

# National Testing Agency

<b>Question Paper Name :</b>	88 Electronic Science 5th Nov 2020 Shift 1
<b>Subject Name :</b>	88 Electronic Science
<b>Creation Date :</b>	2020-11-05 13:20:49
<b>Duration :</b>	180
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<b>Total Marks :</b>	300
<b>Display Marks:</b>	Yes

## 88 Electronic Science

<b>Group Number :</b>	1
<b>Group Id :</b>	53622816
<b>Group Maximum Duration :</b>	0
<b>Group Minimum Duration :</b>	180
<b>Show Attended Group? :</b>	No
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<b>Break time :</b>	0
<b>Group Marks :</b>	300
<b>Is this Group for Examiner? :</b>	No

## PART I General Paper

<b>Section Id :</b>	53622831
<b>Section Number :</b>	1
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	42
<b>Number of Questions to be attempted :</b>	42
<b>Section Marks :</b>	100
<b>Mark As Answered Required? :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	53622891
<b>Question Shuffling Allowed :</b>	Yes

**Question Id : 5362282311 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group  
Comprehension Questions : No  
Question Numbers : (1 to 5)  
Question Label : Comprehension**

The following table shows the total number of beds in each hospital in bracket and the number of patient admitted at different hospitals for a disease on a particular day. Based on the data in the table, answer the questions 1-5 :

Hospital Disease	Hospital A (100)	Hospital B (50)	Hospital C (100)	Hospital D (50)
Viral disease	30	15	35	10
Heart disease	35	10	30	10
Kidney disease	15	5	15	5
Liver disease	10	5	5	15

**Sub questions**

**Question Number : 1 Question Id : 5362282312 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which disease occupies highest number of beds in all the hospitals?

- (1) Heart Disease
- (2) Viral Disease
- (3) Kidney Disease
- (4) Liver Disease

**Options :**

- 5362289001. 1
- 5362289002. 2
- 5362289003. 3
- 5362289004. 4

**Question Number : 2 Question Id : 5362282313 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is the total percentage of unutilized beds?

- (1) 19.44%
- (2) 17.66%
- (3) 16.66%
- (4) 15.44%

**Options :**

- 5362289005. 1
- 5362289006. 2
- 5362289007. 3
- 5362289008. 4

**Question Number : 3 Question Id : 5362282314 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is the percentage of Liver disease patient admitted in all the hospitals from the total patients admitted?

- (1) 15%
- (2) 16%
- (3) 13%
- (4) 14%

**Options :**

- 5362289009. 1
- 5362289010. 2
- 5362289011. 3
- 5362289012. 4

**Question Number : 4 Question Id : 5362282315 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is the ratio of patient admitted for viral disease to kidney disease?

- (1) 9 : 4
- (2) 7 : 4
- (3) 8 : 3
- (4) 10 : 4

**Options :**

- 5362289013. 1
- 5362289014. 2
- 5362289015. 3
- 5362289016. 4

**Question Number : 5 Question Id : 5362282316 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is the ratio of total patients admitted to Hospital A to Hospital B?

- (1) 19 : 7
- (2) 17 : 7
- (3) 18 : 7
- (4) 7 : 17

**Options :**

- 5362289017. 1
- 5362289018. 2
- 5362289019. 3
- 5362289020. 4

**Question Id : 5362282311 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

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

Question Label : Comprehension

नीचे दी गई तालिका में प्रत्येक अस्पताल में बिस्तरों की संख्या कोष्ठक में दर्शाई गई है और किसी एक निश्चित दिन अलग-अलग अस्पतालों में अलग-अलग रोगों से पीड़ित भर्ती रोगियों की संख्या दर्शाई गई है।

अस्पताल रोग	अस्पताल A (100)	अस्पताल B (50)	अस्पताल C (100)	अस्पताल D (50)
विषाणुजनित रोग	30	15	35	10
हृदय रोग	35	10	30	10
गुर्दा रोग	15	5	15	5
यकृत रोग	10	5	5	15

### Sub questions

**Question Number : 1 Question Id : 5362282312 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

सभी अस्पतालों में किस रोग से पीड़ित भर्ती रोगियों की संख्या सर्वाधिक है ?

- (1) हृदय रोग (2) विषाणुजनित रोग  
(3) गुर्दा रोग (4) यकृत रोग

### Options :

5362289001. 1  
5362289002. 2  
5362289003. 3  
5362289004. 4

**Question Number : 2 Question Id : 5362282313 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

सभी अस्पतालों में कुल कितने प्रतिशत बिस्तर खाली हैं ?

- (1) 19.44% (2) 17.66%  
(3) 16.66% (4) 15.44%

### Options :

5362289005. 1  
5362289006. 2  
5362289007. 3  
5362289008. 4

**Question Number : 3 Question Id : 5362282314 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

सभी अस्पतालों में यकृत रोग से पीड़ित भर्ती रोगी कुल भर्ती रोगियों का कितने प्रतिशत हैं?

- (1) 15% (2) 16%  
(3) 13% (4) 14%

**Options :**

5362289009. 1  
5362289010. 2  
5362289011. 3  
5362289012. 4

**Question Number : 4 Question Id : 5362282315 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

विषाणुजनित रोगों से पीड़ित भर्ती रोगियों और गुर्दा रोग से पीड़ित भर्ती रोगियों का अनुपात क्या है?

- (1) 9 : 4 (2) 7 : 4  
(3) 8 : 3 (4) 10 : 4

**Options :**

5362289013. 1  
5362289014. 2  
5362289015. 3  
5362289016. 4

**Question Number : 5 Question Id : 5362282316 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

अस्पताल A और अस्पताल B में भर्ती कुल रोगियों का अनुपात क्या है?

- (1) 19 : 7 (2) 17 : 7  
(3) 18 : 7 (4) 7 : 17

**Options :**

5362289017. 1  
5362289018. 2  
5362289019. 3  
5362289020. 4

**Sub-Section Number :**

2

**Sub-Section Id :**

53622892

**Question Shuffling Allowed :**

Yes

**Question Number : 6 Question Id : 5362282317 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is the focus of concern in understanding level teaching?

- (1) Promotion of scope for seeking of relationship among facts and ideas.
- (2) Encouraging recall and recognition of facts and information.
- (3) Raising of problems and seeing solutions to problems so presented.
- (4) Developing a sense of happiness and ownership in learning.

**Options :**

- 5362289021. 1
- 5362289022. 2
- 5362289023. 3
- 5362289024. 4

**Question Number : 6 Question Id : 5362282317 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

अवबोध स्तर शिक्षण में महत्वपूर्ण क्या है?

- (1) तथ्यों और विचारों के बीच संबंध के देखने के दायरे का संवर्धन
- (2) तथ्यों और सूचना के स्मरण और अभिमान को प्रोत्साहित करना
- (3) समस्याओं का पता लगाना और इस प्रकार प्रस्तुत समस्याओं के समाधानों की खोज
- (4) अधिगम में आनन्द और उससे जुड़े रहने की भावना का विकास करना

**Options :**

- 5362289021. 1
- 5362289022. 2
- 5362289023. 3
- 5362289024. 4

**Question Number : 7 Question Id : 5362282318 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following emotional characteristics are of crucial significance in adolescent learning?

- (1) Feeling of group belongingness
- (2) Hero-worship and sentiments
- (3) Expanding emotional ties with those in the neighbourhood
- (4) Dependence processes and making friends

**Options :**

- 5362289025. 1
- 5362289026. 2
- 5362289027. 3
- 5362289028. 4

**Question Number : 7 Question Id : 5362282318 Question Type : MCQ Option Shuffling : No Is Question**

**Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

किशोर अधिगम में निम्नलिखित में से कौन-कौन सी भावनात्मक विशेषताएं विर्णायक महत्व की हैं?

- (1) समूह से तदीयत्व की भावना
- (2) नायक-पूजा और संवेदनाये
- (3) पड़ोसियों के साथ भावनात्मक संबंधों का विस्तार
- (4) निर्भरता उन्मुखता और मित्र बनाना

**Options :**

5362289025. 1  
5362289026. 2  
5362289027. 3  
5362289028. 4

**Question Number : 8 Question Id : 5362282319 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

During teaching when a teacher uses process questions which of the following types will have dominance?

- (A) Direct questions
- (B) Higher order questions
- (C) Convergent questions
- (D) Indirect questions
- (E) Concept based questions

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) (B), (D) and (E) only |

**Options :**

5362289029. 1  
5362289030. 2  
5362289031. 3  
5362289032. 4

**Question Number : 8 Question Id : 5362282319 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

शिक्षण के दौरान जब कोई अध्यापक प्रक्रिया प्रश्न का प्रयोग करता है तो निम्नलिखित में से कौन-से प्रकार के प्रश्नों का प्रभुत्व होगा ?

- (A) प्रत्यक्ष प्रश्न
- (B) उच्चतर क्रम के प्रश्न
- (C) अभिसारी प्रश्न
- (D) अप्रत्यक्ष प्रश्न
- (E) संकल्पना आधारित प्रश्न

नीचे दिये गये विकल्पों में से सही उत्तर चुनिये :

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

**Options :**

- 5362289029. 1
- 5362289030. 2
- 5362289031. 3
- 5362289032. 4

**Question Number : 9 Question Id : 5362282320 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements :

Statement I : Tutorials, group discussions and question-answer sessions are dialogic and are part of direct teaching methods.

Statement II : Project work, Laboratory work, simulation and role playing are action based and are part of indirect teaching methods.

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**



5362289033. 1  
5362289034. 2  
5362289035. 3  
5362289036. 4

**Question Number : 9 Question Id : 5362282320 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं :

कथन (I) : अनुशिक्षण, समूह परिचर्चा और प्रश्न-उत्तर सत्र संवादात्मक हैं और प्रत्यक्ष शिक्षण विधि के अंग हैं।

कथन (II) : परियोजना कार्य, प्रयोगशाला कार्य, अनुरूपण और भूमिका निर्वहन क्रिया आधारित हैं और अप्रत्यक्ष शिक्षण विधि के अंग हैं।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सर्वाधिक उपयुक्त उत्तर चुनें :

- (1) कथन I और II दोनों सही हैं।
- (2) कथन I और II दोनों सही नहीं हैं।
- (3) कथन I सही है, किंतु कथन II सही नहीं है।
- (4) कथन I सही नहीं है किंतु कथन II सही है।

**Options :**

5362289033. 1  
5362289034. 2  
5362289035. 3  
5362289036. 4

**Question Number : 10 Question Id : 5362282321 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements :

Statement I : Maximum performance tests are designed to assess the upper limits of the examinee's knowledge and abilities.

Statement II : Typical response tests are designed to measure the behaviour and characteristics of examinees.

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

5362289037. 1
5362289038. 2
5362289039. 3
5362289040. 4

**Question Number : 10 Question Id : 5362282321 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं :

कथन (I) : अधिकतम निष्पादन परीक्षण परीक्षार्थियों के ज्ञान और योग्यताओं की उच्चतम सीमाओं का आकलन करने के लिए अभिकल्पित होती हैं।

कथन (II) : विशिष्ट उत्तर परीक्षण परीक्षार्थियों के व्यवहार और विशेषताओं के मापन के लिए अभिकल्पित होती हैं।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सर्वाधिक उपयुक्त उत्तर चुनें :

- (1) कथन I और II दोनों सही हैं।
- (2) कथन I और II दोनों सही नहीं हैं।
- (3) कथन I सही है, किंतु कथन II सही नहीं है।
- (4) कथन I सही नहीं है किंतु कथन II सही है।

**Options :**

5362289037. 1
5362289038. 2
5362289039. 3
5362289040. 4

**Question Number : 11 Question Id : 5362282322 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following methods is used in empirical researches?

- |                       |                       |
|-----------------------|-----------------------|
| (1) Inductive method  | (2) Deductive method  |
| (3) Initiative method | (4) Scientific method |

**Options :**

- 5362289041. 1
- 5362289042. 2
- 5362289043. 3
- 5362289044. 4

**Question Number : 11 Question Id : 5362282322 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

इन्द्रियातुभव शोध में निम्नलिखित में से कौन-सी विधि का प्रयोग होता है?

- |                           |                     |
|---------------------------|---------------------|
| (1) आगमनात्मक विधि        | (2) निगमनात्मक विधि |
| (3) अंतः प्रज्ञात्मक विधि | (4) वैज्ञानिक विधि  |

**Options :**

- 5362289041. 1
- 5362289042. 2
- 5362289043. 3
- 5362289044. 4

**Question Number : 12 Question Id : 5362282323 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

When the independent variable is explored rather than manipulated, to observe the effect on dependent variable, the method of research is called,

- |                          |                               |
|--------------------------|-------------------------------|
| (1) Ex-post facto method | (2) Experimental method       |
| (3) Case study method    | (4) Descriptive survey method |

**Options :**

- 5362289045. 1
- 5362289046. 2
- 5362289047. 3
- 5362289048. 4

**Question Number : 12 Question Id : 5362282323 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

जब आश्रित चर पर प्रभाव प्रेक्षित करने हेतु निराश्रित चर में जोड़ तोड़ करने के बजाय उसे चुना जाता है तो शोध की इस विधि को कहा जाता है :

- |                     |                               |
|---------------------|-------------------------------|
| (1) कार्योत्तर विधि | (2) प्रायोगिक विधि            |
| (3) केस अध्ययन विधि | (4) विवरणात्मक सर्वेक्षण विधि |

**Options :**

- 5362289045. 1
- 5362289046. 2
- 5362289047. 3
- 5362289048. 4

**Question Number : 13 Question Id : 5362282324 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Identify the qualitative research characteristics from the following :

- (A) Exploring a problem and developing a detailed understanding of a central phenomenon.
- (B) Having the literature review play a minor role but justifying the problem.
- (C) Describing a research problem through a description of trends.
- (D) Collecting numeric data from a large number of people using instruments with present questions.
- (E) Collecting data based on words from a small number of individuals.

Choose the correct answer from the options given below :

- |                           |                           |
|---------------------------|---------------------------|
| (1) (A), (B) and (C) only | (2) (A), (B) and (E) only |
| (3) (B), (C) and (D) only | (4) (C), (D) and (E) only |

**Options :**

- 5362289049. 1
- 5362289050. 2
- 5362289051. 3
- 5362289052. 4

**Question Number : 13 Question Id : 5362282324 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

निम्नलिखित में से गुणात्मक शोध विशेषताओं की पहचान कीजिए :

- (A) किसी समस्या को चुनना और केन्द्रीय परिघटना का विस्तृत अवबोध विकसित करना
- (B) साहित्य समीक्षा का एक सूक्ष्म भूमिका निभाना परंतु समस्या को तर्क संगत बताना
- (C) प्रवृत्तियों के विवरण के माध्यम से किसी शोध समस्या का वर्णन।
- (D) पूर्व-निर्धारित प्रश्नों वाले साधनों का प्रयोग कर बड़ी संख्या में लोगों से संख्यात्मक आँकड़े एकत्रित करना।
- (E) कम संख्या में व्यक्तियों से शब्दों पर आधारित आँकड़े एकत्रित करना।

नीचे दिये गये विकल्पों में से सही उत्तर चुनिये :

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

**Options :**

- 5362289049. 1
- 5362289050. 2
- 5362289051. 3
- 5362289052. 4

**Question Number : 14 Question Id : 5362282325 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Identify the probability sampling procedures from the following :

- (A) Quota sampling
- (B) Stratified sampling
- (C) Dimensional sampling
- (D) Cluster sampling
- (E) Systematic sampling

Choose the correct answer from the options given below :

- (1) (A), (B) and (C) only
- (2) (B), (C) and (D) only
- (3) (B), (D) and (E) only
- (4) (C), (D) and (E) only

**Options :**

- 5362289053. 1
- 5362289054. 2

5362289055. 3

5362289056. 4

**Question Number : 14 Question Id : 5362282325 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

निम्नलिखित में से प्रायिकता प्रतिचयन प्रक्रियाओं की पहचान कीजिए:

- (A) आनुपातिक प्रतिचयन
- (B) स्तरीकृत प्रतिचयन
- (C) आयामी प्रतिचयन
- (D) समूह प्रतिचयन
- (E) व्यवस्थित प्रतिचयन

नीचे दिये गये विकल्पों में से सही उत्तर चुनिये :

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

**Options :**

5362289053. 1

5362289054. 2

5362289055. 3

5362289056. 4

**Question Number : 15 Question Id : 5362282326 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements :

Statement I : In research, 'Null hypothesis' when rejected, offers the scope for accepting the alternative or substantive research hypothesis.

Statement II : When the Null hypothesis is rejected, there will be chances for committing 'Beta' rather than 'Alpha' error.

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

- 5362289057. 1
- 5362289058. 2
- 5362289059. 3
- 5362289060. 4

**Question Number : 15 Question Id : 5362282326 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं :

कथन (I) : शोध में जब 'शून्य परिकल्पना' अस्वीकृत होती है, तो वैकल्पिक या मौलिक शोध परिकल्पना को स्वीकार करने की गुंजाइश होती है।

कथन (II) : जब 'शून्य परिकल्पना' अस्वीकृत होती है, तो 'अल्फा' त्रुटि होने के बजाय 'बीटा' त्रुटि होने की संभावना होगी।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सर्वाधिक उपयुक्त उत्तर चुनें :

- (1) कथन I और II दोनों सही हैं।
- (2) कथन I और II दोनों सही नहीं हैं।
- (3) कथन I सही है, किंतु कथन II सही नहीं है।
- (4) कथन I सही नहीं है किंतु कथन II सही है।

**Options :**

- 5362289057. 1
- 5362289058. 2
- 5362289059. 3
- 5362289060. 4

**Question Number : 16 Question Id : 5362282327 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The entry of new media has made online learning :

- |                            |                                   |
|----------------------------|-----------------------------------|
| (1) Secondary source based | (2) Dependent on personal sources |
| (3) Institution-centric    | (4) Independent                   |

**Options :**

- 5362289061. 1
- 5362289062. 2
- 5362289063. 3
- 5362289064. 4

**Question Number : 16 Question Id : 5362282327 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



नए मीडिया के आगमन ने ऑनलाइन अधिगम को कैसा बना दिया है?

- |                           |                            |
|---------------------------|----------------------------|
| (1) द्वितीयक स्रोत आधारित | (2) निजी स्रोतों पर आधारित |
| (3) संस्था-केन्द्रित      | (4) स्वतंत्र               |

**Options :**

- 5362289061. 1
- 5362289062. 2
- 5362289063. 3
- 5362289064. 4

**Question Number : 17 Question Id : 5362282328 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Removal of communication barriers in a classroom will result in

- (A) Clear enunciation of specific instructional behaviours
- (B) A climate of purposeful student interaction.
- (C) Promotion of personality cult.
- (D) The irrelevance of illustrative examples.

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 (D) only |

**Options :**

- 5362289065. 1
- 5362289066. 2
- 5362289067. 3
- 5362289068. 4

**Question Number : 17 Question Id : 5362282328 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

कक्षा में संप्रेषण बाधाओं को हटाने का परिणाम होगा:

- (A) विशिष्ट अनुदेशात्मक व्यवहारों का स्पष्ट निरूपण।
- (B) विद्यार्थियों के बीच सोद्देश्य अन्तःक्रिया का वातावरण।
- (C) व्यक्तित्व वादी सोच का संवर्धन।
- (D) निदर्शी उदाहरणों की अप्रासंगिकता।

नीचे दिये गये विकल्पों में से सही उत्तर चुनिये :

- |                     |                     |
|---------------------|---------------------|
| (1) केवल (A) और (B) | (2) केवल (B) और (C) |
| (3) केवल (C) और (D) | (4) केवल (A) और (D) |

**Options :**

- 5362289065. 1
- 5362289066. 2
- 5362289067. 3
- 5362289068. 4

**Question Number : 18 Question Id : 5362282329 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R) :

Assertion (A) : Repeating more and more the same message will make it important.

Reasons (R) : 'Don't use two words when one will do' is the guiding principle that works.

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 :**

- 5362289069. 1
- 5362289070. 2
- 5362289071. 3
- 5362289072. 4

**Question Number : 18 Question Id : 5362282329 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं जिनमें से एक को अभिकथन (A) और दूसरे को तर्क (R) कहा गया है।

अभिकथन (A) : एक ही संदेश को बार-बार दोहराना उसे महत्वपूर्ण बनाएगा।

तर्क (R) : 'जब एक शब्द से ही काम चल जाए तो दो शब्दों का प्रयोग न करें', यह एक मार्गदर्शी सिद्धांत है, जो सही है।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सर्वाधिक उपयुक्त उत्तर चुनें :

- (1) (A) और (R) दोनों सही हैं और (R), (A) की सही व्याख्या है।
- (2) (A) और (R) दोनों सही हैं परन्तु (R), (A) की सही व्याख्या नहीं है।
- (3) (A) सही है परन्तु (R) सही नहीं है।
- (4) (A) सही नहीं है परन्तु (R) सही है।

**Options :**

- 5362289069. 1
- 5362289070. 2
- 5362289071. 3
- 5362289072. 4

**Question Number : 19 Question Id : 5362282330 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Identify the correct sequence of phases in communication development :

- (A) Acta Diurna
- (B) Cave paintings
- (C) Wooden blocks for printing
- (D) Development of languages
- (E) Metal printing

Choose the correct answer from the options given below :

- (1) (A), (B), (D), (C), (E)
- (2) (B), (D), (C), (A), (E)
- (3) (C), (D), (E), (A), (B)
- (4) (D), (E), (A), (B), (C)

**Options :**

- 5362289073. 1
- 5362289074. 2
- 5362289075. 3
- 5362289076. 4

**Question Number : 19 Question Id : 5362282330 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

सम्प्रेषण विकास के चरण में के सही क्रम की पहचान करें :

- (A) शाही रोजगमचा
- (B) गुफा चित्र
- (C) मुद्रण के लिए काष्ठ ब्लॉक्स
- (D) भाषाओं का विकास
- (E) धातु मुद्रण

नीचे दिए गए विकल्पों में से सही उत्तर चुनिये :

- (1) (A), (B), (D), (C), (E)
- (2) (B), (D), (C), (A), (E)
- (3) (C), (D), (E), (A), (B)
- (4) (D), (E), (A), (B), (C)

**Options :**

- 5362289073. 1
- 5362289074. 2
- 5362289075. 3
- 5362289076. 4

**Question Number : 20 Question Id : 5362282331 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

- List I  
(Mode of Communication)
- (A) One – to – one  
(B) One – to – many  
(C) Many – to – many  
(D) One – to – none

- List II  
(Type of communication)
- (I) Network (transactional)  
(II) Intra-personal  
(III) Inter-personal  
(IV) Mass Communication especially print

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 :**

5362289077. 1  
5362289078. 2  
5362289079. 3  
5362289080. 4

**Question Number : 20 Question Id : 5362282331 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

सूची-I को सूची-II से सुमेलित कीजिए :

- सूची-I  
(सम्प्रेषण विधि)
- (A) एक और एक के बीच  
(B) एक और कई के बीच  
(C) कई और कई के बीच  
(D) एक और किसी के बीच नहीं

- सूची-II  
(सम्प्रेषण का प्रकार)
- (I) नेटवर्क (संव्यवहारात्मक)  
(II) अंतरा – वैयक्तिक  
(III) अंतर-वैयक्तिक  
(IV) जन संचार, विशेषकर मुद्रण

नीचे दिये गये विकल्पों में से सही उत्तर चुनिए :

- (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 :**

5362289077. 1  
5362289078. 2

5362289079. 3

5362289080. 4

**Question Number : 21 Question Id : 5362282332 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is the actual profit when the profit on selling price is 25%?

