

# National Testing Agency

**Question Paper Name :** 88 Electronic Science 07th Jan 2026 Shift 2  
**Subject Name :** 88 Electronic Science  
**Creation Date :** 2026-01-07 20:05:14  
**Duration :** 180  
**Total Marks :** 300  
**Display Marks:** Yes

## Electronic Science and General Paper

**Group Number :** 1  
**Group Id :** 61198790  
**Group Maximum Duration :** 0  
**Group Minimum Duration :** 180  
**Show Attended Group? :** No  
**Edit Attended Group? :** No  
**Break time :** 0  
**Group Marks :** 300

## General Paper

**Section Id :** 611987185  
**Section Number :** 1  
**Section type :** Online  
**Mandatory or Optional :** Mandatory  
**Number of Questions :** 42  
**Number of Questions to be attempted :** 42  
**Section Marks :** 100  
**Maximum Instruction Time :** 0  
**Sub-Section Number :** 1  
**Sub-Section Id :** 611987551  
**Question Shuffling Allowed :** No  
**Is Section Default? :** No

**Question Id : 6119871412 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix**

**Question Numbers : (1 to 5)**

Question Label : Comprehension

The following table shows the marks obtained by six students A-F in six different subjects S1 to S6 having 160, 160, 120, 120, 200 and 240 as maximum marks, respectively. Based on the data in the table, answer the questions that follow:

**Students-wise Details of Marks obtained**

Student	Marks obtained in subject					
	S1 (Out of 160)	S2 (Out of 160)	S3 (Out of 120)	S4 (Out of 120)	S5 (Out of 200)	S6 (Out of 240)
A	80	84	66	56	154	150
B	120	100	84	76	136	132
C	128	72	64	70	144	160
D	84	130	96	84	104	168
E	64	128	90	92	174	70
F	70	96	60	56	164	100

**Sub questions**

**Question Number : 1 Question Id : 6119871413 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the overall respective percentages of marks scored by student A and student B, in all the subjects together?

1. 55% and 62.8%
2. 56% and 63.8%
3. 57% and 61.8%
4. 59% and 64.8%

**Options :**

- 61198755101. 1
- 61198755102. 2
- 61198755103. 3
- 61198755104. 4

**Question Number : 2 Question Id : 6119871414 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the average marks scored by all the students in the subjects S5 and subject S6, respectively?

1. 142 and 130
2. 144 and 128
3. 146 and 130
4. 148 and 126

**Options :**

- 61198755105. 1
- 61198755106. 2
- 61198755107. 3
- 61198755108. 4

**Question Number : 3 Question Id : 6119871415 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the ratio of the total marks scored by student B in all the subjects to the total marks scored by student E in all subjects?

1. 26 : 27
2. 108 : 103
3. 16 : 17
4. 46 : 47

**Options :**

- 61198755109. 1
- 61198755110. 2
- 61198755111. 3
- 61198755112. 4

**Question Number : 4 Question Id : 61198714146 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If for getting first division, a student needs to score minimum 65% marks in aggregate, then the number of students getting first division is:

1. 5
2. 3
3. 2
4. 1

**Options :**

- 61198755113. 1
- 61198755114. 2
- 61198755115. 3
- 61198755116. 4

**Question Number : 5 Question Id : 61198714147 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The marks scored by student B and student C together in subjects S1 is approximately \_\_\_% more than the marks scored by student A, student D and student E together in the same subject.

1. 8.77
2. 9.66
3. 10.53
4. 11.67

**Options :**

- 61198755117. 1
- 61198755118. 2
- 61198755119. 3
- 61198755120. 4

Question Id : 61198714142 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (1 to 5)

Question Label : Comprehension

निम्न तालिका में छः विद्यार्थियों A-F द्वारा क्रमशः 160, 160, 120, 120, 200 और 240 अधिकतम अंक वाले छह विषयों S1 से S6 में प्राप्तांकों को दर्शाया गया है। तालिका में प्रदत्त डेटा के आधार पर आगे पूछे गए प्रश्नों के उत्तर दीजिए:

### प्राप्तांकों का विद्यार्थी-वार विवरण

विद्यार्थी	विषय में प्राप्तांक					
	S1 (160 में से)	S2 (160 में से)	S3 (120 में से)	S4 (120 में से)	S5 (200 में से)	S6 (240 में से)
A	80	84	66	56	154	150
B	120	100	84	76	136	132
C	128	72	64	70	144	160
D	84	130	96	84	104	168
E	64	128	90	92	174	70
F	70	96	60	56	164	100

Sub questions

Question Number : 1 Question Id : 61198714143 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

विद्यार्थी A तथा विद्यार्थी B द्वारा सभी विषयों में मिलाकर प्राप्तांकों का कुल प्रतिशत क्रमशः कितना होगा?

1. 55% और 62.8%
2. 56% और 63.8%
3. 57% और 61.8%
4. 59% और 64.8%

Options :

61198755101. 1  
61198755102. 2  
61198755103. 3  
61198755104. 4

Question Number : 2 Question Id : 61198714144 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सभी विद्यार्थियों द्वारा विषय S5 तथा विषय S6 में प्राप्त अंकों का औसत क्रमशः क्या है?

1. 142 और 130
2. 144 और 128
3. 146 और 130
4. 148 और 126

Options :

61198755105. 1  
61198755106. 2  
61198755107. 3  
61198755108. 4

Question Number : 3 Question Id : 61198714145 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

विद्यार्थी B द्वारा सभी विषयों में प्राप्त कुल अंकों का विद्यार्थी E द्वारा सभी विषयों में कुल अंकों से अनुपात क्या है?

1. 26 : 27
2. 108 : 103
3. 16 : 17
4. 46 : 47

**Options :**

61198755109. 1  
61198755110. 2  
61198755111. 3  
61198755112. 4

**Question Number : 4 Question Id : 61198714146 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

यदि प्रथम श्रेणी प्राप्त करने के लिए, एक विद्यार्थी को कुल मिलाकर न्यूनतम 65% अंक प्राप्त करने की आवश्यकता होती है, तो प्रथम श्रेणी प्राप्त करने वाले विद्यार्थियों की संख्या कितनी है?

1. 5
2. 3
3. 2
4. 1

**Options :**

61198755113. 1  
61198755114. 2  
61198755115. 3  
61198755116. 4

**Question Number : 5 Question Id : 61198714147 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

विद्यार्थी B व विद्यार्थी C द्वारा मिलाकर विषय S1 में प्राप्त अंक उसी विषय में विद्यार्थी E द्वारा मिलाकर प्राप्त किए अंकों से लगभग \_\_\_% अधिक है।

1. 8.77
2. 9.66
3. 10.53
4. 11.67

**Options :**

61198755117. 1  
61198755118. 2  
61198755119. 3  
61198755120. 4

**Sub-Section Number :**

2

**Sub-Section Id :**

611987552

**Question Shuffling Allowed :**

Yes

**Is Section Default? :**

No

Question Number : 6 Question Id : 61198714148 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following are the core social and emotional skills and competencies of self-regulation that are listed under Collaborative for Academic, Social and Emotional Learning (CASEL)?

- A. Self-Management
- B. Self-Awareness
- C. Relationship Skills
- D. Social awareness
- E. Responsible decision making

Choose the **correct** answer from the options given below:

1. C, D and E Only
2. A, B, C, D and E
3. A and D Only
4. B, C and E Only

**Options :**

- 61198755121. 1
- 61198755122. 2
- 61198755123. 3
- 61198755124. 4

Question Number : 6 Question Id : 61198714148 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्नलिखित में से कौन से आत्मनियमन के मुख्य सामाजिक और भावनात्मक कौशल तथा सामर्थ्य हैं जो अकादमिक, सामाजिक और भावनात्मक अधिगम के लिए भागीदारी (सीएसईएल) के तहत सूचीबद्ध हैं?

- A. आत्म-प्रबंधन
- B. आत्म-बोध
- C. संबंध कौशल
- D. सामाजिक बोध
- E. उत्तरदायीपूर्ण निर्णय लेना

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

1. केवल C, D और E
2. A, B, C, D और E
3. केवल A और D
4. केवल B, C और E

**Options :**

- 61198755121. 1
- 61198755122. 2
- 61198755123. 3
- 61198755124. 4

**Question Number : 7 Question Id : 61198714149 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

An overestimated prediction about the probability of an event based on frequency of the event's past occurrences is known as:

1. Hindsight bias
2. Availability heuristic
3. Representativeness heuristic
4. Divergent thinking

**Options :**

- 61198755125. 1
- 61198755126. 2
- 61198755127. 3
- 61198755128. 4

**Question Number : 7 Question Id : 61198714149 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

आशातीत (overestimated) पिछली घटनाओं की आवृत्ति के आधार पर किसी घटना की संभाव्यता के बारे में भविष्यवाणी को क्या कहा जाता है:

1. पश्च दृष्टि पूर्वाग्रह
2. उपलब्धता स्वतःशोध
3. प्रतिनिधिकता स्वतःशोध
4. अपसारी-चिन्तन

**Options :**

- 61198755125. 1
- 61198755126. 2
- 61198755127. 3
- 61198755128. 4

**Question Number : 8 Question Id : 61198714150 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The SWAYAMPRAKASH channel : 05 with the theme of 'Information, Communication and Management Studies' is named as:

1. SANSKRITI
2. SAARASWAT
3. PRABANDHAN
4. PRABODH

**Options :**

- 61198755129. 1
- 61198755130. 2
- 61198755131. 3
- 61198755132. 4

Question Number : 8 Question Id : 61198714150 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

‘सूचना, संचार और प्रबंधन अध्ययन’ की थीम के साथ स्वयंप्रभा चैनल : 05 को क्या नाम दिया गया:

1. SANSKRITI
2. SAARASWAT
3. PRABANDHAN
4. PRABODH

Options :

61198755129. 1  
61198755130. 2  
61198755131. 3  
61198755132. 4

Question Number : 9 Question Id : 61198714151 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following are the prominent features of Self-directed learning?

- A. Passive learning
- B. Extension of learning
- C. Taking ownership of learning
- D. Teacher-centered learning
- E. Self-monitoring

Choose the **correct** answer from the options given below:

1. A, D and E Only
2. B and D Only
3. B, C and E Only
4. A and E Only

Options :

61198755133. 1  
61198755134. 2  
61198755135. 3  
61198755136. 4

Question Number : 9 Question Id : 61198714151 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

आत्म-निर्देशित अधिगम की प्रमुख विशेषताएँ निम्नलिखित में से कौन सी हैं?

- A. निष्क्रिय अधिगम
- B. अधिगम का विस्तार
- C. अधिगम का स्वामित्व लेना
- D. शिक्षक-केंद्रित अधिगम
- E. आत्म-अन्वीक्षण

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल A, D और E
- 2. केवल B और D
- 3. केवल B, C और E
- 4. केवल A और E

**Options :**

- 61198755133. 1
- 61198755134. 2
- 61198755135. 3
- 61198755136. 4

Question Number : 10 Question Id : 61198714152 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

During a live online math tutorial, a teacher wants to demonstrate problem-solving techniques and equations visually. Which software/tool would best support this instructional method?

- 1. Adobe Illustrator
- 2. Camtasia
- 3. Jamboard
- 4. Kahoot

**Options :**

- 61198755137. 1
- 61198755138. 2
- 61198755139. 3
- 61198755140. 4

**Question Number : 10 Question Id : 61198714152 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

एक लाइव ऑनलाइन गणित के ट्यूटोरियल के दौरान शिक्षक दृश्य रूप में समस्या-हल करने की तकनीकों और समीकरणों का प्रदर्शन करना चाहता है। इसे निर्देशात्मक पद्धति को कौनसा सॉफ्टवेयर/साधन सबसे अच्छी तरह से सपोर्ट करेगा?

1. एडोबी एलस्ट्रेटर
2. कैमटासिया
3. जैमबोर्ड
4. काहूट

**Options :**

61198755137. 1  
61198755138. 2  
61198755139. 3  
61198755140. 4

**Question Number : 11 Question Id : 61198714153 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Identify the correct statements.

- A. Panel study is a type of longitudinal research.
- B. Cohort study is a type of longitudinal research.
- C. Panel study is a type of cross-sectional research.
- D. Cohort study is a type of cross-sectional research.

Choose the **correct** answer from the options given below:

1. A and B Only
2. A and D Only
3. B and C Only
4. C and D Only

**Options :**

61198755141. 1  
61198755142. 2  
61198755143. 3  
61198755144. 4

Question Number : 11 Question Id : 61198714153 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सही कथनों की पहचान कीजिए:

- A. पैनल अध्ययन अनुदैर्घ्य शोध का एक प्रकार है।
- B. सहगण (कोहॉर्ट) अध्ययन अनुदैर्घ्य शोध का एक प्रकार है।
- C. पैनल अध्ययन प्रतिनिध्यात्मक (क्रॉस-सैक्शनल) शोध का एक प्रकार है।
- D. सहगण (कोहॉर्ट) अध्ययन प्रतिनिध्यात्मक (क्रॉस-सैक्शनल) शोध का एक प्रकार है।

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल A और B
- 2. केवल A और D
- 3. केवल B और C
- 4. केवल C और D

Options :

- 61198755141. 1
- 61198755142. 2
- 61198755143. 3
- 61198755144. 4

Question Number : 12 Question Id : 61198714154 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a research study, a group that experiences the manipulated independent variables is generally known as:

- 1. Placebo group
- 2. Control group
- 3. Independent group
- 4. Experimental group

Options :

- 61198755145. 1
- 61198755146. 2
- 61198755147. 3
- 61198755148. 4

Question Number : 12 Question Id : 61198714154 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

किसी शोध अध्ययन में ऐसे समूह को, जो छलयोजित अनाश्रित चरों का अनुभव करता है, सामान्यतः क्या कहा जाता है?

- 1. प्लेसीबो समूह
- 2. नियंत्रण समूह
- 3. अनाश्रित समूह
- 4. प्रायोगिक समूह

Options :

- 61198755145. 1
- 61198755146. 2
- 61198755147. 3
- 61198755148. 4

Question Number : 13 Question Id : 61198714155 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Identify the discrete variables.

- A. Number of students in each class of a school
- B. Number of heads obtained in ten tosses of a coin
- C. Marks scored by students in an objective type examination with negative marking for incorrect responses
- D. Height of students in a school

Choose the **correct** answer from the options given below:

- 1. A, B and C Only
- 2. A and B Only
- 3. A, B and D Only
- 4. C and D Only

**Options :**

- 61198755149. 1
- 61198755150. 2
- 61198755151. 3
- 61198755152. 4

Question Number : 13 Question Id : 61198714155 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

असतत चरों की पहचान कीजिए:

- A. किसी विद्यालय की प्रत्येक कक्षा में छात्रों की संख्या
- B. किसी सिक्के को दस बार उछाले जाने पर प्राप्त हेड की संख्या
- C. वस्तुनिष्ठ प्रकार की परीक्षा में गलत उत्तरों के लिए ऋणात्मक अंक के साथ छात्रों के प्राप्तांक
- D. विद्यालय में छात्रों के कद की ऊँचाई

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल A, B और C
- 2. केवल A और B
- 3. केवल A, B और D
- 4. केवल C और D

**Options :**

- 61198755149. 1
- 61198755150. 2
- 61198755151. 3
- 61198755152. 4

Question Number : 14 Question Id : 61198714156 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following statistical measures in increasing order of their values for a given dataset.

- A. 6<sup>th</sup> decile
- B. 3<sup>rd</sup> quartile
- C. Median
- D. 70th percentile

Choose the **correct** answer from the options given below:

- 1. A, B, C, D
- 2. C, A, D, B
- 3. C, B, A, D
- 4. B, C, A, D

Options :

- 61198755153. 1
- 61198755154. 2
- 61198755155. 3
- 61198755156. 4

Question Number : 14 Question Id : 61198714156 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

किसी दिए गए आँकड़ों के समुच्चय के लिए निम्नलिखित सांख्यिकीय मापनों को उनके मानों के आरोही क्रम में व्यवस्थित कीजिए:

- A. छठा दशमक
- B. तृतीय चतुर्थक
- C. माधिका
- D. 70वाँ शतमक

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. A, B, C, D
- 2. C, A, D, B
- 3. C, B, A, D
- 4. B, C, A, D

Options :

- 61198755153. 1
- 61198755154. 2
- 61198755155. 3
- 61198755156. 4

Question Number : 15 Question Id : 61198714157 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical student's t-test is useful for testing the

- A. significance of difference between two sample means
- B. independence of attributes
- C. significance of correlation coefficient
- D. analysis of variance

Choose the **correct** answer from the options given below:

- 1. A and B Only
- 2. B and C Only
- 3. C and D Only
- 4. A and C Only

**Options :**

- 61198755157. 1
- 61198755158. 2
- 61198755159. 3
- 61198755160. 4

Question Number : 15 Question Id : 61198714157 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

छात्रों का टी-परीक्षण किसके परीक्षण के लिए उपयोगी है:

- A. दो प्रतिदर्श मध्यमानों के बीच अंतर की सार्थकता
- B. गुणों की स्वतंत्रता
- C. सहसंबंध गुणांक की सार्थकता
- D. प्रसरण का विश्लेषण

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल A और B
- 2. केवल B और C
- 3. केवल C और D
- 4. केवल A और C

**Options :**

- 61198755157. 1
- 61198755158. 2
- 61198755159. 3
- 61198755160. 4

**Question Number : 16 Question Id : 61198714158 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In mediated communication audience attention is considered as a:

1. Human liability
2. Scarce resource
3. Visibility product
4. Regulated liability

**Options :**

- 61198755161. 1
- 61198755162. 2
- 61198755163. 3
- 61198755164. 4

**Question Number : 16 Question Id : 61198714158 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

माध्यत संप्रेषण में श्रोता के ध्यान को माना जाता है:

1. मानवीय देयता
2. अपर्याप्त संसाधन
3. दृश्यता उत्पाद
4. विनियमित देयता

**Options :**

- 61198755161. 1
- 61198755162. 2
- 61198755163. 3
- 61198755164. 4

**Question Number : 17 Question Id : 61198714159 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is labelled as the second self?

1. The telephone
2. The radio
3. The television
4. The computer

**Options :**

- 61198755165. 1
- 61198755166. 2
- 61198755167. 3
- 61198755168. 4

Question Number : 17 Question Id : 61198714159 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्नलिखित में से किसे दूसरे स्व (सेकंड सेल्फ) की तरह वर्गीकृत किया जाता है?

1. टेलीफोन
2. रेडियो
3. टेलीविजन
4. कंप्यूटर

Options :

61198755165. 1

61198755166. 2

61198755167. 3

61198755168. 4

Question Number : 18 Question Id : 61198714160 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The 'interactive society' is characterized by the following:

- A. Non-electronic communication
- B. Networked integration
- C. Multi-media
- D. Digitisation
- E. Uncultured media environment

Choose the **correct** answer from the options given below:

1. A, B and C Only
2. B, C and D Only
3. C, D and E Only
4. A, B and E Only

Options :

61198755169. 1

61198755170. 2

61198755171. 3

61198755172. 4

Question Number : 18 Question Id : 61198714160 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

'अन्योन्यक्रियात्मक समाज' निम्न के द्वारा अभिलक्षित होता है:

- A. गैर-इलेक्ट्रानिक संचार
- B. नेटवर्क युक्त एकीकरण
- C. जनसंचार
- D. अंकरूपण (डिजिटाइजेशन)
- E. असंस्कृत जनसंचार माध्यम परिवेश

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल A, B और C
- 2. केवल B, C और D
- 3. केवल C, D और E
- 4. केवल A, B और E

**Options :**

- 61198755169. 1
- 61198755170. 2
- 61198755171. 3
- 61198755172. 4

Question Number : 19 Question Id : 61198714161 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following can be categorized under electronically-based communication?

- A. Typographic
- B. Audio-visual
- C. Computer-mediated
- D. Personal conversation
- E. Cylinder press

Choose the **correct** answer from the options given below:

- 1. A, B and C Only
- 2. B, C and D Only
- 3. C, D and E Only
- 4. A, D and E Only

**Options :**

- 61198755173. 1
- 61198755174. 2
- 61198755175. 3
- 61198755176. 4

Question Number : 19 Question Id : 61198714161 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्नलिखित में से किसे इलेक्ट्रॉनिक आधारित संचार की श्रेणी में रखा जा सकता है?

- A. मुद्रण कला संबंधी संचार
- B. श्रव्य - दृश्य संचार
- C. कंप्यूटर माध्यम संचार
- D. व्यक्तिगत वार्तालाप संचार
- E. सिलिंडर प्रेस संचार

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल A, B और C
- 2. केवल B, C और D
- 3. केवल C, D और E
- 4. केवल A, D और E

Options :

- 61198755173. 1
- 61198755174. 2
- 61198755175. 3
- 61198755176. 4

Question Number : 20 Question Id : 61198714162 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I (Term)		LIST-II (Description)	
A.	Natural sign	I.	Less certainty of response in artificial signs
B.	Artificial sign	II.	Those things that are represented in nature
C.	Signal	III.	Those that are constructed in the social world
D.	Symbol	IV.	Artificial signs that produce predictable responses

Choose the **correct** answer from the options given below:

- 1. A-II, B-III, C-IV, D-I
- 2. A-III, B-IV, C-I, D-II
- 3. A-IV, B-I, C-II, D-III
- 4. A-I, B-II, C-III, D-IV

Options :

- 61198755177. 1
- 61198755178. 2
- 61198755179. 3
- 61198755180. 4

Question Number : 20 Question Id : 61198714162 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची -I को सूची-II से सुमेलित करें

सूची -I (शब्दावली)		सूची -II (विवरण)	
A.	प्राकृतिक संकेत	I.	कृत्रिम संकेतों में प्रत्युत्तर प्राप्त होने की निश्चितता कम होना।
B.	कृत्रिम संकेत	II.	वे बातें जिनका प्रतिनिधित्व प्रकृति में होता है।
C.	सिगनल	III.	वे बातें जिनकी संरचना सामाजिक जगत में होती है।
D.	प्रतीक	IV.	वे कृत्रिम संकेत जिनसे पूर्वानुमेय प्रत्युत्तर प्राप्त होते हैं।

नीचे दिए गए विकल्पों में से **सही** विकल्प चुनें:

1. A-II, B-III, C-IV, D-I
2. A-III, B-IV, C-I, D-II
3. A-IV, B-I, C-II, D-III
4. A-I, B-II, C-III, D-IV

**Options :**

61198755177. 1  
61198755178. 2  
61198755179. 3  
61198755180. 4

Question Number : 21 Question Id : 61198714163 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For aiming a target a person gets one rupee each time when he hits it and loses one rupee when he misses it. If he gets Rs 40 after aiming at the target one hundred times, then how many times did he miss the target?

1. 30
2. 40
3. 60
4. 70

**Options :**

61198755181. 1  
61198755182. 2  
61198755183. 3  
61198755184. 4

**Question Number : 21 Question Id : 61198714163 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

किसी लक्ष्य पर निशाना साधने के लिए, एक व्यक्ति को प्रत्येक बार एक (1) रुपया मिलता है जब वह सही निशाना लगाता है और वह एक (1) रुपया खो देता है जब वह गलत निशाना लगाता है। अगर लक्ष्य पर 100 बार निशाना लगाने के बाद उसे 40 रुपये प्राप्त होते हैं, तब कितनी बार उसने निशाना गलत लगाया?