(1) 33.33%

(2) 30.33%

(3) 25%

(4) 20%

**Options :**

5362289081. 1

5362289082. 2

5362289083. 3

5362289084. 4

**Question Number : 21 Question Id : 5362282332 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

यदि विक्रय मूल्य पर लाभ 25% है तो वास्तविक लाभ क्या होगी ?

(1) 33.33%

(2) 30.33%

(3) 25%

(4) 20%

**Options :**

5362289081. 1

5362289082. 2

5362289083. 3

5362289084. 4

**Question Number : 22 Question Id : 5362282333 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is the remainder when  $4^5$  is divided by 15?

(1) 4

(2) 5

(3) 8

(4) 11

**Options :**

5362289085. 1

5362289086. 2

5362289087. 3

5362289088. 4

**Question Number : 22 Question Id : 5362282333 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

Correct Marks : 2 Wrong Marks : 0

4<sup>5</sup> को 15 से विभाजित करने पर शेषफल क्या होगा ?

(1) 4

(2) 5

(3) 8

(4) 11

Options :

5362289085. 1

5362289086. 2

5362289087. 3

5362289088. 4

Question Number : 23 Question Id : 5362282334 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

What is the missing number?

4, -8, 16, (?), 64, -128

(1) -24

(2) -32

(3) 24

(4) 30

Options :

5362289089. 1

5362289090. 2

5362289091. 3

5362289092. 4

Question Number : 23 Question Id : 5362282334 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

निम्नांकित में प्रश्न वाचक चिह्न (?) के स्थान पर कौन सी संख्या आएगी ?

4, -8, 16, (?), 64, -128

(1) -24

(2) -32

(3) 24

(4) 30

Options :

5362289089. 1

5362289090. 2

5362289091. 3

5362289092. 4

Question Number : 24 Question Id : 5362282335 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0



Given below are two statements :

Statement I : Sometimes, Ratio has units.

Statement II : When two ratios are equal, a proportion is formed.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

**Options :**

5362289093. 1

5362289094. 2

5362289095. 3

5362289096. 4

**Question Number : 24 Question Id : 5362282335 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं :

कथन (I) : कभी-कभी अनुपात की इकाइयां होती हैं।

कथन (II) : जब दो अनुपात बराबर होते हैं, तो एक समानुपात का निर्माण होता है।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सही उत्तर चुनें :

- (1) कथन I और II दोनों सही हैं।
- (2) कथन I और II दोनों गलत हैं।
- (3) कथन I सत्य है किंतु कथन II गलत है।
- (4) कथन I असत्य है किंतु कथन II सही है।

**Options :**

5362289093. 1

5362289094. 2

5362289095. 3

5362289096. 4

**Question Number : 25 Question Id : 5362282336 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements :

Statement I : Co-primes are the numbers which have only 1 as their common factor.

Statement II : Factorisation is the decomposition of a number into the other numbers which when added together will give the original number.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

**Options :**

5362289097. 1  
5362289098. 2  
5362289099. 3  
5362289100. 4

**Question Number : 25 Question Id : 5362282336 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं :

कथन (I) : सह-अभाज्य संख्याएं वे हैं जिनका उभयनिष्ठ गुणनखंड मात्र 1 होता है।

कथन (II) : गुणनखंड करने की प्रक्रिया में किसी संख्या को अन्य संख्याओं में विभाजित किया जाता है जिनमें एक साथ जोड़ने पर मूल संख्या प्राप्त होती है।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सही उत्तर चुनें :

- (1) कथन I और II दोनों सही हैं।
- (2) कथन I और II दोनों गलत हैं।
- (3) कथन I सत्य है किंतु कथन II गलत है।
- (4) कथन I असत्य है किंतु कथन II सही है।

**Options :**

5362289097. 1  
5362289098. 2  
5362289099. 3  
5362289100. 4

**Question Number : 26 Question Id : 5362282337 Question Type : MCQ Option Shuffling : No Is Question**

**Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In terms of the relationship indicated below, which word will correctly pair to replace the questions mark?

Worse : Bad :: Doting : \_\_\_\_\_

- |               |             |
|---------------|-------------|
| (1) Reverence | (2) Fond    |
| (3) Hate      | (4) Dislike |

**Options :**

- 5362289101. 1
- 5362289102. 2
- 5362289103. 3
- 5362289104. 4

**Question Number : 26 Question Id : 5362282337 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दिए गए संबंध की दृष्टि से प्रश्न वाचक चिह्न के स्थान पर कौन सा शब्द रखने से सही युग्म बनेगा ?

ज्यादा बुरा : बुरा :: मोहित : \_\_\_\_\_

- |             |           |
|-------------|-----------|
| (1) श्रद्धा | (2) शोक   |
| (3) घृणा    | (4) अरुचि |

**Options :**

- 5362289101. 1
- 5362289102. 2
- 5362289103. 3
- 5362289104. 4

**Question Number : 27 Question Id : 5362282338 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below is a proposition :

'The weather is very cold today'.

Which one of the following, according to Nyāya, is the correct option?

- (A) Samanya lakshana
- (B) Yogaja
- (C) Jnānalakshana
- (D) Sannikarsha

Choose the most appropriate answer from the options given below :

- |              |              |
|--------------|--------------|
| (1) (A) only | (2) (B) only |
| (3) (C) only | (4) (D) only |

**Options :**

5362289105. 1  
5362289106. 2  
5362289107. 3  
5362289108. 4

**Question Number : 27 Question Id : 5362282338 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे एक प्रतिज्ञप्ति दी गई है :

‘आज मौसम बहुत ठंडा है।’

न्याय के अनुसार इसका विवरण देने हेतु निम्नलिखित में से कौन सा सही विकल्प है?

- (A) सामान्य लक्षण
- (B) योग्य
- (C) ज्ञान लक्षण
- (D) सन्निकर्ष

नीचे दिये गये विकल्पों से सही उत्तर चुनिये :

- (1) केवल (A)
- (2) केवल (B)
- (3) केवल (C)
- (4) केवल (D)

**Options :**

5362289105. 1  
5362289106. 2  
5362289107. 3  
5362289108. 4

**Question Number : 28 Question Id : 5362282339 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange in sequence the following theory of causality in Aristotle's philosophy :

- (A) Material cause
- (B) Efficient cause
- (C) Formal cause
- (D) Final cause

Choose the correct answer from the options given below :

- (1) (A), (C), (B), (D)
- (2) (A), (D), (B), (C)
- (3) (C), (B), (A), (D)
- (4) (A), (B), (C), (D)

**Options :**

5362289109. 1  
5362289110. 2  
5362289111. 3  
5362289112. 4

Question Number : 28 Question Id : 5362282339 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

अस्तु के दर्शन में निम्नलिखित कारणता सिद्धांतों को क्रमानुसार रखें :

- (A) भौतिक कारण
- (B) सक्षम कारण
- (C) आकारिक कारण
- (D) अंतिम कारण

नीचे दिये गये विकल्पों से सही उत्तर चुनिये :

- (1) (A), (C), (B), (D)
- (2) (A), (D), (B), (C)
- (3) (C), (B), (A), (D)
- (4) (A), (B), (C), (D)

Options :

- 5362289109. 1
- 5362289110. 2
- 5362289111. 3
- 5362289112. 4

Question Number : 29 Question Id : 5362282340 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Given below are two statements :

Statement I : Some examinations are too long.

Some examinations are too difficult.

Therefore, some examinations are too long and too difficult.

Statement II : Some dogs chase cats.

All dogs have fleas.

Therefore, some cat-chasing dogs have fleas.

In the light of the above statements, choose the correct answer from the options given below:

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

Options :

- 5362289113. 1
- 5362289114. 2
- 5362289115. 3

5362289116.4

**Question Number : 29 Question Id : 5362282340 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं :

कथन (I) : कुछ परीक्षाएं बहुत लम्बी होती हैं।

कुछ परीक्षाएं बहुत कठिन होती हैं।

अतः, कुछ परीक्षाएं बहुत लम्बी और बहुत कठिन होती हैं।

कथन (II) : कुछ कुत्ते बिल्लियों का पीछा करते हैं।

सभी कुत्तों में पिस्सू होते हैं।

अतः, बिल्लियों का पीछा करने वाले कुछ कुत्तों में पिस्सू होते हैं।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सही उत्तर चुनें :

- (1) कथन I और II दोनों सही हैं।
- (2) कथन I और II दोनों गलत हैं।
- (3) कथन I सत्य है किंतु कथन II गलत है।
- (4) कथन I असत्य है किंतु कथन II सही है।

**Options :**

5362289113.1

5362289114.2

5362289115.3

5362289116.4

**Question Number : 30 Question Id : 5362282341 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements :

Statement I : Human reason has this peculiar fate that it reaches at a stage when it can neither answer certain questions nor can it ignore such questions.

Statement II : Human reason, by its own nature, is not competent to resolve certain questions concerning the ultimate reality.

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

5362289117. 1
5362289118. 2
5362289119. 3
5362289120. 4

**Question Number : 30 Question Id : 5362282341 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं :

कथन (I) : मानव तर्क का यह दुर्भाग्य है कि वह ऐसी स्थिति में पहुँच जाता है जब वह कतिपय प्रश्नों का न तो उत्तर दे सकता है और न उनकी अनदेखी कर सकता है।

कथन (II) : मानव तर्क अपने स्वभाव से चरम यथार्थ से संबंधित कतिपय प्रश्नों को हल करने में सक्षम नहीं है।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सर्वाधिक उपयुक्त उत्तर चुनें :

- (1) कथन I और II दोनों सही हैं।
- (2) और II दोनों सही नहीं हैं।
- (3) सही है, किंतु कथन II सही नहीं है।
- (4) सही नहीं है किंतु कथन II सही है।

**Options :**

5362289117. 1
5362289118. 2
5362289119. 3
5362289120. 4

**Question Number : 31 Question Id : 5362282342 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

MOODLE is abbreviation of

- (1) Modular Object-Oriented Distance Learning Environment
- (2) Modular Object-Oriented Dynamic Learning Environment
- (3) Modular Object-Oriented Distance Legislative Environment
- (4) Modular Object-Oriented Distance Legal Environment

**Options :**

- 5362289121. 1
- 5362289122. 2
- 5362289123. 3
- 5362289124. 4

**Question Number : 31 Question Id : 5362282342 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

MOODLE निम्नलिखित में से किसका संक्षिप्त नाम है?

- (1) मोड्युलर ऑब्जेक्ट-ओरिएंटेड डिस्टेंस लर्निंग एन्वायरनमेंट
- (2) मोड्युलर ऑब्जेक्ट-ओरिएंटेड डायनामिक लर्निंग एन्वायरनमेंट
- (3) मोड्युलर ऑब्जेक्ट-ओरिएंटेड डिस्टेंस लेजिस्लेटिव एन्वायरनमेंट
- (4) मोड्युलर ऑब्जेक्ट-ओरिएंटेड डिस्टेंस लीगल एन्वायरनमेंट

**Options :**

- 5362289121. 1
- 5362289122. 2
- 5362289123. 3
- 5362289124. 4

**Question Number : 32 Question Id : 5362282343 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Extra browser window of commercials that open automatically on browsing web pages is called

- |              |            |
|--------------|------------|
| (1) Spam     | (2) Virus  |
| (3) Phishing | (4) Pop-up |

**Options :**

- 5362289125. 1
- 5362289126. 2
- 5362289127. 3
- 5362289128. 4

**Question Number : 32 Question Id : 5362282343 Question Type : MCQ Option Shuffling : No Is Question**



**Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

कॉमर्शियल्स की अतिरिक्त ब्राउजर विंडो, जो वेब पेज ब्राउजिंग करते समय स्वतः खुलती है, क्या कहलाती है?

- |            |            |
|------------|------------|
| (1) स्पैम  | (2) वायरस  |
| (3) फिशिंग | (4) पॉप-अप |

**Options :**

- 5362289125. 1
- 5362289126. 2
- 5362289127. 3
- 5362289128. 4

**Question Number : 33 Question Id : 5362282344 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements :

Statement I : World Wide Web is not an example of client-server technology.

Statement II : FTP is a service available on the internet.

In the light of the above statements, choose the correct answer from the options given below:

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

**Options :**

- 5362289129. 1
- 5362289130. 2
- 5362289131. 3
- 5362289132. 4

**Question Number : 33 Question Id : 5362282344 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं :

कथन (I) : वर्ल्ड वाइड वेब क्लाउंट-सर्वर टेकनोलॉजी का उदाहरण नहीं है।

कथन (II) : एफ टी पी इंटरनेट पर उपलब्ध एक सेवा है।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सही उत्तर चुनें :

- (1) कथन I और II दोनों सही हैं।
- (2) कथन I और II दोनों गलत हैं।
- (3) कथन I सत्य है किंतु कथन II गलत है।
- (4) कथन I असत्य है किंतु कथन II सही है।

**Options :**

- 5362289129. 1
- 5362289130. 2
- 5362289131. 3
- 5362289132. 4

**Question Number : 34 Question Id : 5362282345 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements is/are true?

- (A) Fibre optic cables are wooden fibres to provide high quality transmission.
- (B) Wireless communication provides anytime, anywhere connection to both computers and telephones.
- (C) Mobile phones are capable of providing voice communication and also digital messaging service.

Choose the correct answer from the options given below :

- (1) (A) and (C) only
- (2) (B) and (C) only
- (3) (A) and (B) only
- (4) (C) only

**Options :**

- 5362289133. 1
- 5362289134. 2
- 5362289135. 3
- 5362289136. 4

**Question Number : 34 Question Id : 5362282345 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

निम्नलिखित में से कौनसा/से कथन सही है/हैं?

- (A) फाइबर ऑप्टिक केबल्स उच्च गुणवत्ता का प्रेषण उपलब्ध कराने के लिए हैं।
- (B) वायरलेस कम्युनिकेशन कंप्यूटर और टेलीफोन दोनों को किसी भी समय और किसी भी स्थान पर कनेक्शन प्रदान करता है।
- (C) मोबाइल फोन वॉयस कम्युनिकेशन और डिजिटल मैसेजिंग सर्विस दोनों की सुविधा प्रदान करने में सक्षम हैं।

नीचे दिये गये विकल्पों से सही उत्तर चुनिये :

- (1) केवल (A) और (C)
- (2) केवल (B) और (C)
- (3) केवल (A) और (B)
- (4) केवल (C)

**Options :**

- 5362289133. 1
- 5362289134. 2
- 5362289135. 3
- 5362289136. 4

**Question Number : 35 Question Id : 5362282346 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Consider the following technologies :

- (A) Microprocessor
- (B) Transistor
- (C) Vacuum Tube
- (D) Artificial Intelligence

Arrange the above technologies of different computer generations in the order they have been used. Start from the technology that was used in first generation.

Choose the correct answer from the options given below :

- (1) (C), (A), (B), (D)
- (2) (C), (B), (A), (D)
- (3) (B), (C), (A), (D)
- (4) (C), (B), (D), (A)

**Options :**

- 5362289137. 1
- 5362289138. 2
- 5362289139. 3
- 5362289140. 4

**Question Number : 35 Question Id : 5362282346 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

निम्नलिखित प्रौद्योगिकी विधाओं पर विचार करें :

- (A) माइक्रोप्रोसेसर
- (B) ट्रांजिस्टर
- (C) निर्वात ट्यूब
- (D) कृत्रिय बुद्धिमत्ता

विभिन्न कंप्यूटर पीढ़ियों में प्रयोग की गई उपर्युक्त प्रौद्योगिकीय विधाओं को पहली पीढ़ी से शुरु करते हुए क्रम में रखें :  
नीचे दिये गये विकल्पों से सही उत्तर चुनिये :

- (1) (C), (A), (B), (D)
- (2) (C), (B), (A), (D)
- (3) (B), (C), (A), (D)
- (4) (C), (B), (D), (A)

**Options :**

- 5362289137. 1
- 5362289138. 2
- 5362289139. 3
- 5362289140. 4

**Question Number : 36 Question Id : 5362282347 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The only UN treaty related to environmental issues which has been ratified by all 197 UN member states is

- (1) Montreal Protocol
- (2) Paris Agreement
- (3) Kyoto Protocol
- (4) Basel Convention

**Options :**

- 5362289141. 1
- 5362289142. 2
- 5362289143. 3
- 5362289144. 4

**Question Number : 36 Question Id : 5362282347 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

पर्यावरण मुद्दों से संबंधित एकमात्र संयुक्त राष्ट्र समझौता कौन सा है जिसका संयुक्त राष्ट्र के सभी 197 सदस्य राष्ट्रों द्वारा अनुसमर्थन किया गया है?

- (1) मांट्रियल प्रोटोकॉल
- (2) पेरिस समझौता
- (3) क्योटो प्रोटोकॉल
- (4) बेसल कन्वेंशन

**Options :**

- 5362289141. 1
- 5362289142. 2
- 5362289143. 3

5362289144. 4

**Question Number : 37 Question Id : 5362282348 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

As of now, which of the following is a leading country in wind energy based electricity generation?

- |            |             |
|------------|-------------|
| (1) India  | (2) China   |
| (3) France | (4) Denmark |

**Options :**

5362289145. 1  
5362289146. 2  
5362289147. 3  
5362289148. 4

**Question Number : 37 Question Id : 5362282348 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

वर्तमान में पवन ऊर्जा आधारित विद्युत उत्पादन के मामले में निम्नलिखित में से कौन सा अग्रणी देश है?

- |            |              |
|------------|--------------|
| (1) भारत   | (2) चीन      |
| (3) फ्रांस | (4) डेनमार्क |

**Options :**

5362289145. 1  
5362289146. 2  
5362289147. 3  
5362289148. 4

**Question Number : 38 Question Id : 5362282349 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

'Solar Water Still' is a device to

- (1) Produce potable water by using solar energy
- (2) Pump water by using solar energy
- (3) Generate electricity by using solar energy
- (4) Produce heat using solar energy

**Options :**

5362289149. 1  
5362289150. 2  
5362289151. 3

5362289152. 4

**Question Number : 38 Question Id : 5362282349 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

‘सोलर वाटर स्टिल’ एक उपकरण है, जिसका उपयोग निम्नलिखित में से किसके लिये किया जाता है?

- (1) सौर ऊर्जा के उपयोग द्वारा पेय जल का उत्पादन करने के लिए।
- (2) सौर ऊर्जा के उपयोग द्वारा जल को पम्प करने के लिए।
- (3) सौर ऊर्जा के उपयोग द्वारा विद्युत उत्पादन करने के लिए।
- (4) सौर ऊर्जा के उपयोग द्वारा ऊष्मा उत्पन्न करने के लिए।

**Options :**

- 5362289149. 1
- 5362289150. 2
- 5362289151. 3
- 5362289152. 4

**Question Number : 39 Question Id : 5362282350 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Identify the primary air pollutant among the following :

- |                       |                                 |
|-----------------------|---------------------------------|
| (1) Ozone             | (2) Black carbon aerosols       |
| (3) Sulphate aerosols | (4) Peroxy Acetyl Nitrate (PAN) |

**Options :**

- 5362289153. 1
- 5362289154. 2
- 5362289155. 3
- 5362289156. 4

**Question Number : 39 Question Id : 5362282350 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

निम्नलिखित में से प्राथमिक वायु प्रदूषक की पहचान करें :

- |                     |  |
|---------------------|--|
| (1) ओजोन            | (2) ब्लैक कार्बन ऐरोसोल्स              |
| (3) सल्फेट ऐरोसोल्स | (4) परआक्सी ऐसीटाईल नाईट्रेट (पी ए एन) |

**Options :**

- 5362289153. 1
- 5362289154. 2
- 5362289155. 3
- 5362289156. 4

**Question Number : 40 Question Id : 5362282351 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements :

**Statement I :** Long stretches of major rivers of India have very low Biochemical Oxygen Demand (BOD) values.

**Statement II :** In rivers oxygen is added into water by diffusion from air due to its turbulent and rapid flow.

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

- 5362289157. 1
- 5362289158. 2
- 5362289159. 3
- 5362289160. 4

**Question Number : 40 Question Id : 5362282351 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नीचे दो कथन दिए गए हैं :

**कथन (I) :** भारत की प्रमुख नदियों के लम्बे खंडों में जैवरासायनिक ऑक्सीजन मांग (बायोकेमिकल ऑक्सीजन डिमांड (बी ओडी)) का मान बहुत कम होता ।

**कथन (II) :** नदियों के उग्र और तेज प्रवाह के कारण वायु के विसरण से उनके जल में ऑक्सीजन मिल जाता है ।

उपर्युक्त कथनों के आलोक में निम्नांकित विकल्पों में से सर्वाधिक उपयुक्त उत्तर चुनें :

- (1) कथन I और II दोनों सही हैं ।
- (2) कथन I और II दोनों सही नहीं हैं ।
- (3) कथन I सही है किंतु कथन II सही नहीं है ।
- (4) कथन I सही नहीं है किंतु कथन II सही है ।

**Options :**

- 5362289157. 1
- 5362289158. 2
- 5362289159. 3
- 5362289160. 4

**Question Number : 41 Question Id : 5362282352 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Paravidya, according to the vedic tradition, implies :

- (1) Knowledge based on human experience
- (2) Knowledge that transcends human experience
- (3) Knowledge acquired from teachers
- (4) Knowledge acquired from texts.

**Options :**

- 5362289161. 1
- 5362289162. 2
- 5362289163. 3
- 5362289164. 4

**Question Number : 41 Question Id : 5362282352 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

वैदिक परम्परा के अनुसार पराविद्या का अर्थ है

- (1) मानव अनुभव पर आधारित ज्ञान
- (2) मानव अनुभव से परे ज्ञान
- (3) शिक्षकों से अर्जित ज्ञान
- (4) ग्रन्थों से अर्जित ज्ञान

**Options :**

- 5362289161. 1
- 5362289162. 2
- 5362289163. 3
- 5362289164. 4

**Question Number : 42 Question Id : 5362282353 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



The underlying purpose of environmental education is to :

- (A) Adjust to environmental challenges
- (B) Help face environmental hazards
- (C) Promote individual's critical-thinking about emerging issues
- (D) Increase public awareness and knowledge of environmental issues.
- (E) Enhance problem-solving and decision-making skills in respect of handling environmental issues.

Choose the correct answer from the options given below :

- (1) (A), (B), (C) only
- (2) (B), (C), (D) only
- (3) (C), (D), (E) only
- (4) (D), (E), (A) only

**Options :**

- 5362289165. 1
- 5362289166. 2
- 5362289167. 3
- 5362289168. 4

**Question Number : 42 Question Id : 5362282353 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

पर्यावरण शिक्षा का अत्तर्निहित उद्देश्य है :

- (A) पर्यावरण संबंधी चुनौतियों के प्रति समायोजन करना।
- (B) पर्यावरण संबंधी खतरों का सामना करने में सहायता करना।
- (C) उभरते मुद्दों के बारे में व्यक्ति के समालोचनात्मक चिंतन को बढ़ावा देना।
- (D) पर्यावरण संबंधी मुद्दों के बारे में जनजागरूकता और ज्ञान बढ़ाना।
- (E) पर्यावरण संबंधी मुद्दों से निपटने में समस्या-समाधान और निर्णय लेने के कौशलों में वृद्धि करना।

नीचे दिये गये विकल्पों से सही उत्तर चुनिये :

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

**Options :**

- 5362289165. 1
- 5362289166. 2
- 5362289167. 3
- 5362289168. 4

**Question Number : 43 Question Id : 5362282354 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

MHRD, Govt. of India, scheme 'RUSA' supports the following components :

- (A) Upgrading autonomous colleges to the status of a University
- (B) Providing maintenance grants to state Universities
- (C) Setting up of new professional colleges in un-served and under-served areas of the country
- (D) Providing infrastructure grants to colleges and universities to scale up capacity
- (E) More scholarship programmes to supplement the cost of education

Choose the correct answer from the options given below :

- (1) (A), (B), (D) and (E) only
- (2) (A), (B), (C) and (E) only
- (3) (B), (C), (D) and (E) only
- (4) (A), (C), (D) and (E) only

**Options :**

- 5362289169. 1
- 5362289170. 2
- 5362289171. 3
- 5362289172. 4

**Question Number : 43 Question Id : 5362282354 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

भारत सरकार के मानव संसाधन विकास मंत्रालय की 'रूसा' योजना निम्नलिखित में से किन घटकों हेतु सहायता प्रदान करती है?

- (A) स्वायत्त कॉलेजों को विश्वविद्यालय का दर्जा प्रदान करने के लिए।
- (B) राज्य विश्वविद्यालयों को अनुरक्षण अनुदान प्रदान करने के लिए।
- (C) देश के असेवित और अल्पसेवित क्षेत्रों में नए व्यावसायिक कॉलेजों की स्थापना करने के लिए।
- (D) कॉलेजों और विश्वविद्यालयों की क्षमता बढ़ाने के लिए अवसंरचना अनुदान प्रदान करने के लिए।
- (E) शिक्षा की लागत की अनुपूर्ति करने के लिए अधिक छात्रवृत्ति कार्यक्रम चलाने के लिए।

नीचे दिये गये विकल्पों से सही उत्तर चुनिये :

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

**Options :**

- 5362289169. 1
- 5362289170. 2
- 5362289171. 3
- 5362289172. 4

**Question Number : 44 Question Id : 5362282355 Question Type : MCQ Option Shuffling : No Is Question**

**Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following ICT initiatives of MHRD deal with E-governance for institutions/universities?

- |             |            |
|-------------|------------|
| (1) SAMARTH | (2) VIDWAN |
| (3) IRINS   | (4) SWAYAM |

**Options :**

- 5362289173. 1
- 5362289174. 2
- 5362289175. 3
- 5362289176. 4

**Question Number : 44 Question Id : 5362282355 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

मानव संसाधन विकास मंत्रालय की निम्नलिखित में से कौन सी आई सी टी पहल संस्थाओं/विश्वविद्यालयों के लिए ई-गवर्नेंस से संबंधित है?

- |                      |               |
|----------------------|---------------|
| (1) 'समर्थ'          | (2) 'विद्वान' |
| (3) 'आई आर आई एन एस' | (4) 'स्वयम'   |

**Options :**

- 5362289173. 1
- 5362289174. 2
- 5362289175. 3
- 5362289176. 4

**Question Number : 45 Question Id : 5362282356 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A 'De-novo' institution is characterized by

- (1) ICT enabled pedagogy
- (2) focus on teaching and research in unique and emerging areas of knowledge
- (3) focus on teaching and research on foreign languages and their literature
- (4) state of art infrastructure

**Options :**

- 5362289177. 1
- 5362289178. 2
- 5362289179. 3
- 5362289180. 4

**Question Number : 45 Question Id : 5362282356 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

एक 'डि-नोवो' संस्था की क्या विशेषता है?

- (1) आई सी टी समर्थित शिक्षणशास्त्र
- (2) ज्ञान के अद्वितीय और उभरते क्षेत्रों में शिक्षण और शोध पर ध्यान केन्द्रित करना।
- (3) विदेशी भाषाओं और उनके साहित्य के शिक्षण और शोध पर ध्यान केन्द्रित करना।
- (4) अत्याधुनिक बुनियादी ढांचा

**Options :**

5362289177. 1

5362289178. 2

5362289179. 3

5362289180. 4

**Sub-Section Number :**

3

**Sub-Section Id :**

53622893

**Question Shuffling Allowed :**

Yes

**Question Id : 5362282357 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

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

Question Label : Comprehension

Read the passage and answer questions from 46 to 50.

If so much of present day cultural learning depends on situation and context how do the resulting assemblages acquire an organised coherence? One way this issue is being raised in recent anthropology is through the concern with identity, whether defined as identity of the person of an ethnic group or of an entire nation. But identities do not swim above in the stream of social life like amoebas in fermenting banana soup. If definitions of identity involve a characterisation of attributes and a drawing of boundaries around the units so defined, in contrast with other units, this must have a causal context. Moreover, we know that the search for identity varies historically, intensifying or slackening over periods of time. Thus, a major rise occurred in the demand for identity with the advent of the nation-state and the collateral development of nationalism, which hoped to create a unified and identifiable 'people', out of diverse populations with distinctive identities of their own. Recently, the demand for identities has risen once again, precisely at a time when cultural repertoires are becoming again more heterogeneous, as people have responded to changes in the social division of labour, in their relation to governments, in reaction to new modes of communication. These repertoires of cultural understandings and practices do not easily fit any traditional notion of culture as an integral and integrated set of forms and meanings.

**Sub questions**

**Question Number : 46 Question Id : 5362282358 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is the focal issue in the present day cultural learning?

- (1) Unending discussions on it
- (2) Contextual clarity
- (3) Anthropological concern
- (4) The need to organise the issue properly

**Options :**

5362289181. 1  
5362289182. 2  
5362289183. 3  
5362289184. 4

**Question Number : 47 Question Id : 5362282359 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The identity has a tendency to have

- (1) Different attributes from others
- (2) Coherence with other units
- (3) Undistinguishable boundaries
- (4) The movement above the stream of social life

**Options :**

5362289185. 1  
5362289186. 2  
5362289187. 3  
5362289188. 4

**Question Number : 48 Question Id : 5362282360 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Historically the search for identity has been of

- (1) Uniform continuity
- (2) Slackening of culture
- (3) Intermittent intensity
- (4) Illogical motives

**Options :**

5362289189. 1  
5362289190. 2  
5362289191. 3  
5362289192. 4

**Question Number : 49 Question Id : 5362282361 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The advent of nationalism led to

- (1) Competing identities
- (2) Single identity across the nation
- (3) The emergence of a unified cultural repertoire
- (4) Unity within diverse identities

**Options :**

- 5362289193. 1
- 5362289194. 2
- 5362289195. 3
- 5362289196. 4

**Question Number : 50 Question Id : 5362282362 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The new cultural understanding does not fit into the traditional notion of culture due to

- (1) New modes of communication
- (2) Traditional social divisions of labour
- (3) Integrated sets of meanings
- (4) The creation of a strong nation-state

**Options :**

- 5362289197. 1
- 5362289198. 2
- 5362289199. 3
- 5362289200. 4

**Question Id : 5362282357 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

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

Question Label : Comprehension

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़े और प्रश्नों (46-50) के उत्तर दें :

यदि अद्यतन सांस्कृतिक व्यवहारपरक अधिगम अधिकांशतः परिस्थिति एवं संदर्भ पर निर्भर होता है तो यह चिंतनीय है कि परिणामी संघटनाएं किस तरह एक व्यवस्थित रूप ग्रहण कर लेती हैं? हाल में नृविज्ञान में इस मुद्दे को उठाए जाने का एक तरीका पहचान के सरोकार से संबंधित है चाहे उसे व्यक्ति की पहचान के रूप में नृजातीय समूह के रूप में या संपूर्ण राष्ट्र के रूप में परिभाषित किया जाए। परन्तु पहचान के बारे में यह नहीं कहा जा सकता कि वह केले के शोरबे में तैरने वाले अमीबा की भांति सामाजिक जीवन की धारा में सतह पर तैरती रहती हैं। यदि पहचान की परिभाषाओं में गुणों का विशेषीकरण और अन्य इकाइयों के सापेक्ष इस प्रकार परिभाषित इकाइयों के चारों ओर सीमा-रेखा खींचना शामिल है तो यह अवश्य एक कार्य-कारण मूलक संदर्भ होना चाहिए। इसके अलावा हम जानते हैं कि पहचान की तलाश में ऐतिहासिक रूप से स्पष्टतः अंतर रहा है जो भिन्न भिन्न समयावधियों में तीव्र और शिथिल हो जाती हैं। इस प्रकार पहचान की ओर अग्रसरता में अत्यधिक वृद्धि राष्ट्र-राज्यों के उद्भव और राष्ट्रवाद के संपारिर्विक विकास के साथ-साथ हुई, जिसमें अपनी अलग पहचानों वाली विधितापूर्ण जनसंख्या में से एक एकीकृत और विशिष्ट पहचान-योग्य लोगों के सृजन की उम्मीद सृजित हुई। हाल में पहचान की इस अग्रसरता में एक बार फिर वृद्धि हुई, यह मुख्यतः ऐसे समय में हुआ है जब सांस्कृतिक भाषीय कोश पुनः और अधिक विजातीय बन रहे हैं, जब आम लोगों ने अपनी सरकारों से उनके संबंध में, संचार की नई पद्धतियों की प्रतिक्रिया-स्वरूप श्रम के सामाजिक विभाजन में परिवर्तन पर प्रतिक्रिया जतायी है। यहाँ उल्लेखनीय है कि सांस्कृतिक अवबोध और एतदविषयक प्रथाओं के ये कोश स्वरूपों और अर्थों के अविच्छिन्न और समेकित समूह के रूप में किसी संस्कृति की परम्परागत धारणा में सरलता से समानरूपी नहीं बन पाते हैं।

**Sub questions**

**Question Number : 46 Question Id : 5362282358 Question Type : MCQ Option Shuffling : No Is Question**

**Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

वर्तमान समय में सांस्कृतिक अधिगम का केन्द्रीय मुद्दा क्या है?

- |                             |  |
|-----------------------------|--|
| (1) इस मुद्दे पर अनंत चर्चा | (2) संदर्भ संबंधी स्पष्टता                           |
| (3) नृजातीय सरोकार          | (4) इस मुद्दे को उचित ढंग से संगठित करने की आवश्यकता |

**Options :**

- 5362289181. 1
- 5362289182. 2
- 5362289183. 3
- 5362289184. 4

**Question Number : 47 Question Id : 5362282359 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

पहचान में निम्नलिखित प्राप्त करने की प्रवृत्ति होती है

- (1) अन्यो से भिन्न गुण
- (2) अन्य इकाइयों से संसक्तता
- (3) अविभेदीय सीमाएं
- (4) समाजिक जीवन धारा की सतह पर गतिशीलता

**Options :**

- 5362289185. 1
- 5362289186. 2
- 5362289187. 3
- 5362289188. 4

**Question Number : 48 Question Id : 5362282360 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

ऐतिहासिक रूप से पहचान में निम्नलिखित में से किसे प्राप्त करने को प्रवृत्ति होती है?

- |                     |                         |
|---------------------|-------------------------|
| (1) एकसमान निरंतरता | (2) संस्कृति की शिथिलता |
| (3) सविराम तीव्रता  | (4) अतार्किक उत्प्रेरक  |

**Options :**

- 5362289189. 1
- 5362289190. 2
- 5362289191. 3
- 5362289192. 4

**Question Number : 49 Question Id : 5362282361 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

राष्ट्रवाद के उद्भव के कारण निम्नलिखित हुआ

- (1) प्रतिस्पर्धा पहचान
- (2) संपूर्ण राष्ट्र में एकल पहचान
- (3) एक एकीकृत सांस्कृतिक कोश का उदय
- (4) विविधतपूर्ण पहचानों के बीच एकता

**Options :**

- 5362289193. 1
- 5362289194. 2
- 5362289195. 3
- 5362289196. 4

**Question Number : 50 Question Id : 5362282362 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

नया सांस्कृतिक अवबोध निम्नलिखित में किसके कारण संस्कृति की परम्परागत धारणा के समुरूपी नहीं होता है

- (1) संचार की नई पद्धतियाँ
- (2) श्रम का परम्परागत सामाजिक विभाजन
- (3) अर्थों के समेकित समूह
- (4) एक मजबूत राष्ट्र-राज्य का सृजन

**Options :**

- 5362289197. 1
- 5362289198. 2
- 5362289199. 3
- 5362289200. 4

## **PART II Electronic Science**

<b>Section Id :</b>	53622832
<b>Section Number :</b>	2
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory



Number of Questions : 92  
Number of Questions to be attempted : 92  
Section Marks : 200  
Mark As Answered Required? : Yes  
Sub-Section Number : 1  
Sub-Section Id : 53622894  
Question Shuffling Allowed : Yes

Question Number : 51 Question Id : 5362282363 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

In case of varactor diode with hyper-abrupt junction the sensitivity (S) value for  $m = -\frac{5}{3}$  is

- (1) 2 (2) 3  
(3) 1 (4)  $\frac{1}{2}$

Options :

5362289201. 1  
5362289202. 2  
5362289203. 3  
5362289204. 4

Question Number : 51 Question Id : 5362282363 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

In case of varactor diode with hyper-abrupt junction the sensitivity (S) value for  $m = -\frac{5}{3}$  is

- (1) 2 (2) 3  
(3) 1 (4)  $\frac{1}{2}$

Options :

5362289201. 1  
5362289202. 2  
5362289203. 3  
5362289204. 4

Question Number : 52 Question Id : 5362282364 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

For an ideal MS contact between a metal and a *P*-type semi conductor. The relation between barrier height  $q\phi_{(B,o)}$  is given by

- (1)  $q\phi_{(B,o)} = q(\phi_m - \chi)$                       (2)  $q\phi_{(B,o)} = \frac{Eg}{2} - q(\phi_m - \chi)$
- (3)  $q\phi_{(B,o)} = q(\chi - \phi_m)$                       (4)  $q\phi_{(B,o)} = Eg - q(\phi_m - \chi)$

**Options :**

5362289205. 1  
5362289206. 2  
5362289207. 3  
5362289208. 4

**Question Number : 52 Question Id : 5362282364 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

For an ideal MS contact between a metal and a *P*-type semi conductor. The relation between barrier height  $q\phi_{(B,o)}$  is given by

- (1)  $q\phi_{(B,o)} = q(\phi_m - \chi)$                       (2)  $q\phi_{(B,o)} = \frac{Eg}{2} - q(\phi_m - \chi)$
- (3)  $q\phi_{(B,o)} = q(\chi - \phi_m)$                       (4)  $q\phi_{(B,o)} = Eg - q(\phi_m - \chi)$

**Options :**

5362289205. 1  
5362289206. 2  
5362289207. 3  
5362289208. 4

**Question Number : 53 Question Id : 5362282365 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The Debye length  $L_D$  is a characteristic length for semiconductor and is defined as

$$(1) \quad L_D = \sqrt{\frac{\epsilon_s KT}{qN}}$$

$$(2) \quad L_D = \sqrt{\frac{\epsilon_s KT}{q^2 N}}$$

$$(3) \quad L_D = \sqrt{\frac{2 \epsilon_s KT}{q^2 N}}$$

$$(4) \quad L_D = \sqrt{\frac{\epsilon_s KT}{2qN}}$$

where,  $K$  is Boltzmann constant,  $T$  is temperature in Kelvin,  $q$  is unit electronic charge,  $N$  is impurity concentration of the substrate in per  $m^3$ ,  $\epsilon_s$  is dielectric permittivity of silicon.

**Options :**

5362289209. 1

5362289210. 2

5362289211. 3

5362289212. 4

**Question Number : 53 Question Id : 5362282365 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The Debye length  $L_D$  is a characteristic length for semiconductor and is defined as

$$(1) \quad L_D = \sqrt{\frac{\epsilon_s KT}{qN}}$$

$$(2) \quad L_D = \sqrt{\frac{\epsilon_s KT}{q^2 N}}$$

$$(3) \quad L_D = \sqrt{\frac{2 \epsilon_s KT}{q^2 N}}$$

$$(4) \quad L_D = \sqrt{\frac{\epsilon_s KT}{2qN}}$$

where,  $K$  is Boltzmann constant,  $T$  is temperature in Kelvin,  $q$  is unit electronic charge,  $N$  is impurity concentration of the substrate in per  $m^3$ ,  $\epsilon_s$  is dielectric permittivity of silicon.

**Options :**

5362289209. 1

5362289210. 2

5362289211. 3

5362289212. 4

**Question Number : 54 Question Id : 5362282366 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The depletion layer width at thermal equilibrium for a one-sided abrupt junction is

$$(1) \quad W_D = \sqrt{\frac{\epsilon_S}{qN} \left( \psi_{bi} - \frac{2KT}{q} \right)}$$

$$(2) \quad W_D = \sqrt{\frac{2\epsilon_S}{qN} \left( \psi_{bi} - \frac{2KT}{q} \right)}$$

$$(3) \quad W_D = \sqrt{\frac{2\epsilon_S}{qN} \left( \psi_{bi} - \frac{KT}{q} \right)}$$

$$(4) \quad W_D = \sqrt{\frac{\epsilon_S}{qN} \left( \psi_{bi} - \frac{KT}{q} \right)}$$

**Options :**

5362289213. 1

5362289214. 2

5362289215. 3

5362289216. 4

**Question Number : 54 Question Id : 5362282366 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The depletion layer width at thermal equilibrium for a one-sided abrupt junction is

$$(1) \quad W_D = \sqrt{\frac{\epsilon_S}{qN} \left( \psi_{bi} - \frac{2KT}{q} \right)}$$

$$(2) \quad W_D = \sqrt{\frac{2\epsilon_S}{qN} \left( \psi_{bi} - \frac{2KT}{q} \right)}$$

$$(3) \quad W_D = \sqrt{\frac{2\epsilon_S}{qN} \left( \psi_{bi} - \frac{KT}{q} \right)}$$

$$(4) \quad W_D = \sqrt{\frac{\epsilon_S}{qN} \left( \psi_{bi} - \frac{KT}{q} \right)}$$

**Options :**

5362289213. 1

5362289214. 2

5362289215. 3

5362289216. 4

**Question Number : 55 Question Id : 5362282367 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Number of ways in which a Schottky defect can occur in silicon is given by

(1)  $\frac{N!}{(N - n_s)!}$

(2)  $\frac{N!}{n_s!}$

(3)  $\frac{N!}{N - n_s!}$

(4)  $\frac{N!}{(N - n_s)!n_s!}$

where  $N$  = total no. of atoms in a crystal of unit volume

$n_s$  = number of Schottky defects per unit volume.

**Options :**

5362289217. 1

5362289218. 2

5362289219. 3

5362289220. 4

**Question Number : 55 Question Id : 5362282367 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Number of ways in which a Schottky defect can occur in silicon is given by

(1)  $\frac{N!}{(N - n_s)!}$

(2)  $\frac{N!}{n_s!}$

(3)  $\frac{N!}{N - n_s!}$

(4)  $\frac{N!}{(N - n_s)!n_s!}$

where  $N$  = total no. of atoms in a crystal of unit volume

$n_s$  = number of Schottky defects per unit volume.

**Options :**

5362289217. 1

5362289218. 2

5362289219. 3

5362289220. 4

**Question Number : 56 Question Id : 5362282368 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What would be system pressure of Si-MBE system in order to achieve  $5 \times 10^7$  cm mean free path(L) of atoms?

- (1)  $10^{-7}$  torr (2)  $10^{-8}$  torr  
(3)  $10^{-9}$  torr (4)  $10^{-10}$  torr

**Options :**

5362289221. 1  
5362289222. 2  
5362289223. 3  
5362289224. 4

**Question Number : 56 Question Id : 5362282368 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What would be system pressure of Si-MBE system in order to achieve  $5 \times 10^7$  cm mean free path(L) of atoms?

- (1)  $10^{-7}$  torr (2)  $10^{-8}$  torr  
(3)  $10^{-9}$  torr (4)  $10^{-10}$  torr

**Options :**

5362289221. 1  
5362289222. 2  
5362289223. 3  
5362289224. 4

**Question Number : 57 Question Id : 5362282369 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which Plasma Analytical technique involves placement of conducting probe smaller than particle mean free path directly in the plasma?

- (1) Actinometry  
(2) Lesser Induced Fluorescence  
(3) Retarding Grid  
(4) Langmuir technique

**Options :**

5362289225. 1  
5362289226. 2

5362289227. 3

5362289228. 4

**Question Number : 57 Question Id : 5362282369 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which Plasma Analytical technique involves placement of conducting probe smaller than particle mean free path directly in the plasma?