1. 30
2. 40
3. 60
4. 70

**Options :**

61198755181. 1  
61198755182. 2  
61198755183. 3  
61198755184. 4

**Question Number : 22 Question Id : 61198714164 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Three successive discounts of 10%, 25% and 35% on the marked price of an item are equivalent to a single discount of:

1. ~ 56.1%
2. ~ 43.9%
3. 70%
4. ~ 50.2%

**Options :**

61198755185. 1  
61198755186. 2  
61198755187. 3  
61198755188. 4

**Question Number : 22 Question Id : 61198714164 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

किसी वस्तु के अंकित मूल्य पर तीन क्रमागत बट्टे 10%, 25% और 35% के समकक्ष एक बट्टा होगा:

1. ~ 56.1%
2. ~ 43.9%
3. 70%
4. ~ 50.2%

**Options :**

61198755185. 1  
61198755186. 2  
61198755187. 3  
61198755188. 4

**Question Number : 23 Question Id : 61198714165 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A car travels from city A to city B with a constant speed. If the speed of the car is increased by 20 km/h it will reach destination 1 hour earlier. On the other hand, if its speed decreases by 20 km/h, it reaches 2 hours later than scheduled time. What is the usual time if it travels with routine speed?

1. 2 hr
2. 4 hr
3. 8 hr
4. 10 hr

**Options :**

61198755189. 1  
61198755190. 2  
61198755191. 3  
61198755192. 4

**Question Number : 23 Question Id : 61198714165 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

एक कार शहर A से शहर B तक स्थिर गति से यात्रा करती है। अगर कार की गति 20 किमी./घं. बढ़ाई जाती है तब वह गंतव्य 1 घंटे जल्दी पहुंचेगी। वहीं दूसरी ओर, अगर गति 20 किमी./घं. घटाई जाती है, तब वह अपने अनुसूचित समय से 2 घंटा देरी से पहुँचेगी। अगर वह नेमी गति से यात्रा करती है, तब उसका सामान्य समय क्या है?

1. 2 घंटा
2. 4 घंटा
3. 8 घंटा
4. 10 घंटा

**Options :**

61198755189. 1  
61198755190. 2  
61198755191. 3  
61198755192. 4

**Question Number : 24 Question Id : 61198714166 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The present ages of three persons are in the proportion 4 : 5 : 7. Seven years ago, the sum of their ages was 59 years. The present age of youngest of them is

1. 15 years
2. 20 years
3. 25 years
4. 35 years

**Options :**

61198755193. 1  
61198755194. 2  
61198755195. 3  
61198755196. 4

**Question Number : 24 Question Id : 61198714166 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

तीन व्यक्तियों की वर्तमान आयु 4 : 5 : 7 के अनुपात में है। सात वर्ष पूर्व उन व्यक्तियों की आयु का कुल योग 59 वर्ष था। वर्तमान में उनमें से सबसे कनिष्ठ व्यक्ति की आयु कितनी है?

1. 15 वर्ष
2. 20 वर्ष
3. 25 वर्ष
4. 35 वर्ष

**Options :**

- 61198755193. 1
- 61198755194. 2
- 61198755195. 3
- 61198755196. 4

**Question Number : 25 Question Id : 61198714167 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In a certain coding language, if the word 'DRIVE' is coded as 'GOLSH', then the word 'COINS' will be coded as:

1. FKKOU
2. EKLPV
3. FLLKV
4. ELKPU

**Options :**

- 61198755197. 1
- 61198755198. 2
- 61198755199. 3
- 61198755200. 4

**Question Number : 25 Question Id : 61198714167 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

एक निश्चित कूटलेखन भाषा में, शब्द 'DRIVE' को 'GOLSH' से कूटित किया जाता है, तब शब्द 'COINS' का कूट होगा:

1. FKKOU
2. EKLPV
3. FLLKV
4. ELKPU

**Options :**

- 61198755197. 1
- 61198755198. 2
- 61198755199. 3
- 61198755200. 4

**Question Number : 26 Question Id : 61198714168 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

"Just look around yourself, everything around us is so intelligently organized. Obviously this world must have been created by an intelligent God." Which of the following fallacy is committed in the above argument?

1. Hasty Generalization
2. Begging the question
3. Equivocation
4. Slippery slope

**Options :**

- 61198755201. 1
- 61198755202. 2
- 61198755203. 3
- 61198755204. 4

**Question Number : 26 Question Id : 61198714168 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

"अपने चारों ओर दृष्टिपात करें हमारे चारों ओर की वस्तुएँ अत्यंत बुद्धिमानी से व्यवस्थित की गई हैं। स्पष्ट है कि यह संसार किसी बुद्धिमान ईश्वर द्वारा सृजित किया गया है।" उपर्युक्त कथन में कौन-सा तर्कदोष है?

1. अविचारित सामान्यीकरण
2. आत्माश्रय दोष
3. अनेकार्थकता
4. फिसलनयुक्त ढलान

**Options :**

- 61198755201. 1
- 61198755202. 2
- 61198755203. 3
- 61198755204. 4

**Question Number : 27 Question Id : 61198714169 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If the statement 'No fishes are mammals' is given as false, then which of the following proposition can be immediately inferred to be true?

1. Some fishes are mammals
2. All fishes are mammals
3. Some fishes are not mammals
4. All mammals are fishes

**Options :**

- 61198755205. 1
- 61198755206. 2
- 61198755207. 3
- 61198755208. 4

Question Number : 27 Question Id : 61198714169 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि यह कथन 'कोई भी मछली स्तनपायी नहीं होती' को गलत माना जाता है तो तत्काल निम्नलिखित किसी प्रतिज्ञप्ति के सत्य होने का अनुमान लगाया जा सकता है?

1. कुछ मछलियाँ स्तनपायी होती हैं।
2. सभी मछलियाँ स्तनपायी होती हैं।
3. कुछ मछलियाँ स्तनपायी नहीं होती हैं।
4. सभी स्तनपायी मछलियाँ होती हैं।

Options :

- 61198755205. 1
- 61198755206. 2
- 61198755207. 3
- 61198755208. 4

Question Number : 28 Question Id : 61198714170 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following statements are logically equivalent?

- A. All non-bovines are cats
- B. No cats are bovines
- C. All cats are non-bovines
- D. No bovines are cats

Choose the **correct** answer from the options given below:

1. B, C and D Only
2. A and C Only
3. B and D Only
4. A, B and C Only

Options :

- 61198755209. 1
- 61198755210. 2
- 61198755211. 3
- 61198755212. 4

Question Number : 28 Question Id : 61198714170 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्नलिखित कथनों में से कौन-से कथन तार्किक दृष्टि से समतुल्य हैं?

- A. सभी गैर-गोजातीय बिल्लियाँ होते हैं।
- B. कोई भी बिल्ली गोजातीय नहीं होती है।
- C. सभी बिल्लियाँ गैर-गोजातीय होती हैं।
- D. कोई भी गोजातीय, बिल्लियाँ नहीं होते हैं।

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल B, C और D
- 2. केवल A और C
- 3. केवल B और D
- 4. केवल A, B और C

**Options :**

- 61198755209. 1
- 61198755210. 2
- 61198755211. 3
- 61198755212. 4

Question Number : 29 Question Id : 61198714171 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following statements are true?

- A. Validity is an attribute of deductive argument.
- B. Validity can be attributed to any single proposition.
- C. In a valid argument all of its premises have to be true.
- D. A valid deductive argument can not have all true premises and a false conclusion.

Choose the **correct** answer from the options given below:

- 1. B and C Only
- 2. A, C and D Only
- 3. A and D Only
- 4. C and D Only

**Options :**

- 61198755213. 1
- 61198755214. 2
- 61198755215. 3
- 61198755216. 4

Question Number : 29 Question Id : 61198714171 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्नलिखित में से कौन-से कथन सत्य हैं?

- A. वैधता, निगमनात्मक युक्ति की विशेषता है।
- B. वैधता को किसी एकल प्रतिज्ञप्ति पर गुणारोपित किया जा सकता है।
- C. किसी वैध युक्ति में इसकी सभी आधारिकाओं का सत्य होना अपेक्षित है।
- D. किसी वैध निगमनात्मक युक्ति में सभी सत्य आधारिकाएँ और एक गलत निष्कर्ष नहीं हो सकता।

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल B और C
- 2. केवल A, C और D
- 3. केवल A और D
- 4. केवल C और D

**Options :**

- 61198755213. 1
- 61198755214. 2
- 61198755215. 3
- 61198755216. 4

Question Number : 30 Question Id : 61198714172 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following arguments is fallacious because the middle term is present in both positive and negative instances and violates the rule that it should not be present in the negative instances?

- 1. Fire is cold because it is a substance
- 2. The hill has fire because it is knowable
- 3. Sound is eternal because it is produced
- 4. Wherever there is fire there is smoke

**Options :**

- 61198755217. 1
- 61198755218. 2
- 61198755219. 3
- 61198755220. 4

**Question Number : 30 Question Id : 61198714172 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

निम्नलिखित कथनों में से किस कथन में तर्कदोष है क्योंकि मध्यम पद अन्वय दृष्टांत और निषेधात्मक दृष्टांत दोनों में मौजूद है और इससे इस नियम का उल्लंघन होता है कि यह निषेधात्मक दृष्टांतों में मौजूद नहीं होना चाहिए।

1. आग ठंडी होती है क्योंकि यह तत्व है।
2. पहाड़ी में आग है क्योंकि यह श्रेय है।
3. ध्वनि शाश्वत है क्योंकि इसे उत्पन्न किया जाता है।
4. जहाँ कहीं आग होती है तो वहाँ धुँआ होता है।

**Options :**

- 61198755217. 1
- 61198755218. 2
- 61198755219. 3
- 61198755220. 4

**Question Number : 31 Question Id : 61198714173 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

An exciting new evolution of the World Wide Web (WWW) providing machine-readable and machine-comprehensible information far beyond the current capabilities is called:

1. Dynamic Web
2. Web Browser
3. Semantic Web
4. Static Web

**Options :**

- 61198755221. 1
- 61198755222. 2
- 61198755223. 3
- 61198755224. 4

**Question Number : 31 Question Id : 61198714173 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

वर्तमान सामर्थ्य से कहीं परे जा कर मशीन पठनीय और मशीन बोधगम्य सूचना प्रदान करने वाले विश्वव्यापी वेब (WWW) के रोमांचक नवीन उद्भव को निम्न में से क्या कहा जाता है?

1. गति वेब
2. वेब ब्राउजर
3. सिमेंटिक वेब
4. स्थिर वेब

**Options :**

- 61198755221. 1
- 61198755222. 2
- 61198755223. 3
- 61198755224. 4

**Question Number : 32 Question Id : 61198714174 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is Bluetooth technology?

1. It means the technology can travel with the user; for instance, users can download software, email messages, and web pages onto a laptop or other mobile device
2. It refers to any type of operation accomplished without the use of a hard-wired connection
3. It refers to a wireless Personal Area Network (PAN) technology that transmits signal over short distances among cell phones, computers and other devices
4. It provides communication for devices owned by a single user that work over a short distance

**Options :**

- 61198755225. 1
- 61198755226. 2
- 61198755227. 3
- 61198755228. 4

**Question Number : 32 Question Id : 61198714174 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

ब्लूटूथ प्रौद्योगिकी क्या है?

1. इसका अर्थ है कि प्रौद्योगिकी प्रयोक्ता के साथ चल सकती है; उदाहरणार्थ, प्रयोक्ता लेपटाप अथवा अन्य मोबाइल उपकरण पर सॉफ्टवेयर, ईमेल संदेश और वेब पृष्ठों को डाउनलोड कर सकते हैं।
2. इसका संकेत हार्ड-तार वाले कनेक्शन का प्रयोग किए बिना किए जाने वाले किसी प्रकार के प्रचालन की ओर है।
3. इसका अर्थ बे-तार पर्सनल एरिया नेटवर्क (PAN) प्रौद्योगिकी से है जो सेल फोन, कंप्यूटरों व अन्य उपकरणों के बीच छोटी दूरियों तक संकेतों (सिग्नल) का प्रेषण करती है।
4. यह एक प्रयोक्ता के उपकरणों हेतु संचार उपलब्ध कराता है जो छोटी दूरियों तक काम करता है।

**Options :**

- 61198755225. 1
- 61198755226. 2
- 61198755227. 3
- 61198755228. 4

Question Number : 33 Question Id : 61198714175 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II in the context of MS-EXCEL

LIST-I (Cell Reference)		LIST-II (Definition and Features)	
A.	\$D\$5	I.	Mixed reference. Row is fixed and column is changeable when fill handle is used
B.	D\$5	II.	Mixed reference. Column is fixed and row is changeable when fill handle is used
C.	D5	III.	Absolute reference. Column and row are fixed when fill handle is used
D.	\$D5	IV.	Relative reference. Column and row are changeable when fill handle is used

Choose the *correct* answer from the options given below:

1. A-III, B-I, C-IV, D-II
2. A-II, B-I, C-IV, D-III
3. A-III, B-IV, C-I, D-II
4. A-IV, B-I, C-III, D-II

**Options :**

61198755229. 1

61198755230. 2

61198755231. 3

61198755232. 4

Question Number : 33 Question Id : 61198714175 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची -I को सूची-II से सुमेलित करें (MS-EXCEL के संदर्भ में)

सूची -I (सैल संदर्भ)		सूची -II (परिभाषा व अभिलक्षण)	
A.	\$D\$5	I.	मिश्रित संदर्भ। जब फिल हैंडल का प्रयोग किया जाता है तो पंक्ति नियत रहती है और कॉलम परिवर्तनीय हो जाता है।
B.	\$D5	II.	मिश्रित संदर्भ। फिल हैंडल के प्रयोग किए जाने पर कॉलम नियत रहता है और पंक्ति परिवर्तनीय हो जाती है।
C.	D5	III.	निरपेक्ष संदर्भ। फिल हैंडल का प्रयोग किए जाने पर कॉलम व पंक्ति नियत रहते हैं।
D.	\$D5	IV.	सापेक्षिक संदर्भ। फिल हैंडल का प्रयोग किए जाने पर कॉलम व पंक्ति परिवर्तनीय हो जाते हैं।

नीचे दिए गए विकल्पों में से **सही** विकल्प चुनें:

1. A-III, B-I, C-IV, D-II
2. A-II, B-I, C-IV, D-III
3. A-III, B-IV, C-I, D-II
4. A-IV, B-I, C-III, D-II

Options :

61198755229. 1  
61198755230. 2  
61198755231. 3  
61198755232. 4

Question Number : 34 Question Id : 61198714176 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following statements are true with reference to the evolution of WWW?

- A. Web 2.0 is the "participative social web"
- B. Web 1.0 is the "ready-only web"
- C. Three main applications of Web 2.0 are YouTube, Wikis and Blogs
- D. Web 3.0 is the "read, write, execute web"

Choose the **correct** answer from the options given below:

1. A, B and C Only
2. A and C Only
3. B and D Only
4. A, B, C and D

Options :

61198755233. 1  
61198755234. 2  
61198755235. 3  
61198755236. 4

Question Number : 34 Question Id : 61198714176 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

WWW के क्रमिक विकास के संदर्भ में निम्न में से कौन से कथन सही हैं?

- A. वेब 2.0 "प्रतिभागी सामाजिक वेब" है।
- B. वेब 1.0 "केवल पठनीय वेब" है।
- C. वेब 2.0 के तीन प्रमुख अनुप्रयोग हैं यू-ट्यूब, विकीज व ब्लॉग।
- D. वेब 3.0 "पढ़ें, लिखें और निष्पादित करें वेब" है।

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल A, B और C
- 2. केवल A और C
- 3. केवल B और D
- 4. A, B, C और D

**Options :**

- 61198755233. 1
- 61198755234. 2
- 61198755235. 3
- 61198755236. 4

Question Number : 35 Question Id : 61198714177 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If  $(L)_M$  represents a number L in base M number system, then identify the correct ascending order of the following numbers A-D, when converted to decimal number system.

- A.  $(333.2)_4$
- B.  $(111111.11)_2$
- C.  $(77.2)_8$
- D.  $(3F.6)_{16}$

Choose the **correct** answer from the options given below:

- 1. B, D, A, C
- 2. C, D, A, B
- 3. A, D, B, C
- 4. C, D, B, A

**Options :**

- 61198755237. 1
- 61198755238. 2
- 61198755239. 3
- 61198755240. 4

Question Number : 35 Question Id : 61198714177 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि आधार M संख्या प्रणाली में  $(L)_M$  संख्या L को दर्शाता है तो दशमलव संख्या प्रणाली में परिवर्तन किए जाने पर निम्न संख्याओं A-D के सही आरोही क्रम की पहचान कीजिए।

- A.  $(333.2)_4$
- B.  $(111111.11)_2$
- C.  $(77.2)_8$
- D.  $(3F.6)_{16}$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें:

- 1. B, D, A, C
- 2. C, D, A, B
- 3. A, D, B, C
- 4. C, D, B, A

Options :

- 61198755237. 1
- 61198755238. 2
- 61198755239. 3
- 61198755240. 4

Question Number : 36 Question Id : 61198714178 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

When did India become party to Convention on Biodiversity (CBD)?

- 1. 1992
- 2. 1993
- 3. 1994
- 4. 1995

Options :

- 61198755241. 1
- 61198755242. 2
- 61198755243. 3
- 61198755244. 4

Question Number : 36 Question Id : 61198714178 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

भारत जैव विविधता संबंधी अभिसमय (CBD) में कब शामिल हुआ था?

- 1. 1992
- 2. 1993
- 3. 1994
- 4. 1995

Options :

- 61198755241. 1
- 61198755242. 2
- 61198755243. 3
- 61198755244. 4

Question Number : 37 Question Id : 61198714179 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is a kind of wave generated during an earthquake?

1. N-Wave
2. O-Wave
3. P-Wave
4. Q-Wave

Options :

- 61198755245. 1
- 61198755246. 2
- 61198755247. 3
- 61198755248. 4

Question Number : 37 Question Id : 61198714179 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्न में से कौन भूकंप के दौरान उत्पन्न एक प्रकार की तरंग है?

1. N-तरंग
2. O-तरंग
3. P-तरंग
4. Q-तरंग

Options :

- 61198755245. 1
- 61198755246. 2
- 61198755247. 3
- 61198755248. 4

Question Number : 38 Question Id : 61198714180 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Geothermal power plants are much like fossil and nuclear plants with exception of no requirements of:

- A. Vapour dominated hydrothermal resources
- B. Boiler
- C. Fission reactor
- D. Turbine generator

Choose the **correct** answer from the options given below:

1. A, B and C Only
2. B and C Only
3. A and D Only
4. B, C and D Only

Options :

- 61198755249. 1
- 61198755250. 2
- 61198755251. 3
- 61198755252. 4

Question Number : 38 Question Id : 61198714180 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

भूतापीय ऊर्जा संयंत्र, जीवाश्मी व नाभिकीय संयंत्रों के अत्यधिक समान होते हैं सिवाय निम्न की आवश्यकता के बिना

- A. वाष्प प्रधान जलतापीय संसाधन
- B. बॉयलर
- C. विखंडन रिएक्टर
- D. टर्बाइन जनरेटर

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

1. केवल A, B और C
2. केवल B और C
3. केवल A और D
4. केवल B, C और D

**Options :**

- 61198755249. 1
- 61198755250. 2
- 61198755251. 3
- 61198755252. 4

Question Number : 39 Question Id : 61198714181 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the correct increasing order of Global Warming Potential (GWP) of the following Green House Gases (GHGs)?

- A. CFC - 11 (Chlorofluorocarbon - 11)
- B. CH<sub>4</sub> (Methane)
- C. CO<sub>2</sub> (Carbon dioxide)
- D. N<sub>2</sub>O (Nitrous oxide)

Choose the **correct** answer from the options given below:

1. A, B, D, C
2. C, B, D, A
3. C, D, B, A
4. A, D, B, C

**Options :**

- 61198755253. 1
- 61198755254. 2
- 61198755255. 3
- 61198755256. 4

Question Number : 39 Question Id : 61198714181 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्न ग्रीन हाउस गैसों (GHGs) की वैश्विक तापन क्षमता (GWP) का आरोही क्रम क्या है?

- A. CFC - 11 (क्लोरोफ्लूरोकार्बन - 11)
- B. CH<sub>4</sub> (मीथेन)
- C. CO<sub>2</sub> (कार्बन डाईऑक्साइड)
- D. N<sub>2</sub>O (नाइट्रस ऑक्साइड)

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. A, B, D, C
- 2. C, B, D, A
- 3. C, D, B, A
- 4. A, D, B, C

**Options :**

- 61198755253. 1
- 61198755254. 2
- 61198755255. 3
- 61198755256. 4

Question Number : 40 Question Id : 61198714182 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In which of the water treatment processes additional BOD (Biological Oxygen Demand) is provided to remove the biological material?

- 1. Primary Treatment Process
- 2. Secondary Treatment Process
- 3. Tertiary Treatment Process
- 4. Advanced Treatment Process

**Options :**

- 61198755257. 1
- 61198755258. 2
- 61198755259. 3
- 61198755260. 4

**Question Number : 40 Question Id : 61198714182 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

निम्न में से किस जलशोधन प्रक्रिया में जैविक सामग्री को हटाने के लिए अतिरिक्त BOD (जैव ऑक्सीजन मांग) प्रदान किया जाता है?

1. प्राथमिक शोधन प्रक्रिया
2. द्वितीयक शोधन प्रक्रिया
3. तृतीयक शोधन प्रक्रिया
4. उन्नत शोधन प्रक्रिया

**Options :**

61198755257. 1  
61198755258. 2  
61198755259. 3  
61198755260. 4

**Question Number : 41 Question Id : 61198714183 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The Simla conference of 1901 was described by Lord Curzon as:

1. High-level Education Commission
2. High Power Education Commission
3. Secret Education Commission
4. Confidential Education Commission

**Options :**

61198755261. 1  
61198755262. 2  
61198755263. 3  
61198755264. 4

**Question Number : 41 Question Id : 61198714183 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

वर्ष 1901 शिमला सम्मेलन का वर्णन लॉर्ड कर्जन ने निम्नलिखित प्रकार से किया था:

1. उच्च-स्तरीय शिक्षा आयोग
2. उच्चाधिकार प्राप्त शिक्षा आयोग
3. गुप्त शिक्षा आयोग
4. गोपनीय शिक्षा आयोग

**Options :**

61198755261. 1  
61198755262. 2  
61198755263. 3  
61198755264. 4

Question Number : 42 Question Id : 61198714184 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following ancient university was situated on the banks of the river Krishna in Vidarbha?

1. Sridhanya Katak
2. Talkshashila
3. Nalanda
4. Sakya

Options :

- 61198755265. 1
- 61198755266. 2
- 61198755267. 3
- 61198755268. 4

Question Number : 42 Question Id : 61198714184 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्न में से कौन सा प्राचीन विश्वविद्यालय विदर्भ में कृष्णा नदी के किनारे स्थित था?

1. श्रीधन्य कटक
2. तक्षशिला
3. नालंदा
4. शाक्य

Options :

- 61198755265. 1
- 61198755266. 2
- 61198755267. 3
- 61198755268. 4

Question Number : 43 Question Id : 61198714185 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following universities were considered as Institutions of National Importance at the commencement of constitution?

- A. Benares Hindu University
- B. Aligarh Muslim University
- C. Delhi University
- D. Hyderabad University
- E. Calicut University

Choose the **correct** answer from the options given below:

1. A, B and C Only
2. B, C and D Only
3. C, D and E Only
4. A, D and E Only

Options :

- 61198755269. 1
- 61198755270. 2
- 61198755271. 3
- 61198755272. 4

Question Number : 43 Question Id : 61198714185 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्नलिखित में से कौन से विश्वविद्यालय संविधान के आरंभ के समय राष्ट्रीय महत्व के संस्थान समझे जाते थे?