- (1) Actinometry
- (2) Lesser Induced Fluorescence
- (3) Retarding Grid
- (4) Langmuir technique

**Options :**

5362289225. 1

5362289226. 2

5362289227. 3

5362289228. 4

**Question Number : 58 Question Id : 5362282370 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which gas is used in reactive plasma for etching all three i.e. silicides, silicon and silicon dioxide

- (1)  $F_2$
- (2)  $SF_6$
- (3)  $CF_4 + O_2$
- (4)  $NF_3$

**Options :**

5362289229. 1

5362289230. 2

5362289231. 3

5362289232. 4

**Question Number : 58 Question Id : 5362282370 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which gas is used in reactive plasma for etching all three i.e. silicides, silicon and silicon dioxide

- (1)  $F_2$  (2)  $SF_6$   
(3)  $CF_4 + O_2$  (4)  $NF_3$

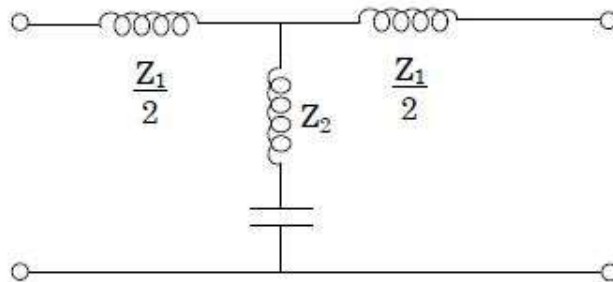
Options :

5362289229. 1  
5362289230. 2  
5362289231. 3  
5362289232. 4

Question Number : 59 Question Id : 5362282371 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Consider a circuit as shown in figure



The circuit is

- (1) Constant K low-pass filter  
(2) Constant K high-pass filter  
(3) The m-derived low-pass filter  
(4) The m-derived high-pass filter

Options :

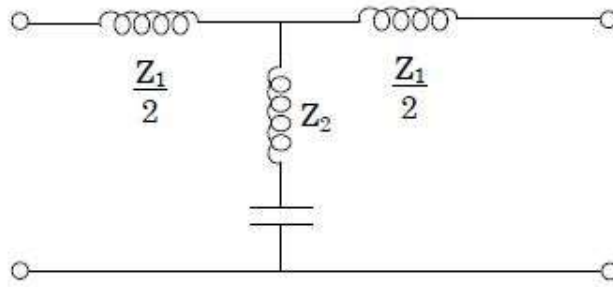
5362289233. 1  
5362289234. 2  
5362289235. 3  
5362289236. 4

Question Number : 59 Question Id : 5362282371 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0



Consider a circuit as shown in figure



The circuit is

- (1) Constant K low-pass filter
- (2) Constant K high-pass filter
- (3) The m-derived low-pass filter
- (4) The m-derived high-pass filter

Options :

- 5362289233. 1
- 5362289234. 2
- 5362289235. 3
- 5362289236. 4

Question Number : 60 Question Id : 5362282372 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The region of convergence of the sequence  $x[n] = \left(\frac{-1}{3}\right)^n u[n] - \left(\frac{1}{2}\right)^n u[-n-1]$  is

- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| (1) $\frac{1}{3} <  z  < \frac{1}{2}$ | (2) $ z  > \frac{1}{3}$               |
| (3) $ z  < \frac{1}{2}$               | (4) $\frac{1}{2} <  z  < \frac{1}{3}$ |

Options :

- 5362289237. 1
- 5362289238. 2
- 5362289239. 3
- 5362289240. 4

Question Number : 60 Question Id : 5362282372 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The region of convergence of the sequence  $x[n] = \left(\frac{-1}{3}\right)^n u[n] - \left(\frac{1}{2}\right)^n u[-n-1]$  is

(1)  $\frac{1}{3} < |z| < \frac{1}{2}$

(2)  $|z| > \frac{1}{3}$

(3)  $|z| < \frac{1}{2}$

(4)  $\frac{1}{2} < |z| < \frac{1}{3}$

**Options :**

5362289237. 1

5362289238. 2

5362289239. 3

5362289240. 4

**Question Number : 61 Question Id : 5362282373 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The Fourier series expansion of a periodic function with half wave symmetry contains

(1) only even harmonics

(2) only odd harmonics

(3) both even and odd harmonics

(4) no harmonics

**Options :**

5362289241. 1

5362289242. 2

5362289243. 3

5362289244. 4

**Question Number : 61 Question Id : 5362282373 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The Fourier series expansion of a periodic function with half wave symmetry contains

(1) only even harmonics

(2) only odd harmonics

(3) both even and odd harmonics

(4) no harmonics

**Options :**

5362289241. 1

5362289242. 2

5362289243. 3

5362289244. 4

Question Number : 62 Question Id : 5362282374 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The Fourier transform of  $x^*[-n]$  is

(1)  $X^*(e^{-j\omega})$

(2)  $X^*(e^{j\omega})$

(3)  $X^*(-e^{-j\omega})$

(4)  $X^*(-e^{j\omega})$

Options :

5362289245. 1

5362289246. 2

5362289247. 3

5362289248. 4

Question Number : 62 Question Id : 5362282374 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The Fourier transform of  $x^*[-n]$  is

(1)  $X^*(e^{-j\omega})$

(2)  $X^*(e^{j\omega})$

(3)  $X^*(-e^{-j\omega})$

(4)  $X^*(-e^{j\omega})$

Options :

5362289245. 1

5362289246. 2

5362289247. 3

5362289248. 4

Question Number : 63 Question Id : 5362282375 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The slew rate for a 741 is  $0.5 \text{ V} / \mu \text{ second}$ . The combination of maximum frequencies for an undistorted sine-wave output of 10 V peak and 1 V peak are approximately

(1) 8 kHz and 80 kHz

(2) 48 kHz and 4.8 kHz

(3) 20 kHz and 2 kHz

(4) 2 kHz and 20 kHz

Options :

5362289249. 1

5362289250. 2

5362289251. 3

5362289252. 4

Question Number : 63 Question Id : 5362282375 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The slew rate for a 741 is  $0.5 \text{ V}/\mu\text{ second}$ . The combination of maximum frequencies for an undistorted sine-wave output of 10 V peak and 1 V peak are approximately

- (1) 8 kHz and 80 kHz
- (2) 48 kHz and 4.8 kHz
- (3) 20 kHz and 2 kHz
- (4) 2 kHz and 20 kHz

**Options :**

- 5362289249. 1
- 5362289250. 2
- 5362289251. 3
- 5362289252. 4

**Question Number : 64 Question Id : 5362282376 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following is not a component of basic Phase-Locked Loop (PLL)?

- (1) Phase detector
- (2) Voltage controlled oscillator
- (3) Schmitt Trigger
- (4) Low-pass filter

**Options :**

- 5362289253. 1
- 5362289254. 2
- 5362289255. 3
- 5362289256. 4

**Question Number : 64 Question Id : 5362282376 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following is not a component of basic Phase-Locked Loop (PLL)?

- (1) Phase detector
- (2) Voltage controlled oscillator
- (3) Schmitt Trigger
- (4) Low-pass filter

**Options :**

- 5362289253. 1
- 5362289254. 2
- 5362289255. 3
- 5362289256. 4

**Question Number : 65 Question Id : 5362282377 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

If  $T_J$  and  $T_A$  are junction temp. and ambient temp respectively  $\theta_{JC}$ ,  $\theta_{CS}$  and  $\theta_{SA}$  are transistor thermal resistance, insulator thermal resistance and heat-sink thermal resistance respectively. The equation of maximum power dissipation is given by

$$(1) \quad P_D = \frac{T_J + T_A}{\theta_{JC} + \theta_{CS} + \theta_{SA}}$$

$$(2) \quad P_D = \frac{T_J - T_A}{\theta_{JC} + \theta_{CS} + \theta_{SA}}$$

$$(3) \quad P_D = \frac{T_A - T_J}{\theta_{JC} + \theta_{CS} + \theta_{SA}}$$

$$(4) \quad P_D = \frac{T_J - T_A}{\theta_{JC} + \theta_{CS} - \theta_{SA}}$$

**Options :**

5362289257. 1

5362289258. 2

5362289259. 3

5362289260. 4

**Question Number : 65 Question Id : 5362282377 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

If  $T_J$  and  $T_A$  are junction temp. and ambient temp respectively  $\theta_{JC}$ ,  $\theta_{CS}$  and  $\theta_{SA}$  are transistor thermal resistance, insulator thermal resistance and heat-sink thermal resistance respectively. The equation of maximum power dissipation is given by

$$(1) \quad P_D = \frac{T_J + T_A}{\theta_{JC} + \theta_{CS} + \theta_{SA}}$$

$$(2) \quad P_D = \frac{T_J - T_A}{\theta_{JC} + \theta_{CS} + \theta_{SA}}$$

$$(3) \quad P_D = \frac{T_A - T_J}{\theta_{JC} + \theta_{CS} + \theta_{SA}}$$

$$(4) \quad P_D = \frac{T_J - T_A}{\theta_{JC} + \theta_{CS} - \theta_{SA}}$$

**Options :**

5362289257. 1

5362289258. 2

5362289259. 3

5362289260. 4

**Question Number : 66 Question Id : 5362282378 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

If  $V_{ref}$  is the output reference value and  $V_{fs}$  is the ideal full-scale output voltage when the digital inputs are all 1. Which of the following equation is correct?

$$(1) \quad V_{ref} = V_{fs} \left( 1 - \frac{1}{2^n} \right)$$

$$(2) \quad V_{fs} = V_{ref} \left( \frac{1}{2^n} - 1 \right)$$

$$(3) \quad V_{fs} = V_{ref} \left( 1 - \frac{1}{2^n} \right)$$

$$(4) \quad V_{ref} = V_{fs} \left( \frac{1}{2^n} - 1 \right)$$

**Options :**

5362289261. 1  
5362289262. 2  
5362289263. 3  
5362289264. 4

**Question Number : 66 Question Id : 5362282378 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

If  $V_{\text{ref}}$  is the output reference value and  $V_{\text{fs}}$  is the ideal full-scale output voltage when the digital inputs are all 1. Which of the following equation is correct?

(1)  $V_{\text{ref}} = V_{\text{fs}} \left( 1 - \frac{1}{2^n} \right)$

(2)  $V_{\text{fs}} = V_{\text{ref}} \left( \frac{1}{2^n} - 1 \right)$

(3)  $V_{\text{fs}} = V_{\text{ref}} \left( 1 - \frac{1}{2^n} \right)$

(4)  $V_{\text{ref}} = V_{\text{fs}} \left( \frac{1}{2^n} - 1 \right)$

**Options :**

5362289261. 1  
5362289262. 2  
5362289263. 3  
5362289264. 4

**Question Number : 67 Question Id : 5362282379 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements is not correct about a CPLD (Complex Programmable Logic Device)?

- (1) A CPLD is a logic device that consists of multiple SPLDs interconnected on a single chip
- (2) A CPLD is based on Product-Of-Sums (POS) architecture
- (3) A CPLD consists of multiple group of PAL with programmable interconnection
- (4) A CPLD can be used to implement large logic function

**Options :**

5362289265. 1  
5362289266. 2  
5362289267. 3  
5362289268. 4

**Question Number : 67 Question Id : 5362282379 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements is not correct about a CPLD (Complex Programmable Logic Device)?

- (1) A CPLD is a logic device that consists of multiple SPLDs interconnected on a single chip
- (2) A CPLD is based on Product-Of-Sums (POS) architecture
- (3) A CPLD consists of multiple group of PAL with programmable interconnection
- (4) A CPLD can be used to implement large logic function

**Options :**

- 5362289265. 1
- 5362289266. 2
- 5362289267. 3
- 5362289268. 4

**Question Number : 68 Question Id : 5362282380 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The final code after encoding data bits 1101 into 7-bit even parity Hamming Code is

- |             |             |
|-------------|-------------|
| (1) 1110101 | (2) 1011101 |
| (3) 1010101 | (4) 0110101 |

**Options :**

- 5362289269. 1
- 5362289270. 2
- 5362289271. 3
- 5362289272. 4

**Question Number : 68 Question Id : 5362282380 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The final code after encoding data bits 1101 into 7-bit even parity Hamming Code is

- |             |             |
|-------------|-------------|
| (1) 1110101 | (2) 1011101 |
| (3) 1010101 | (4) 0110101 |

**Options :**

- 5362289269. 1
- 5362289270. 2
- 5362289271. 3
- 5362289272. 4

**Question Number : 69 Question Id : 5362282381 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The A/O gates in which an addition variable or a combination of variables can be included in the logic operation are called

- |                    |                      |
|--------------------|----------------------|
| (1) AOI Gates      | (2) Expandable Gates |
| (3) Variable Gates | (4) Scalable Gates   |

**Options :**

- 5362289273. 1
- 5362289274. 2
- 5362289275. 3
- 5362289276. 4

**Question Number : 69 Question Id : 5362282381 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The A/O gates in which an addition variable or a combination of variables can be included in the logic operation are called

- |                    |                      |
|--------------------|----------------------|
| (1) AOI Gates      | (2) Expandable Gates |
| (3) Variable Gates | (4) Scalable Gates   |

**Options :**

- 5362289273. 1
- 5362289274. 2
- 5362289275. 3
- 5362289276. 4

**Question Number : 70 Question Id : 5362282382 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The statement which is not applicable to a Moore machine

- (1) Output is a function of present state only
- (2) It requires more number of states for implementing same function
- (3) Input changes do not affect the output
- (4) The characteristic equation of output  $Z(t)$  can be given as  $Z(t) = g\{S(t), x(t)\}$  where  $S(t)$  represents present state,  $x(t)$  indicates present input

**Options :**

- 5362289277. 1
- 5362289278. 2
- 5362289279. 3
- 5362289280. 4

**Question Number : 70 Question Id : 5362282382 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**



Correct Marks : 2 Wrong Marks : 0

The statement which is not applicable to a Moore machine

- (1) Output is a function of present state only
- (2) It requires more number of states for implementing same function
- (3) Input changes do not affect the output
- (4) The characteristic equation of output  $Z(t)$  can be given as  $Z(t) = g\{S(t), x(t)\}$  where  $S(t)$  represents present state,  $x(t)$  indicates present input

Options :

- 5362289277. 1
- 5362289278. 2
- 5362289279. 3
- 5362289280. 4

Question Number : 71 Question Id : 5362282383 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The program written below gives

```
MOV A, # 85 H
```

```
CPL A,
```

```
ADD A, #
```

- |         |         |
|---------|---------|
| (1) 7BH | (2) B7H |
| (3) 78H | (4) 87H |

Options :

- 5362289281. 1
- 5362289282. 2
- 5362289283. 3
- 5362289284. 4

Question Number : 71 Question Id : 5362282383 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The program written below gives

MOV A, # 85 H

CPL A,

ADD A, #

(1) 7BH

(2) B7H

(3) 78H

(4) 87H

**Options :**

5362289281. 1

5362289282. 2

5362289283. 3

5362289284. 4

**Question Number : 72 Question Id : 5362282384 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The relationship between revolution per minute (rpm), steps per revolution (spr) and steps per second (sps) is given by

(1)  $sps = \frac{rpm \times spr}{60}$

(2)  $rpm = \frac{60}{sps \times spr}$

(3)  $rpm = \frac{sps \times spr}{60}$

(4)  $sps = \frac{60}{rpm \times spr}$

**Options :**

5362289285. 1

5362289286. 2

5362289287. 3

5362289288. 4

**Question Number : 72 Question Id : 5362282384 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The relationship between revolution per minute (rpm), steps per revolution (spr) and steps per second (sps) is given by

(1)  $sps = \frac{rpm \times spr}{60}$

(2)  $rpm = \frac{60}{sps \times spr}$

(3)  $rpm = \frac{sps \times spr}{60}$

(4)  $sps = \frac{60}{rpm \times spr}$

**Options :**

5362289285. 1

5362289286. 2

5362289287. 3

5362289288. 4

**Question Number : 73 Question Id : 5362282385 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What happens if Interrupts INT0, TF0 and INT 1 are activated at the same time?

- (1) They are latched and kept internally
- (2) They are latched and kept externally
- (3) They are unlatched and kept internally
- (4) They are unlatched and kept externally

**Options :**

5362289289. 1

5362289290. 2

5362289291. 3

5362289292. 4

**Question Number : 73 Question Id : 5362282385 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What happens if Interrupts INT0, TF0 and INT 1 are activated at the same time?

- (1) They are latched and kept internally
- (2) They are latched and kept externally
- (3) They are unlatched and kept internally
- (4) They are unlatched and kept externally

**Options :**

5362289289. 1

5362289290. 2

5362289291. 3

5362289292. 4

**Question Number : 74 Question Id : 5362282386 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In the Register Indirect addressing mode, the effective address of the datum in the base register or an index register that is specified by the instruction is

$$(1) \quad EA = \begin{Bmatrix} (AX) \\ (DI) \\ (SI) \end{Bmatrix}$$

$$(2) \quad EA = \begin{Bmatrix} (BX) \\ (DI) \\ (SI) \end{Bmatrix}$$

$$(3) \quad EA = \begin{Bmatrix} (CX) \\ (DI) \\ (SI) \end{Bmatrix}$$

$$(4) \quad EA = \begin{Bmatrix} (DX) \\ (DI) \\ (SI) \end{Bmatrix}$$

**Options :**

5362289293. 1

5362289294. 2

5362289295. 3

5362289296. 4

**Question Number : 74 Question Id : 5362282386 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In the Register Indirect addressing mode, the effective address of the datum in the base register or an index register that is specified by the instruction is

$$(1) \quad EA = \begin{Bmatrix} (AX) \\ (DI) \\ (SI) \end{Bmatrix}$$

$$(2) \quad EA = \begin{Bmatrix} (BX) \\ (DI) \\ (SI) \end{Bmatrix}$$

$$(3) \quad EA = \begin{Bmatrix} (CX) \\ (DI) \\ (SI) \end{Bmatrix}$$

$$(4) \quad EA = \begin{Bmatrix} (DX) \\ (DI) \\ (SI) \end{Bmatrix}$$

**Options :**

5362289293. 1

5362289294. 2

5362289295. 3

5362289296. 4

**Question Number : 75 Question Id : 5362282387 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

RG-59 U type transmission line has an open circuit impedance of  $150 \angle 25^\circ \Omega$ , and a short circuit impedance of  $37.5 \angle -35^\circ \Omega$ . The value of characteristic impedance is given by :

(1)  $4 \angle -5^\circ \Omega$

(2)  $75 \angle -5^\circ \Omega$

(3)  $150 \angle 25^\circ \Omega$

(4)  $37.5 \angle -35^\circ \Omega$

**Options :**

5362289297. 1

5362289298. 2

5362289299. 3

5362289300. 4

**Question Number : 75 Question Id : 5362282387 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

RG-59 U type transmission line has an open circuit impedance of  $150 \angle 25^\circ \Omega$ , and a short circuit impedance of  $37.5 \angle -35^\circ \Omega$ . The value of characteristic impedance is given by :

(1)  $4 \angle -5^\circ \Omega$

(2)  $75 \angle -5^\circ \Omega$

(3)  $150 \angle 25^\circ \Omega$

(4)  $37.5 \angle -35^\circ \Omega$

**Options :**

5362289297. 1

5362289298. 2

5362289299. 3

5362289300. 4

**Question Number : 76 Question Id : 5362282388 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

An air filled rectangular waveguide of dimension  $7 \times 3.5 \text{ cm}^2$  operates in the dominant  $TE_{10}$  mode. The value of phase velocity of the wave in the guide at a frequency of 3.5 GHz is given by :

(1)  $3.78 \times 10^8 \text{ m/S}$

(2)  $6.78 \times 10^5 \text{ m/S}$

(3)  $5.78 \times 10^8 \text{ m/S}$

(4)  $4.78 \times 10^8 \text{ m/S}$

**Options :**

5362289301. 1

5362289302. 2

5362289303. 3

5362289304. 4

**Question Number : 76 Question Id : 5362282388 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

An air filled rectangular waveguide of dimension  $7 \times 3.5 \text{ cm}^2$  operates in the dominant  $\text{TE}_{10}$  mode. The value of phase velocity of the wave in the guide at a frequency of 3.5 GHz is given by :

- (1)  $3.78 \times 10^8 \text{ m/S}$  (2)  $6.78 \times 10^5 \text{ m/S}$   
(3)  $5.78 \times 10^8 \text{ m/S}$  (4)  $4.78 \times 10^8 \text{ m/S}$

**Options :**

5362289301. 1  
5362289302. 2  
5362289303. 3  
5362289304. 4

**Question Number : 77 Question Id : 5362282389 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In case of linear arrays of 'n' isotropic point sources of equal amplitude and spacings. The expression for total electric field at a large distance in the direction ' $\theta$ ' is given by

- (1)  $E = \frac{1 + e^{jn\Psi}}{1 - e^{j\Psi}}$  (2)  $E = \frac{1 + e^{jn\Psi}}{1 + e^{j\Psi}}$   
(3)  $E = \frac{1 - e^{j\Psi}}{1 + e^{jn\Psi}}$  (4)  $E = \frac{1 - e^{jn\Psi}}{1 - e^{j\Psi}}$

**Options :**

5362289305. 1  
5362289306. 2  
5362289307. 3  
5362289308. 4

**Question Number : 77 Question Id : 5362282389 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In case of linear arrays of 'n' isotropic point sources of equal amplitude and spacings. The expression for total electric field at a large distance in the direction ' $\theta$ ' is given by

- (1)  $E = \frac{1 + e^{jn\Psi}}{1 - e^{j\Psi}}$  (2)  $E = \frac{1 + e^{jn\Psi}}{1 + e^{j\Psi}}$   
(3)  $E = \frac{1 - e^{j\Psi}}{1 + e^{jn\Psi}}$  (4)  $E = \frac{1 - e^{jn\Psi}}{1 - e^{j\Psi}}$

**Options :**

- 5362289305. 1
- 5362289306. 2
- 5362289307. 3
- 5362289308. 4

**Question Number : 78 Question Id : 5362282390 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A sphere of radius  $r_1 = 30$  cm has a charge density  $\left(\rho \frac{r}{r_1}\right)$  where  $\rho_0 = 200 \text{ pC/m}^3$ . The value of total charge on the sphere is given by

- (1) 34 pC
- (2) 8.5 pC
- (3) 17 pC
- (4) 68 pC

**Options :**

- 5362289309. 1
- 5362289310. 2
- 5362289311. 3
- 5362289312. 4

**Question Number : 78 Question Id : 5362282390 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A sphere of radius  $r_1 = 30$  cm has a charge density  $\left(\rho \frac{r}{r_1}\right)$  where  $\rho_0 = 200 \text{ pC/m}^3$ . The value of total charge on the sphere is given by

- (1) 34 pC
- (2) 8.5 pC
- (3) 17 pC
- (4) 68 pC

**Options :**

- 5362289309. 1
- 5362289310. 2
- 5362289311. 3
- 5362289312. 4

**Question Number : 79 Question Id : 5362282391 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A VSB transmitter that transmits 25% of the other sideband along with wanted sideband, radiates 0.625 kW when the modulation percentage is 60%. If we want to transmit the same message by an AM transmitter then carrier power (in kW) required is

- (1) 6.56 kW (2) 5.56 kW  
(3) 4.56 kW (4) 7.56 kW

**Options :**

5362289313. 1  
5362289314. 2  
5362289315. 3  
5362289316. 4

**Question Number : 79 Question Id : 5362282391 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A VSB transmitter that transmits 25% of the other sideband along with wanted sideband, radiates 0.625 kW when the modulation percentage is 60%. If we want to transmit the same message by an AM transmitter then carrier power (in kW) required is

- (1) 6.56 kW (2) 5.56 kW  
(3) 4.56 kW (4) 7.56 kW

**Options :**

5362289313. 1  
5362289314. 2  
5362289315. 3  
5362289316. 4

**Question Number : 80 Question Id : 5362282392 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The term dispersion describe the process of

- (1) reflecting light from a smooth surface  
(2) the process by which light is absorbed by an uneven rough surface  
(3) light scattering  
(4) separating light into its component frequencies

**Options :**

5362289317. 1  
5362289318. 2  
5362289319. 3  
5362289320. 4

**Question Number : 80 Question Id : 5362282392 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**



**Correct Marks : 2 Wrong Marks : 0**

The term dispersion describe the process of

- (1) reflecting light from a smooth surface
- (2) the process by which light is absorbed by an uneven rough surface
- (3) light scattering
- (4) separating light into its component frequencies

**Options :**

- 5362289317. 1
- 5362289318. 2
- 5362289319. 3
- 5362289320. 4

**Question Number : 81 Question Id : 5362282393 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In a FDM system, 10 channels are multiplexed. Each channel having a BW of 50 kHz. If the guard band between the channels are 1 kHz, the minimum bandwidth required for transmission is

- |             |             |
|-------------|-------------|
| (1) 505 kHz | (2) 500 kHz |
| (3) 509 kHz | (4) 510 kHz |

**Options :**

- 5362289321. 1
- 5362289322. 2
- 5362289323. 3
- 5362289324. 4

**Question Number : 81 Question Id : 5362282393 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In a FDM system, 10 channels are multiplexed. Each channel having a BW of 50 kHz. If the guard band between the channels are 1 kHz, the minimum bandwidth required for transmission is

- |             |             |
|-------------|-------------|
| (1) 505 kHz | (2) 500 kHz |
| (3) 509 kHz | (4) 510 kHz |

**Options :**

- 5362289321. 1
- 5362289322. 2
- 5362289323. 3
- 5362289324. 4

**Question Number : 82 Question Id : 5362282394 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The main objective of CELL in a cellular mobile system is

- |                      |                                  |
|----------------------|----------------------------------|
| (1) Higher bandwidth | (2) Hand off                     |
| (3) Frequency re-use | (4) Simple modulation techniques |

**Options :**

- 5362289325. 1
- 5362289326. 2
- 5362289327. 3
- 5362289328. 4

**Question Number : 82 Question Id : 5362282394 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The main objective of CELL in a cellular mobile system is

- |                      |                                  |
|----------------------|----------------------------------|
| (1) Higher bandwidth | (2) Hand off                     |
| (3) Frequency re-use | (4) Simple modulation techniques |

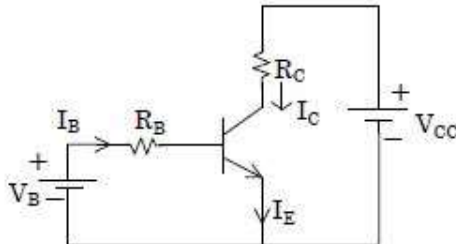
**Options :**

- 5362289325. 1
- 5362289326. 2
- 5362289327. 3
- 5362289328. 4

**Question Number : 83 Question Id : 5362282395 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In the following circuit  $\beta$  is in the range of 8 to 40,  $R_C=11\Omega$ ,  $V_{CC}=200\text{ V}$ ,  $V_B=10\text{ V}$ . If the  $V_{CE}$  (saturation) = 1.0 V and  $V_{BE}$  (sat)=1.5 V, over drive factor = 5. The value of power loss in the transistor is given by :



(1) 35.07 W

(2) 23.07 W

(3) 13.07 W

(4) 26.09 W

**Options :**

5362289329. 1

5362289330. 2

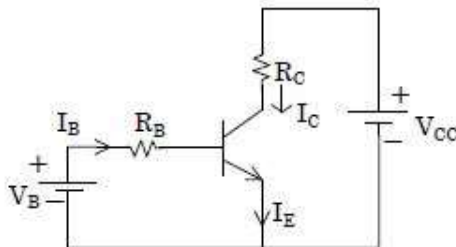
5362289331. 3

5362289332. 4

**Question Number : 83 Question Id : 5362282395 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In the following circuit  $\beta$  is in the range of 8 to 40,  $R_C=11\Omega$ ,  $V_{CC}=200\text{ V}$ ,  $V_B=10\text{ V}$ . If the  $V_{CE}$  (saturation) = 1.0 V and  $V_{BE}$  (sat)=1.5 V, over drive factor = 5. The value of power loss in the transistor is given by :



(1) 35.07 W

(2) 23.07 W

(3) 13.07 W

(4) 26.09 W

**Options :**

5362289329. 1

5362289330. 2

5362289331. 3

5362289332. 4

**Question Number : 84 Question Id : 5362282396 Question Type : MCQ Option Shuffling : No Is Question**

**Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A three phase four pole induction motor is operating on an input frequency of 75 Hz and slip of 4%. If the rotor resistance of the machine is  $1 \Omega$ . The torque developed by the motor is given by : (Assume the operating voltage is 415 V, assuming stator voltage drop = 0)

- |                    |                    |
|--------------------|--------------------|
| (1) 6889 syn.watts | (2) 7898 syn.watts |
| (3) 8998 syn.watts | (4) 9998 syn.watts |

**Options :**

- 5362289333. 1
- 5362289334. 2
- 5362289335. 3
- 5362289336. 4

**Question Number : 84 Question Id : 5362282396 Question Type : MCQ Option Shuffling : No Is Question**

**Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A three phase four pole induction motor is operating on an input frequency of 75 Hz and slip of 4%. If the rotor resistance of the machine is  $1 \Omega$ . The torque developed by the motor is given by : (Assume the operating voltage is 415 V, assuming stator voltage drop = 0)

- |                    |                    |
|--------------------|--------------------|
| (1) 6889 syn.watts | (2) 7898 syn.watts |
| (3) 8998 syn.watts | (4) 9998 syn.watts |

**Options :**

- 5362289333. 1
- 5362289334. 2
- 5362289335. 3
- 5362289336. 4

**Question Number : 85 Question Id : 5362282397 Question Type : MCQ Option Shuffling : No Is Question**

**Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Insertion of negative feedback in control system affects

- (1) the transient response to vanish uniformly
- (2) the transient response to decay very fast
- (3) no change in transient response
- (4) the transient response decays at a slow rate

**Options :**

- 5362289337. 1
- 5362289338. 2
- 5362289339. 3
- 5362289340. 4

Question Number : 85 Question Id : 5362282397 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Insertion of negative feedback in control system affects

- (1) the transient response to vanish uniformly
- (2) the transient response to decay very fast
- (3) no change in transient response
- (4) the transient response decays at a slow rate

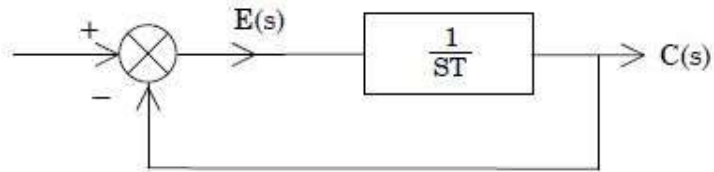
Options :

- 5362289337. 1
- 5362289338. 2
- 5362289339. 3
- 5362289340. 4

Question Number : 86 Question Id : 5362282398 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

For the following First Order System. The value of steady state error is given by



- (1) 0 (zero)
- (2)  $\infty$  (infinite)
- (3)  $(1 - e^{-t/T})$
- (4)  $(1 + e^{-t/T})$

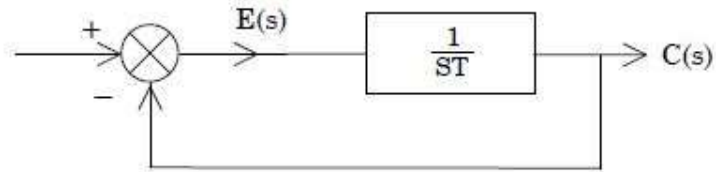
Options :

- 5362289341. 1
- 5362289342. 2
- 5362289343. 3
- 5362289344. 4

Question Number : 86 Question Id : 5362282398 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

For the following First Order System. The value of steady state error is given by



- |                      |                         |
|----------------------|-------------------------|
| (1) 0 (zero)         | (2) $\infty$ (infinite) |
| (3) $(1 - e^{-t/T})$ | (4) $(1 + e^{-t/T})$    |

**Options :**

- 5362289341. 1
- 5362289342. 2
- 5362289343. 3
- 5362289344. 4

**Question Number : 87 Question Id : 5362282399 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A dual-slope integrating type of A/D converter has an integrating capacitor of  $0.1 \mu\text{F}$  and a resistance of  $100 \text{ k}\Omega$ . If the reference voltage is  $2 \text{ V}$ , and the output of the integrator is not to exceed to  $10 \text{ V}$ , the value of maximum time the reference voltage can be integrated is

- |                     |                     |
|---------------------|---------------------|
| (1) 10 m second     | (2) 50 m second     |
| (3) $50 \mu$ second | (4) $10 \mu$ second |

**Options :**

- 5362289345. 1
- 5362289346. 2
- 5362289347. 3
- 5362289348. 4

**Question Number : 87 Question Id : 5362282399 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A dual-slope integrating type of A/D converter has an integrating capacitor of  $0.1 \mu\text{F}$  and a resistance of  $100 \text{ k}\Omega$ . If the reference voltage is  $2 \text{ V}$ , and the output of the integrator is not to exceed to  $10 \text{ V}$ , the value of maximum time the reference voltage can be integrated is

- |                     |                     |
|---------------------|---------------------|
| (1) 10 m second     | (2) 50 m second     |
| (3) $50 \mu$ second | (4) $10 \mu$ second |

**Options :**

5362289345. 1  
5362289346. 2  
5362289347. 3  
5362289348. 4

**Question Number : 88 Question Id : 5362282400 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The velocity transducer consists of a moving coil suspended in the magnetic field of a permanent magnet. It is not used for measurement of velocities developed in a

- (1) linear manner
- (2) sinusoidal manner
- (3) both (1) and (2)
- (4) discrete manner

**Options :**

5362289349. 1  
5362289350. 2  
5362289351. 3  
5362289352. 4

**Question Number : 88 Question Id : 5362282400 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The velocity transducer consists of a moving coil suspended in the magnetic field of a permanent magnet. It is not used for measurement of velocities developed in a

- (1) linear manner
- (2) sinusoidal manner
- (3) both (1) and (2)
- (4) discrete manner

**Options :**

5362289349. 1  
5362289350. 2  
5362289351. 3  
5362289352. 4

**Question Number : 89 Question Id : 5362282401 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is not the source of Error in a Thermocouple transducer

- (1) Open junction
- (2) Thermal conduction
- (3) Galvanic action
- (4) Hall effect

**Options :**

- 5362289353. 1
- 5362289354. 2
- 5362289355. 3
- 5362289356. 4

**Question Number : 89 Question Id : 5362282401 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

What is not the source of Error in a Thermocouple transducer

- (1) Open junction
- (2) Thermal conduction
- (3) Galvanic action
- (4) Hall effect

**Options :**

- 5362289353. 1
- 5362289354. 2
- 5362289355. 3
- 5362289356. 4

**Question Number : 90 Question Id : 5362282402 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which is not the important characteristics of thermistors that make them extremely useful in measurement and control applications?

- (1) the resistance – temperature characteristic
- (2) the voltage – current characteristic
- (3) the current – time characteristic
- (4) the power – time characteristic

**Options :**

- 5362289357. 1
- 5362289358. 2
- 5362289359. 3
- 5362289360. 4



**Question Number : 90 Question Id : 5362282402 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which is not the important characteristics of thermistors that make them extremely useful in measurement and control applications?

- (1) the resistance – temperature characteristic
- (2) the voltage – current characteristic
- (3) the current – time characteristic
- (4) the power – time characteristic

**Options :**

5362289357. 1

5362289358. 2

5362289359. 3

5362289360. 4

**Question Number : 91 Question Id : 5362282403 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Currents in the three terminals of a transistor are mostly diffusion currents which are related by the minority carrier distribution in the base region. Which of the following statements are correct?

- (A) The applied voltages control the boundary densities through the term  $\exp(qV/kT)$
- (B) The base current is the difference between the emitter and collector currents
- (C) In order to maximize emitter resistance, the emitter contact is usually made directly on top of the emitter
- (D) Emitter Bandgap narrowing increases current gain
- (E) Emitter and collector currents are given by the minority density gradients at the junction boundaries

Choose the most appropriate answer from the options given below :

- (1) (B), (C), (D) only
- (2) (A), (B), (E) only
- (3) (C), (B), (E) only
- (4) (D), (E), (A) only

**Options :**

- 5362289361. 1
- 5362289362. 2
- 5362289363. 3
- 5362289364. 4

**Question Number : 91 Question Id : 5362282403 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Currents in the three terminals of a transistor are mostly diffusion currents which are related by the minority carrier distribution in the base region. Which of the following statements are correct?

- (A) The applied voltages control the boundary densities through the term  $\exp(qV/kT)$
- (B) The base current is the difference between the emitter and collector currents
- (C) In order to maximize emitter resistance, the emitter contact is usually made directly on top of the emitter
- (D) Emitter Bandgap narrowing increases current gain
- (E) Emitter and collector currents are given by the minority density gradients at the junction boundaries

Choose the most appropriate answer from the options given below :

- (1) (B), (C), (D) only
- (2) (A), (B), (E) only
- (3) (C), (B), (E) only
- (4) (D), (E), (A) only

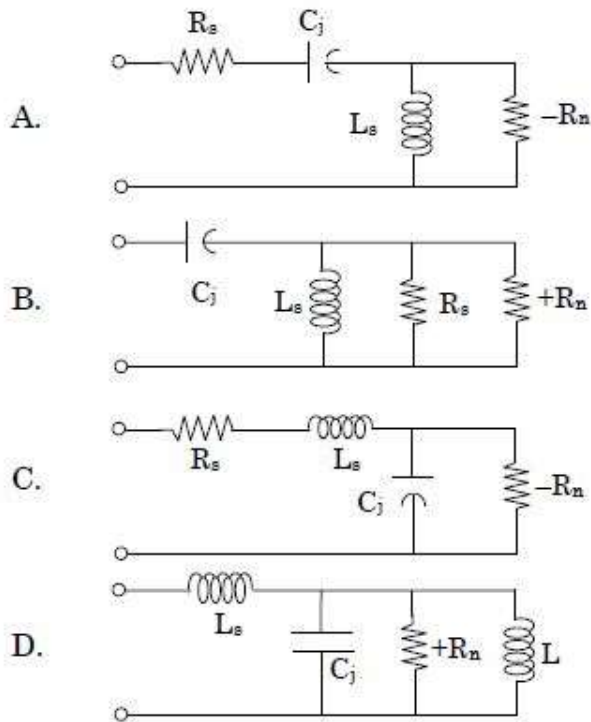
**Options :**

- 5362289361. 1
- 5362289362. 2
- 5362289363. 3
- 5362289364. 4

**Question Number : 92 Question Id : 5362282404 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The small signal model of tunnel diode can be represented as



where  $R_s$  is series resistance;  
 $L_s$  is series inductance;  
 $C_j$  is junction capacitance;  
 $-R_n$  is negative resistance

Choose the most appropriate answer from the options given below :

- |              |                      |
|--------------|----------------------|
| (1) (A) only | (2) (A) and (B) only |
| (3) (C) only | (4) (C) and (D) only |

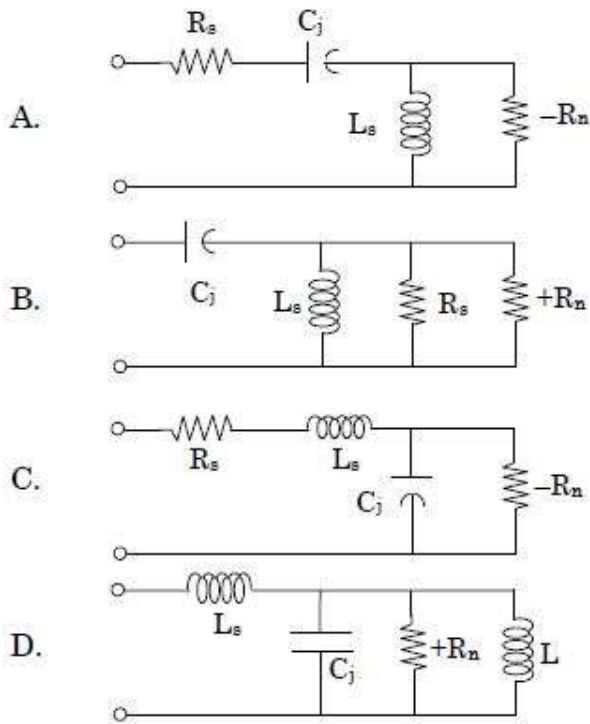
Options :

- 5362289365. 1
- 5362289366. 2
- 5362289367. 3
- 5362289368. 4

Question Number : 92 Question Id : 5362282404 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

The small signal model of tunnel diode can be represented as



where  $R_s$  is series resistance;  
 $L_s$  is series inductance;  
 $C_j$  is junction capacitance;  
 $-R_n$  is negative resistance

Choose the most appropriate answer from the options given below :

- (1) (A) only (2) (A) and (B) only  
 (3) (C) only (4) (C) and (D) only

Options :

5362289365. 1  
 5362289366. 2  
 5362289367. 3  
 5362289368. 4

Question Number : 93 Question Id : 5362282405 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

In which of the following techniques beam of electrons is used as a probe and the secondary radiation is X-ray.

- (A) LEED
- (B) EMP
- (C) TEM
- (D) STEM
- (E) EELS

Choose the correct answer from the options given below :

- (1) (A) and (E) only
- (2) (B) and (D) only
- (3) (C) and (E) only
- (4) (A) and (C) only

**Options :**

5362289369. 1

5362289370. 2

5362289371. 3

5362289372. 4

**Question Number : 93 Question Id : 5362282405 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In which of the following techniques beam of electrons is used as a probe and the secondary radiation is X-ray.

- (A) LEED
- (B) EMP
- (C) TEM
- (D) STEM
- (E) EELS

Choose the correct answer from the options given below :

- (1) (A) and (E) only
- (2) (B) and (D) only
- (3) (C) and (E) only
- (4) (A) and (C) only

**Options :**

5362289369. 1

5362289370. 2

5362289371. 3

5362289372. 4

**Question Number : 94 Question Id : 5362282406 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which metals or alloys amongst the following, do not reduce  $\text{SiO}_2$  and are found to have poor adhesion on  $\text{SiO}_2$  surfaces.

- (A) W
- (B)  $\text{Mo}$
- (C) Al
- (D) TiN
- (E)  $\text{WSi}_2$

Choose the correct answer from the options given below :

- (1) (A) and (C) only
- (2) (B) and (C) only
- (3) (C) and (D) only
- (4) (A) and (B) only

**Options :**

5362289373. 1

5362289374. 2

5362289375. 3

5362289376. 4

**Question Number : 94 Question Id : 5362282406 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which metals or alloys amongst the following, do not reduce  $\text{SiO}_2$  and are found to have poor adhesion on  $\text{SiO}_2$  surfaces.

- (A) W
- (B)  $\text{Mo}$
- (C) Al
- (D) TiN
- (E)  $\text{WSi}_2$

Choose the correct answer from the options given below :

- (1) (A) and (C) only
- (2) (B) and (C) only
- (3) (C) and (D) only
- (4) (A) and (B) only

**Options :**

- 5362289373. 1
- 5362289374. 2
- 5362289375. 3
- 5362289376. 4

**Question Number : 95 Question Id : 5362282407 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



Which of the following gases commonly used in CVD are pyrophoric, toxic and flammable?

- (A) Phosphine
- (B) Argon
- (C) Nitrogen Oxide
- (D) Silane
- (E) Nitrogen

Choose the most appropriate answer from the options given below :

- (1) (B) and (C) only
- (2) (C) and (E) only
- (3) (B) and (E) only
- (4) (A) and (D) only

**Options :**

5362289377. 1

5362289378. 2

5362289379. 3

5362289380. 4

**Question Number : 95 Question Id : 5362282407 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following gases commonly used in CVD are pyrophoric, toxic and flammable?

- (A) Phosphine
- (B) Argon
- (C) Nitrogen Oxide
- (D) Silane
- (E) Nitrogen

Choose the most appropriate answer from the options given below :

- (1) (B) and (C) only
- (2) (C) and (E) only
- (3) (B) and (E) only
- (4) (A) and (D) only

**Options :**

5362289377. 1

5362289378. 2

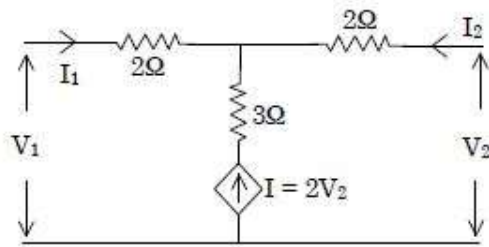
5362289379. 3

5362289380. 4

**Question Number : 96 Question Id : 5362282408 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Consider a circuit shown in figure :



The correct values of Y parameters are

- (A)  $Y_{11} = \frac{1}{4} \text{ U}, Y_{12} = -\frac{5}{4} \text{ U}$
- (B)  $Y_{21} = -\frac{3}{4} \text{ U}, Y_{22} = -\frac{1}{4} \text{ U}$
- (C)  $Y_{11} = \frac{5}{4} \text{ U}, Y_{12} = -\frac{1}{4} \text{ U}$
- (D)  $Y_{21} = -\frac{5}{4} \text{ U}, Y_{22} = -\frac{1}{4} \text{ U}$
- (E)  $Y_{21} = -\frac{1}{4} \text{ U}, Y_{22} = -\frac{3}{4} \text{ U}$

Choose the correct answer from the options given below :

- (1) (B) and (C) only                      (2) (A) and (D) only
- (3) (A) and (E) only                      (4) (C) and (D) only

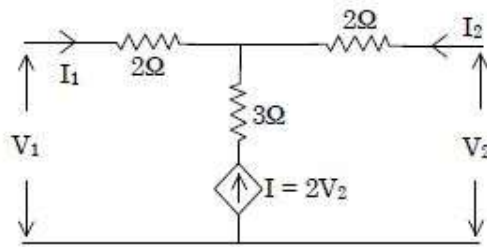
**Options :**

5362289381. 1
5362289382. 2
5362289383. 3
5362289384. 4

Question Number : 96 Question Id : 5362282408 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

Consider a circuit shown in figure :



The correct values of Y parameters are

- (A)  $Y_{11} = \frac{1}{4} \text{ U}, Y_{12} = -\frac{5}{4} \text{ U}$
- (B)  $Y_{21} = -\frac{3}{4} \text{ U}, Y_{22} = -\frac{1}{4} \text{ U}$
- (C)  $Y_{11} = \frac{5}{4} \text{ U}, Y_{12} = -\frac{1}{4} \text{ U}$
- (D)  $Y_{21} = -\frac{5}{4} \text{ U}, Y_{22} = -\frac{1}{4} \text{ U}$
- (E)  $Y_{21} = -\frac{1}{4} \text{ U}, Y_{22} = -\frac{3}{4} \text{ U}$

Choose the correct answer from the options given below :

- (1) (B) and (C) only                      (2) (A) and (D) only
- (3) (A) and (E) only                      (4) (C) and (D) only

**Options :**

5362289381. 1
5362289382. 2
5362289383. 3
5362289384. 4

**Question Number : 97 Question Id : 5362282409 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements regarding tree are correct?

- (A) All the links of a tree together does not constitute the complement of the corresponding tree
- (B) A connected subgraph of a connected graph is a tree if there exist  $(n - 1)$  nodes of the group
- (C) A connected subgraph of a connected graph is a tree if there exists many paths between any pair of nodes in it
- (D) The number of terminal nodes or end vertices of every tree are atleast two
- (E) Every connected graph has atleast one tree

Choose the correct answer from the options given below :

- (1) (A) and (B) only
- (2) (B) and (C) only
- (3) (B) and (D) only
- (4) (D) and (E) only

**Options :**

- 5362289385. 1
- 5362289386. 2
- 5362289387. 3
- 5362289388. 4

**Question Number : 97 Question Id : 5362282409 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements regarding tree are correct?