- A. बनारस हिंदू विश्वविद्यालय
- B. अलीगढ़ मुस्लिम विश्वविद्यालय
- C. दिल्ली विश्वविद्यालय
- D. हैदराबाद विश्वविद्यालय
- E. कालीकट विश्वविद्यालय

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

- 1. केवल A, B और C
- 2. केवल B, C और D
- 3. केवल C, D और E
- 4. केवल A, D और E

**Options :**

- 61198755269. 1
- 61198755270. 2
- 61198755271. 3
- 61198755272. 4

Question Number : 44 Question Id : 61198714186 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Environmental education must include topics of:

- A. Personal hygiene
- B. Biological diversity
- C. Waste management
- D. Pollution
- E. Wildlife conservation

Choose the **correct** answer from the options given below:

- 1. A, B and C Only
- 2. B, C, D and E Only
- 3. A, B, D and E Only
- 4. A, C, D and E Only

**Options :**

- 61198755273. 1
- 61198755274. 2
- 61198755275. 3
- 61198755276. 4

Question Number : 44 Question Id : 61198714186 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

पर्यावरण संबंधी शिक्षा में निम्नलिखित विषयों को अवश्य शामिल किया जाना चाहिए:

- A. व्यक्तिगत स्वच्छता
- B. जैविक विविधता
- C. कचरा प्रबंधन
- D. प्रदूषण
- E. वन्य जीव संरक्षण

नीचे दिए गए विकल्पों में से **सही** उत्तर चुनें:

1. केवल A, B और C
2. केवल B, C, D और E
3. केवल A, B, D और E
4. केवल A, C, D और E

Options :

- 61198755273. 1
- 61198755274. 2
- 61198755275. 3
- 61198755276. 4

Question Number : 45 Question Id : 61198714187 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I (Commission/Committee)		LIST-II (Chairman)	
A.	First Indian Education Commission	I.	T. Raleigh
B.	Indian University Commission	II.	M. E. Sadlar
C.	Calcutta University Commission	III.	J. E. D. Bethune
D.	Council of Education	IV.	W. W. Hunter

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-II, B-III, C-IV, D-I
3. A-III, B-IV, C-I, D-II
4. A-IV, B-I, C-II, D-III

Options :

- 61198755277. 1
- 61198755278. 2
- 61198755279. 3
- 61198755280. 4

Question Number : 45 Question Id : 61198714187 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची -I को सूची-II से सुमेलित करें

सूची -I (आयोग/समिति)		सूची -II (अध्यक्ष)	
A.	प्रथम भारतीय शिक्षा आयोग	I.	टी. राले
B.	भारतीय विश्वविद्यालय आयोग	II.	एम.ई. सैडलर
C.	कोलकाता विश्वविद्यालय आयोग	III.	जे.ई.डी. बेथून
D.	शिक्षा परिषद	IV.	डबल्यू. डबल्यू. हंटर

नीचे दिए गए विकल्पों में से **सही** विकल्प चुनें:

1. A-I, B-II, C-III, D-IV
2. A-II, B-III, C-IV, D-I
3. A-III, B-IV, C-I, D-II
4. A-IV, B-I, C-II, D-III

**Options :**

61198755277. 1

61198755278. 2

61198755279. 3

61198755280. 4

**Sub-Section Number :**

3

**Sub-Section Id :**

611987553

**Question Shuffling Allowed :**

No

**Is Section Default? :**

No

**Question Id : 61198714188 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix**

**Question Numbers : (46 to 50)**

Question Label : Comprehension

**Read the passage given below and answer the question that follow:**

Before delving into the role that missionary schools played in the emergence of Indian nationalism, it is necessary to understand the broader context in which Christian missionaries had been religious actors in the Indian subcontinent since the 1700s. With the rise of British power under the East India Company, and later the crown, missionaries of various denominations made India one of their largest areas of activity. This was especially true after the amendment of the company's charter in 1813, which allowed missionaries unhindered access to the company's domains. But it was through their involvement in new forms of education that the missionaries made a significant and perhaps the most lasting impact.

Many 'educational missionaries' initially saw Western learning and knowledge as a stepping stone to spreading Christianity. By the 1870s, however, this approach to the conversion of India's Brahmans and other high castes had largely fallen out of favor. By then, the most active Anglican missionary societies - The Church Missionary Society (CMS), The London Missionary Society (LMS), The Society for the Propagation of the Gospel (SPG), and the Cambridge Mission to Delhi (CMD) - were mostly involved in teaching in high schools and colleges across North India. In the United Provinces, India's most populous province, these societies ran half of the high schools and colleges. American missionary societies, by contrast, worked overwhelmingly with the lower-caste communities and were far less involved in higher levels of education. Anglican mission schools, therefore, interacted with the very groups and communities who would go on to lead the Indian nationalist movement.

**Sub questions**

**Question Number : 46 Question Id : 61198714189 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following societies was involved in teaching in high schools and colleges of North India?

1. American Missionary Society
2. European Missionary Society
3. Anglican Missionary Societies
4. Central Indian Missionary Society

**Options :**

- 61198755281. 1
- 61198755282. 2
- 61198755283. 3
- 61198755284. 4

**Question Number : 47 Question Id : 61198714190 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

'Educational missionaries' initially find western learning as:

1. A way to spread business
2. A way to improve community health
3. A way to have a political control
4. A way to spread Christianity

**Options :**

- 61198755285. 1
- 61198755286. 2
- 61198755287. 3
- 61198755288. 4

**Question Number : 48 Question Id : 61198714191 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

When did Christian missionaries start their activities in the Indian subcontinent?

1. 1600s
2. 1700s
3. 1800s
4. 1900s

**Options :**

- 61198755289. 1
- 61198755290. 2
- 61198755291. 3
- 61198755292. 4

**Question Number : 49 Question Id : 61198714192 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following was not an active Anglican missionary society?

1. The Church Missionary Society (CMS)
2. The London Missionary Society (LMS)
3. The Society for the Propagation of the Gospel (SPG)
4. American Missionary Society (AMS)

**Options :**

- 61198755293. 1
- 61198755294. 2
- 61198755295. 3
- 61198755296. 4

**Question Number : 50 Question Id : 61198714193 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following predominantly worked with the lower caste communities in India?

1. The Church Missionary Society (CMS)
2. American Missionary Society (AMS)
3. The London Missionary Society (LMS)
4. The Society for the Propagation of the Gospel (SPG)

**Options :**

- 61198755297. 1
- 61198755298. 2
- 61198755299. 3
- 61198755300. 4

Question Id : 61198714188 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (46 to 50)

Question Label : Comprehension

**निम्नलिखित गद्यांश को पढ़िए और उत्तर दीजिए:**

भारतीय राष्ट्रवाद के उदय में मिशनरी विद्यालयों द्वारा निभाई गई भूमिका में जाने से पहले उसे वृहत्तर संदर्भ को समझना आवश्यक है जिसमें भारतीय उपमहाद्वीप में सत्रहवीं शताब्दी (1700s) से ही ईसाई प्रचारक धार्मिक कार्यकर्ता रहे थे। ईस्ट इंडिया कंपनी और बाद में ब्रिटिश ताज के अधीन ब्रिटिश शक्ति के उभार के साथ, विभिन्न शाखाओं के प्रचारकों ने भारत को अपने क्रियाकलापों का एक सर्वाधिक बड़ा क्षेत्र बना लिया था। यह 1813 में कंपनी के चार्टर में हुए संशोधन के बाद की अवधि के लिए विशेष रूप से सत्य था जिसने ईसाई प्रचारकों को कंपनी के अधिकार क्षेत्र में निर्बाध पहुँच की अनुमति दी। परन्तु शिक्षा के नए रूपों में ईसाई प्रचारकों की भागीदारी से उन्होंने महत्वपूर्ण और संभवतया सर्वाधिक दीर्घकालिक प्रभाव डाला।

अनेक 'शैक्षिक मिशनरियों' ने आरंभ में पश्चिमी अधिगम और ज्ञान को ईसाई धर्म के प्रचार के साधन के रूप में देखा। तथापि 1870 के दशक तक भारत के ब्राह्मणों व अन्य उच्च जातियों के रूपांतरण का यह दृष्टिकोण मुख्यतया अननुकूल हो गया था। तब तक सर्वाधिक सक्रिय एंग्लिकन मिशनरी सोसायटियां – चर्च मिशनरी सोसायटी (CMS), द लंदन मिशनरी सोसायटी (LMS), द सोसायटी फॉर द प्रोपगेशन ऑफ द गास्पेल (SPG) और केंब्रिज मिशन टू दिल्ली (CMD) – अधिकांश उत्तर भारत के हाई स्कूलों और महाविद्यालयों में शिक्षण में व्यस्त थीं। संयुक्त प्रांत में भारत की सर्वाधिक जनसंख्या वाले प्रदेश, ये सोसायटियां आधे से अधिक हाई स्कूल व महाविद्यालय चलाती थीं। इसके विपरीत अमरीकी मिशनरी सोसायटियां मुख्यतया निम्न जाति समुदायों में कार्यरत थीं और शिक्षा के उच्च स्तरों में कहीं कम शामिल थीं। अतः एंग्लिकन मिशन स्कूल उन्हीं समूहों व समुदायों से अंतःक्रिया कर रहे थे जिन्होंने आगे चलकर भारतीय राष्ट्रवादी आंदोलन का नेतृत्व किया।

**Sub questions**

Question Number : 46 Question Id : 61198714189 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्न में से कौन सी सोसायटियां उत्तर भारत के हाई स्कूलों व महाविद्यालयों में शिक्षण में अंतर्ग्रस्त थीं?

1. अमेरिकन मिशनरी सोसायटी
2. यूरोपियन मिशनरी सोसायटी
3. एंग्लियन मिशनरी सोसायटियां
4. सेंट्रल मिशनरी सोसायटी

**Options :**

61198755281. 1
61198755282. 2
61198755283. 3
61198755284. 4

Question Number : 47 Question Id : 61198714190 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

आरंभ में अनेक 'शैक्षिक प्रचारक' मिशनरी अधिगम को किस रूप में पाते थे?

1. व्यापार प्रसार का एक तरीका
2. सामुदायिक स्वास्थ्य में सुधार का एक तरीका
3. राजनीतिक नियंत्रण का एक तरीका
4. ईसाई धर्म प्रसार का एक तरीका

**Options :**

61198755285. 1

61198755286. 2  
61198755287. 3  
61198755288. 4

**Question Number : 48 Question Id : 61198714191 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

ईसाई प्रचारकों ने भारतीय उप-महाद्वीप में अपनी गतिविधियाँ कब आरंभ की थीं?

1. 1600s
2. 1700s
3. 1800s
4. 1900s

**Options :**

61198755289. 1  
61198755290. 2  
61198755291. 3  
61198755292. 4

**Question Number : 49 Question Id : 61198714192 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

निम्न में से कौन एक सक्रिय एंग्लिकन मिशनरी सोसायटी नहीं थी?

1. द चर्च मिशनरी सोसायटी (CMS)
2. द लंडन मिशनरी सोसायटी (LMS)
3. द सोसायटी फॉर द प्रोपेगेशन ऑफ द गॉस्पेल (SPG)
4. अमेरिकन मिशनरी सोसायटी (AMS)

**Options :**

61198755293. 1  
61198755294. 2  
61198755295. 3  
61198755296. 4

**Question Number : 50 Question Id : 61198714193 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

निम्नलिखित में से किसने भारत में निम्नवर्ग के समुदायों के साथ प्रमुखता से काम किया था?

1. द चर्च मिशनरी सोसायटी (CMS)
2. अमेरिकन मिशनरी सोसायटी (AMS)
3. द लंडन मिशनरी सोसायटी (LMS)
4. द सोसायटी फॉर द प्रोपेगेशन ऑफ द गॉस्पेल (SPG)

**Options :**

61198755297. 1  
61198755298. 2  
61198755299. 3  
61198755300. 4

<b>Section Id :</b>	611987186
<b>Section Number :</b>	2
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	92
<b>Number of Questions to be attempted :</b>	92
<b>Section Marks :</b>	200
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	611987554
<b>Question Shuffling Allowed :</b>	Yes
<b>Is Section Default? :</b>	No

**Question Number : 51 Question Id : 61198714194 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A silicon solar cell has a short-circuit current of 100mA and an open circuit voltage of 0.8V under full solar illumination. The fill factor is given as 0.7, what is the maximum power delivered to a load by the cell?

1. 100 mW
2. 150 mW
3. 88 mW
4. 56 mW

**Options :**

- 61198755301. 1
- 61198755302. 2
- 61198755303. 3
- 61198755304. 4

**Question Number : 51 Question Id : 61198714194 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A silicon solar cell has a short-circuit current of 100mA and an open circuit voltage of 0.8V under full solar illumination. The fill factor is given as 0.7, what is the maximum power delivered to a load by the cell?

1. 100 mW
2. 150 mW
3. 88 mW
4. 56 mW

**Options :**

- 61198755301. 1
- 61198755302. 2
- 61198755303. 3
- 61198755304. 4

**Question Number : 52 Question Id : 61198714195 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In a long P-type silicon bar doped with  $N_A=10^{17}\text{cm}^{-3}$ , what is the diffusion constant?

Assume hole mobility  $\mu_p = 500\text{cm}^2/\text{V-s}$

1. 18.25 cm/s
2. 12.95 cm/s
3. 14.75 cm/s
4. 1.47 cm/s

**Options :**

- 61198755305. 1
- 61198755306. 2
- 61198755307. 3
- 61198755308. 4

**Question Number : 52 Question Id : 61198714195 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In a long P-type silicon bar doped with  $N_A=10^{17}\text{cm}^{-3}$ , what is the diffusion constant?

Assume hole mobility  $\mu_p = 500\text{cm}^2/\text{V-s}$

1. 18.25 cm/s
2. 12.95 cm/s
3. 14.75 cm/s
4. 1.47 cm/s

**Options :**

- 61198755305. 1
- 61198755306. 2
- 61198755307. 3
- 61198755308. 4

**Question Number : 53 Question Id : 61198714196 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In a pure silicon, what is the time for an electron to drift  $1\mu\text{m}$  in an electric field of  $100\text{V/cm}$ ?

Assume electron mobility of  $1350\text{cm}^2/\text{V-s}$

1. 0.74 ns
2. 0.74  $\mu\text{s}$
3. 7.4 ns
4. 7.4  $\mu\text{s}$

**Options :**

- 61198755309. 1
- 61198755310. 2
- 61198755311. 3
- 61198755312. 4

Question Number : 53 Question Id : 61198714196 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a pure silicon, what is the time for an electron to drift  $1\mu\text{m}$  in an electric field of  $100\text{ V/cm}$ ?

Assume electron mobility of  $1350\text{ cm}^2/\text{V-s}$

1.  $0.74\text{ ns}$
2.  $0.74\text{ }\mu\text{s}$
3.  $7.4\text{ ns}$
4.  $7.4\text{ }\mu\text{s}$

Options :

61198755309. 1  
61198755310. 2  
61198755311. 3  
61198755312. 4

Question Number : 54 Question Id : 61198714197 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A p-n junction is doped with donor concentration  $N_D$  and acceptor concentration  $N_A$ , having depletion width of  $x_n$  and  $x_p$  respectively. Choose the correct option.

1.  $N_D \propto x_p$
2.  $N_A \propto \frac{1}{\sqrt{x_n}}$
3.  $N_D \propto \frac{1}{x_n}$
4.  $N_A \propto x_n$

Options :

61198755313. 1  
61198755314. 2  
61198755315. 3  
61198755316. 4

Question Number : 54 Question Id : 61198714197 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A p-n junction is doped with donor concentration  $N_D$  and acceptor concentration  $N_A$ , having depletion width of  $x_n$  and  $x_p$  respectively. Choose the correct option.

1.  $N_D \propto x_p$
2.  $N_A \propto \frac{1}{\sqrt{x_n}}$
3.  $N_D \propto \frac{1}{x_n}$
4.  $N_A \propto x_n$

Options :

- 61198755313. 1
- 61198755314. 2
- 61198755315. 3
- 61198755316. 4

Question Number : 55 Question Id : 61198714198 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In an n-channel MOS device having p-type silicon substrate and gate oxide thickness of 10nm, depletion charge  $Q_d = -3.32 \times 10^{-8} \text{ C/cm}^2$ , flat band voltage  $V_{FB} = -0.561 \text{ V}$ , and surface potential under strong inversion = 0.658 V. What is the device threshold voltage?

1. 1.2 V
2. 0.18 V
3. 0.56 V
4. 0.78 V

Options :

- 61198755317. 1
- 61198755318. 2
- 61198755319. 3
- 61198755320. 4

Question Number : 55 Question Id : 61198714198 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In an n-channel MOS device having p-type silicon substrate and gate oxide thickness of 10nm, depletion charge  $Q_d = -3.32 \times 10^{-8} \text{ C/cm}^2$ , flat band voltage  $V_{FB} = -0.561 \text{ V}$ , and surface potential under strong inversion = 0.658 V. What is the device threshold voltage?

1. 1.2 V
2. 0.18 V
3. 0.56 V
4. 0.78 V

Options :

- 61198755317. 1
- 61198755318. 2
- 61198755319. 3
- 61198755320. 4

Question Number : 56 Question Id : 61198714199 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A semiconductor uses P-type substrates with  $N_A = 5 \times 10^{15} \text{ cm}^{-3}$  in an n-MOS device having depletion region width of  $0.415 \mu\text{m}$ . What is the depletion charge in magnitude?

1.  $1.6 \times 10^{-10} \text{ C/cm}^2$
2.  $3.32 \times 10^{-8} \text{ C/cm}^2$
3.  $6.42 \times 10^{-9} \text{ C/cm}^2$
4.  $1.82 \times 10^{-8} \text{ C/cm}^2$

Options :

61198755321. 1  
61198755322. 2  
61198755323. 3  
61198755324. 4

Question Number : 56 Question Id : 61198714199 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A semiconductor uses P-type substrates with  $N_A = 5 \times 10^{15} \text{ cm}^{-3}$  in an n-MOS device having depletion region width of  $0.415 \mu\text{m}$ . What is the depletion charge in magnitude?

1.  $1.6 \times 10^{-10} \text{ C/cm}^2$
2.  $3.32 \times 10^{-8} \text{ C/cm}^2$
3.  $6.42 \times 10^{-9} \text{ C/cm}^2$
4.  $1.82 \times 10^{-8} \text{ C/cm}^2$

Options :

61198755321. 1  
61198755322. 2  
61198755323. 3  
61198755324. 4

Question Number : 57 Question Id : 61198714200 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Area of the CMOS implementation of  $F = \overline{A+B}$ , estimated using stick diagram following  $\lambda$ -based design rules is \_\_\_\_\_.

1.  $1280 \lambda^2$
2.  $576 \lambda^2$
3.  $960 \lambda^2$
4.  $768 \lambda^2$

Options :

61198755325. 1  
61198755326. 2  
61198755327. 3  
61198755328. 4

Question Number : 57 Question Id : 61198714200 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Area of the CMOS implementation of  $F = \overline{A+B}$ , estimated using stick diagram following  $\lambda$ -based design rules is \_\_\_\_\_.

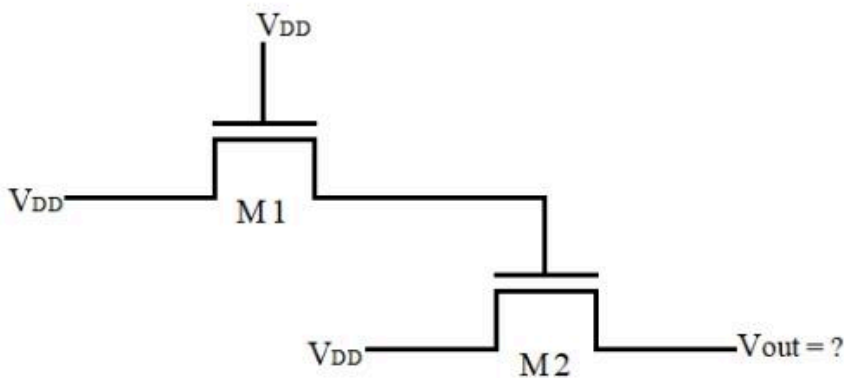
1.  $1280 \lambda^2$
2.  $576 \lambda^2$
3.  $960 \lambda^2$
4.  $768 \lambda^2$

Options :

61198755325. 1  
61198755326. 2  
61198755327. 3  
61198755328. 4

Question Number : 58 Question Id : 61198714201 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the voltage at the output node of the given circuit? Assume  $V_{DD} = 1.8V$  and threshold voltage of the transistor  $V_{TN} = 0.4V$  and body bias effect is negligible.

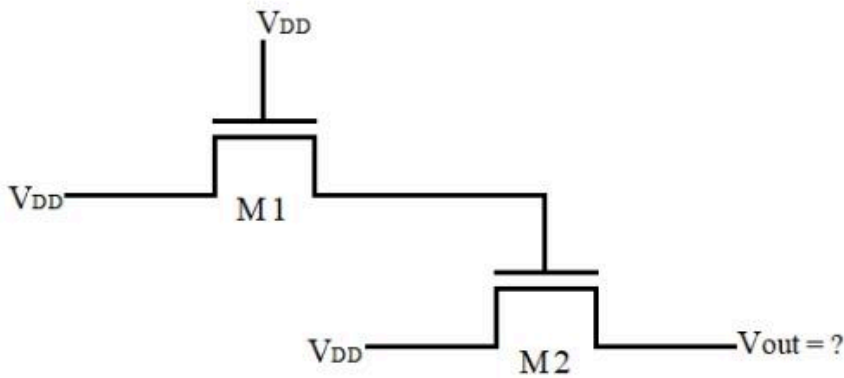


1. 1.8 V
2. 1.4 V
3. 1.0 V
4. 0.8 V

Options :

61198755329. 1  
61198755330. 2  
61198755331. 3  
61198755332. 4

Question Number : 58 Question Id : 61198714201 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical  
 What is the voltage at the output node of the given circuit? Assume  $V_{DD} = 1.8V$  and threshold voltage of the transistor  $V_{TN} = 0.4V$  and body bias effect is negligible.



1. 1.8 V
2. 1.4 V
3. 1.0 V
4. 0.8 V

Options :

- 61198755329. 1
- 61198755330. 2
- 61198755331. 3
- 61198755332. 4

Question Number : 59 Question Id : 61198714202 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical  
 Bode plot is not used to find \_\_\_\_\_ of the system.

1. Gain Margin
2. Phase Margin
3. Stability
4. Transient Behaviour

Options :

- 61198755333. 1
- 61198755334. 2
- 61198755335. 3
- 61198755336. 4

**Question Number : 59 Question Id : 61198714202 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Bode plot is not used to find \_\_\_\_\_ of the system.

1. Gain Margin
2. Phase Margin
3. Stability
4. Transient Behaviour

**Options :**

- 61198755333. 1
- 61198755334. 2
- 61198755335. 3
- 61198755336. 4

**Question Number : 60 Question Id : 61198714203 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which one of the method is not used to design an IIR (Infinite Impulse Response) filter?

1. Approximation of derivatives
2. Impulse Invariance method
3. Bi-linear transformation
4. Window technique

**Options :**

- 61198755337. 1
- 61198755338. 2
- 61198755339. 3
- 61198755340. 4

**Question Number : 60 Question Id : 61198714203 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which one of the method is not used to design an IIR (Infinite Impulse Response) filter?

1. Approximation of derivatives
2. Impulse Invariance method
3. Bi-linear transformation
4. Window technique

**Options :**

- 61198755337. 1
- 61198755338. 2
- 61198755339. 3
- 61198755340. 4

Question Number : 61 Question Id : 61198714204 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If a discrete time sequence  $x[n]$  is given by  $\left\{ \underset{\uparrow}{1}, 2, 3, 4 \right\}$ . Then  $x((n-2)_4)$  will be given by

1.  $\left\{ \underset{\uparrow}{4}, 1, 2, 3 \right\}$

2.  $\left\{ \underset{\uparrow}{3}, 4, 1, 2 \right\}$

3.  $\left\{ \underset{\uparrow}{2}, 3, 4, 1 \right\}$

4.  $\left\{ \underset{\uparrow}{1}, 2, 3, 4 \right\}$

Options :

61198755341. 1

61198755342. 2

61198755343. 3

61198755344. 4

Question Number : 61 Question Id : 61198714204 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If a discrete time sequence  $x[n]$  is given by  $\left\{ \underset{\uparrow}{1}, 2, 3, 4 \right\}$ . Then  $x((n-2)_4)$  will be given by

1.  $\left\{ \underset{\uparrow}{4}, 1, 2, 3 \right\}$

2.  $\left\{ \underset{\uparrow}{3}, 4, 1, 2 \right\}$

3.  $\left\{ \underset{\uparrow}{2}, 3, 4, 1 \right\}$

4.  $\left\{ \underset{\uparrow}{1}, 2, 3, 4 \right\}$

Options :

61198755341. 1

61198755342. 2

61198755343. 3

61198755344. 4

**Question Number : 62 Question Id : 61198714205 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is not a network theorem used to solve ac/dc circuits?

1. Superposition Theorem
2. Norton's Theorem
3. Reciprocity Theorem
4. Parseval's Theorem

**Options :**

- 61198755345. 1
- 61198755346. 2
- 61198755347. 3
- 61198755348. 4

**Question Number : 62 Question Id : 61198714205 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is not a network theorem used to solve ac/dc circuits?

1. Superposition Theorem
2. Norton's Theorem
3. Reciprocity Theorem
4. Parseval's Theorem

**Options :**

- 61198755345. 1
- 61198755346. 2
- 61198755347. 3
- 61198755348. 4

**Question Number : 63 Question Id : 61198714206 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A single resistor and a single capacitor can be connected to form a filter with a roll-off rate of \_\_\_\_\_.

1. -40 dB/decade
2. -6 dB/octave
3. -20 dB/decade
4. both (2) & (3)

**Options :**

- 61198755349. 1
- 61198755350. 2
- 61198755351. 3
- 61198755352. 4

Question Number : 63 Question Id : 61198714206 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A single resistor and a single capacitor can be connected to form a filter with a roll-off rate of \_\_\_\_\_.

1. -40 dB/decade
2. -6 dB/octave
3. -20 dB/decade
4. both (2) & (3)

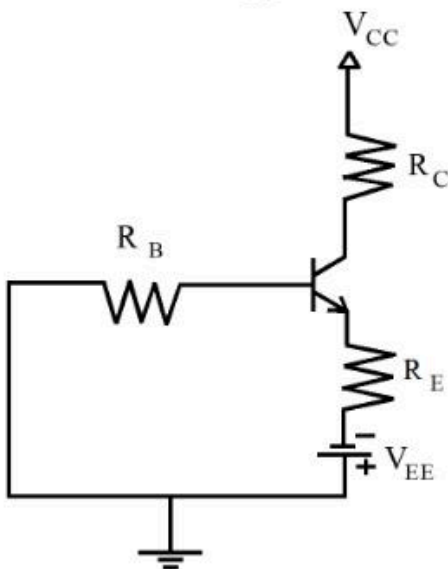
Options :

61198755349. 1  
61198755350. 2  
61198755351. 3  
61198755352. 4

Question Number : 64 Question Id : 61198714207 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In an emitter bias circuit,  $R_E=2.7\text{ k}\Omega$  and  $V_{EE}=15\text{V}$ .

Assuming  $R_E \gg \frac{R_B}{\beta_{DC}}$ , what is the value of emitter current?



1. 5.3 mA
2. 2.7 mA
3. 10.6 mA
4. 8.0 mA

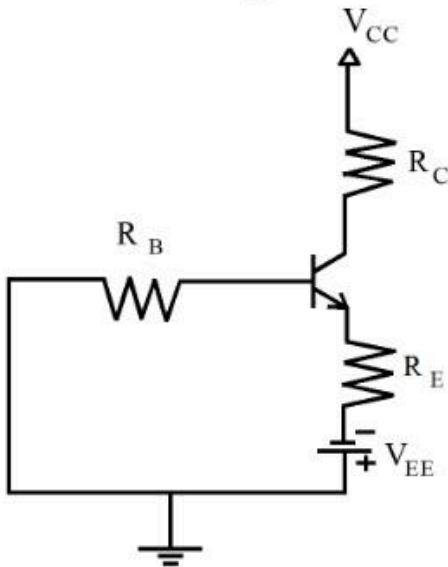
Options :

61198755353. 1  
61198755354. 2  
61198755355. 3  
61198755356. 4

Question Number : 64 Question Id : 61198714207 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In an emitter bias circuit,  $R_E=2.7\text{ k}\Omega$  and  $V_{EE}=15\text{V}$ .

Assuming  $R_E \gg \frac{R_B}{\beta_{DC}}$ , what is the value of emitter current?



1. 5.3 mA
2. 2.7 mA
3. 10.6 mA
4. 8.0 mA

Options :

- 61198755353. 1
- 61198755354. 2
- 61198755355. 3
- 61198755356. 4

Question Number : 65 Question Id : 61198714208 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A certain cascaded amplifier arrangement has the following voltage gains of individual stages;  $A_{V1}=10\text{V/V}$ ,  $A_{V2}=20\text{ V/V}$  and  $A_{V3}=40\text{ V/V}$ . What is the overall voltage gain of the cascaded amplifier?

1. 60 dB
2. 68 dB
3. 70 dB
4. 78 dB

Options :

- 61198755357. 1
- 61198755358. 2
- 61198755359. 3
- 61198755360. 4

**Question Number : 65 Question Id : 61198714208 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A certain cascaded amplifier arrangement has the following voltage gains of individual stages;  $A_{V1}=10V/V$ ,  $A_{V2}=20 V/V$  and  $A_{V3}=40 V/V$ . What is the overall voltage gain of the cascaded amplifier?

1. 60 dB
2. 68 dB
3. 70 dB
4. 78 dB

**Options :**

- 61198755357. 1
- 61198755358. 2
- 61198755359. 3
- 61198755360. 4

**Question Number : 66 Question Id : 61198714209 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The maximum efficiency of a Class-A power amplifier is \_\_\_\_\_.

1. 25%
2. 50%
3. 79%
4. 98%

**Options :**

- 61198755361. 1
- 61198755362. 2
- 61198755363. 3
- 61198755364. 4

**Question Number : 66 Question Id : 61198714209 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The maximum efficiency of a Class-A power amplifier is \_\_\_\_\_.

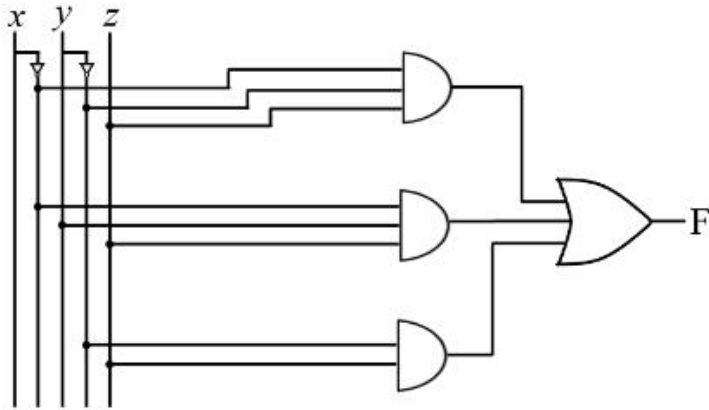
1. 25%
2. 50%
3. 79%
4. 98%

**Options :**

- 61198755361. 1
- 61198755362. 2
- 61198755363. 3
- 61198755364. 4

Question Number : 67 Question Id : 61198714210 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The correct Boolean expression for the given circuit is.



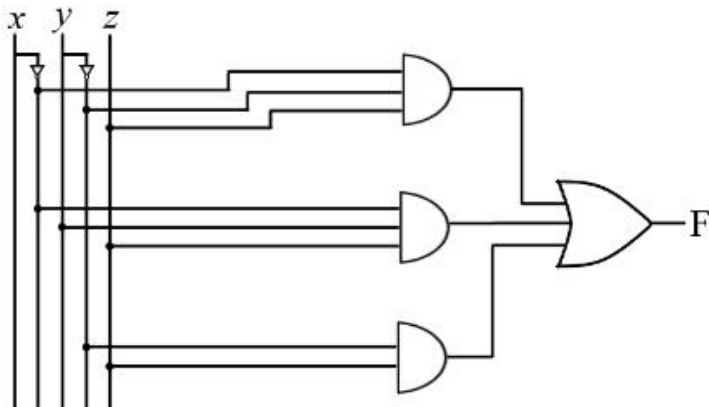
1.  $F = \bar{x}\bar{y}z + \bar{x}yz + \bar{y}z$
2.  $F = \bar{x}\bar{y}z + \bar{x}yz + xz$
3.  $F = xy\bar{z} + \bar{x}yz + \bar{y}z$
4.  $F = x\bar{y}\bar{z} + \bar{x}yz + \bar{y}z$

Options :

- 61198755365. 1
- 61198755366. 2
- 61198755367. 3
- 61198755368. 4

Question Number : 67 Question Id : 61198714210 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The correct Boolean expression for the given circuit is.



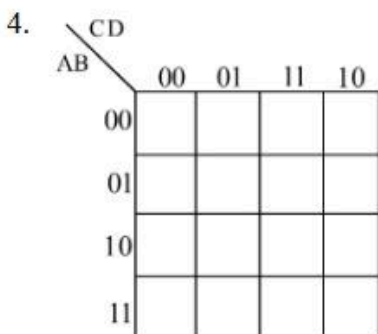
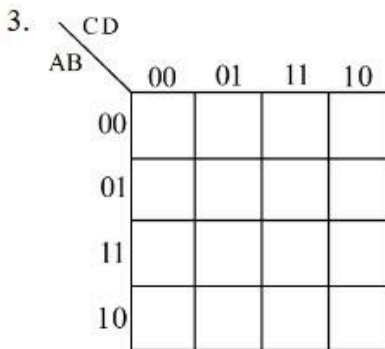
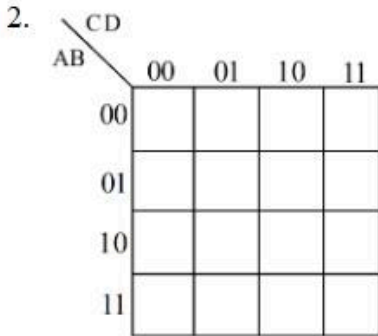
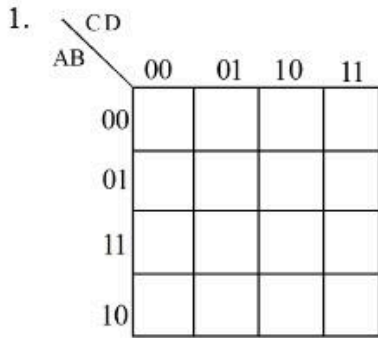
1.  $F = \bar{x}\bar{y}z + \bar{x}yz + \bar{y}z$
2.  $F = \bar{x}\bar{y}z + \bar{x}yz + xz$
3.  $F = xy\bar{z} + \bar{x}yz + \bar{y}z$
4.  $F = x\bar{y}\bar{z} + \bar{x}yz + \bar{y}z$

Options :

- 61198755365. 1
- 61198755366. 2
- 61198755367. 3
- 61198755368. 4

Question Number : 68 Question Id : 61198714211 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one is the correct representation of 4-variable Karnaugh map (K-map)?

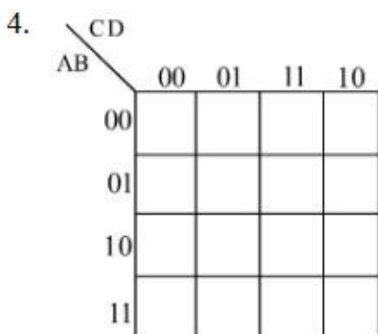
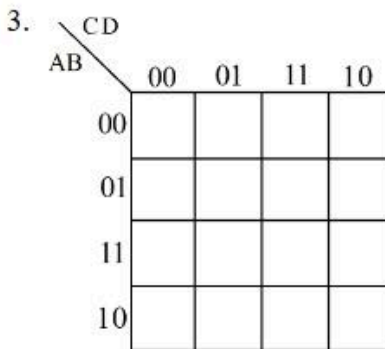
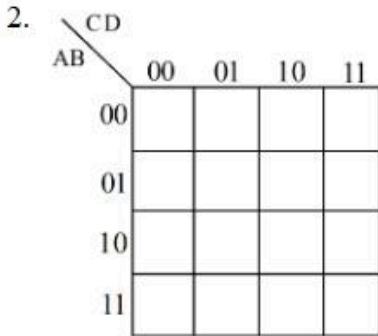
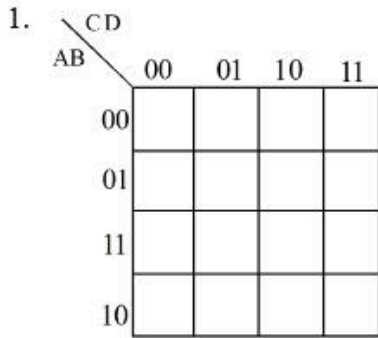


Options :

- 61198755369. 1
- 61198755370. 2
- 61198755371. 3
- 61198755372. 4

Question Number : 68 Question Id : 61198714211 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one is the correct representation of 4-variable Karnaugh map (K-map)?



Options :

- 61198755369. 1
- 61198755370. 2
- 61198755371. 3
- 61198755372. 4

**Question Number : 69 Question Id : 61198714212 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

For a 4-bit binary serial input serial output shift register, how many J-K flip flops are required?

1. 1
2. 2
3. 16
4. 4

**Options :**

- 61198755373. 1
- 61198755374. 2
- 61198755375. 3
- 61198755376. 4

**Question Number : 69 Question Id : 61198714212 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

For a 4-bit binary serial input serial output shift register, how many J-K flip flops are required?

1. 1
2. 2
3. 16
4. 4

**Options :**

- 61198755373. 1
- 61198755374. 2
- 61198755375. 3
- 61198755376. 4

**Question Number : 70 Question Id : 61198714213 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

For the design of 4-bit Binary to Gray code converter, how many Ex-OR gates are required?

1. 1
2. 2
3. 3
4. 4

**Options :**

- 61198755377. 1
- 61198755378. 2
- 61198755379. 3
- 61198755380. 4

**Question Number : 70 Question Id : 61198714213 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

For the design of 4-bit Binary to Gray code converter, how many Ex-OR gates are required?

1. 1
2. 2
3. 3
4. 4

**Options :**

- 61198755377. 1
- 61198755378. 2
- 61198755379. 3
- 61198755380. 4

**Question Number : 71 Question Id : 61198714214 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The 8051 microcontroller has \_\_\_\_\_ on-chip RAM and \_\_\_ on-chip ROM.

1. 128 K bytes, 4 K bytes
2. 128 bytes, 4 K bytes
3. 128 bytes, 4 M bytes
4. 128 K bytes, 4 M bytes

**Options :**

- 61198755381. 1
- 61198755382. 2
- 61198755383. 3
- 61198755384. 4

**Question Number : 71 Question Id : 61198714214 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The 8051 microcontroller has \_\_\_\_\_ on-chip RAM and \_\_\_ on-chip ROM.

1. 128 K bytes, 4 K bytes
2. 128 bytes, 4 K bytes
3. 128 bytes, 4 M bytes
4. 128 K bytes, 4 M bytes

**Options :**

- 61198755381. 1
- 61198755382. 2
- 61198755383. 3
- 61198755384. 4

**Question Number : 72 Question Id : 61198714215 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In the 8051 microcontroller, the program counter is \_\_\_\_\_ bits wide.

1. 8
2. 16
3. 4
4. 32

**Options :**

- 61198755385. 1
- 61198755386. 2
- 61198755387. 3
- 61198755388. 4

**Question Number : 72 Question Id : 61198714215 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In the 8051 microcontroller, the program counter is \_\_\_\_\_ bits wide.

1. 8
2. 16
3. 4
4. 32

**Options :**

- 61198755385. 1
- 61198755386. 2
- 61198755387. 3
- 61198755388. 4

**Question Number : 73 Question Id : 61198714216 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

How many bytes are used by the given data directive of the 8051 microcontroller?

```
DATA_1 DB "INDIA"
```

1. 4
2. 5
3. 6
4. 7

**Options :**

- 61198755389. 1
- 61198755390. 2
- 61198755391. 3
- 61198755392. 4

**Question Number : 73 Question Id : 61198714216 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

How many bytes are used by the given data directive of the 8051 microcontroller?

DATA\_1 DB "INDIA"

1. 4
2. 5
3. 6
4. 7

**Options :**

- 61198755389. 1
- 61198755390. 2
- 61198755391. 3
- 61198755392. 4

**Question Number : 74 Question Id : 61198714217 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the 8051 ports need pull-up resistors to function as an I/O port?

1. Port 0
2. Port 1
3. Port 2
4. Port 3

**Options :**

- 61198755393. 1
- 61198755394. 2
- 61198755395. 3
- 61198755396. 4

**Question Number : 74 Question Id : 61198714217 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the 8051 ports need pull-up resistors to function as an I/O port?

1. Port 0
2. Port 1
3. Port 2
4. Port 3

**Options :**

- 61198755393. 1
- 61198755394. 2
- 61198755395. 3
- 61198755396. 4

Question Number : 75 Question Id : 61198714218 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following term is not a part of Poynting theorem.

$$\oint_S (\bar{E} \times \bar{H}) d\bar{s} = -\frac{\partial}{\partial t} \int_V \left[ \frac{1}{2} \epsilon \bar{E}^2 + \frac{1}{2} \mu \bar{H}^2 \right] dv - \int_V \sigma \bar{E}^2 dv$$

1. Inductive power dissipated
2. Ohmic power dissipated
3. Total power leaving the volume
4. Rate of decrease in energy stored in electric and magnetic fields

Options :

- 61198755397. 1
- 61198755398. 2
- 61198755399. 3
- 61198755400. 4

Question Number : 75 Question Id : 61198714218 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following term is not a part of Poynting theorem.

$$\oint_S (\bar{E} \times \bar{H}) d\bar{s} = -\frac{\partial}{\partial t} \int_V \left[ \frac{1}{2} \epsilon \bar{E}^2 + \frac{1}{2} \mu \bar{H}^2 \right] dv - \int_V \sigma \bar{E}^2 dv$$

1. Inductive power dissipated
2. Ohmic power dissipated
3. Total power leaving the volume
4. Rate of decrease in energy stored in electric and magnetic fields

Options :

- 61198755397. 1
- 61198755398. 2
- 61198755399. 3
- 61198755400. 4

Question Number : 76 Question Id : 61198714219 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Determine the gradient of a scalar field given by

$$U = x^2y + xyz$$

1.  $y(2x+z)\hat{a}_x + x(x+z)\hat{a}_y + xy\hat{a}_z$
2.  $y(2z+x)\hat{a}_x + x(x+z)\hat{a}_y + xy\hat{a}_z$
3.  $y(2x+z)\hat{a}_x + z(x+z)\hat{a}_y + xy\hat{a}_z$
4.  $y(2z+x)\hat{a}_x + z(x+z)\hat{a}_y + xy\hat{a}_z$

Options :

- 61198755401. 1
- 61198755402. 2
- 61198755403. 3
- 61198755404. 4

Question Number : 76 Question Id : 61198714219 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Determine the gradient of a scalar field given by

$$U = x^2y + xyz$$

1.  $y(2x+z)\hat{a}_x + x(x+z)\hat{a}_y + xy\hat{a}_z$
2.  $y(2z+x)\hat{a}_x + x(x+z)\hat{a}_y + xy\hat{a}_z$
3.  $y(2x+z)\hat{a}_x + z(x+z)\hat{a}_y + xy\hat{a}_z$
4.  $y(2z+x)\hat{a}_x + z(x+z)\hat{a}_y + xy\hat{a}_z$

Options :

61198755401. 1

61198755402. 2

61198755403. 3

61198755404. 4

Question Number : 77 Question Id : 61198714220 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Determine the polarization of a plane wave with

$$\vec{E}(z,t) = 3e^{-0.25z} \cos(\omega t - 0.6z)\hat{a}_x + 4e^{-0.25z} \sin(\omega t - 0.6z)\hat{a}_y \frac{V}{m}$$

1. Left hand circularly polarization
2. Right hand circularly polarization
3. Linear polarization
4. Elliptical polarization

Options :

61198755405. 1

61198755406. 2

61198755407. 3

61198755408. 4

Question Number : 77 Question Id : 61198714220 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Determine the polarization of a plane wave with

$$\vec{E}(z, t) = 3e^{-0.25z} \cos(\omega t - 0.6z) \hat{a}_x + 4e^{-0.25z} \sin(\omega t - 0.6z) \hat{a}_y \frac{V}{m}$$

1. Left hand circularly polarization
2. Right hand circularly polarization
3. Linear polarization
4. Elliptical polarization

Options :

- 61198755405. 1
- 61198755406. 2
- 61198755407. 3
- 61198755408. 4

Question Number : 78 Question Id : 61198714221 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The electric flux density  $\vec{D}$  is measured in

1. C/m<sup>2</sup>
2. V/m<sup>2</sup>
3. A/m<sup>2</sup>
4. W/m<sup>2</sup>

Options :

- 61198755409. 1
- 61198755410. 2
- 61198755411. 3
- 61198755412. 4

Question Number : 78 Question Id : 61198714221 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The electric flux density  $\vec{D}$  is measured in

1. C/m<sup>2</sup>
2. V/m<sup>2</sup>
3. A/m<sup>2</sup>
4. W/m<sup>2</sup>

Options :

- 61198755409. 1
- 61198755410. 2
- 61198755411. 3
- 61198755412. 4

**Question Number : 79 Question Id : 61198714222 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A 2KW carrier is to be modulated to a 90% level. The total transmitted power would be \_\_\_\_\_.

1. 2.81 KW
2. 3.62 KW
3. 1.82 KW
4. 1.4 KW

**Options :**

- 61198755413. 1
- 61198755414. 2
- 61198755415. 3
- 61198755416. 4

**Question Number : 79 Question Id : 61198714222 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A 2KW carrier is to be modulated to a 90% level. The total transmitted power would be \_\_\_\_\_.