- (A) All the links of a tree together does not constitute the complement of the corresponding tree
- (B) A connected subgraph of a connected graph is a tree if there exist  $(n - 1)$  nodes of the group
- (C) A connected subgraph of a connected graph is a tree if there exists many paths between any pair of nodes in it
- (D) The number of terminal nodes or end vertices of every tree are atleast two
- (E) Every connected graph has atleast one tree

Choose the correct answer from the options given below :

- (1) (A) and (B) only
- (2) (B) and (C) only
- (3) (B) and (D) only
- (4) (D) and (E) only

**Options :**

- 5362289385. 1
- 5362289386. 2
- 5362289387. 3
- 5362289388. 4

**Question Number : 98 Question Id : 5362282410 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements are not correct?

- (A) Precision rectifiers use positive feedback to compensate for the forward drop of the diodes
- (B) Precision peak detector uses a capacitor to effectively lengthen the duration of the peaks
- (C) Limiters may be thought of as programmable signal clippers
- (D) In order to improve performance of comparators negative feedback may be used
- (E) There are two basic approaches for realizing a design : (1) using zener diodes and (2) using biased-signal diode network

Choose the most appropriate answer from the options given below :

- (1) (A) and (D) only
- (2) (D) and (E) only
- (3) (A) and (C) only
- (4) (B) and (D) only

**Options :**

- 5362289389. 1
- 5362289390. 2
- 5362289391. 3
- 5362289392. 4

**Question Number : 98 Question Id : 5362282410 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements are not correct?

- (A) Precision rectifiers use positive feedback to compensate for the forward drop of the diodes
- (B) Precision peak detector uses a capacitor to effectively lengthen the duration of the peaks
- (C) Limiters may be thought of as programmable signal clippers
- (D) In order to improve performance of comparators negative feedback may be used
- (E) There are two basic approaches for realizing a design : (1) using zener diodes and (2) using biased-signal diode network

Choose the most appropriate answer from the options given below :

- (1) (A) and (D) only
- (2) (D) and (E) only
- (3) (A) and (C) only
- (4) (B) and (D) only

**Options :**

- 5362289389. 1
- 5362289390. 2
- 5362289391. 3
- 5362289392. 4

**Question Number : 99 Question Id : 5362282411 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The network formed by resistors and capacitors for modifying the rate of change of gain and the phase shift is called a compensating network. Which of the following statements are not correct?

- (A) The main purpose of a compensating network is to modify the performance of op-amp circuit over the desired frequency range
- (B) There are two types of op-amps : internally compensated and externally compensated
- (C) 741 C is an externally compensated op-amp while 709 C is internally compensated op-amp
- (D) The phase lag and phase lead are most commonly used compensating networks in op-amps
- (E) Phase lag contributes a positive phase angle and phase lead a negative phase angle

Choose the most appropriate answer from the options given below :

- (1) (B) and (C) only
- (2) (B) and (E) only
- (3) (C) and (D) only
- (4) (C) and (E) only

**Options :**

- 5362289393. 1
- 5362289394. 2
- 5362289395. 3
- 5362289396. 4

**Question Number : 99 Question Id : 5362282411 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



The network formed by resistors and capacitors for modifying the rate of change of gain and the phase shift is called a compensating network. Which of the following statements are not correct?

- (A) The main purpose of a compensating network is to modify the performance of op-amp circuit over the desired frequency range
- (B) There are two types of op-amps : internally compensated and externally compensated
- (C) 741 C is an externally compensated op-amp while 709 C is internally compensated op-amp
- (D) The phase lag and phase lead are most commonly used compensating networks in op-amps
- (E) Phase lag contributes a positive phase angle and phase lead a negative phase angle

Choose the most appropriate answer from the options given below :

- (1) (B) and (C) only
- (2) (B) and (E) only
- (3) (C) and (D) only
- (4) (C) and (E) only

**Options :**

- 5362289393. 1
- 5362289394. 2
- 5362289395. 3
- 5362289396. 4

**Question Number : 100 Question Id : 5362282412 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Three major types of programmable logic are SPLD, CPLD and FPGA. Each major type have many manufacturer specific subcategories. Some statements are given below related to these programmable logic devices.

Which of the following statements are correct?

- (A) CPLDs have much higher capacity than SPLDs
- (B) FPGAs are similar to CPLDs in their internal organization
- (C) Two basic classes of FPGAs are course grained and fine grained
- (D) Fine grained FPGA has large logic blocks while course-grained FPGA has much smaller logic blocks
- (E) FPGAs come in package and ranging less than 1000 pins.

Choose the most appropriate answer from the options given below :

- (1) (A) and (D) only
- (2) (B) and (D) only
- (3) (B) and (C) only
- (4) (A) and (C) only

**Options :**

- 5362289397. 1
- 5362289398. 2
- 5362289399. 3
- 5362289400. 4

**Question Number : 100 Question Id : 5362282412 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Three major types of programmable logic are SPLD, CPLD and FPGA. Each major type have many manufacturer specific subcategories. Some statements are given below related to these programmable logic devices.

Which of the following statements are correct?

- (A) CPLDs have much higher capacity than SPLDs
- (B) FPGAs are similar to CPLDs in their internal organization
- (C) Two basic classes of FPGAs are course grained and fine grained
- (D) Fine grained FPGA has large logic blocks while course-grained FPGA has much smaller logic blocks
- (E) FPGAs come in package and ranging less than 1000 pins.

Choose the most appropriate answer from the options given below :

- (1) (A) and (D) only
- (2) (B) and (D) only
- (3) (B) and (C) only
- (4) (A) and (C) only

**Options :**

- 5362289397. 1
- 5362289398. 2
- 5362289399. 3
- 5362289400. 4

**Question Number : 101 Question Id : 5362282413 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The performance parameters of a logic family are required for better understanding. The following statements explain the characteristics of Digital logic family. Which of these statements are correct?

- (A) The operating speed of a logic family is determined from its propagation delay
- (B) Power dissipation is inversely proportional to switching frequency and directly proportional to cycle time
- (C) Fan-in is defined as maximum number of inputs for a logic gate in a particular logic family
- (D) Fan-out is defined as number of dissimilar logic gates driven by a single logic gate

Choose the most appropriate answer from the options given below :

- (1) (A) and (B) only
- (2) (A) and (C) only
- (3) (A) and (D) only
- (4) (B) and (C) only

**Options :**

- 5362289401. 1
- 5362289402. 2
- 5362289403. 3
- 5362289404. 4

**Question Number : 101 Question Id : 5362282413 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The performance parameters of a logic family are required for better understanding. The following statements explain the characteristics of Digital logic family. Which of these statements are correct?

- (A) The operating speed of a logic family is determined from its propagation delay
- (B) Power dissipation is inversely proportional to switching frequency and directly proportional to cycle time
- (C) Fan-in is defined as maximum number of inputs for a logic gate in a particular logic family
- (D) Fan-out is defined as number of dissimilar logic gates driven by a single logic gate

Choose the most appropriate answer from the options given below :

- (1) (A) and (B) only
- (2) (A) and (C) only
- (3) (A) and (D) only
- (4) (B) and (C) only

**Options :**

- 5362289401. 1
- 5362289402. 2
- 5362289403. 3
- 5362289404. 4

**Question Number : 102 Question Id : 5362282414 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In case of the parallel adder, the speed with which an addition can be performed is governed by the time required for the carries to propagate or ripple through all the stages of the adder. Which of the following statements are correct?

- (A) The method of speeding up the addition process is based on additional functions of full-adder called carry generate and carry propagation
- (B) The look-ahead-carry adder speeds up the process by eliminating ripple carry delay.
- (C) The final sum output of the  $n^{\text{th}}$  stage is given by  $S_n = P_n \oplus C_n$  where  $P_n = A_n \oplus B_n$
- (D) The final carry output of  $n^{\text{th}}$  stage is given by  $C_{n+1} = G_n + P_n$  where  $G_n = A_n \cdot B_n$

Choose the correct answer from the options given below :

- (1) (A) and (B) only
- (2) (A) and (C) only
- (3) (A), (B) and (C) only
- (4) (B), (C) and (D) only

**Options :**

- 5362289405. 1
- 5362289406. 2
- 5362289407. 3
- 5362289408. 4

**Question Number : 102 Question Id : 5362282414 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

In case of the parallel adder, the speed with which an addition can be performed is governed by the time required for the carries to propagate or ripple through all the stages of the adder. Which of the following statements are correct?

- (A) The method of speeding up the addition process is based on additional functions of full-adder called carry generate and carry propagation
- (B) The look-ahead-carry adder speeds up the process by eliminating ripple carry delay.
- (C) The final sum output of the  $n^{\text{th}}$  stage is given by  $S_n = P_n \oplus C_n$  where  $P_n = A_n \oplus B_n$
- (D) The final carry output of  $n^{\text{th}}$  stage is given by  $C_{n+1} = G_n + P_n$  where  $G_n = A_n \cdot B_n$

Choose the correct answer from the options given below :

- (1) (A) and (B) only
- (2) (A) and (C) only
- (3) (A), (B) and (C) only
- (4) (B), (C) and (D) only

**Options :**

- 5362289405. 1
- 5362289406. 2
- 5362289407. 3
- 5362289408. 4

**Question Number : 103 Question Id : 5362282415 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

For the 40-character wide LCD, the upper address range can go as high as :

- (A) 0101011
- (B) 1000000
- (C) 0100111
- (D) 1001000
- (E) 1011111

Choose the most appropriate answer from the options given below :

- (1) (C) only
- (2) (A) only
- (3) (D) only
- (4) (B) and (E) only

**Options :**

- 5362289409. 1
- 5362289410. 2
- 5362289411. 3
- 5362289412. 4

**Question Number : 103 Question Id : 5362282415 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



For the 40-character wide LCD, the upper address range can go as high as :

- (A) 0101011
- (B) 1000000
- (C) 0100111
- (D) 1001000
- (E) 1011111

Choose the most appropriate answer from the options given below :

- (1) (C) only
- (2) (A) only
- (3) (D) only
- (4) (B) and (E) only

**Options :**

- 5362289409. 1
- 5362289410. 2
- 5362289411. 3
- 5362289412. 4

**Question Number : 104 Question Id : 5362282416 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Keyboards are organised in a matrix. The CPU of 8051 accesses both rows and columns through its ports. So, it can access

- (A)  $4 \times 4$  matrix of keys
- (B)  $8 \times 8$  matrix of keys
- (C)  $16 \times 16$  matrix of keys
- (D)  $2 \times 2$  matrix of keys
- (E)  $32 \times 32$  matrix of keys

Choose the most appropriate answer from the options given below :

- (1) (B) only
- (2) (A) only
- (3) (C) only
- (4) (D) and (E) only

**Options :**

- 5362289413. 1
- 5362289414. 2
- 5362289415. 3
- 5362289416. 4

**Question Number : 104 Question Id : 5362282416 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Keyboards are organised in a matrix. The CPU of 8051 accesses both rows and columns through its ports. So, it can access

- (A)  $4 \times 4$  matrix of keys
- (B)  $8 \times 8$  matrix of keys
- (C)  $16 \times 16$  matrix of keys
- (D)  $2 \times 2$  matrix of keys
- (E)  $32 \times 32$  matrix of keys

Choose the most appropriate answer from the options given below :

- (1) (B) only
- (2) (A) only
- (3) (C) only
- (4) (D) and (E) only

**Options :**

5362289413. 1

5362289414. 2

5362289415. 3

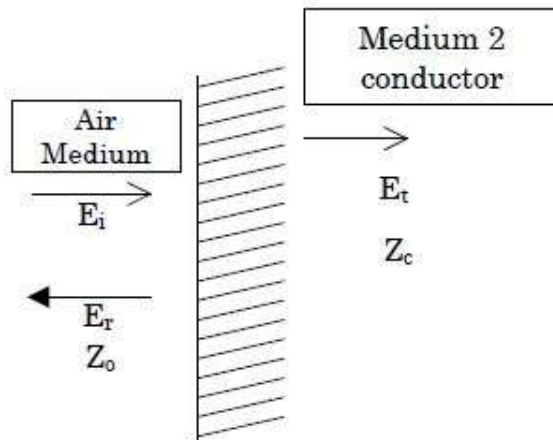
5362289416. 4

**Question Number : 105 Question Id : 5362282417 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

For an EM wave ray traversing from air, medium 1 to a conducting Medium 2.

Following statements are given :



- (A)  $E_t \simeq \frac{2Z_c}{Z_0} E_i$
- (B)  $E_r = \frac{Z_c - Z_0}{Z_c + Z_0} E_i$
- (C)  $E_r = \frac{Z_c}{Z_c + Z_0} E_i$
- (D)  $H_t \simeq 2H_i$
- (E)  $H_t \simeq H_i$

Which of the above are correct?

Choose the most appropriate answer from the options given below :

- (1) (A), (B), (D) only                      (2) (A), (C), (E) only
- (3) (A), (B), (E) only                      (4) (B), (C), (D) only

**Options :**

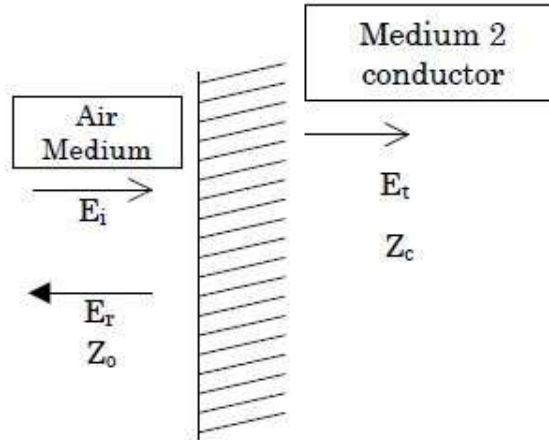
5362289417. 1  
 5362289418. 2  
 5362289419. 3  
 5362289420. 4

**Question Number : 105 Question Id : 5362282417 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

For an EM wave ray traversing from air, medium 1 to a conducting Medium 2.

Following statements are given :



- (A)  $E_t \simeq \frac{2Z_C}{Z_0} E_i$
- (B)  $E_r = \frac{Z_C - Z_0}{Z_C + Z_0} E_i$
- (C)  $E_r = \frac{Z_C}{Z_C + Z_0} E_i$
- (D)  $H_t \simeq 2H_i$
- (E)  $H_t \simeq H_i$

Which of the above are correct?

Choose the most appropriate answer from the options given below :

- (1) (A), (B), (D) only
- (2) (A), (C), (E) only
- (3) (A), (B), (E) only
- (4) (B), (C), (D) only

**Options :**

5362289417. 1
5362289418. 2
5362289419. 3
5362289420. 4

**Question Number : 106 Question Id : 5362282418 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A dielectric medium has a relative permittivity  $\epsilon_r = 6$ , for this the values of Index of Refraction and Phase velocity are given

- (A)  $\eta = 6$
- (B)  $\eta = 2.45$
- (C) Phase Velocity =  $3 \times 10^8$  m/s
- (D) Phase Velocity =  $1.22 \times 10^8$  m/s

Choose the most appropriate answer from the options given below :

- (1) (A), (C) only
- (2) (A), (D) only
- (3) (B), (D) only
- (4) (B), (C) only

**Options :**

- 5362289421. 1
- 5362289422. 2
- 5362289423. 3
- 5362289424. 4

**Question Number : 106 Question Id : 5362282418 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A dielectric medium has a relative permittivity  $\epsilon_r = 6$ , for this the values of Index of Refraction and Phase velocity are given

- (A)  $\eta = 6$
- (B)  $\eta = 2.45$
- (C) Phase Velocity =  $3 \times 10^8$  m/s
- (D) Phase Velocity =  $1.22 \times 10^8$  m/s

Choose the most appropriate answer from the options given below :

- (1) (A), (C) only
- (2) (A), (D) only
- (3) (B), (D) only
- (4) (B), (C) only

**Options :**

- 5362289421. 1
- 5362289422. 2
- 5362289423. 3
- 5362289424. 4

**Question Number : 107 Question Id : 5362282419 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A plane wave of frequency 2 GHz travelling in air parallel to a flat ground plane with  $\vec{H}$  parallel to the ground plane losses  $3 \mu \text{ W/m}^2$  into the ground plane having conductivity  $\sigma = 10^7 \text{ U/m}$ ,  $\mu_r = \epsilon_r = 1$ . The following data is given

- (A)  $E = 3.89 \text{ V/m}$
- (B)  $E = 8.98 \text{ V/m}$
- (C)  $H = 10.33 \text{ mA/m}$
- (D)  $H = 3.97 \text{ mA/m}$

Choose the most appropriate answer from the options given below :

- (1) (A), (C) only
- (2) (A), (D) only
- (3) (B), (C) only
- (4) (B), (D) only

**Options :**

- 5362289425. 1
- 5362289426. 2
- 5362289427. 3
- 5362289428. 4

**Question Number : 107 Question Id : 5362282419 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A plane wave of frequency 2 GHz travelling in air parallel to a flat ground plane with  $\vec{H}$  parallel to the ground plane losses  $3 \mu \text{ W/m}^2$  into the ground plane having conductivity  $\sigma = 10^7 \text{ U/m}$ ,  $\mu_r = \epsilon_r = 1$ . The following data is given

- (A)  $E = 3.89 \text{ V/m}$
- (B)  $E = 8.98 \text{ V/m}$
- (C)  $H = 10.33 \text{ mA/m}$
- (D)  $H = 3.97 \text{ mA/m}$

Choose the most appropriate answer from the options given below :

- (1) (A), (C) only
- (2) (A), (D) only
- (3) (B), (C) only
- (4) (B), (D) only

**Options :**

- 5362289425. 1
- 5362289426. 2
- 5362289427. 3
- 5362289428. 4

**Question Number : 108 Question Id : 5362282420 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements about the matched filter in a communication receiver are correct?

- (A) It may produce phase error if synchronization is improper
- (B) Its impulse response depends on the signal shape
- (C) The characteristics of the matched filter is matched with the transmitted data
- (D) It produces inter symbol interference
- (E) It measures the correlation between incoming received message and its impulse response

Choose the correct answer from the options given below :

- (1) (B), (C), (E) only
- (2) (A), (B), (C) only
- (3) (C), (D), (E) only
- (4) (A), (D), (E) only

**Options :**

- 5362289429. 1
- 5362289430. 2
- 5362289431. 3
- 5362289432. 4

**Question Number : 108 Question Id : 5362282420 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements about the matched filter in a communication receiver are correct?

- (A) It may produce phase error if synchronization is improper
- (B) Its impulse response depends on the signal shape
- (C) The characteristics of the matched filter is matched with the transmitted data
- (D) It produces inter symbol interference
- (E) It measures the correlation between incoming received message and its impulse response

Choose the correct answer from the options given below :

- (1) (B), (C), (E) only
- (2) (A), (B), (C) only
- (3) (C), (D), (E) only
- (4) (A), (D), (E) only

**Options :**

- 5362289429. 1
- 5362289430. 2
- 5362289431. 3
- 5362289432. 4

**Question Number : 109 Question Id : 5362282421 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements are true?

- (A) A parity check code can detect and correct single bit error
- (B) The efficiency of Huffman code is linearly proportional to average entropy
- (C) Coding increases the channel bandwidth
- (D) Coding increases the information rate
- (E) A code dictionary with minimum distance 2 is not capable of error correction.

Choose the correct answer from the options given below :

- (1) (A), (B), (D) only
- (2) (B), (D), (E) only
- (3) (A), (C), (D) only
- (4) (B), (C), (D) only

**Options :**

- 5362289433. 1
- 5362289434. 2
- 5362289435. 3
- 5362289436. 4

**Question Number : 109 Question Id : 5362282421 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements are true?

- (A) A parity check code can detect and correct single bit error
- (B) The efficiency of Huffman code is linearly proportional to average entropy
- (C) Coding increases the channel bandwidth
- (D) Coding increases the information rate
- (E) A code dictionary with minimum distance 2 is not capable of error correction.

Choose the correct answer from the options given below :

- (1) (A), (B), (D) only
- (2) (B), (D), (E) only
- (3) (A), (C), (D) only
- (4) (B), (C), (D) only

**Options :**

- 5362289433. 1
- 5362289434. 2
- 5362289435. 3
- 5362289436. 4

**Question Number : 110 Question Id : 5362282422 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



Which of the following statements are correct?

- (A) A given source will have maximum entropy if the message produced are statistically independent
- (B) As the bandwidth approaches infinity, the channel capacity becomes zero.
- (C) For binary transmission the baud rate is always equal to bit rate
- (D) The mutual information of a channel with independent input and output is constant
- (E) Nat is a unit of information

Choose the correct answer from the options given below :

- (1) (A) and (E) only
- (2) (A) and (B) only
- (3) (C) and (E) only
- (4) (A), (D) and (E) only

**Options :**

- 5362289437. 1
- 5362289438. 2
- 5362289439. 3
- 5362289440. 4

**Question Number : 110 Question Id : 5362282422 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements are correct?