1. 2.81 KW
2. 3.62 KW
3. 1.82 KW
4. 1.4 KW

**Options :**

- 61198755413. 1
- 61198755414. 2
- 61198755415. 3
- 61198755416. 4

**Question Number : 80 Question Id : 61198714223 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A super heterodyne receiver uses an IF frequency of 455 KHz. The receiver is tuned to a transmitter having carrier frequency of 2400KHz. High side tuning is to be used, the image frequency is

1. 2655 KHz
2. 1855 KHz
3. 3310 KHz
4. 1410 KHz

**Options :**

- 61198755417. 1
- 61198755418. 2
- 61198755419. 3
- 61198755420. 4

**Question Number : 80 Question Id : 61198714223 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A super heterodyne receiver uses an IF frequency of 455 KHz. The receiver is tuned to a transmitter having carrier frequency of 2400KHz. High side tuning is to be used, the image frequency is

1. 2655 KHz
2. 1855 KHz
3. 3310 KHz
4. 1410 KHz

**Options :**

- 61198755417. 1
- 61198755418. 2
- 61198755419. 3
- 61198755420. 4

**Question Number : 81 Question Id : 61198714224 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The message signal  $m(t)=\sin(2000\pi t)$ . Frequency sensitivity constant  $K_f= 100$  KHz/V, phase sensitivity constant  $K_p= 10$ rad/V. The bandwidth of FM signal is

1. 208 KHz
2. 202 KHz
3. 404 KHz
4. 402 KHz

**Options :**

- 61198755421. 1
- 61198755422. 2
- 61198755423. 3
- 61198755424. 4

**Question Number : 81 Question Id : 61198714224 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The message signal  $m(t)=\sin(2000\pi t)$ . Frequency sensitivity constant  $K_f= 100$  KHz/V, phase sensitivity constant  $K_p= 10$ rad/V. The bandwidth of FM signal is

1. 208 KHz
2. 202 KHz
3. 404 KHz
4. 402 KHz

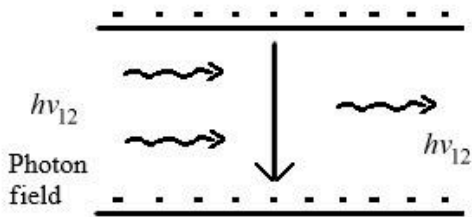
**Options :**

- 61198755421. 1
- 61198755422. 2
- 61198755423. 3
- 61198755424. 4

Question Number : 82 Question Id : 61198714225 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a LASER device the instantaneous populations of energy  $E_1$  and  $E_2$  (figure below) to be  $n_1$  and  $n_2$  respectively. At thermal equilibrium the relative population is given by  $n_2 = n_1 e^{-h\nu_{12}/KT}$

The condition for population inversion when stimulated emission dominates is given by



1.  $n_2 = n_1$
2.  $n_2 < n_1$
3.  $n_2 > n_1$
4. None of the above

Options :

61198755425. 1

61198755426. 2

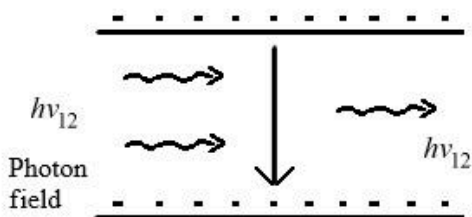
61198755427. 3

61198755428. 4

Question Number : 82 Question Id : 61198714225 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a LASER device the instantaneous populations of energy  $E_1$  and  $E_2$  (figure below) to be  $n_1$  and  $n_2$  respectively. At thermal equilibrium the relative population is given by  $n_2 = n_1 e^{-h\nu_{12}/KT}$

The condition for population inversion when stimulated emission dominates is given by



1.  $n_2 = n_1$
2.  $n_2 < n_1$
3.  $n_2 > n_1$
4. None of the above

Options :

61198755425. 1

61198755426. 2

61198755427. 3

61198755428. 4

**Question Number : 83 Question Id : 61198714226 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Surge current rating of an SCR specifies the maximum

1. Repetitive current with sinewave
2. Non-repetitive current with rectangular wave
3. Non-repetitive current with sinewave
4. Repetitive current with triangular wave

**Options :**

- 61198755429. 1
- 61198755430. 2
- 61198755431. 3
- 61198755432. 4

**Question Number : 83 Question Id : 61198714226 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Surge current rating of an SCR specifies the maximum

1. Repetitive current with sinewave
2. Non-repetitive current with rectangular wave
3. Non-repetitive current with sinewave
4. Repetitive current with triangular wave

**Options :**

- 61198755429. 1
- 61198755430. 2
- 61198755431. 3
- 61198755432. 4

**Question Number : 84 Question Id : 61198714227 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement is not correct in respect of field control of DC motors

1. Only the speeds above the rated speed are possible with the field control of DC motors.
2. The flux cannot be increased due to saturation effect.
3. Field control can cope up with the constant KW drives only where the load torque falls with the increasing speed.
4. The field control method is suitable for the applications where speed reversal of the motor is required.

**Options :**

- 61198755433. 1
- 61198755434. 2
- 61198755435. 3
- 61198755436. 4

**Question Number : 84 Question Id : 61198714227 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement is not correct in respect of field control of DC motors

1. Only the speeds above the rated speed are possible with the field control of DC motors.
2. The flux cannot be increased due to saturation effect.
3. Field control can cope up with the constant KW drives only where the load torque falls with the increasing speed.
4. The field control method is suitable for the applications where speed reversal of the motor is required.

**Options :**

- 61198755433. 1
- 61198755434. 2
- 61198755435. 3
- 61198755436. 4

**Question Number : 85 Question Id : 61198714228 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement is not related to TRIAC

1. It can conduct in both the directions
2. Extensively used for control of power in AC circuits
3. It is a low power device
4. When in operation, it is equivalent to two SCRs connected in anti-parallel.

**Options :**

- 61198755437. 1
- 61198755438. 2
- 61198755439. 3
- 61198755440. 4

**Question Number : 85 Question Id : 61198714228 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement is not related to TRIAC

1. It can conduct in both the directions
2. Extensively used for control of power in AC circuits
3. It is a low power device
4. When in operation, it is equivalent to two SCRs connected in anti-parallel.

**Options :**

- 61198755437. 1
- 61198755438. 2
- 61198755439. 3
- 61198755440. 4

**Question Number : 86 Question Id : 61198714229 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement is not correct in respect of Transfer Function of linear Time Invariant System

1. The ratio of Laplace transform of the output to the Laplace transform of the input variable under the assumption that all initial conditions are zero.
2. The ratio of Fourier transform of the output to Fourier transform of the input variable.
3. The higher power of the complex variable 's' in the denominator of the transfer function determines the order of the system.
4. It is an expression in s-domain relating the output and input of linear time invariant system in terms of the system parameters and is independent of the input.

**Options :**

- 61198755441. 1
- 61198755442. 2
- 61198755443. 3
- 61198755444. 4

**Question Number : 86 Question Id : 61198714229 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement is not correct in respect of Transfer Function of linear Time Invariant System

1. The ratio of Laplace transform of the output to the Laplace transform of the input variable under the assumption that all initial conditions are zero.
2. The ratio of Fourier transform of the output to Fourier transform of the input variable.
3. The higher power of the complex variable 's' in the denominator of the transfer function determines the order of the system.
4. It is an expression in s-domain relating the output and input of linear time invariant system in terms of the system parameters and is independent of the input.

**Options :**

- 61198755441. 1
- 61198755442. 2
- 61198755443. 3
- 61198755444. 4

**Question Number : 87 Question Id : 61198714230 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The frequency range of ECG is

1. 0.05 Hz to 120 Hz
2. 0.05 KHz to 120 KHz
3. 0.1 Hz to 100 Hz
4. 10 Hz to 2000 Hz

**Options :**

- 61198755445. 1
- 61198755446. 2
- 61198755447. 3
- 61198755448. 4

**Question Number : 87 Question Id : 61198714230 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The frequency range of ECG is

1. 0.05 Hz to 120 Hz
2. 0.05 KHz to 120 KHz
3. 0.1 Hz to 100 Hz
4. 10 Hz to 2000 Hz

**Options :**

- 61198755445. 1
- 61198755446. 2
- 61198755447. 3
- 61198755448. 4

**Question Number : 88 Question Id : 61198714231 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Three phase power is measured by Two-wattmeter method and the readings of both wattmeters are equal. This condition is obtained at a power factor of

1. Unity
2. Zero
3. More than zero but less than 0.5
4. 0.5

**Options :**

- 61198755449. 1
- 61198755450. 2
- 61198755451. 3
- 61198755452. 4

**Question Number : 88 Question Id : 61198714231 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Three phase power is measured by Two-wattmeter method and the readings of both wattmeters are equal. This condition is obtained at a power factor of

1. Unity
2. Zero
3. More than zero but less than 0.5
4. 0.5

**Options :**

- 61198755449. 1
- 61198755450. 2
- 61198755451. 3
- 61198755452. 4

**Question Number : 89 Question Id : 61198714232 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Maxwell's Inductance-Capacitance Bridge is suited for measurement of only

1. Low Q Coils
2. Very Low Q Coils
3. Medium Q Coils
4. High Q Coils

**Options :**

- 61198755453. 1
- 61198755454. 2
- 61198755455. 3
- 61198755456. 4

**Question Number : 89 Question Id : 61198714232 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Maxwell's Inductance-Capacitance Bridge is suited for measurement of only

1. Low Q Coils
2. Very Low Q Coils
3. Medium Q Coils
4. High Q Coils

**Options :**

- 61198755453. 1
- 61198755454. 2
- 61198755455. 3
- 61198755456. 4

**Question Number : 90 Question Id : 61198714233 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In CRO, if the signal of  $12\mu\text{s}$  risetime is observed as the signal with  $15\mu\text{s}$  rise time. Calculate the value of bandwidth of CRO, if the value of K is 0.35

1. 36 KHz
2. 39 KHz
3. 42 KHz
4. 45 KHz

**Options :**

- 61198755457. 1
- 61198755458. 2
- 61198755459. 3
- 61198755460. 4

Question Number : 90 Question Id : 61198714233 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In CRO, if the signal of  $12\mu\text{s}$  risetime is observed as the signal with  $15\mu\text{s}$  rise time. Calculate the value of bandwidth of CRO, if the value of K is 0.35

1. 36 KHz
2. 39 KHz
3. 42 KHz
4. 45 KHz

Options :

- 61198755457. 1
- 61198755458. 2
- 61198755459. 3
- 61198755460. 4

Question Number : 91 Question Id : 61198714234 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** In a  $p^+n$  junction, the depletion width is larger for n-side as compared to p-side.

**Reason R:** As doping concentration increases, the depletion width reduces.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

Options :

- 61198755461. 1
- 61198755462. 2
- 61198755463. 3
- 61198755464. 4

Question Number : 91 Question Id : 61198714234 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** In a  $p^+n$  junction, the depletion width is larger for n-side as compared to p-side.

**Reason R:** As doping concentration increases, the depletion width reduces.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755461. 1
- 61198755462. 2
- 61198755463. 3
- 61198755464. 4

Question Number : 92 Question Id : 61198714235 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Impurity diffusion in semiconductor essentially needs very high temperature.

**Reason R:** Diffusivity of impurity atoms is negligibly small at room temperature.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755465. 1
- 61198755466. 2
- 61198755467. 3
- 61198755468. 4

Question Number : 92 Question Id : 61198714235 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Impurity diffusion in semiconductor essentially needs very high temperature.

**Reason R:** Diffusivity of impurity atoms is negligibly small at room temperature.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755465. 1
- 61198755466. 2
- 61198755467. 3
- 61198755468. 4

Question Number : 93 Question Id : 61198714236 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** For a given sequence  $X[n] = \left(\frac{1}{2}\right)^n u(n)$  and its Z-transform  $X(z) = \frac{1}{1 - \frac{1}{2}z^{-1}}; |z| > \frac{1}{2}$  is a

stable system.

**Reason R:** For a stable system ROC (Region of Convergence) must include the unit circle.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755469. 1
- 61198755470. 2
- 61198755471. 3
- 61198755472. 4

Question Number : 93 Question Id : 61198714236 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** For a given sequence  $X[n] = \left(\frac{1}{2}\right)^n u(n)$  and its Z-transform  $X(z) = \frac{1}{1 - \frac{1}{2}z^{-1}}; |z| > \frac{1}{2}$  is a

stable system.

**Reason R:** For a stable system ROC (Region of Convergence) must include the unit circle.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755469. 1
- 61198755470. 2
- 61198755471. 3
- 61198755472. 4

Question Number : 94 Question Id : 61198714237 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** A 555 timer can be used for voltage to frequency conversion.

**Reason R:** A 555 timer can be set up to operate as a voltage controlled oscillator.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755473. 1
- 61198755474. 2
- 61198755475. 3
- 61198755476. 4

Question Number : 94 Question Id : 61198714237 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** A 555 timer can be used for voltage to frequency conversion.

**Reason R:** A 555 timer can be set up to operate as a voltage controlled oscillator.

In the light of the above statements, choose the *most appropriate* answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

61198755473. 1

61198755474. 2

61198755475. 3

61198755476. 4

Question Number : 95 Question Id : 61198714238 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** For any sequential circuit state diagram can be drawn from a given state table and vice-a-versa.

**Reason R:** The excitation table of the flip-flop can be deduced from its characteristic table.

In the light of the above statements, choose the *most appropriate* answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

61198755477. 1

61198755478. 2

61198755479. 3

61198755480. 4

Question Number : 95 Question Id : 61198714238 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** For any sequential circuit state diagram can be drawn from a given state table and vice-a-versa.

**Reason R:** The excitation table of the flip-flop can be deduced from its characteristic table.

In the light of the above statements, choose the *most appropriate* answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

61198755477. 1

61198755478. 2

61198755479. 3

61198755480. 4

Question Number : 96 Question Id : 61198714239 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** The 8051 microcontroller supports full-duplex data transmission.

**Reason R:** The pin of I/O ports in 8051 microcontroller are bit addressable.

In the light of the above statements, choose the *most appropriate* answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

61198755481. 1

61198755482. 2

61198755483. 3

61198755484. 4

Question Number : 96 Question Id : 61198714239 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** The 8051 microcontroller supports full-duplex data transmission.

**Reason R:** The pin of I/O ports in 8051 microcontroller are bit addressable.

In the light of the above statements, choose the *most appropriate* answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755481. 1
- 61198755482. 2
- 61198755483. 3
- 61198755484. 4

Question Number : 97 Question Id : 61198714240 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Wave polarization may be regarded as the locus of the tip of the electric field (in a plane perpendicular to the direction of propagation) at a given point as a function of time.

**Reason R:** Elliptical polarization is achieved when the  $x$  and  $y$  components are not equal in magnitude  $E_{ox} \neq E_{oy}$  and the phase difference between them is an odd multiple of  $\frac{\pi}{2}$ . [ $z$ -is the direction of propagation]

In the light of the above statements, choose the *most appropriate* answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755485. 1
- 61198755486. 2
- 61198755487. 3
- 61198755488. 4

Question Number : 97 Question Id : 61198714240 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Wave polarization may be regarded as the locus of the tip of the electric field (in a plane perpendicular to the direction of propagation) at a given point as a function of time.

**Reason R:** Elliptical polarization is achieved when the  $x$  and  $y$  components are not equal in magnitude  $E_{ox} \neq E_{oy}$  and the phase difference between them is an odd multiple of  $\frac{\pi}{2}$ . [z-is the direction of propagation]

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755485. 1
- 61198755486. 2
- 61198755487. 3
- 61198755488. 4

Question Number : 98 Question Id : 61198714241 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** In a photodetector, it is desired that the width of the depletion region  $W$  be large enough so that most of the photons are absorbed within  $W$  rather than in the neutral  $n$  and  $p$  regions.

**Reason R:** A wider width  $W$  results in small junction capacitance.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755489. 1
- 61198755490. 2
- 61198755491. 3
- 61198755492. 4

Question Number : 98 Question Id : 61198714241 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** In a photodetector, it is desired that the width of the depletion region  $W$  be large enough so that most of the photons are absorbed within  $W$  rather than in the neutral  $n$  and  $p$  regions.

**Reason R:** A wider width  $W$  results in small junction capacitance.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

61198755489. 1

61198755490. 2

61198755491. 3

61198755492. 4

Question Number : 99 Question Id : 61198714242 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Chopper converts fixed d.c. input voltage to a controllable d.c. output voltage. The Chopper circuit require forced or load commutation to turn off the thyristors.

**Reason R:** The Chopper circuits are dependent upon the type of commutation and also on the direction of power flow.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

61198755493. 1

61198755494. 2

61198755495. 3

61198755496. 4

Question Number : 99 Question Id : 61198714242 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Chopper converts fixed d.c. input voltage to a controllable d.c. output voltage. The Chopper circuit require forced or load commutation to turn off the thyristors.

**Reason R:** The Chopper circuits are dependent upon the type of commutation and also on the direction of power flow.

In the light of the above statements, choose the *most appropriate* answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755493. 1
- 61198755494. 2
- 61198755495. 3
- 61198755496. 4

Question Number : 100 Question Id : 61198714243 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** The ECG helps in the diagnosis of malfunctioning of heart.

**Reason R:** If any feature of the curve is missing, it indicates a heart block. However, the cardiac disorders, specially those involving the heart valves cannot be diagnosed by the ECG.

In the light of the above statements, choose the *most appropriate* answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755497. 1
- 61198755498. 2
- 61198755499. 3
- 61198755500. 4

Question Number : 100 Question Id : 61198714243 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** The ECG helps in the diagnosis of malfunctioning of heart.

**Reason R:** If any feature of the curve is missing, it indicates a heart block. However, the cardiac disorders, specially those involving the heart valves cannot be diagnosed by the ECG.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 61198755497. 1
- 61198755498. 2
- 61198755499. 3
- 61198755500. 4

Question Number : 101 Question Id : 61198714244 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange in terms of ascending order of band gap.

- A. Si
- B. GaN
- C. InSb
- D. GaAs
- E. AlAs

Choose the **correct** answer from the options given below:

1. C, A, D, E, B
2. D, B, A, C, E
3. B, D, E, C, A
4. C, A, E, B, D

**Options :**

- 61198755501. 1
- 61198755502. 2
- 61198755503. 3
- 61198755504. 4

Question Number : 101 Question Id : 61198714244 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange in terms of ascending order of band gap.

- A. Si
- B. GaN
- C. InSb
- D. GaAs
- E. AlAs

Choose the **correct** answer from the options given below:

1. C, A, D, E, B
2. D, B, A, C, E
3. B, D, E, C, A
4. C, A, E, B, D

**Options :**

- 61198755501. 1
- 61198755502. 2
- 61198755503. 3
- 61198755504. 4

Question Number : 102 Question Id : 61198714245 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the given process steps in sequence for self-aligned gate formation.

- A. Thermal oxidation to grow gate oxide.
- B. Polysilicon deposition
- C. Photolithography using gate mask
- D. Etching of polysilicon and oxide
- E. Source/drain diffusion

Choose the **correct** answer from the options given below:

1. E, A, B, C, D
2. A, B, C, D, E
3. E, B, A, C, D
4. A, B, D, C, E

**Options :**

- 61198755505. 1
- 61198755506. 2
- 61198755507. 3
- 61198755508. 4

Question Number : 102 Question Id : 61198714245 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the given process steps in sequence for self-aligned gate formation.

- A. Thermal oxidation to grow gate oxide.
- B. Polysilicon deposition
- C. Photolithography using gate mask
- D. Etching of polysilicon and oxide
- E. Source/drain diffusion

Choose the **correct** answer from the options given below:

- 1. E, A, B, C, D
- 2. A, B, C, D, E
- 3. E, B, A, C, D
- 4. A, B, D, C, E

Options :

61198755505. 1

61198755506. 2

61198755507. 3

61198755508. 4

Question Number : 103 Question Id : 61198714246 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the given region of operation of transistors in CMOS inverter when input voltage  $V_{in}$  is swept from 0V to  $V_{DD}$ .

- A. NMOS in cut-off, PMOS in linear region
- B. NMOS in saturation, PMOS in linear region
- C. NMOS in saturation PMOS in saturation region
- D. NMOS in linear, PMOS in saturation region
- E. NMOS in linear, PMOS in cutoff region

Choose the **correct** answer from the options given below:

- 1. A, D, E, B, C
- 2. A, D, C, E, B
- 3. A, B, C, D, E
- 4. C, D, E, B, A

Options :

61198755509. 1

61198755510. 2

61198755511. 3

61198755512. 4

Question Number : 103 Question Id : 61198714246 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the given region of operation of transistors in CMOS inverter when input voltage  $V_{in}$  is swept from 0V to  $V_{DD}$ .

- A. NMOS in cut-off, PMOS in linear region
- B. NMOS in saturation, PMOS in linear region
- C. NMOS in saturation PMOS in saturation region
- D. NMOS in linear, PMOS in saturation region
- E. NMOS in linear, PMOS in cutoff region

Choose the **correct** answer from the options given below:

- 1. A, D, E, B, C
- 2. A, D, C, E, B
- 3. A, B, C, D, E
- 4. C, D, E, B, A

Options :

- 61198755509. 1
- 61198755510. 2
- 61198755511. 3
- 61198755512. 4

Question Number : 104 Question Id : 61198714247 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following in the sequence of steps to perform continuous/discrete time convolution.

- A. Fold (time-reverse) one of the signal
- B. Perform multiplication of the signal
- C. Plot the signals
- D. Perform addition of the magnitudes of the signal

Choose the **correct** answer from the options given below:

- 1. A, B, C, D
- 2. C, A, B, D
- 3. B, C, A, D
- 4. D, A, C, B

Options :

- 61198755513. 1
- 61198755514. 2
- 61198755515. 3
- 61198755516. 4

Question Number : 104 Question Id : 61198714247 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following in the sequence of steps to perform continuous/discrete time convolution.

- A. Fold (time-reverse) one of the signal
- B. Perform multiplication of the signal
- C. Plot the signals
- D. Perform addition of the magnitudes of the signal

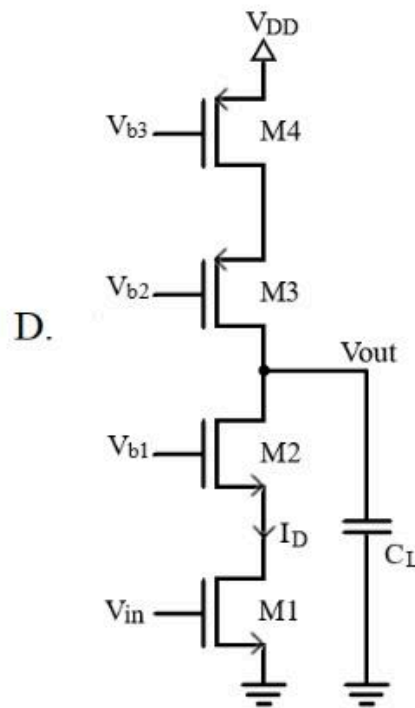
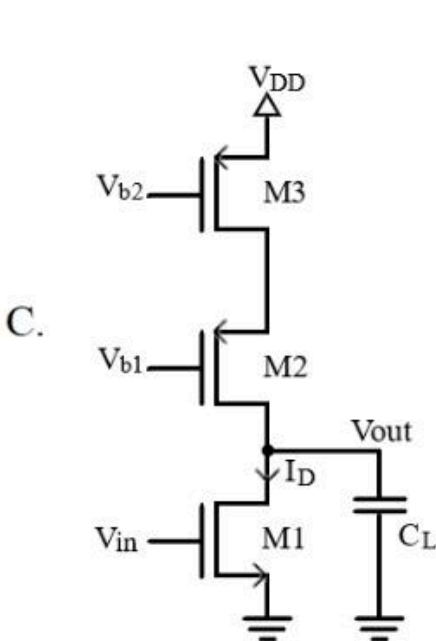
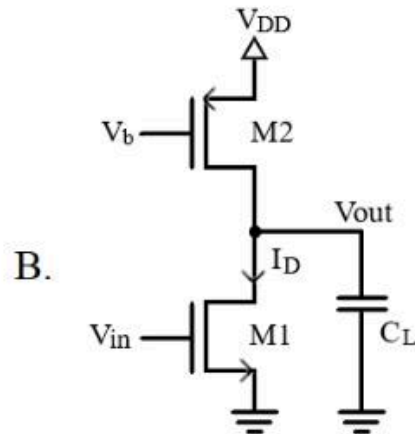
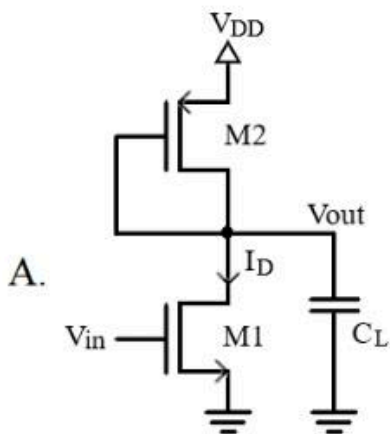
Choose the **correct** answer from the options given below:

- 1. A, B, C, D
- 2. C, A, B, D
- 3. B, C, A, D
- 4. D, A, C, B

**Options :**

- 61198755513. 1
- 61198755514. 2
- 61198755515. 3
- 61198755516. 4

Question Number : 105 Question Id : 61198714248 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Arrange the following amplifiers in the order of maximum achievable -3dB frequency. Assume the transconductance ( $g_m$ ) of the driver transistor (M1) same in all the circuits.