- (A) A given source will have maximum entropy if the message produced are statistically independent
- (B) As the bandwidth approaches infinity, the channel capacity becomes zero.
- (C) For binary transmission the baud rate is always equal to bit rate
- (D) The mutual information of a channel with independent input and output is constant
- (E) Nat is a unit of information

Choose the correct answer from the options given below :

- (1) (A) and (E) only
- (2) (A) and (B) only
- (3) (C) and (E) only
- (4) (A), (D) and (E) only

**Options :**

- 5362289437. 1
- 5362289438. 2
- 5362289439. 3
- 5362289440. 4

**Question Number : 111 Question Id : 5362282423 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A differential transformer

- (A) is a differential voltage of two secondary windings of a transformer is varied by positioning the magnetic core through an externally applied force
- (B) is used for pressure measurement
- (C) is used for force measurement
- (D) is used for displacement measurement
- (E) is used for position measurement

Choose the correct answer from the options given below :

- (1) (A) only
- (2) (B) only
- (3) (C) only
- (4) (A), (B), (C), (D), (E) only

**Options :**

- 5362289441. 1
- 5362289442. 2
- 5362289443. 3
- 5362289444. 4

**Question Number : 111 Question Id : 5362282423 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A differential transformer

- (A) is a differential voltage of two secondary windings of a transformer is varied by positioning the magnetic core through an externally applied force
- (B) is used for pressure measurement
- (C) is used for force measurement
- (D) is used for displacement measurement
- (E) is used for position measurement

Choose the correct answer from the options given below :

- (1) (A) only
- (2) (B) only
- (3) (C) only
- (4) (A), (B), (C), (D), (E) only

**Options :**

- 5362289441. 1
- 5362289442. 2
- 5362289443. 3
- 5362289444. 4

**Question Number : 112 Question Id : 5362282424 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The wheatstone bridge is widely used for precision measurement of resistance :

- (A) from  $1\ \Omega$  to few  $M\Omega$
- (B) very low resistance
- (C) very high resistance
- (D)  $1\ m\ \Omega$  -  $10\ k\ \Omega$
- (E)  $0.1\ \Omega$  -  $100\ k\ \Omega$

Choose the correct answer from the options given below :

- (1) (A) only
- (2) (A) and (B) only
- (3) (B) and (C) only
- (4) (D) and (E) only

**Options :**

- 5362289445. 1
- 5362289446. 2
- 5362289447. 3
- 5362289448. 4

**Question Number : 112 Question Id : 5362282424 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The wheatstone bridge is widely used for precision measurement of resistance :

- (A) from  $1\ \Omega$  to few  $M\Omega$
- (B) very low resistance
- (C) very high resistance
- (D)  $1\ m\ \Omega$  -  $10\ k\ \Omega$
- (E)  $0.1\ \Omega$  -  $100\ k\ \Omega$

Choose the correct answer from the options given below :

- (1) (A) only
- (2) (A) and (B) only
- (3) (B) and (C) only
- (4) (D) and (E) only

**Options :**

- 5362289445. 1
- 5362289446. 2
- 5362289447. 3
- 5362289448. 4

**Question Number : 113 Question Id : 5362282425 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The Schering bridge, one of the most important AC bridge

- (A) It is used for capacitance measurement
- (B) It is used for phase angle measurement
- (C) It is used for inductance measurement
- (D) It is used for resistance measurement
- (E) It is used for torque measurement

Choose the correct answer from the options given below :

- (1) (A) and (B) only
- (2) (C) only
- (3) (D) only
- (4) (E) only

**Options :**

- 5362289449. 1
- 5362289450. 2
- 5362289451. 3
- 5362289452. 4

**Question Number : 113 Question Id : 5362282425 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The Schering bridge, one of the most important AC bridge

- (A) It is used for capacitance measurement
- (B) It is used for phase angle measurement
- (C) It is used for inductance measurement
- (D) It is used for resistance measurement
- (E) It is used for torque measurement

Choose the correct answer from the options given below :

- (1) (A) and (B) only
- (2) (C) only
- (3) (D) only
- (4) (E) only

**Options :**

- 5362289449. 1
- 5362289450. 2
- 5362289451. 3
- 5362289452. 4

**Question Number : 114 Question Id : 5362282426 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

For the unit step response of second order system following statements are given :

- (A) Delay time is the time required for the response to reach 60% of the final value in first attempt
- (B) Settling time is the time required for the response to reach and stay within (2% or 5%) tolerance band of its final value
- (C) Delay time is the time required for the response to reach 50% of the final value in first attempt
- (D) Settling time is the time required for the response to reach and stay within 15% of the final value

Which of the above are correct?

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 (D) only

**Options :**

- 5362289453. 1
- 5362289454. 2
- 5362289455. 3
- 5362289456. 4

**Question Number : 114 Question Id : 5362282426 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

For the unit step response of second order system following statements are given :

- (A) Delay time is the time required for the response to reach 60% of the final value in first attempt
- (B) Settling time is the time required for the response to reach and stay within (2% or 5%) tolerance band of its final value
- (C) Delay time is the time required for the response to reach 50% of the final value in first attempt
- (D) Settling time is the time required for the response to reach and stay within 15% of the final value

Which of the above are correct?

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 (D) only

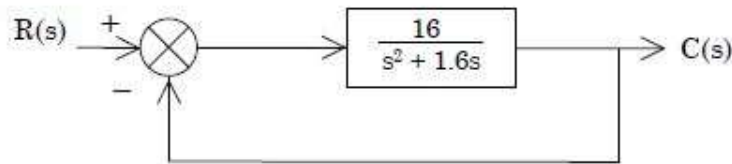
**Options :**

- 5362289453. 1
- 5362289454. 2
- 5362289455. 3
- 5362289456. 4

Question Number : 115 Question Id : 5362282427 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

A unity feedback system as shown has damping ratio of 0.8 using derivative control



Following parameters are obtained

- (A) Characteristic equation is  $s^2 + 1.6s + 16 = 0$
- (B)  $\xi = 0.2$  (without derivative control)
- (C)  $\xi = 0.8$  (without derivative control)
- (D)  $\omega_n = 4$  rad/sec

Choose the most appropriate answer from the options given below :

- (1) (A), (C), (D) only
- (2) (B), (D) only
- (3) (A), (B), (D) only
- (4) (C), (D)

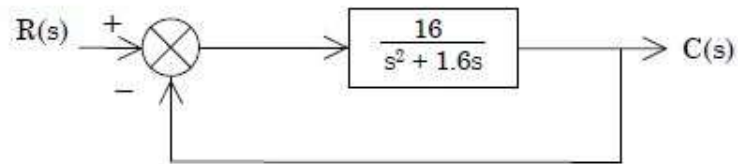
Options :

- 5362289457. 1
- 5362289458. 2
- 5362289459. 3
- 5362289460. 4

Question Number : 115 Question Id : 5362282427 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

A unity feedback system as shown has damping ratio of 0.8 using derivative control



Following parameters are obtained

- (A) Characteristic equation is  $s^2 + 1.6s + 16 = 0$
- (B)  $\xi = 0.2$  (without derivative control)
- (C)  $\xi = 0.8$  (without derivative control)
- (D)  $\omega_n = 4$  rad/sec

Choose the most appropriate answer from the options given below :

- (1) (A), (C), (D) only
- (2) (B), (D) only
- (3) (A), (B), (D) only
- (4) (C), (D)

**Options :**

- 5362289457. 1
- 5362289458. 2
- 5362289459. 3
- 5362289460. 4

**Question Number : 116 Question Id : 5362282428 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I (Volt - ampere characteristics of tunnel diode)		List II (Observation)	
(a) At peak current $I_p$ corresponding to $V_p$	(i)	Resistance becomes	and remains positive
(b) If voltage increases beyond $V_p$	(ii)	Current reaches $I_p$ (peak current) and	increases
(c) When voltage is just more than valley voltage	(iii)	$\frac{dI}{dV}$ is	negative
(d) When voltage is more than peak forward voltage	(iv)	Slope $\frac{dI}{dV}$ is	zero

Choose the correct answer from the options given below :

- (1) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
- (2) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
- (3) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
- (4) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

**Options :**

- 5362289461. 1
- 5362289462. 2
- 5362289463. 3
- 5362289464. 4

**Question Number : 116 Question Id : 5362282428 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



Match List I with List II

List I (Volt - ampere characteristics of tunnel diode)		List II (Observation)	
(a) At peak current $I_p$ corresponding to $V_p$	(i)	Resistance becomes	and remains positive
(b) If voltage increases beyond $V_p$	(ii)	Current reaches $I_p$ (peak current) and	increases
(c) When voltage is just more than valley voltage	(iii)	$\frac{dI}{dV}$ is	negative
(d) When voltage is more than peak forward voltage	(iv)	Slope $\frac{dI}{dV}$ is	zero

Choose the correct answer from the options given below :

- (1) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
- (2) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
- (3) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
- (4) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

**Options :**

- 5362289461. 1
- 5362289462. 2
- 5362289463. 3
- 5362289464. 4

**Question Number : 117 Question Id : 5362282429 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

**List I**  
**(Diffusion profile measurement technique)**

- (a) Capacitance – voltage
- (b) Differential - conductance
- (c) spreading resistance
- (d) RBS

**List II**  
**(Characteristics)**

- (i) Not suitable for diffusion studies in VLSI process when shallow junction profile are of interest
- (ii) Needs Van de Graaff generator
- (iii) Two – point probe arrangement
- (iv) Concentration near the junction space – charge region at zero bias cannot be measured

Choose the correct answer from the options given below :

- (1) (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)
- (2) (a)-(iv), (b)-(i), (c)-(iii), (d)-(ii)
- (3) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
- (4) (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)

**Options :**

- 5362289465. 1
- 5362289466. 2
- 5362289467. 3
- 5362289468. 4

**Question Number : 117 Question Id : 5362282429 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

**List I**  
**(Diffusion profile measurement technique)**

- (a) Capacitance – voltage
- (b) Differential - conductance
- (c) spreading resistance
- (d) RBS

**List II**  
**(Characteristics)**

- (i) Not suitable for diffusion studies in VLSI process when shallow junction profile are of interest
- (ii) Needs Van de Graaff generator
- (iii) Two – point probe arrangement
- (iv) Concentration near the junction space – charge region at zero bias cannot be measured

Choose the correct answer from the options given below :

- (1) (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)
- (2) (a)-(iv), (b)-(i), (c)-(iii), (d)-(ii)
- (3) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
- (4) (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)

**Options :**

- 5362289465. 1
- 5362289466. 2
- 5362289467. 3
- 5362289468. 4

**Question Number : 118 Question Id : 5362282430 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I  
( $h$  parameter)

List II  
( $T$  parameter)

(a)  $h_{11}$

(i)  $\frac{\Delta T}{D}$

(b)  $h_{12}$

(ii)  $-\frac{1}{D}$

(c)  $h_{21}$

(iii)  $\frac{B}{D}$

(d)  $h_{22}$

(iv)  $\frac{C}{D}$

Choose the correct answer from the options given below :

(1) (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)

(2) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

(3) (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)

(4) (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)

**Options :**

5362289469. 1

5362289470. 2

5362289471. 3

5362289472. 4

**Question Number : 118 Question Id : 5362282430 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I  
( $h$  parameter)

List II  
( $T$  parameter)

(a)  $h_{11}$

(i)  $\frac{\Delta T}{D}$

(b)  $h_{12}$

(ii)  $-\frac{1}{D}$

(c)  $h_{21}$

(iii)  $\frac{B}{D}$

(d)  $h_{22}$

(iv)  $\frac{C}{D}$

Choose the correct answer from the options given below :

(1) (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)

(2) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

(3) (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)

(4) (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)

**Options :**

5362289469. 1

5362289470. 2

5362289471. 3

5362289472. 4

**Question Number : 119 Question Id : 5362282431 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I (Configuration)	List II (Equation of Base current)
(a) Fixed Bias	(i) $I_B = \frac{V_{CC} - V_{BE}}{R_B + (\beta + 1)R_E}$
(b) Emitter Bias	(ii) $I_B = \frac{V_{EE} - V_{BE}}{R_B + (\beta + 1)R_E}$
(c) Emitter follower	(iii) $I_B = \frac{V_{CC} - V_{BE}}{R_B}$
(d) Common - base	(iv) $I_B = \frac{V_{EE} - V_{BE}}{R_E(\beta + 1)}$

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)-(i), (c)-(ii), (d)-(iv)

**Options :**

- 5362289473. 1
- 5362289474. 2
- 5362289475. 3
- 5362289476. 4

**Question Number : 119 Question Id : 5362282431 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I (Configuration)	List II (Equation of Base current)
(a) Fixed Bias	(i) $I_B = \frac{V_{CC} - V_{BE}}{R_B + (\beta + 1)R_E}$
(b) Emitter Bias	(ii) $I_B = \frac{V_{EE} - V_{BE}}{R_B + (\beta + 1)R_E}$
(c) Emitter follower	(iii) $I_B = \frac{V_{CC} - V_{BE}}{R_B}$
(d) Common - base	(iv) $I_B = \frac{V_{EE} - V_{BE}}{R_E(\beta + 1)}$

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)-(i), (c)-(ii), (d)-(iv)

**Options :**

- 5362289473. 1
- 5362289474. 2
- 5362289475. 3
- 5362289476. 4

**Question Number : 120 Question Id : 5362282432 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

- | List I                   | List II                                  |
|--------------------------|--|
| (a) Simplest type of ADC | (i) Flash – type ADC                     |
| (b) Fastest ADC          | (ii) dual – slope type ADC               |
| (c) Slowest ADC          | (iii) counter – type ADC                 |
| (d) Most widely used ADC | (iv) Successive – approximation type ADC |

Choose the correct answer from the options given below :

- (1) (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)
- (2) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
- (3) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)
- (4) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

**Options :**

- 5362289477. 1
- 5362289478. 2
- 5362289479. 3
- 5362289480. 4

**Question Number : 120 Question Id : 5362282432 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

- | List I                   | List II                                  |
|--------------------------|--|
| (a) Simplest type of ADC | (i) Flash – type ADC                     |
| (b) Fastest ADC          | (ii) dual – slope type ADC               |
| (c) Slowest ADC          | (iii) counter – type ADC                 |
| (d) Most widely used ADC | (iv) Successive – approximation type ADC |

Choose the correct answer from the options given below :

- (1) (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)
- (2) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
- (3) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)
- (4) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

**Options :**

- 5362289477. 1
- 5362289478. 2



5362289479. 3

5362289480. 4

**Question Number : 121 Question Id : 5362282433 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

**Match List I with List II**

<b>List I</b>	<b>List II</b>
<b>(Interrupt)</b>	<b>(ROM location (Hex.))</b>
(a) Reset	(i) 001B
(b) External hardware int. 0 (INT0)	(ii) 0003
(c) Timer 0 interrupt (TF0)	(iii) 000B
(d) Timer 1 interrupt (TF1)	(iv) 0000

Choose the correct answer from the options given below :

- (1) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)
- (2) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
- (3) (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)
- (4) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

**Options :**

5362289481. 1

5362289482. 2

5362289483. 3

5362289484. 4

**Question Number : 121 Question Id : 5362282433 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I (Interrupt)	List II (ROM location (Hex.))
(a) Reset	(i) 001B
(b) External hardware int. 0 (INT0)	(ii) 0003
(c) Timer 0 interrupt (TF0)	(iii) 000B
(d) Timer 1 interrupt (TF1)	(iv) 0000

Choose the correct answer from the options given below :

- (1) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)
- (2) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
- (3) (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)
- (4) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

**Options :**

- 5362289481. 1
- 5362289482. 2
- 5362289483. 3
- 5362289484. 4

**Question Number : 122 Question Id : 5362282434 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I

List II

- |                               |                      |
|-------------------------------|----------------------|
| (a) Klystron                  | (i) Slow structure   |
| (b) Transfer Electron devices | (ii) Bunching        |
| (c) MESFET                    | (iii) Warm electrons |
| (d) Travelling wave tube      | (iv) Pinch - off     |

Choose the correct answer from the options given below :

- (1) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
- (2) (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)
- (3) (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)
- (4) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

**Options :**

5362289485. 1

5362289486. 2

5362289487. 3

5362289488. 4

**Question Number : 122 Question Id : 5362282434 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I

List II

- |                               |                      |
|-------------------------------|----------------------|
| (a) Klystron                  | (i) Slow structure   |
| (b) Transfer Electron devices | (ii) Bunching        |
| (c) MESFET                    | (iii) Warm electrons |
| (d) Travelling wave tube      | (iv) Pinch - off     |

Choose the correct answer from the options given below :

- (1) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
- (2) (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)
- (3) (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)
- (4) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

**Options :**

- 5362289485. 1
- 5362289486. 2
- 5362289487. 3
- 5362289488. 4

**Question Number : 123 Question Id : 5362282435 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I

List II

- |              |                           |
|--------------|---------------------------|
| (a) DPSK     | (i) Non coherent detector |
| (b) AM       | (ii) Ratio detector       |
| (c) FM       | (iii) Coherent detector   |
| (d) DSB - SC | (iv) Rectifier Detector   |

Choose the correct answer from the options given below :

- (1) (a)-(i), (b)-(iv), (c)-(ii), (d)-(iii)
- (2) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)
- (3) (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)
- (4) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

**Options :**

- 5362289489. 1
- 5362289490. 2
- 5362289491. 3
- 5362289492. 4

**Question Number : 123 Question Id : 5362282435 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

**Match List I with List II**

List I	List II
(a) DPSK	(i) Non coherent detector
(b) AM	(ii) Ratio detector
(c) FM	(iii) Coherent detector
(d) DSB - SC	(iv) Rectifier Detector

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

- (1) (a)-(i), (b)-(iv), (c)-(ii), (d)-(iii)
- (2) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)
- (3) (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)
- (4) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

**Options :**

- 5362289489. 1
- 5362289490. 2
- 5362289491. 3
- 5362289492. 4

**Question Number : 124 Question Id : 5362282436 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

For time response of a second order system

List I

(a) Slower time constant

(b) Rise time

(c) Settling time

(d) Faster time constant

List II

(i) 
$$\frac{1}{\left(\zeta + \sqrt{\zeta^2 + 1}\right)\omega_n}$$

(ii) 
$$\frac{1}{4\zeta\omega_n}$$

(iii) 
$$\frac{\pi - \phi}{\omega_n - \sqrt{1 - \zeta^2}}$$

(iv) 
$$\frac{1}{\left(\zeta - \sqrt{\zeta^2 - 1}\right)\omega_n}$$

Choose the correct answer from the options given below :

(1) (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

(2) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)

(3) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

(4) (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

**Options :**

5362289493. 1

5362289494. 2

5362289495. 3

5362289496. 4

**Question Number : 124 Question Id : 5362282436 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

For time response of a second order system

List I

(a) Slower time constant

(b) Rise time

(c) Settling time

(d) Faster time constant

List II

(i)  $\frac{1}{\left(\zeta + \sqrt{\zeta^2 + 1}\right)\omega_n}$

(ii)  $\frac{1}{4\zeta\omega_n}$

(iii)  $\frac{\pi - \phi}{\omega_n - \sqrt{1 - \zeta^2}}$

(iv)  $\frac{1}{\left(\zeta - \sqrt{\zeta^2 - 1}\right)\omega_n}$

Choose the correct answer from the options given below :

(1) (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

(2) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)

(3) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

(4) (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

**Options :**

5362289493. 1

5362289494. 2

5362289495. 3

5362289496. 4

**Question Number : 125 Question Id : 5362282437 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Match List I with List II

List I (Symbol)	List II (Value)
(a) $da$	(i) $10^{-15}$
(b) $d$	(ii) $10^{-1}$
(c) $f$	(iii) $10^{-18}$
(d) $a$	(iv) $10$

Choose the correct answer from the options given below :

- (1) (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)
- (2) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
- (3) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
- (4) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

**Options :**

- 5362289497. 1
- 5362289498. 2
- 5362289499. 3
- 5362289500. 4

**Question Number : 125 Question Id : 5362282437 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



Match List I with List II

List I (Symbol)	List II (Value)
(a) $da$	(i) $10^{-15}$
(b) $d$	(ii) $10^{-1}$
(c) $f$	(iii) $10^{-18}$
(d) $a$	(iv) $10$

Choose the correct answer from the options given below :

- (1) (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)
- (2) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
- (3) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
- (4) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

**Options :**

- 5362289497. 1
- 5362289498. 2
- 5362289499. 3
- 5362289500. 4

**Question Number : 126 Question Id : 5362282438 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the following semiconductor materials on the basis of Energy – Bandgap ( $E_g$ ) from highest to lowest

- (A) ZnSe
- (B) InAs
- (C) CdTe
- (D) Ge
- (E) InP

Choose the correct answer from the options given below :

- (1) (D), (C), (B), (A), (E)
- (2) (C), (B), (A), (E), (D)
- (3) (B), (A), (D), (C), (E)
- (4) (A), (C), (E), (D), (B)

**Options :**

- 5362289501. 1
- 5362289502. 2
- 5362289503. 3
- 5362289504. 4

**Question Number : 126 Question Id : 5362282438 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the following semiconductor materials on the basis of Energy – Bandgap ( $E_g$ ) from highest to lowest

- (A) ZnSe
- (B) InAs
- (C) CdTe
- (D) Ge
- (E) InP

Choose the correct answer from the options given below :

- (1) (D), (C), (B), (A), (E)
- (2) (C), (B), (A), (E), (D)
- (3) (B), (A), (D), (C), (E)
- (4) (A), (C), (E), (D), (B)

**Options :**

- 5362289501. 1
- 5362289502. 2
- 5362289503. 3
- 5362289504. 4

**Question Number : 127 Question Id : 5362282439 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The sequence of first to last step involved in a typical silicon gate n – MOS transistor is

- (A) Gate oxidation
- (B) Contact cuts
- (C) Patterning  $\text{SiO}_2$  layer
- (D) Implant or diffusion
- (E) Patterning of aluminium layer

Choose the correct answer from the options given below :

- (1) (C), (D), (A), (B), (E)
- (2) (B), (D), (A), (C), (E)
- (3) (C), (A), (D), (B), (E)
- (4) (B), (A), (D), (E), (C)

**Options :**

- 5362289505. 1
- 5362289506. 2

5362289507. 3

5362289508. 4

**Question Number : 127 Question Id : 5362282439 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The sequence of first to last step involved in a typical silicon gate n – MOS transistor is

- (A) Gate oxidation
- (B) Contact cuts
- (C) Patterning  $\text{SiO}_2$  layer
- (D) Implant or diffusion
- (E) Patterning of aluminium layer

Choose the correct answer from the options given below :

- (1) (C), (D), (A), (B), (E)
- (2) (B), (D), (A), (C), (E)
- (3) (C), (A), (D), (B), (E)
- (4) (B), (A), (D), (E), (C)

**Options :**

5362289505. 1

5362289506. 2

5362289507. 3

5362289508. 4

**Question Number : 128 Question Id : 5362282440 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the Nyquist sampling interval of the signal in descending order

- (A)  $\sin c(300t)$
- (B)  $\sin c(300t) + \sin c^2(300t)$
- (C)  $\sin c(200t)$
- (D)  $\sin c(200t) + \sin c^2(200t)$
- (E)  $\sin c(200t) + \sin c(500t)$

Choose the correct answer from the options given below :

- (1) (A), (C), (B), (D), (E)
- (2) (C), (D), (E), (A), (B)
- (3) (C), (A), (D), (E), (B)
- (4) (A), (E), (D), (C), (B)

**Options :**

- 5362289509. 1
- 5362289510. 2
- 5362289511. 3
- 5362289512. 4

**Question Number : 128 Question Id : 5362282440 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the Nyquist sampling interval of the signal in descending order

- (A)  $\sin c(300t)$
- (B)  $\sin c(300t) + \sin c^2(300t)$
- (C)  $\sin c(200t)$
- (D)  $\sin c(200t) + \sin c^2(200t)$
- (E)  $\sin c(200t) + \sin c(500t)$

Choose the correct answer from the options given below :

- (1) (A), (C), (B), (D), (E)
- (2) (C), (D), (E), (A), (B)
- (3) (C), (A), (D), (E), (B)
- (4) (A), (E), (D), (C), (B)

**Options :**

- 5362289509. 1
- 5362289510. 2
- 5362289511. 3
- 5362289512. 4

**Question Number : 129 Question Id : 5362282441 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Compare the output signal swing of the following power amplifiers

- (A) Class A
- (B) Class B
- (C) Class AB
- (D) Class C

Choose the correct answer from the options given below :

- (1) (A) > (B) > (C) > (D)
- (2) (D) > (C) > (B) > (A)
- (3) (D) > (B) > (C) > (A)
- (4) (A) > (C) > (B) > (D)

**Options :**

- 5362289513. 1
- 5362289514. 2
- 5362289515. 3
- 5362289516. 4

**Question Number : 129 Question Id : 5362282441 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Compare the output signal swing of the following power amplifiers