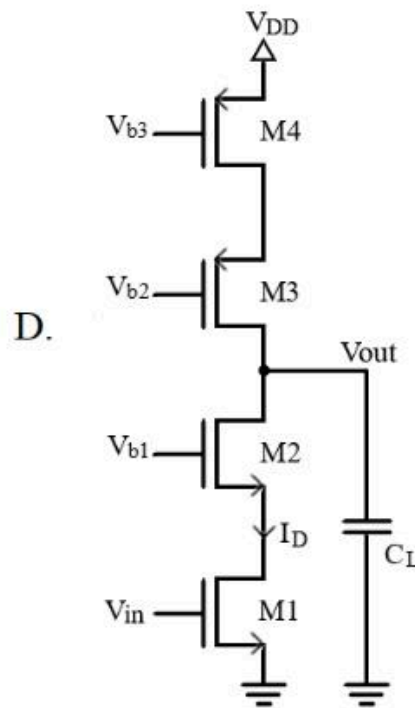
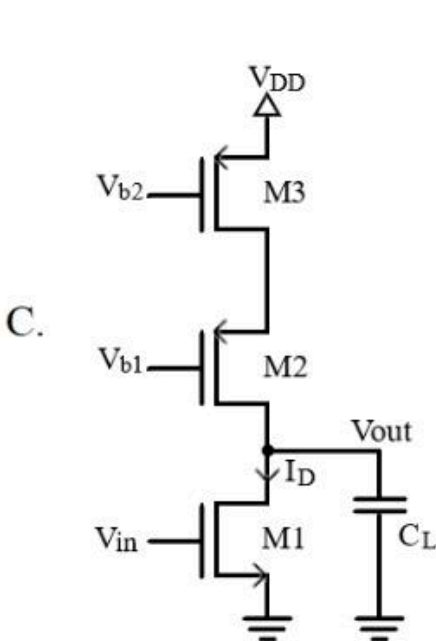
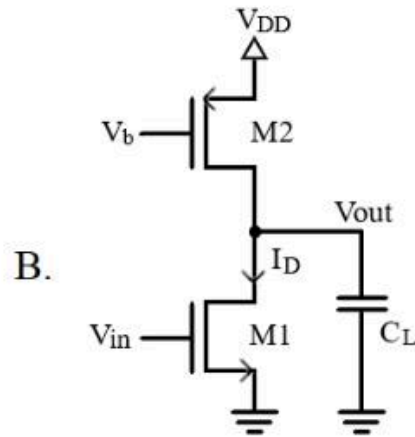
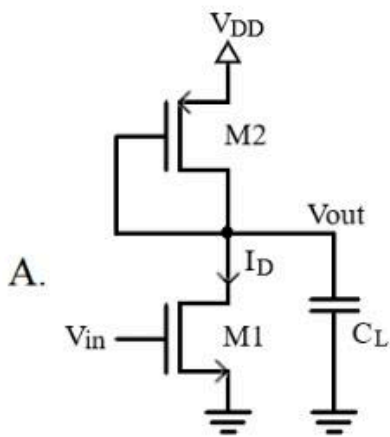
Choose the **correct** answer from the options given below:

1. A, B, C, D
2. B, C, D, A
3. C, D, A, B
4. D, C, B, A

Options :

- 61198755517. 1
- 61198755518. 2
- 61198755519. 3
- 61198755520. 4

Question Number : 105 Question Id : 61198714248 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical Arrange the following amplifiers in the order of maximum achievable -3dB frequency. Assume the transconductance ( $g_m$ ) of the driver transistor (M1) same in all the circuits.



Choose the **correct** answer from the options given below:

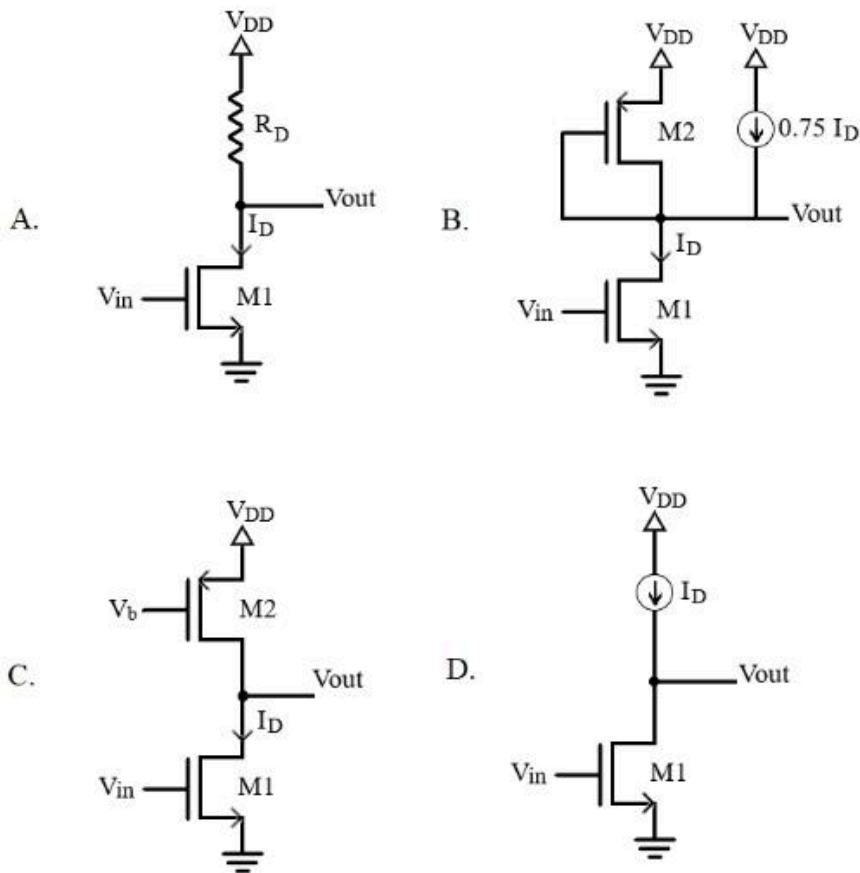
1. A, B, C, D
2. B, C, D, A
3. C, D, A, B
4. D, C, B, A

Options :

- 61198755517. 1
- 61198755518. 2
- 61198755519. 3
- 61198755520. 4

Question Number : 106 Question Id : 61198714249 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following amplifiers in the order of maximum achievable voltage gain. Assume the geometry and overdrive voltage is same for the transistor M1 in all the circuits and  $R_D \ll r_{o1}$ .



Choose the **correct** answer from the options given below:

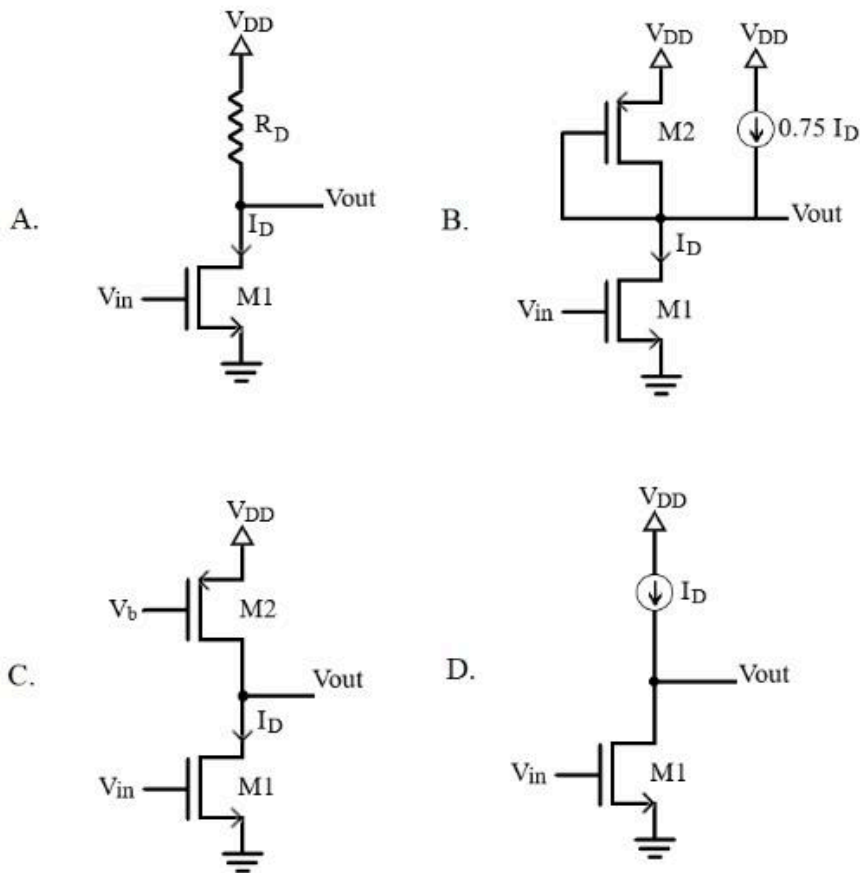
1. C, D, A, B
2. C, A, B, D
3. A, B, C, D
4. D, C, B, A

Options :

- 61198755521. 1
- 61198755522. 2
- 61198755523. 3
- 61198755524. 4

Question Number : 106 Question Id : 61198714249 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following amplifiers in the order of maximum achievable voltage gain. Assume the geometry and overdrive voltage is same for the transistor M1 in all the circuits and  $R_D \ll r_{o1}$ .



Choose the **correct** answer from the options given below:

1. C, D, A, B
2. C, A, B, D
3. A, B, C, D
4. D, C, B, A

Options :

- 61198755521. 1
- 61198755522. 2
- 61198755523. 3
- 61198755524. 4

**Question Number : 107 Question Id : 61198714250 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The design of synchronous circuit involves following steps

- A. From the specifications, derive a state diagram of a circuit
- B. Derive the simplified flip-flops input and output equations.
- C. Reduce the number of state, if necessary
- D. Choose the type of flip-flops to be used
- E. Assign binary values to the states and obtain binary coded table

Choose the **correct** answer from the options given below:

- 1. A, C, E, D, B
- 2. A, B, C, D, E
- 3. A, C, E, B, D
- 4. A, D, C, B, E

**Options :**

61198755525. 1

61198755526. 2

61198755527. 3

61198755528. 4

**Question Number : 107 Question Id : 61198714250 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The design of synchronous circuit involves following steps

- A. From the specifications, derive a state diagram of a circuit
- B. Derive the simplified flip-flops input and output equations.
- C. Reduce the number of state, if necessary
- D. Choose the type of flip-flops to be used
- E. Assign binary values to the states and obtain binary coded table

Choose the **correct** answer from the options given below:

- 1. A, C, E, D, B
- 2. A, B, C, D, E
- 3. A, C, E, B, D
- 4. A, D, C, B, E

**Options :**

61198755525. 1

61198755526. 2

61198755527. 3

61198755528. 4

**Question Number : 108 Question Id : 61198714251 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Arrange the following 8051 interrupts in increasing priority order.

- A. Timer interrupt 0 (TF0)
- B. Timer interrupt 1 (TF1)
- C. External interrupt 0 (INT0)
- D. External interrupt 1 (INT1)

Choose the **correct** answer from the options given below:

- 1. B, A, D, C
- 2. C, D, A, B
- 3. B, D, A, C
- 4. C, A, D, B

**Options :**

- 61198755529. 1
- 61198755530. 2
- 61198755531. 3
- 61198755532. 4

**Question Number : 108 Question Id : 61198714251 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Arrange the following 8051 interrupts in increasing priority order.

- A. Timer interrupt 0 (TF0)
- B. Timer interrupt 1 (TF1)
- C. External interrupt 0 (INT0)
- D. External interrupt 1 (INT1)

Choose the **correct** answer from the options given below:

- 1. B, A, D, C
- 2. C, D, A, B
- 3. B, D, A, C
- 4. C, A, D, B

**Options :**

- 61198755529. 1
- 61198755530. 2
- 61198755531. 3
- 61198755532. 4

**Question Number : 109 Question Id : 61198714252 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The 8086 has 2-byte of flag register, where the lower byte of flag register is same as of 8085 and the upper byte has only 4 used bits. Arrange these flags according to their place in the flag register from left to right.

- A. Overflow flag - O
- B. Directional flag - D
- C. Interrupt enable flag - I
- D. Trap flag - T

Choose the **correct** answer from the options given below:

- 1. A, B, C, D
- 2. D, C, B, A
- 3. A, C, D, B
- 4. D, B, A, C

**Options :**

61198755533. 1

61198755534. 2

61198755535. 3

61198755536. 4

**Question Number : 109 Question Id : 61198714252 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The 8086 has 2-byte of flag register, where the lower byte of flag register is same as of 8085 and the upper byte has only 4 used bits. Arrange these flags according to their place in the flag register from left to right.

- A. Overflow flag - O
- B. Directional flag - D
- C. Interrupt enable flag - I
- D. Trap flag - T

Choose the **correct** answer from the options given below:

- 1. A, B, C, D
- 2. D, C, B, A
- 3. A, C, D, B
- 4. D, B, A, C

**Options :**

61198755533. 1

61198755534. 2

61198755535. 3

61198755536. 4

Question Number : 110 Question Id : 61198714253 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the formulas of  $\beta$  in the order where plane wave is travelling in lossy dielectric, free space, good conductor, loss-less dielectric respectively.

A.  $\beta = \omega \sqrt{\frac{\mu\epsilon}{2} \left[ \sqrt{1 + \left(\frac{\sigma}{\omega\epsilon}\right)^2} + 1 \right]}$

B.  $\beta = \frac{\omega}{c}$

C.  $\beta = \omega \sqrt{\mu\epsilon}$

D.  $\beta = \sqrt{\frac{\omega\mu\sigma}{2}}$

Choose the **correct** answer from the options given below:

1. A, C, B, D
2. B, A, D, C
3. A, B, D, C
4. C, A, B, D

Options :

61198755537. 1

61198755538. 2

61198755539. 3

61198755540. 4

Question Number : 110 Question Id : 61198714253 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the formulas of  $\beta$  in the order where plane wave is travelling in lossy dielectric, free space, good conductor, loss-less dielectric respectively.

A.  $\beta = \omega \sqrt{\frac{\mu\epsilon}{2} \left[ \sqrt{1 + \left(\frac{\sigma}{\omega\epsilon}\right)^2} + 1 \right]}$

B.  $\beta = \frac{\omega}{c}$

C.  $\beta = \omega \sqrt{\mu\epsilon}$

D.  $\beta = \sqrt{\frac{\omega\mu\sigma}{2}}$

Choose the **correct** answer from the options given below:

1. A, C, B, D
2. B, A, D, C
3. A, B, D, C
4. C, A, B, D

Options :

61198755537. 1

61198755538. 2

61198755539. 3

61198755540. 4

Question Number : 111 Question Id : 61198714254 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange in ascending order of wavelength

- A. GaAs having  $E_g = 1.4\text{eV}$
- B.  $\text{Al}_{0.2}\text{Ga}_{0.8}\text{As}$  having  $E_g=1.62\text{eV}$
- C.  $\text{Al}_{0.4}\text{Ga}_{0.6}\text{As}$  having  $E_g=1.92\text{eV}$
- D.  $\text{GaAs}_{0.4}\text{P}_{0.6}$  having  $E_g=2.2\text{eV}$
- E.  $\text{GaAs}_{0.2}\text{P}_{0.8}$  having  $E_g=2.5\text{eV}$

Choose the **correct** answer from the options given below:

1. A, B, C, D, E
2. D, E, C, B, A
3. B, C, D, E, A
4. E, D, C, B, A

Options :

61198755541. 1

61198755542. 2

61198755543. 3

61198755544. 4

Question Number : 111 Question Id : 61198714254 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange in ascending order of wavelength

- A. GaAs having  $E_g = 1.4\text{eV}$
- B.  $\text{Al}_{0.2}\text{Ga}_{0.8}\text{As}$  having  $E_g=1.62\text{eV}$
- C.  $\text{Al}_{0.4}\text{Ga}_{0.6}\text{As}$  having  $E_g=1.92\text{eV}$
- D.  $\text{GaAs}_{0.4}\text{P}_{0.6}$  having  $E_g=2.2\text{eV}$
- E.  $\text{GaAs}_{0.2}\text{P}_{0.8}$  having  $E_g=2.5\text{eV}$

Choose the **correct** answer from the options given below:

- 1. A, B, C, D, E
- 2. D, E, C, B, A
- 3. B, C, D, E, A
- 4. E, D, C, B, A

Options :

- 61198755541. 1
- 61198755542. 2
- 61198755543. 3
- 61198755544. 4

Question Number : 112 Question Id : 61198714255 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange PCM system starting from transmission to reception of signal

- A. Sampling and Quantization
- B. Quantization and decoding
- C. Holding circuit
- D. Encoding
- E. Low pass filter (LPF)

Choose the **correct** answer from the options given below:

- 1. A, B, C, D, E
- 2. A, D, B, C, E
- 3. B, C, D, A, E
- 4. D, C, A, B, E

Options :

- 61198755545. 1
- 61198755546. 2
- 61198755547. 3
- 61198755548. 4

Question Number : 112 Question Id : 61198714255 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange PCM system starting from transmission to reception of signal

- A. Sampling and Quantization
- B. Quantization and decoding
- C. Holding circuit
- D. Encoding
- E. Low pass filter (LPF)

Choose the **correct** answer from the options given below:

- 1. A, B, C, D, E
- 2. A, D, B, C, E
- 3. B, C, D, A, E
- 4. D, C, A, B, E

Options :

61198755545. 1

61198755546. 2

61198755547. 3

61198755548. 4

Question Number : 113 Question Id : 61198714256 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A d.c motor is operating at a terminal voltage of 220V, arrange the following parameters in increasing order of their values

- A. Terminal Voltage (Volts)
- B. Back e.m.f (Volts)
- C. Speed (RPM)
- D. Armature Resistance ( $\Omega$ )
- E. Efficiency (%)

Choose the **correct** answer from the options given below:

- 1. A, B, C, D, E
- 2. E, B, A, D, C
- 3. C, A, B, D, E
- 4. D, E, B, A, C

Options :

61198755549. 1

61198755550. 2

61198755551. 3

61198755552. 4

**Question Number : 113 Question Id : 61198714256 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A d.c motor is operating at a terminal voltage of 220V, arrange the following parameters in increasing order of their values

- A. Terminal Voltage (Volts)
- B. Back e.m.f (Volts)
- C. Speed (RPM)
- D. Armature Resistance ( $\Omega$ )
- E. Efficiency (%)

Choose the **correct** answer from the options given below:

- 1. A, B, C, D, E
- 2. E, B, A, D, C
- 3. C, A, B, D, E
- 4. D, E, B, A, C

**Options :**

- 61198755549. 1
- 61198755550. 2
- 61198755551. 3
- 61198755552. 4

**Question Number : 114 Question Id : 61198714257 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Arrange the following semiconductor devices in decreasing order of operating speed (frequency)

- A. IGBT
- B. MOSFET
- C. Power BJT
- D. SCR

Choose the **correct** answer from the options given below:

- 1. A, B, C, D
- 2. D, C, B, A
- 3. A, B, D, C
- 4. B, A, C, D

**Options :**

- 61198755553. 1
- 61198755554. 2
- 61198755555. 3
- 61198755556. 4

Question Number : 114 Question Id : 61198714257 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following semiconductor devices in decreasing order of operating speed (frequency)

- A. IGBT
- B. MOSFET
- C. Power BJT
- D. SCR

Choose the **correct** answer from the options given below:

- 1. A, B, C, D
- 2. D, C, B, A
- 3. A, B, D, C
- 4. B, A, C, D

Options :

- 61198755553. 1
- 61198755554. 2
- 61198755555. 3
- 61198755556. 4

Question Number : 115 Question Id : 61198714258 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following lamps based on the increasing power rating and energy consumption to provide the same level of illumination or lighting

- A. Incandescent Lamp with efficacy of 10 lumens/watt
- B. Compact fluorescent lamp (CFL) with efficacy of 60 lumens/watt
- C. Halogen lamp with efficacy of 20 lumens/watt
- D. Mercury vapour lamp with efficacy of 40 lumens/watt
- E. Light Emitting diode (LED) lamp with efficacy of 80 lumens/watt

Choose the **correct** answer from the options given below:

- 1. E, B, D, C, A
- 2. A, C, D, B, E
- 3. A, B, C, D, E
- 4. E, D, C, B, A

Options :

- 61198755557. 1
- 61198755558. 2
- 61198755559. 3
- 61198755560. 4

Question Number : 115 Question Id : 61198714258 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Arrange the following lamps based on the increasing power rating and energy consumption to provide the same level of Illumination or lighting

- A. Incandescent Lamp with efficacy of 10 lumens/watt
- B. Compact fluorescent lamp (CFL) with efficacy of 60 lumens/watt
- C. Halogen lamp with efficacy of 20 lumens/watt
- D. Mercury vapour lamp with efficacy of 40 lumens/watt
- E. Light Emitting diode (LED) lamp with efficacy of 80 lumens/watt

Choose the **correct** answer from the options given below:

- 1. E, B, D, C, A
- 2. A, C, D, B, E
- 3. A, B, C, D, E
- 4. E, D, C, B, A

Options :

- 61198755557. 1
- 61198755558. 2
- 61198755559. 3
- 61198755560. 4

Question Number : 116 Question Id : 61198714259 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

- A. An impurity scattering cause decrease in mobility with decrease in temperature.
- B. A slow moving carrier is likely to scatter more strongly than carrier with great momentum
- C. Drift velocity of an electron increases with decrease in mobility
- D. Drift velocity of an electron decrease with decrease in mobility
- E. At critical electric field ( $=10^5$  V/cm) drift velocity tends to saturate.

Choose the **correct** answer from the options given below:

- 1. A and C only
- 2. A, C, D and E only
- 3. A, B, D and E only
- 4. C and E only

Options :

- 61198755561. 1
- 61198755562. 2
- 61198755563. 3
- 61198755564. 4

**Question Number : 116 Question Id : 61198714259 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. An impurity scattering cause decrease in mobility with decrease in temperature.
- B. A slow moving carrier is likely to scatter more strongly than carrier with great momentum
- C. Drift velocity of an electron increases with decrease in mobility
- D. Drift velocity of an electron decrease with decrease in mobility
- E. At critical electric field ( $=10^5$  V/cm) drift velocity tends to saturate.

Choose the **correct** answer from the options given below:

- 1. A and C only
- 2. A, C, D and E only
- 3. A, B, D and E only
- 4. C and E only

**Options :**

- 61198755561. 1
- 61198755562. 2
- 61198755563. 3
- 61198755564. 4

**Question Number : 117 Question Id : 61198714260 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. For impurity diffusion in semiconductor, concentration gradient is the only essential requirement.
- B. Annealing is a mandatory step after ion-implantation.
- C. Wet etching is normally anisotropic
- D. High temperature is required for the growth of  $\text{SiO}_2$  because oxidation reaction takes place at high temperature
- E. Bird's beak formation is a characteristic of LOCOS isolation

Choose the **correct** answer from the options given below:

- 1. A, B, D, E only
- 2. A, D, E only
- 3. B and E only
- 4. A, C, D only

**Options :**

- 61198755565. 1
- 61198755566. 2
- 61198755567. 3
- 61198755568. 4

Question Number : 117 Question Id : 61198714260 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

- A. For impurity diffusion in semiconductor, concentration gradient is the only essential requirement.
- B. Annealing is a mandatory step after ion-implantation.
- C. Wet etching is normally anisotropic
- D. High temperature is required for the growth of SiO<sub>2</sub> because oxidation reaction takes place at high temperature
- E. Bird's beak formation is a characteristic of LOCOS isolation

Choose the **correct** answer from the options given below:

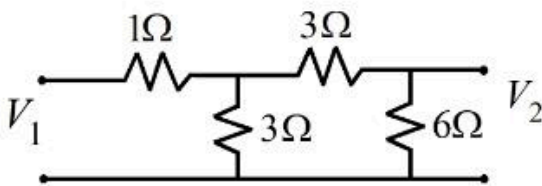
1. A, B, D, E only
2. A, D, E only
3. B and E only
4. A, C, D only

Options :

- 61198755565. 1
- 61198755566. 2
- 61198755567. 3
- 61198755568. 4

Question Number : 118 Question Id : 61198714261 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For the network shown in figure. The 2 port network parameters are



- A.  $Z_{11}=3.25, Z_{12}=1.5, Z_{21}=1.5, Z_{22}=3$
- B.  $Y_{11}=0.4, Y_{12}=0.5, Y_{21}=-0.2, Y_{22}=1.6$
- C.  $h_{11}=2.5, h_{12}=0.5, h_{21}=-0.5, h_{22}=0.33$
- D.  $A=2.167, B=0.8, C=2, D=3$

Choose the **correct** answer from the options given below:

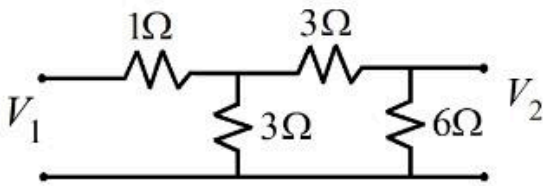
1. A only
2. A and B only
3. B and C only
4. C and D only

Options :

- 61198755569. 1
- 61198755570. 2
- 61198755571. 3
- 61198755572. 4

Question Number : 118 Question Id : 61198714261 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For the network shown in figure. The 2 port network parameters are



- A.  $Z_{11}=3.25, Z_{12}=1.5, Z_{21}=1.5, Z_{22}=3$
- B.  $Y_{11}=0.4, Y_{12}=0.5, Y_{21}=-0.2, Y_{22}=1.6$
- C.  $h_{11}=2.5, h_{12}=0.5, h_{21}=-0.5, h_{22}=0.33$
- D.  $A=2.167, B=0.8, C=2, D=3$

Choose the **correct** answer from the options given below:

- 1. A only
- 2. A and B only
- 3. B and C only
- 4. C and D only

Options :

- 61198755569. 1
- 61198755570. 2
- 61198755571. 3
- 61198755572. 4

Question Number : 119 Question Id : 61198714262 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

- A. In an RC phase-shift oscillator, the impedance in the feedback circuit is a low pass RC network.
- B. In the Colpitts oscillator, the impedance in the feedback circuit is a lowpass LC network.
- C. In the Hartley oscillator, the impedance in the feedback circuit is a high pass LC network.
- D. D flip-flop is an example of monostable multivibrator
- E. Quadrature oscillator generates four waveforms of different phases

Choose the **correct** answer from the options given below:

- 1. A, B and C only
- 2. A and D only
- 3. B and C only
- 4. B, C and E only

Options :

- 61198755573. 1
- 61198755574. 2
- 61198755575. 3
- 61198755576. 4

**Question Number : 119 Question Id : 61198714262 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. In an RC phase-shift oscillator, the impedance in the feedback circuit is a low pass RC network.
- B. In the Colpitts oscillator, the impedance in the feedback circuit is a lowpass LC network.
- C. In the Hartley oscillator, the impedance in the feedback circuit is a high pass LC network.
- D. D flip-flop is an example of monostable multivibrator
- E. Quadrature oscillator generates four waveforms of different phases

Choose the **correct** answer from the options given below:

- 1. A, B and C only
- 2. A and D only
- 3. B and C only
- 4. B, C and E only

**Options :**

- 61198755573. 1
- 61198755574. 2
- 61198755575. 3
- 61198755576. 4

**Question Number : 120 Question Id : 61198714263 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. Design of synchronous counter is difficult as compared to asynchronous counter.
- B. Digital counter are used for counting the pulses/events.
- C. Counter are the combination circuits.
- D. In Asynchronous counter, the same clock pulse can be applied to all the flip-flops.

Choose the **correct** answer from the options given below:

- 1. A only
- 2. A and B only
- 3. B and C only
- 4. C and D only

**Options :**

- 61198755577. 1
- 61198755578. 2
- 61198755579. 3
- 61198755580. 4

**Question Number : 120 Question Id : 61198714263 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. Design of synchronous counter is difficult as compared to asynchronous counter.
- B. Digital counter are used for counting the pulses/events.
- C. Counter are the combination circuits.
- D. In Asynchronous counter, the same clock pulse can be applied to all the flip-flops.

Choose the **correct** answer from the options given below:

- 1. A only
- 2. A and B only
- 3. B and C only
- 4. C and D only

**Options :**

- 61198755577. 1
- 61198755578. 2
- 61198755579. 3
- 61198755580. 4

**Question Number : 121 Question Id : 61198714264 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. Microcontrollers are normally less expensive than microprocessors.
- B. The 8051 microcontroller has three on-chip timers.
- C. Mode 2 of 8051 timer is used to set the baud rate.
- D. For the LCD to recognize information at the data pins as data, the register select (RS) pin must be set to low.
- E. A driver must be placed between the micrcontroller and the stepper motor.

Choose the **correct** answer from the options given below:

- 1. A and B only
- 2. A, C and E only
- 3. A, B and C only
- 4. A, C and D only

**Options :**

- 61198755581. 1
- 61198755582. 2
- 61198755583. 3
- 61198755584. 4

**Question Number : 121 Question Id : 61198714264 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. Microcontrollers are normally less expensive than microprocessors.
- B. The 8051 microcontroller has three on-chip timers.
- C. Mode 2 of 8051 timer is used to set the baud rate.
- D. For the LCD to recognize information at the data pins as data, the register select (RS) pin must be set to low.
- E. A driver must be placed between the microcontroller and the stepper motor.

Choose the **correct** answer from the options given below:

- 1. A and B only
- 2. A, C and E only
- 3. A, B and C only
- 4. A, C and D only

**Options :**

- 61198755581. 1
- 61198755582. 2
- 61198755583. 3
- 61198755584. 4

**Question Number : 122 Question Id : 61198714265 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. VSWR can be easily deduced from smith chart.
- B. VSWR is the ratio of  $V_{max}/V_{min}$  values.
- C. VSWR is the ratio of  $I_{min}/I_{max}$  values.
- D. The value of the VSWR can be in between 0 and 1 only.

Choose the **correct** answer from the options given below:

- 1. A and B only
- 2. B and C only
- 3. D only
- 4. A and D only

**Options :**

- 61198755585. 1
- 61198755586. 2
- 61198755587. 3
- 61198755588. 4

**Question Number : 122 Question Id : 61198714265 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. VSWR can be easily deduced from smith chart.
- B. VSWR is the ratio of  $V_{max}/V_{min}$  values.
- C. VSWR is the ratio of  $I_{min}/I_{max}$  values.
- D. The value of the VSWR can be in between 0 and 1 only.

Choose the **correct** answer from the options given below:

- 1. A and B only
- 2. B and C only
- 3. D only
- 4. A and D only

**Options :**

- 61198755585. 1
- 61198755586. 2
- 61198755587. 3
- 61198755588. 4

**Question Number : 123 Question Id : 61198714266 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Comparing Delta Modulation (DM) with PCM system: DM requires

- A. Lower Sampling Rate
- B. Higher Sampling Rate
- C. Large Bandwidth
- D. Simpler Hardware
- E. Complex Hardware

Choose the **correct** answer from the options given below:

- 1. B and E only
- 2. B, C and D only
- 3. A and C only
- 4. A, C and E only

**Options :**

- 61198755589. 1
- 61198755590. 2
- 61198755591. 3
- 61198755592. 4

Question Number : 123 Question Id : 61198714266 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Comparing Delta Modulation (DM) with PCM system: DM requires

- A. Lower Sampling Rate
- B. Higher Sampling Rate
- C. Large Bandwidth
- D. Simpler Hardware
- E. Complex Hardware

Choose the **correct** answer from the options given below:

- 1. B and E only
- 2. B, C and D only
- 3. A and C only
- 4. A, C and E only

**Options :**

61198755589. 1

61198755590. 2

61198755591. 3

61198755592. 4

Question Number : 124 Question Id : 61198714267 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

- A. In any open loop control system, the output is not compared with the reference input.
- B. Traffic control by means of signals operated on a time basis is an example of closed loop control.
- C. Closed loop control always implies the use of feedback control action in order to reduce system error.
- D. Washing machine is an example of open loop system.
- E. Stability is a major concern in open loop control system.

Choose the **correct** answer from the options given below:

- 1. A, E only
- 2. A and B only
- 3. A, C and D only
- 4. A, B and D only

**Options :**

61198755593. 1

61198755594. 2

61198755595. 3

61198755596. 4

**Question Number : 124 Question Id : 61198714267 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

- A. In any open loop control system, the output is not compared with the reference input.
- B. Traffic control by means of signals operated on a time basis is an example of closed loop control.
- C. Closed loop control always implies the use of feedback control action in order to reduce system error.
- D. Washing machine is an example of open loop system.
- E. Stability is a major concern in open loop control system.

Choose the **correct** answer from the options given below:

- 1. A, E only
- 2. A and B only
- 3. A, C and D only
- 4. A, B and D only

**Options :**

- 61198755593. 1
- 61198755594. 2
- 61198755595. 3
- 61198755596. 4

**Question Number : 125 Question Id : 61198714268 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Choose the correct option for A.C Bridges

- A. Hay's Bridge is a modification of Maxwell's Bridge.
- B. The Hay's Bridge is suited for the measurement of high Q coils.
- C. A Wein's Bridge cannot be used for the measurement of capacitance.
- D. In Owen's Bridge, the balance equations are quite simple and must have frequency component.
- E. Owen's bridge can be used over a wide range of measurement of inductances.

Choose the **correct** answer from the options given below:

- 1. A only
- 2. A, B, E only
- 3. B, C, D only
- 4. A, C only

**Options :**

- 61198755597. 1
- 61198755598. 2
- 61198755599. 3
- 61198755600. 4

Question Number : 125 Question Id : 61198714268 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Choose the correct option for A.C Bridges

- A. Hay's Bridge is a modification of Maxwell's Bridge.
- B. The Hay's Bridge is suited for the measurement of high Q coils.
- C. A Wein's Bridge cannot be used for the measurement of capacitance.
- D. In Owen's Bridge, the balance equations are quite simple and must have frequency component.
- E. Owen's bridge can be used over a wide range of measurement of inductances.

Choose the **correct** answer from the options given below:

- 1. A only
- 2. A, B, E only
- 3. B, C, D only
- 4. A, C only

Options :

- 61198755597. 1
- 61198755598. 2
- 61198755599. 3
- 61198755600. 4

Question Number : 126 Question Id : 61198714269 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Einstein relation	I.	$q D_n \frac{dn}{dx}$
B.	Diffusion length of electron	II.	$\sqrt{D_n \tau_n}$
C.	Electron diffusion current density	III.	$\frac{D_n}{\mu_n} = \frac{KT}{q}$
D.	Electron Drift velocity	IV.	$\mu_n E$

Choose the **correct** answer from the options given below:

- 1. A-III, B-IV, C-I, D-II
- 2. A-III, B-II, C-I, D-IV
- 3. A-II, B-III, C-IV, D-I
- 4. A-I, B-II, C-IV, D-III

Options :

- 61198755601. 1
- 61198755602. 2
- 61198755603. 3
- 61198755604. 4

Question Number : 126 Question Id : 61198714269 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Einstein relation	I.	$q D_n \frac{dn}{dx}$
B.	Diffusion length of electron	II.	$\sqrt{D_n \tau_n}$
C.	Electron diffusion current density	III.	$\frac{D_n}{\mu_n} = \frac{KT}{q}$
D.	Electron Drift velocity	IV.	$\mu_n E$

Choose the **correct** answer from the options given below:

1. A-III, B-IV, C-I, D-II
2. A-III, B-II, C-I, D-IV
3. A-II, B-III, C-IV, D-I
4. A-I, B-II, C-IV, D-III

Options :

61198755601. 1  
 61198755602. 2  
 61198755603. 3  
 61198755604. 4

Question Number : 127 Question Id : 61198714270 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
Type of Semiconductor		Position of Fermi level	
A.	n-type semiconductor	I.	Middle of the band gap
B.	p-type semiconductor	II.	Above the conduction band
C.	Intrinsic semiconductor	III.	Near or below the conduction
D.	De-generate semiconductor	IV.	Near or above the valance band

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-II, B-III, C-IV, D-I
3. A-III, B-II, C-I, D-IV
4. A-III, B-IV, C-I, D-II

Options :

61198755605. 1  
 61198755606. 2  
 61198755607. 3  
 61198755608. 4

Question Number : 127 Question Id : 61198714270 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
Type of Semiconductor		Position of Fermi level	
A.	n-type semiconductor	I.	Middle of the band gap
B.	p-type semiconductor	II.	Above the conduction band
C.	Intrinsic semiconductor	III.	Near or below the conduction
D.	De-generate semiconductor	IV.	Near or above the valance band

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-II, B-III, C-IV, D-I
3. A-III, B-II, C-I, D-IV
4. A-III, B-IV, C-I, D-II

Options :

- 61198755605. 1
- 61198755606. 2
- 61198755607. 3
- 61198755608. 4

Question Number : 128 Question Id : 61198714271 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Shallow trench isolation (STI)	I.	Low static power dissipation
B.	Junction isolation	II.	High static power dissipation
C.	CMOS technology	III.	High component density
D.	Bipolar IC technology	IV.	Low component density

Choose the **correct** answer from the options given below:

1. A-I, B-IV, C-II, D-III
2. A-III, B-IV, C-I, D-II
3. A-III, B-II, C-IV, D-I
4. A-I, B-III, C-IV, D-II

Options :

- 61198755609. 1
- 61198755610. 2
- 61198755611. 3
- 61198755612. 4

Question Number : 128 Question Id : 61198714271 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Shallow trench isolation (STI)	I.	Low static power dissipation
B.	Junction isolation	II.	High static power dissipation
C.	CMOS technology	III.	High component density
D.	Bipolar IC technology	IV.	Low component density

Choose the **correct** answer from the options given below:

1. A-I, B-IV, C-II, D-III
2. A-III, B-IV, C-I, D-II
3. A-III, B-II, C-IV, D-I
4. A-I, B-III, C-IV, D-II

Options :

- 61198755609. 1
- 61198755610. 2
- 61198755611. 3
- 61198755612. 4

Question Number : 129 Question Id : 61198714272 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Continuous and periodic signal	I.	continuous time Fourier series
B.	Continuous and aperiodic signal	II.	discrete time Fourier series
C.	Discrete and periodic signal	III.	continuous time Fourier transform
D.	Discrete and aperiodic signal	IV.	discrete time Fourier transform

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-I, B-III, C-II, D-IV
3. A-I, B-IV, C-II, D-III
4. A-I, B-III, C-IV, D-II

Options :

- 61198755613. 1
- 61198755614. 2
- 61198755615. 3
- 61198755616. 4

Question Number : 129 Question Id : 61198714272 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Continuous and periodic signal	I.	continuous time Fourier series
B.	Continuous and aperiodic signal	II.	discrete time Fourier series
C.	Discrete and periodic signal	III.	continuous time Fourier transform
D.	Discrete and aperiodic signal	IV.	discrete time Fourier transform

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-I, B-III, C-II, D-IV
3. A-I, B-IV, C-II, D-III
4. A-I, B-III, C-IV, D-II

Options :

61198755613. 1  
 61198755614. 2  
 61198755615. 3  
 61198755616. 4

Question Number : 130 Question Id : 61198714273 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	$e^{-at} u(t)$	I.	$\frac{\omega_0}{s^2 + \omega_0^2}; \text{Re}[s] > 0$
B.	$-e^{-at} u(-t)$	II.	$\frac{1}{s+a}; \text{Re}[s] > -a$
C.	$\text{Cos}\omega_0 t u(t)$	III.	$\frac{1}{s+a}; \text{Re}[s] < -a$
D.	$\text{Sin}\omega_0 t u(t)$	IV.	$\frac{s}{s^2 + \omega_0^2}; \text{Re}[s] > 0$

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-II, B-III, C-IV, D-I
3. A-III, B-IV, C-I, D-II
4. A-IV, B-I, C-II, D-III

Options :

61198755617. 1  
 61198755618. 2  
 61198755619. 3  
 61198755620. 4

Question Number : 130 Question Id : 61198714273 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	$e^{-at} u(t)$	I.	$\frac{\omega_0}{s^2 + \omega_0^2}; R_e[s] > 0$
B.	$-e^{-at} u(-t)$	II.	$\frac{1}{s+a}; R_e[s] > -a$
C.	$\text{Cos}\omega_0 t u(t)$	III.	$\frac{1}{s+a}; R_e[s] < -a$
D.	$\text{Sin}\omega_0 t u(t)$	IV.	$\frac{s}{s^2 + \omega_0^2}; R_e[s] > 0$

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-II, B-III, C-IV, D-I
3. A-III, B-IV, C-I, D-II
4. A-IV, B-I, C-II, D-III

**Options :**

61198755617. 1  
 61198755618. 2  
 61198755619. 3  
 61198755620. 4

Question Number : 131 Question Id : 61198714274 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Crystal Oscillator	I.	Speed measurement
B.	Phase locked loop	II.	RC feedback circuit
C.	Frequency to voltage converter	III.	Most stable Oscillator
D.	Phase shift Oscillator	IV.	Frequency synthesis

Choose the **correct** answer from the options given below:

1. A-II, B-IV, C-I, D-III
2. A-IV, B-I, C-II, D-III
3. A-III, B-IV, C-I, D-II
4. A-III, B-II, C-I, D-IV

Options :

- 61198755621. 1
- 61198755622. 2
- 61198755623. 3
- 61198755624. 4

Question Number : 131 Question Id : 61198714274 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Crystal Oscillator	I.	Speed measurement
B.	Phase locked loop	II.	RC feedback circuit
C.	Frequency to voltage converter	III.	Most stable Oscillator
D.	Phase shift Oscillator	IV.	Frequency synthesis

Choose the **correct** answer from the options given below:

1. A-II, B-IV, C-I, D-III
2. A-IV, B-I, C-II, D-III
3. A-III, B-IV, C-I, D-II
4. A-III, B-II, C-I, D-IV

Options :

- 61198755621. 1
- 61198755622. 2
- 61198755623. 3
- 61198755624. 4

Question Number : 132 Question Id : 61198714275 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	$F(A,B,C,D) = \sum (1,3, 4,11,12,13,14,15)$	I.	8×1MUX
B.	$F(A,B,C) = \sum (1,2,6,7)$	II.	4×1MUX
C.	$F(A,B,C) = \sum (1,3,5,7)$	III.	4×1MUX and 1 NOT gate
D.	$F(A,B,C,D) = \sum (1,3,5,7,9,11,13,15)$	IV.	8×1MUX and 1 NOT gate

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-IV, B-III, C-II, D-I
3. A-I, B-III, C-II, D-IV
4. A-IV, B-II, C-III, D-I

Options :

- 61198755625. 1
- 61198755626. 2
- 61198755627. 3
- 61198755628. 4

Question Number : 132 Question Id : 61198714275 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	$F(A,B,C,D) = \sum (1,3, 4,11,12,13,14,15)$	I.	8×1MUX
B.	$F(A,B,C) = \sum (1,2,6,7)$	II.	4×1MUX
C.	$F(A,B,C) = \sum (1,3,5,7)$	III.	4×1MUX and 1 NOT gate
D.	$F(A,B,C,D) = \sum (1,3,5,7,9,11,13,15)$	IV.	8×1MUX and 1 NOT gate

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-IV, B-III, C-II, D-I
3. A-I, B-III, C-II, D-IV
4. A-IV, B-II, C-III, D-I

Options :

- 61198755625. 1
- 61198755626. 2
- 61198755627. 3
- 61198755628. 4

Question Number : 133 Question Id : 61198714276 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Emitter Coupled Transistor pair	I.	TTL logic family
B.	Multiple emitter BJT	II.	CMOS logic family
C.	Rail-to-rail output swing	III.	Pass transistor logic
D.	Most efficient implementation of XOR function	IV.	ECL logic family

Choose the **correct** answer from the options given below:

1. A-I, B-IV, C-III, D-II
2. A-IV, B-I, C-III, D-II
3. A-IV, B-I, C-II, D-III
4. A-I, B-IV, C-II, D-III

Options :

- 61198755629. 1
- 61198755630. 2
- 61198755631. 3
- 61198755632. 4

Question Number : 133 Question Id : 61198714276 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Emitter Coupled Transistor pair	I.	TTL logic family
B.	Multiple emitter BJT	II.	CMOS logic family
C.	Rail-to-rail output swing	III.	Pass transistor logic
D.	Most efficient implementation of XOR function	IV.	ECL logic family

Choose the **correct** answer from the options given below:

1. A-I, B-IV, C-III, D-II
2. A-IV, B-I, C-III, D-II
3. A-IV, B-I, C-II, D-III
4. A-I, B-IV, C-II, D-III

Options :

- 61198755629. 1
- 61198755630. 2
- 61198755631. 3
- 61198755632. 4

Question Number : 134 Question Id : 61198714277 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Immediate addressing mode	I.	MOV A,@R0
B.	Indexed addressing mode	II.	MOV DPTR,#4521H
C.	Register addressing mode	III.	MOVC A,@A+DPTR
D.	Register indirect addressing mode	IV.	MOV A,R0

Choose the **correct** answer from the options given below:

1. A-II, B-III, C-I, D-IV
2. A-II, B-III, C-IV, D-I
3. A-III, B-II, C-IV, D-I
4. A-III, B-IV, C-I, D-II

Options :

- 61198755633. 1
- 61198755634. 2
- 61198755635. 3
- 61198755636. 4

Question Number : 134 Question Id : 61198714277 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Immediate addressing mode	I.	MOV A,@R0
B.	Indexed addressing mode	II.	MOV DPTR,#4521H
C.	Register addressing mode	III.	MOVC A,@A+DPTR
D.	Register indirect addressing mode	IV.	MOV A,R0

Choose the **correct** answer from the options given below:

1. A-II, B-III, C-I, D-IV
2. A-II, B-III, C-IV, D-I
3. A-III, B-II, C-IV, D-I
4. A-III, B-IV, C-I, D-II

Options :

- 61198755633. 1
- 61198755634. 2
- 61198755635. 3
- 61198755636. 4

Question Number : 135 Question Id : 61198714278 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	In general, $Z_{in}$	I.	$-jZ_0 \cot \beta \ell$
B.	When $Z_L=0$ , $Z_{in}$	II.	$Z_0$
C.	When $Z_L=\infty$ ; $Z_{in}$	III.	$jZ_0 \tan \beta \ell$
D.	When $Z_L=Z_0$ ; $Z_{in}$	IV.	$Z_0 \left[ \frac{Z_L + jZ_0 \tan \beta \ell}{Z_0 + jZ_L \tan \beta \ell} \right]$

Choose the **correct** answer from the options given below:

1. A-IV, B-III, C-I, D-II
2. A-I, B-II, C-III, D-IV
3. A-IV, B-II, C-III, D-I
4. A-IV, B-I, C-II, D-III

Options :

61198755637. 1  
 61198755638. 2  
 61198755639. 3  
 61198755640. 4

Question Number : 135 Question Id : 61198714278 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	In general, $Z_{in}$	I.	$-jZ_0 \cot \beta \ell$
B.	When $Z_L=0$ , $Z_{in}$	II.	$Z_0$
C.	When $Z_L=\infty$ ; $Z_{in}$	III.	$jZ_0 \tan \beta \ell$
D.	When $Z_L=Z_0$ ; $Z_{in}$	IV.	$Z_0 \left[ \frac{Z_L + jZ_0 \tan \beta \ell}{Z_0 + jZ_L \tan \beta \ell} \right]$

Choose the **correct** answer from the options given below:

1. A-IV, B-III, C-I, D-II
2. A-I, B-II, C-III, D-IV
3. A-IV, B-II, C-III, D-I
4. A-IV, B-I, C-II, D-III

Options :

61198755637. 1  
 61198755638. 2  
 61198755639. 3  
 61198755640. 4

Question Number : 136 Question Id : 61198714279 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	$\nabla \cdot \vec{D} = \rho_V$	I.	$\oint_S \vec{D} \cdot d\vec{s} = \int_V \rho_V dv$
B.	$\nabla \cdot \vec{B} = 0$	II.	$\oint_S \vec{B} \cdot d\vec{s} = 0$
C.	$\nabla \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$	III.	$\oint_L \vec{E} \cdot d\vec{\ell} = -\frac{\partial}{\partial t} \int_S \vec{B} \cdot d\vec{s}$
D.	$\nabla \times \vec{H} = \vec{J} + \frac{\partial \vec{D}}{\partial t}$	IV.	$\oint_L \vec{H} \cdot d\vec{\ell} = \int_S \left( \vec{J} + \frac{\partial \vec{D}}{\partial t} \right) \cdot d\vec{s}$

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-IV, B-I, C-II, D-III
3. A-III, B-IV, C-I, D-II
4. A-II, B-III, C-IV, D-I

**Options :**

61198755641. 1  
 61198755642. 2  
 61198755643. 3  
 61198755644. 4

Question Number : 136 Question Id : 61198714279 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	$\nabla \cdot \bar{D} = \rho_V$	I.	$\oint_S \bar{D} \cdot d\bar{s} = \int_V \rho_V dv$
B.	$\nabla \cdot \bar{B} = 0$	II.	$\oint_S \bar{B} \cdot d\bar{s} = 0$
C.	$\nabla \times \bar{E} = -\frac{\partial \bar{B}}{\partial t}$	III.	$\oint_L \bar{E} \cdot d\bar{\ell} = -\frac{\partial}{\partial t} \int_S \bar{B} \cdot d\bar{s}$
D.	$\nabla \times \bar{H} = \bar{J} + \frac{\partial \bar{D}}{\partial t}$	IV.	$\oint_L \bar{H} \cdot d\bar{\ell} = \int_S \left( \bar{J} + \frac{\partial \bar{D}}{\partial t} \right) \cdot d\bar{s}$

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-IV, B-I, C-II, D-III
3. A-III, B-IV, C-I, D-II
4. A-II, B-III, C-IV, D-I

Options :

61198755641. 1  
 61198755642. 2  
 61198755643. 3  
 61198755644. 4

Question Number : 137 Question Id : 61198714280 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	$[1+K_m(t)] A \sin(\omega_c t)$	I.	Phase modulation
B.	$K_m(t) A \sin(\omega_c t)$	II.	Frequency modulation
C.	$A \sin[\omega_c t + K_m(t)]$	III.	Amplitude modulation
D.	$A \sin \left[ \omega_c t + K \int_{-\infty}^t m(t) dt \right]$	IV.	DSB-SC modulation

Choose the **correct** answer from the options given below:

1. A-IV, B-II, C-III, D-I
2. A-II, B-I, C-III, D-IV
3. A-III, B-I, C-II, D-IV
4. A-III, B-IV, C-I, D-II

Options :

61198755645. 1  
 61198755646. 2  
 61198755647. 3  
 61198755648. 4

Question Number : 137 Question Id : 61198714280 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	$[1+K_m(t)] \text{Asin}(\omega_c t)$	I.	Phase modulation
B.	$K_m(t) \text{Asin}(\omega_c t)$	II.	Frequency modulation
C.	$\text{Asin}[\omega_c t + K_m(t)]$	III.	Amplitude modulation
D.	$A \sin \left[ \omega_c t + K \int_{-\infty}^t m(t) dt \right]$	IV.	DSB-SC modulation

Choose the **correct** answer from the options given below:

1. A-IV, B-II, C-III, D-I
2. A-II, B-I, C-III, D-IV
3. A-III, B-I, C-II, D-IV
4. A-III, B-IV, C-I, D-II

Options :

61198755645. 1  
 61198755646. 2  
 61198755647. 3  
 61198755648. 4

Question Number : 138 Question Id : 61198714281 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	BJT	I.	Five layers and four junction device
B.	MOSFET	II.	Power switching device with fast acting features and high power capability with voltage control features
C.	IGBT	III.	Voltage controlled device
D.	DIAC	IV.	Current controlled device

Choose the **correct** answer from the options given below:

1. A-IV, B-III, C-II, D-I
2. A-I, B-II, C-III, D-IV
3. A-II, B-III, C-I, D-IV
4. A-III, B-IV, C-I, D-II

Options :

61198755649. 1  
 61198755650. 2  
 61198755651. 3  
 61198755652. 4

Question Number : 138 Question Id : 61198714281 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	BJT	I.	Five layers and four junction device
B.	MOSFET	II.	Power switching device with fast acting features and high power capability with voltage control features
C.	IGBT	III.	Voltage controlled device
D.	DIAC	IV.	Current controlled device

Choose the **correct** answer from the options given below:

1. A-IV, B-III, C-II, D-I
2. A-I, B-II, C-III, D-IV
3. A-II, B-III, C-I, D-IV
4. A-III, B-IV, C-I, D-II

Options :

61198755649. 1  
 61198755650. 2  
 61198755651. 3  
 61198755652. 4

Question Number : 139 Question Id : 61198714282 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Nyquist Criterion	I.	Polar Plots
B.	Bode Plot	II.	Rectangular Plots
C.	Phase Margin	III.	Amount of additional phase lag at the gain crossover frequency required to bring the system to the verge of instability
D.	Gain Margin	IV.	It is the reciprocal of the magnitude $ G(j\omega) $ at the frequency at which the phase angle is $-180^\circ$ .

Choose the **correct** answer from the options given below:

1. A-IV, B-III, C-II, D-I
2. A-II, B-I, C-IV, D-III
3. A-I, B-II, C-III, D-IV
4. A-II, B-I, C-III, D-IV

Options :

61198755653. 1  
 61198755654. 2  
 61198755655. 3  
 61198755656. 4

Question Number : 139 Question Id : 61198714282 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Nyquist Criterion	I.	Polar Plots
B.	Bode Plot	II.	Rectangular Plots
C.	Phase Margin	III.	Amount of additional phase lag at the gain crossover frequency required to bring the system to the verge of instability
D.	Gain Margin	IV.	It is the reciprocal of the magnitude $ G(j\omega) $ at the frequency at which the phase angle is $-180^\circ$ .

Choose the **correct** answer from the options given below:

1. A-IV, B-III, C-II, D-I
2. A-II, B-I, C-IV, D-III
3. A-I, B-II, C-III, D-IV
4. A-II, B-I, C-III, D-IV

Options :

61198755653. 1

61198755654. 2

61198755655. 3

61198755656. 4

Question Number : 140 Question Id : 61198714283 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Electrocardiogram (ECG)	I.	The rise or fall of the blood pressure from the normal blood pressure (120/80)
B.	Electroencephalogram (EEG)	II.	The biopotentials generated by the muscles of the heart
C.	Sphygmomanometer	III.	Used to measure the blood pressure
D.	Malfunctioning of the heart	IV.	The biopotential generated by the neuronal activity of the brain

Choose the **correct** answer from the options given below:

1. A-I, B-IV, C-III, D-II
2. A-II, B-IV, C-III, D-I
3. A-I, B-II, C-III, D-IV
4. A-III, B-II, C-IV, D-I

Options :

61198755657. 1

61198755658. 2

61198755659. 3

61198755660. 4

Question Number : 140 Question Id : 61198714283 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Electrocardiogram (ECG)	I.	The rise or fall of the blood pressure from the normal blood pressure (120/80)
B.	Electroencephalogram (EEG)	II.	The biopotentials generated by the muscles of the heart
C.	Sphygmomanometer	III.	Used to measure the blood pressure
D.	Malfunctioning of the heart	IV.	The biopotential generated by the neuronal activity of the brain

Choose the **correct** answer from the options given below:

1. A-I, B-IV, C-III, D-II
2. A-II, B-IV, C-III, D-I
3. A-I, B-II, C-III, D-IV
4. A-III, B-II, C-IV, D-I

**Options :**

61198755657. 1

61198755658. 2

61198755659. 3

61198755660. 4

**Sub-Section Number :**

2

**Sub-Section Id :**

611987555

**Question Shuffling Allowed :**

No

**Is Section Default? :**

No

**Question Id : 61198714284 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix**

**Question Numbers : (141 to 145)**

Question Label : Comprehension

Electronic circuits can be perceived as a set of electronic components connected in a manner to give the desired response. Electronic circuits can be implemented in discrete form or in integrated circuit (IC) form. In discrete circuits, electronic component are placed on a PCB and they are connected in a desired fashion using metal tracks on the PCB. On the other hand, in IC's all the desired components are placed on one single piece of silicon. The interconnection of these components are realized using on-chip metal lines. On the basis of the number of components on a silicon chip, ICs are classified as SSI, MSI, LSI and VLSI chips. Over the period of five decades, the technology advancement has lead to the increase in the number of transistors from tens of transistors per chip to billions of transistors per chip. This tremendous increase in the component density has been made possible by the scaling of MOS devices. The journey of technology scaling has been immensely challenging. However, intervention in terms of introduction of new materials, advanced process techniques and innovative device architectures has made this possible. Currently, state-of-art ICs are being manufactured with component density of the order of hundreds of million transistors per square millimeter silicon area.

**Sub questions**

**Question Number : 141 Question Id : 61198714285 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A semiconductor IC housing 100 to 10000 equivalent gates is classified as \_\_\_\_\_

1. SSI Package
2. MSI Package
3. LSI Package
4. VLSI Package

**Options :**

- 61198755661. 1
- 61198755662. 2
- 61198755663. 3
- 61198755664. 4

**Question Number : 142 Question Id : 61198714286 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Moore's law states that \_\_\_\_\_

1. The number of transistors on a chip triples every two years
2. The number of transistors on a chip doubles nearly every four years
3. The number of transistors on a chip doubles nearly every two years
4. The number of transistors on a chip triples every year

**Options :**

- 61198755665. 1
- 61198755666. 2
- 61198755667. 3
- 61198755668. 4

**Question Number : 143 Question Id : 61198714287 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

SCL Mohali, a semiconductor foundry owned by the Government of India, manufactures IC's at which of the technology nodes mentioned below?

1. 180 nm
2. 90 nm
3. 45 nm
4. 32 nm

**Options :**

- 61198755669. 1
- 61198755670. 2
- 61198755671. 3
- 61198755672. 4

**Question Number : 144 Question Id : 61198714288 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**  
Which of the following is the most advanced technology node in commercial production?

1. 32 nm
2. 14 nm
3. 7 nm
4. 3 nm

**Options :**

- 61198755673. 1
- 61198755674. 2
- 61198755675. 3
- 61198755676. 4

**Question Number : 145 Question Id : 61198714289 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**  
Currently, state of the art microprocessors are being manufactured using \_\_\_\_\_

1. BJT technology
2. NMOS technology
3. CMOS technology
4. Bi-CMOS technology

**Options :**

- 61198755677. 1
- 61198755678. 2
- 61198755679. 3
- 61198755680. 4

**Question Id : 61198714284 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix**

**Question Numbers : (141 to 145)**

Question Label : Comprehension

Electronic circuits can be perceived as a set of electronic components connected in a manner to give the desired response. Electronic circuits can be implemented in discrete form or in integrated circuit (IC) form. In discrete circuits, electronic component are placed on a PCB and they are connected in a desired fashion using metal tracks on the PCB. On the other hand, in IC's all the desired components are placed on one single piece of silicon. The interconnection of these components are realized using on-chip metal lines. On the basis of the number of components on a silicon chip, ICs are classified as SSI, MSI, LSI and VLSI chips. Over the period of five decades, the technology advancement has lead to the increase in the number of transistors from tens of transistors per chip to billions of transistors per chip. This tremendous increase in the component density has been made possible by the scaling of MOS devices. The journey of technology scaling has been immensely challenging. However, intervention in terms of introduction of new materials, advanced process techniques and innovative device architectures has made this possible. Currently, state-of-art ICs are being manufactured with component density of the order of hundreds of million transistors per square millimeter silicon area.

**Sub questions**

**Question Number : 141 Question Id : 61198714285 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A semiconductor IC housing 100 to 10000 equivalent gates is classified as \_\_\_\_\_

1. SSI Package
2. MSI Package
3. LSI Package
4. VLSI Package

**Options :**

- 61198755661. 1
- 61198755662. 2
- 61198755663. 3
- 61198755664. 4

**Question Number : 142 Question Id : 61198714286 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Moore's law states that \_\_\_\_\_

1. The number of transistors on a chip triples every two years
2. The number of transistors on a chip doubles nearly every four years
3. The number of transistors on a chip doubles nearly every two years
4. The number of transistors on a chip triples every year

**Options :**

- 61198755665. 1
- 61198755666. 2
- 61198755667. 3
- 61198755668. 4

**Question Number : 143 Question Id : 61198714287 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

SCL Mohali, a semiconductor foundry owned by the Government of India, manufactures IC's at which of the technology nodes mentioned below?

1. 180 nm
2. 90 nm
3. 45 nm
4. 32 nm

**Options :**

- 61198755669. 1
- 61198755670. 2
- 61198755671. 3
- 61198755672. 4

**Question Number : 144 Question Id : 61198714288 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**  
Which of the following is the most advanced technology node in commercial production?

1. 32 nm
2. 14 nm
3. 7 nm
4. 3 nm

**Options :**

- 61198755673. 1
- 61198755674. 2
- 61198755675. 3
- 61198755676. 4

**Question Number : 145 Question Id : 61198714289 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**  
Currently, state of the art microprocessors are being manufactured using \_\_\_\_\_

1. BJT technology
2. NMOS technology
3. CMOS technology
4. Bi-CMOS technology

**Options :**

- 61198755677. 1
- 61198755678. 2
- 61198755679. 3
- 61198755680. 4

**Sub-Section Number :**

3

**Sub-Section Id :**

611987556

**Question Shuffling Allowed :**

No

**Is Section Default? :**

No

**Question Id : 61198714290 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix**

**Question Numbers : (146 to 150)**

Question Label : Comprehension

A p-n junction is formed by doping boron impurity to form p-type semiconductor material with doping concentration of  $1 \times 10^{18} \text{ cm}^{-3}$  and doped with arsenic to form n-type semiconductor material having doping concentration of  $5 \times 10^{15} \text{ cm}^{-3}$ . It is the tendency of charge carrier to diffuse from higher concentration to lower concentration. As a result of it, the hole diffuse from p-side to n-side and electron diffuse from n-side to p-side. By doing so, holes leave behind the negative charge and electron leave behind the positive charge on either side of the junction and are immobile in nature. Therefore the junction is formed. The electric field attains its peak value at the junction while it is zero in the neutral n and p region. the current component due to drift of the carrier must exactly cancels the diffusion current. Therefore at the junction under thermal equilibrium condition the drift and the diffusion current density exactly balance each other. The contact potential at the junction is  $V_o = 0.796 \text{ V}$  and the width of depletion region ( $W = x_n + x_p$ ) is  $0.457 \mu\text{m}$ . To turn ON the p-n junction diode one must apply forward bias voltage equal to or greater than the contact potential  $V_o$ . assume area  $A = 10^{-4} \text{ cm}^2$

**Sub questions**

**Question Number : 146 Question Id : 61198714291 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the maximum electric field in a p-n junction under thermal equilibrium condition

1.  $-1.5 \times 10^5 \text{ V/cm}$
2.  $-5.0 \times 10^4 \text{ V/cm}$
3.  $-3.4 \times 10^4 \text{ V/cm}$
4.  $-1.2 \times 10^4 \text{ V/cm}$

**Options :**

- 61198755681. 1
- 61198755682. 2
- 61198755683. 3
- 61198755684. 4

**Question Number : 147 Question Id : 61198714292 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The p-n junction capacitance under zero bias condition is given by: assume area  $A = 10^{-4} \text{ cm}^2$

1.  $228.6 \times 10^{-14} \text{ F}$
2.  $1.28 \times 10^{-10} \text{ F}$
3.  $3.25 \times 10^{-14} \text{ F}$
4.  $582.6 \times 10^{-10} \text{ F}$

**Options :**

- 61198755685. 1
- 61198755686. 2
- 61198755687. 3
- 61198755688. 4

**Question Number : 148 Question Id : 61198714293 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The expression for diode current is given by

1. 
$$I_D = I_S \left( 1 - e^{\frac{-V_D}{\eta V_T}} \right)$$

2. 
$$I_D = I_S \left( e^{\frac{-V_D}{\eta V_T}} - 1 \right)$$

3. 
$$I_D = I_S \left( e^{\frac{+V_D}{\eta V_T}} - 1 \right)$$

4. 
$$I_D = I_S \left( 1 - e^{\frac{+V_D}{\eta V_T}} \right)$$

**Options :**

61198755689. 1

61198755690. 2

61198755691. 3

61198755692. 4

**Question Number : 149 Question Id : 61198714294 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

An inductance of 0.273 mH is now placed in parallel with p-n junction, the resonant frequency is given by approximately

1.  $\frac{20}{\pi} \text{ MHz}$

2.  $\frac{20}{\pi} \text{ KHz}$

3.  $\frac{2}{\pi} \text{ MHz}$

4.  $\frac{2}{\pi} \text{ KHz}$

**Options :**

61198755693. 1

61198755694. 2

61198755695. 3

61198755696. 4

**Question Number : 150 Question Id : 61198714295 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the depletion region width on n-side ( $x_n$ ) and on p-side ( $x_p$ ) respectively?

1. 0.455  $\mu\text{m}$  and 0.002  $\mu\text{m}$
2. 0.455  $\mu\text{m}$  and 0.0892  $\mu\text{m}$
3. 0.334  $\mu\text{m}$  and 0.123  $\mu\text{m}$
4. 0.521  $\mu\text{m}$  and 0.022  $\mu\text{m}$

**Options :**

61198755697. 1

61198755698. 2

61198755699. 3

61198755700. 4

**Question Id : 61198714290 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix**

**Question Numbers : (146 to 150)**

Question Label : Comprehension

A p-n junction is formed by doping boron impurity to form p-type semiconductor material with doping concentration of  $1 \times 10^{18} \text{ cm}^{-3}$  and doped with arsenic to form n-type semiconductor material having doping concentration of  $5 \times 10^{15} \text{ cm}^{-3}$ . It is the tendency of charge carrier to diffuse from higher concentration to lower concentration. As a result of it, the hole diffuse from p-side to n-side and electron diffuse from n-side to p-side. By doing so, holes leave behind the negative charge and electron leave behind the positive charge on either side of the junction and are immobile in nature. Therefore the junction is formed. The electric field attains its peak value at the junction while it is zero in the neutral n and p region. the current component due to drift of the carrier must exactly cancels the diffusion current. Therefore at the junction under thermal equilibrium condition the drift and the diffusion current density exactly balance each other. The contact potential at the junction is  $V_0 = 0.796 \text{ V}$  and the width of depletion region ( $W = x_n + x_p$ ) is  $0.457 \mu\text{m}$ . To turn ON the p-n junction diode one must apply forward bias voltage equal to or greater than the contact potential  $V_0$ . assume area  $A = 10^{-4} \text{ cm}^2$

**Sub questions**

**Question Number : 146 Question Id : 61198714291 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the maximum electric field in a p-n junction under thermal equilibrium condition

1.  $-1.5 \times 10^5 \text{ V/cm}$
2.  $-5.0 \times 10^4 \text{ V/cm}$
3.  $-3.4 \times 10^4 \text{ V/cm}$
4.  $-1.2 \times 10^4 \text{ V/cm}$

**Options :**

- 61198755681. 1
- 61198755682. 2
- 61198755683. 3
- 61198755684. 4

**Question Number : 147 Question Id : 61198714292 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The p-n junction capacitance under zero bias condition is given by: assume area  $A = 10^{-4} \text{ cm}^2$

1.  $228.6 \times 10^{-14} \text{ F}$
2.  $1.28 \times 10^{-10} \text{ F}$
3.  $3.25 \times 10^{-14} \text{ F}$
4.  $582.6 \times 10^{-10} \text{ F}$

**Options :**

- 61198755685. 1
- 61198755686. 2
- 61198755687. 3
- 61198755688. 4

**Question Number : 148 Question Id : 61198714293 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The expression for diode current is given by

1. 
$$I_D = I_S \left( 1 - e^{\frac{-V_D}{\eta V_T}} \right)$$

2. 
$$I_D = I_S \left( e^{\frac{-V_D}{\eta V_T}} - 1 \right)$$

3. 
$$I_D = I_S \left( e^{\frac{+V_D}{\eta V_T}} - 1 \right)$$

4. 
$$I_D = I_S \left( 1 - e^{\frac{+V_D}{\eta V_T}} \right)$$

**Options :**

61198755689. 1

61198755690. 2

61198755691. 3

61198755692. 4

**Question Number : 149 Question Id : 61198714294 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

An inductance of 0.273 mH is now placed in parallel with p-n junction, the resonant frequency is given by approximately

1.  $\frac{20}{\pi} \text{ MHz}$

2.  $\frac{20}{\pi} \text{ KHz}$

3.  $\frac{2}{\pi} \text{ MHz}$

4.  $\frac{2}{\pi} \text{ KHz}$

**Options :**

61198755693. 1

61198755694. 2

61198755695. 3

61198755696. 4

**Question Number : 150 Question Id : 61198714295 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

What is the depletion region width on n-side ( $x_n$ ) and on p-side ( $x_p$ ) respectively?

1. 0.455  $\mu\text{m}$  and 0.002  $\mu\text{m}$
2. 0.455  $\mu\text{m}$  and 0.0892  $\mu\text{m}$
3. 0.334  $\mu\text{m}$  and 0.123  $\mu\text{m}$
4. 0.521  $\mu\text{m}$  and 0.022  $\mu\text{m}$

**Options :**

61198755697. 1

61198755698. 2

61198755699. 3

61198755700. 4