- (A) Class A
- (B) Class B
- (C) Class AB
- (D) Class C

Choose the correct answer from the options given below :

- (1) (A) > (B) > (C) > (D)
- (2) (D) > (C) > (B) > (A)
- (3) (D) > (B) > (C) > (A)
- (4) (A) > (C) > (B) > (D)

**Options :**

- 5362289513. 1
- 5362289514. 2
- 5362289515. 3
- 5362289516. 4

**Question Number : 130 Question Id : 5362282442 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

For designing a sequential circuit, the following steps are used as general methodology

- (A) State Assignment and transition table
- (B) State diagram
- (C) State table
- (D) Realization
- (E) k-maps and minimal expressions

The sequence of these steps in order of their execution is

Choose the correct answer from the options given below :

- (1) (C), (A), (B), (E), (D)
- (2) (E), (B), (A), (D), (C)
- (3) (A), (B), (E), (C), (D)
- (4) (B), (C), (A), (E), (D)

**Options :**

- 5362289517. 1
- 5362289518. 2
- 5362289519. 3
- 5362289520. 4

**Question Number : 130 Question Id : 5362282442 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

For designing a sequential circuit, the following steps are used as general methodology

- (A) State Assignment and transition table
- (B) State diagram
- (C) State table
- (D) Realization
- (E) k-maps and minimal expressions

The sequence of these steps in order of their execution is

Choose the correct answer from the options given below :

- |                             |                             |
|-----------------------------|-----------------------------|
| (1) (C), (A), (B), (E), (D) | (2) (E), (B), (A), (D), (C) |
| (3) (A), (B), (E), (C), (D) | (4) (B), (C), (A), (E), (D) |

**Options :**

- 5362289517. 1
- 5362289518. 2
- 5362289519. 3
- 5362289520. 4

**Question Number : 131 Question Id : 5362282443 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the following addresses in ascending order of their priority

- (A) Address for divide error is 0000H
- (B) Address for one – byte interrupt instruction, INT is 000CH
- (C) Address for overflow, INTO instruction is 0010H
- (D) Address for single step trap – TF must be set is 0004H
- (E) Address for non maskable interrupt is 0008H

Choose the correct answer from the options given below :

- (1) (A), (D), (E), (B), (C)
- (2) (A), (E), (D), (B), (C)
- (3) (A), (E), (B), (C), (D)
- (4) (A), (D), (B), (E), (C)

**Options :**

- 5362289521. 1
- 5362289522. 2
- 5362289523. 3
- 5362289524. 4

**Question Number : 131 Question Id : 5362282443 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the following addresses in ascending order of their priority

- (A) Address for divide error is 0000H
- (B) Address for one – byte interrupt instruction, INT is 000CH
- (C) Address for overflow, INTO instruction is 0010H
- (D) Address for single step trap – TF must be set is 0004H
- (E) Address for non maskable interrupt is 0008H

Choose the correct answer from the options given below :

- (1) (A), (D), (E), (B), (C)
- (2) (A), (E), (D), (B), (C)
- (3) (A), (E), (B), (C), (D)
- (4) (A), (D), (B), (E), (C)

**Options :**

- 5362289521. 1
- 5362289522. 2
- 5362289523. 3
- 5362289524. 4

**Question Number : 132 Question Id : 5362282444 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



Following materials are given

- (A) Nickel
- (B) Silicon iron
- (C) Silver
- (D) Cobalt

Arrange them in ascending order of relative permeability

Choose the correct answer from the options given below :

- (1) (C), (D), (B), (A)
- (2) (C), (D), (A), (B)
- (3) (B), (D), (A), (C)
- (4) (C), (A), (D), (B)

**Options :**

- 5362289525. 1
- 5362289526. 2
- 5362289527. 3
- 5362289528. 4

**Question Number : 132 Question Id : 5362282444 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Following materials are given

- (A) Nickel
- (B) Silicon iron
- (C) Silver
- (D) Cobalt

Arrange them in ascending order of relative permeability

Choose the correct answer from the options given below :

- (1) (C), (D), (B), (A)
- (2) (C), (D), (A), (B)
- (3) (B), (D), (A), (C)
- (4) (C), (A), (D), (B)

**Options :**

- 5362289525. 1
- 5362289526. 2
- 5362289527. 3
- 5362289528. 4

**Question Number : 133 Question Id : 5362282445 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the bandwidth efficiency of the following M – ary modulation schemes in descending order

- (A) 8 – ary PSK
- (B) 8 – ary FSK
- (C) 16 – ary FSK
- (D) 16 – ary PSK
- (E) 4 – ary FSK

Choose the correct answer from the options given below :

- (1) (D), (C), (A), (B), (E)
- (2) (D), (E), (A), (C), (B)
- (3) (C), (D), (B), (A), (E)
- (4) (D), (A), (E), (B), (C)

**Options :**

- 5362289529. 1
- 5362289530. 2
- 5362289531. 3
- 5362289532. 4

**Question Number : 133 Question Id : 5362282445 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the bandwidth efficiency of the following M – ary modulation schemes in descending order

- (A) 8 – ary PSK
- (B) 8 – ary FSK
- (C) 16 – ary FSK
- (D) 16 – ary PSK
- (E) 4 – ary FSK

Choose the correct answer from the options given below :

- (1) (D), (C), (A), (B), (E)
- (2) (D), (E), (A), (C), (B)
- (3) (C), (D), (B), (A), (E)
- (4) (D), (A), (E), (B), (C)

**Options :**

- 5362289529. 1
- 5362289530. 2
- 5362289531. 3
- 5362289532. 4

**Question Number : 134 Question Id : 5362282446 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

Correct Marks : 2 Wrong Marks : 0

For a unity feedback system, open loop, gain is a complex quantity  $(x + jy)$  and  $M$  circles are drawn for different values of 'M'

- (A)  $M = 1$
- (B)  $M = 2$
- (C)  $M = 3$
- (D)  $M = 1.6$

Arrange the above in ascending order of radius for constant magnitude Loci

Choose the correct answer from the options given below :

- (1) (C), (B), (D), (A)
- (2) (B), (C), (A), (D)
- (3) (D), (A), (B), (C)
- (4) (C), (D), (A), (B)

Options :

- 5362289533. 1
- 5362289534. 2
- 5362289535. 3
- 5362289536. 4

Question Number : 134 Question Id : 5362282446 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 2 Wrong Marks : 0

For a unity feedback system, open loop, gain is a complex quantity  $(x + jy)$  and  $M$  circles are drawn for different values of 'M'

- (A)  $M = 1$
- (B)  $M = 2$
- (C)  $M = 3$
- (D)  $M = 1.6$

Arrange the above in ascending order of radius for constant magnitude Loci

Choose the correct answer from the options given below :

- (1) (C), (B), (D), (A)
- (2) (B), (C), (A), (D)
- (3) (D), (A), (B), (C)
- (4) (C), (D), (A), (B)

Options :

- 5362289533. 1
- 5362289534. 2
- 5362289535. 3
- 5362289536. 4

Question Number : 135 Question Id : 5362282447 Question Type : MCQ Option Shuffling : No Is Question

**Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the following in their order of occurrence from control grid to fluorescent screen

- (A) Focusing Anode
- (B) Horizontal Deflection Plates
- (C) Aquadag
- (D) Pre – accelerating anode
- (E) Vertical deflection plates

Choose the correct answer from the options given below :

- |                             |                             |
|-----------------------------|-----------------------------|
| (1) (A), (D), (C), (B), (E) | (2) (B), (C), (D), (A), (E) |
| (3) (D), (A), (E), (B), (C) | (4) (C), (B), (D), (E), (A) |

**Options :**

- 5362289537. 1
- 5362289538. 2
- 5362289539. 3
- 5362289540. 4

**Question Number : 135 Question Id : 5362282447 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Arrange the following in their order of occurrence from control grid to fluorescent screen

- (A) Focusing Anode
- (B) Horizontal Deflection Plates
- (C) Aquadag
- (D) Pre – accelerating anode
- (E) Vertical deflection plates

Choose the correct answer from the options given below :

- |                             |                             |
|-----------------------------|-----------------------------|
| (1) (A), (D), (C), (B), (E) | (2) (B), (C), (D), (A), (E) |
| (3) (D), (A), (E), (B), (C) | (4) (C), (B), (D), (E), (A) |

**Options :**

- 5362289537. 1
- 5362289538. 2
- 5362289539. 3
- 5362289540. 4

**Question Number : 136 Question Id : 5362282448 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Statement I : For memory capacitors, one of the popular structure is trench capacitor to push memory densities to 64 Mbits and beyond.

Statement II : The sides of the trench capacitor are doped  $n^+$  and the bottom of the trench has a  $p^+$  region, that forms a channel – stop region to isolate adjacent capacitors.

In the light of the above statements, choose the correct answer from the options given below

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

**Options :**

- 5362289541. 1
- 5362289542. 2
- 5362289543. 3
- 5362289544. 4

**Question Number : 136 Question Id : 5362282448 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Statement I : For memory capacitors, one of the popular structure is trench capacitor to push memory densities to 64 Mbits and beyond.

Statement II : The sides of the trench capacitor are doped  $n^+$  and the bottom of the trench has a  $p^+$  region, that forms a channel – stop region to isolate adjacent capacitors.

In the light of the above statements, choose the correct answer from the options given below

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

**Options :**

- 5362289541. 1
- 5362289542. 2
- 5362289543. 3
- 5362289544. 4

**Question Number : 137 Question Id : 5362282449 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R)

Assertion (A) : The circuits that are quite stable and relatively insensitive to temperature variations have high stability factors.

Reasons (R) : For a particular configuration, if a change in  $I_{CO}$  fails to produce a significant change in  $I_C$ , the stability factor will be quite small.

In the light of the above statement, choose the correct answer from the options given below :

- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- (3) (A) is true but (R) is false
- (4) (A) is false but (R) is true

**Options :**

- 5362289545. 1
- 5362289546. 2
- 5362289547. 3
- 5362289548. 4

**Question Number : 137 Question Id : 5362282449 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R)

Assertion (A) : The circuits that are quite stable and relatively insensitive to temperature variations have high stability factors.

Reasons (R) : For a particular configuration, if a change in  $I_{CO}$  fails to produce a significant change in  $I_C$ , the stability factor will be quite small.

In the light of the above statement, choose the correct answer from the options given below :

- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- (3) (A) is true but (R) is false
- (4) (A) is false but (R) is true

**Options :**

- 5362289545. 1
- 5362289546. 2
- 5362289547. 3
- 5362289548. 4

**Question Number : 138 Question Id : 5362282450 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R)

Assertion (A) : In Gunn effect, when electric field is varied from zero to a threshold value. The drift velocity decreases

Reasons (R) : Beyond the threshold electric field, if the electric field is increased. The drift velocity is decreased and the diode exhibits negative resistance.

In the light of the above statement, 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 :**

- 5362289549. 1
- 5362289550. 2
- 5362289551. 3
- 5362289552. 4

**Question Number : 138 Question Id : 5362282450 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R)

Assertion (A) : In Gunn effect, when electric field is varied from zero to a threshold value. The drift velocity decreases

Reasons (R) : Beyond the threshold electric field, if the electric field is increased. The drift velocity is decreased and the diode exhibits negative resistance.

In the light of the above statement, 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 :**

- 5362289549. 1
- 5362289550. 2
- 5362289551. 3
- 5362289552. 4

**Question Number : 139 Question Id : 5362282451 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Give below are two statements :

Statement I : The Hall effect sensor is included in the magnetic core structure of the current probe.

Statement II : The Hall effect sensor assures that the static magnetic flux in the core is exactly zero.

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

- 5362289553. 1
- 5362289554. 2
- 5362289555. 3
- 5362289556. 4

**Question Number : 139 Question Id : 5362282451 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Give below are two statements :

Statement I : The Hall effect sensor is included in the magnetic core structure of the current probe.

Statement II : The Hall effect sensor assures that the static magnetic flux in the core is exactly zero.

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

- 5362289553. 1
- 5362289554. 2
- 5362289555. 3
- 5362289556. 4

**Question Number : 140 Question Id : 5362282452 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**



**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R)

Assertion (A) : The Syndrome depends on both the error pattern and the transmitted code word.

Reasons (R) : All error patterns that differ by a code word have the same syndrome.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- (3) (A) is true but (R) is false
- (4) (A) is false but (R) is true

**Options :**

5362289557. 1

5362289558. 2

5362289559. 3

5362289560. 4

**Question Number : 140 Question Id : 5362282452 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Given below are two statements : One is labelled as Assertion (A) and the other is labelled as Reason (R)

Assertion (A) : The Syndrome depends on both the error pattern and the transmitted code word.

Reasons (R) : All error patterns that differ by a code word have the same syndrome.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- (3) (A) is true but (R) is false
- (4) (A) is false but (R) is true

**Options :**

5362289557. 1

5362289558. 2

5362289559. 3

5362289560. 4

**Sub-Section Number :**

2

**Sub-Section Id :**

53622895

**Question Shuffling Allowed :**

Yes

**Question Id : 5362282453 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

**Question Numbers : (141 to 145)**

Question Label : Comprehension

Read the Passage and Answer Question 91 – 95 :

Charge Couple Device (CCD) can be used either as an image sensor or as a shift register. As a photo detector it has also been called charge – coupled image sensor or charge – transfer image sensor. Most common area images use either interline transfer or frame transfer readout architecture. The spacing between CCDs should be small for efficient charge transfer.

**Sub questions**

**Question Number : 141 Question Id : 5362282454 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which semi conductor materials are used to make Charge Couple Device (CCD)?

- (A) Si
- (B) Hg Cd Tc
- (C) Ta
- (D) In Sb

Choose the correct answer from the options given below :

- (1) (A) only
- (2) (A) and (C) only
- (3) (C) and (D) only
- (4) (A), (B) and (D) only

**Options :**

- 5362289561. 1
- 5362289562. 2
- 5362289563. 3
- 5362289564. 4

**Question Number : 142 Question Id : 5362282455 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

CCDs have the following characteristics

- (1) Low dark current, high – noise
- (2) High – voltage operation, low – noise
- (3) Poor dynamic range, low – dark current
- (4) Good linearity, low – dark current

**Options :**

- 5362289565. 1
- 5362289566. 2
- 5362289567. 3
- 5362289568. 4

**Question Number : 143 Question Id : 5362282456 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Give below are two statements :

Statement I : The advantage of frame – transfer readout architecture, compared to the interline, transfer is a more efficient light – sensing area.

Statement II : For both interline transfer and frame – transfer, all columns advance their charge signals to the horizontal output register simultaneously

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

5362289569. 1

5362289570. 2

5362289571. 3

5362289572. 4

**Question Number : 144 Question Id : 5362282457 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Give below are two statements :

Statement I : A line imager with dual output registers has poor read – out speed

Statement II : In the frame transfer scheme, signals are shifted to a storage area away from the sensing area.

In the light of the above statements, choose the correct answer from the options given below

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

**Options :**

5362289573. 1

5362289574. 2

5362289575. 3

5362289576. 4

**Question Number : 145 Question Id : 5362282458 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Give below are two statements :

Statement I : The three basic charge – transfer mechanisms in CCD are (a) thermal diffusion, (b) self – induced drift and (c) fringing – field effect.

Statement II : For small amount of signal charge, self induced drift is the dominant factor and for a reasonably large charge packet; thermal diffusion is the dominant transfer mechanism

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

5362289577. 1

5362289578. 2

5362289579. 3

5362289580. 4

**Question Id : 5362282453 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

**Question Numbers : (141 to 145)**

Question Label : Comprehension

Read the Passage and Answer Question 91 – 95 :

Charge Couple Device (CCD) can be used either as an image sensor or as a shift register. As a photo detector it has also been called charge – coupled image sensor or charge – transfer image sensor. Most common area images use either interline transfer or frame transfer readout architecture. The spacing between CCDs should be small for efficient charge transfer.

**Sub questions**

**Question Number : 141 Question Id : 5362282454 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which semi conductor materials are used to make Charge Couple Device (CCD)?

- (A) Si
- (B) Hg Cd Te
- (C) Ta
- (D) In Sb

Choose the correct answer from the options given below :

- (1) (A) only
- (2) (A) and (C) only
- (3) (C) and (D) only
- (4) (A), (B) and (D) only

**Options :**

- 5362289561. 1
- 5362289562. 2
- 5362289563. 3
- 5362289564. 4

**Question Number : 142 Question Id : 5362282455 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

CCDs have the following characteristics

- (1) Low dark current, high – noise
- (2) High – voltage operation, low – noise
- (3) Poor dynamic range, low – dark current
- (4) Good linearity, low – dark current

**Options :**

- 5362289565. 1
- 5362289566. 2
- 5362289567. 3
- 5362289568. 4

**Question Number : 143 Question Id : 5362282456 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Give below are two statements :

Statement I : The advantage of frame – transfer readout architecture, compared to the interline, transfer is a more efficient light – sensing area.

Statement II : For both interline transfer and frame – transfer, all columns advance their charge signals to the horizontal output register simultaneously

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

- 5362289569. 1
- 5362289570. 2
- 5362289571. 3
- 5362289572. 4

**Question Number : 144 Question Id : 5362282457 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Give below are two statements :

Statement I : A line imager with dual output registers has poor read – out speed

Statement II : In the frame transfer scheme, signals are shifted to a storage area away from the sensing area.

In the light of the above statements, choose the correct answer from the options given below

- (1) Both Statement I and Statement II are true
- (2) Both Statement I and Statement II are false
- (3) Statement I is correct but Statement II is false
- (4) Statement I is incorrect but Statement II is true

**Options :**

- 5362289573. 1
- 5362289574. 2
- 5362289575. 3
- 5362289576. 4

**Question Number : 145 Question Id : 5362282458 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Give below are two statements :

**Statement I :** The three basic charge – transfer mechanisms in CCD are (a) thermal diffusion, (b) self – induced drift and (c) fringing – field effect.

**Statement II :** For small amount of signal charge, self induced drift is the dominant factor and for a reasonably large charge packet; thermal diffusion is the dominant transfer mechanism

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

- (1) Both Statement I and Statement II are correct
- (2) Both Statement I and Statement II are incorrect
- (3) Statement I is correct but Statement II is incorrect
- (4) Statement I is incorrect but Statement II is correct

**Options :**

5362289577. 1

5362289578. 2

5362289579. 3

5362289580. 4

**Sub-Section Number :**

3

**Sub-Section Id :**

53622896

**Question Shuffling Allowed :**

Yes

**Question Id : 5362282459 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

**Question Numbers : (146 to 150)**

Question Label : Comprehension

Read the Passage and Answer Question 96 – 100 :

The ability of the oscillator circuit is to oscillate at one exact frequency is called frequency stability. The frequency of oscillation is an important criterion. Usually the circuits producing sine waves are called oscillators while those generating a square wave, triangular wave and/or saw tooth wave are called generators though both of these can be used interchangeably.

**Sub questions**

**Question Number : 146 Question Id : 5362282460 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements are not correct?

- (A) Rise time of triangular waveform is always equal to its fall time
- (B) Saw tooth waveforms have unequal rise and fall times
- (C) Triangular wave generator can not be converted into a sawtooth wave generator
- (D) Triangular wave generator can be converted into sawtooth wave generator by injecting a variable dc voltage into the inverting terminal of the integrator.

Choose the correct answer from the options given below :

- (1) (C) and (D) only
- (2) (C) only
- (3) (B) only
- (4) (A) and (B) only

**Options :**

- 5362289581. 1
- 5362289582. 2
- 5362289583. 3
- 5362289584. 4

**Question Number : 147 Question Id : 5362282461 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The frequency of oscillation of a quadrature oscillator having resistance of  $100\text{ k}\Omega$  and  $0.01\ \mu\text{F}$  capacitor is

- (1) 100 Hz
- (2) 159 Hz
- (3) 200 Hz
- (4) 259 Hz

**Options :**

- 5362289585. 1
- 5362289586. 2
- 5362289587. 3
- 5362289588. 4

**Question Number : 148 Question Id : 5362282462 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**



The equation of frequency of oscillation of a triangular wave generator is given as

$$(1) \quad f_0 = \frac{3R_1C_1R_2}{R_3}$$

$$(2) \quad f_0 = \frac{4R_1C_1R_2}{R_3}$$

$$(3) \quad f_0 = \frac{R_3}{3R_1C_1R_2}$$

$$(4) \quad f_0 = \frac{R_3}{4R_1C_1R_2}$$

**Options :**

5362289589. 1

5362289590. 2

5362289591. 3

5362289592. 4

**Question Number : 149 Question Id : 5362282463 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A triangular wave generator can be formed by connecting

- (1) an integrator to square wave generator
- (2) a differentiator to square wave generator
- (3) a differentiator to quadrature oscillator
- (4) an integrator to quadrature oscillator

**Options :**

5362289593. 1

5362289594. 2

5362289595. 3

5362289596. 4

**Question Number : 150 Question Id : 5362282464 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Square wave generator is also called

- (1) one-shot multivibrator
- (2) sample and hold circuit
- (3) free- running multivibrator
- (4) voltage-to-current convertor

**Options :**

5362289597. 1

5362289598. 2

5362289599. 3

5362289600. 4

**Question Id : 5362282459 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No**

**Question Numbers : (146 to 150)**

Question Label : Comprehension

Read the Passage and Answer Question 96 – 100 :

The ability of the oscillator circuit is to oscillate at one exact frequency is called frequency stability. The frequency of oscillation is an important criterion. Usually the circuits producing sine waves are called oscillators while those generating a square wave, triangular wave and/or saw tooth wave are called generators though both of these can be used interchangeably.

**Sub questions**

**Question Number : 146 Question Id : 5362282460 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Which of the following statements are not correct?

- (A) Rise time of triangular waveform is always equal to its fall time
- (B) Saw tooth waveforms have unequal rise and fall times
- (C) Triangular wave generator can not be converted into a sawtooth wave generator
- (D) Triangular wave generator can be converted into sawtooth wave generator by injecting a variable dc voltage into the inverting terminal of the integrator.

Choose the correct answer from the options given below :

- (1) (C) and (D) only
- (2) (C) only
- (3) (B) only
- (4) (A) and (B) only

**Options :**

- 5362289581. 1
- 5362289582. 2
- 5362289583. 3
- 5362289584. 4

**Question Number : 147 Question Id : 5362282461 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The frequency of oscillation of a quadrature oscillator having resistance of  $100\text{ k}\Omega$  and  $0.01\ \mu\text{F}$  capacitor is

- (1) 100 Hz
- (2) 159 Hz
- (3) 200 Hz
- (4) 259 Hz

**Options :**

- 5362289585. 1
- 5362289586. 2
- 5362289587. 3
- 5362289588. 4

**Question Number : 148 Question Id : 5362282462 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

The equation of frequency of oscillation of a triangular wave generator is given as

$$(1) \quad f_0 = \frac{3R_1C_1R_2}{R_3}$$

$$(2) \quad f_0 = \frac{4R_1C_1R_2}{R_3}$$

$$(3) \quad f_0 = \frac{R_3}{3R_1C_1R_2}$$

$$(4) \quad f_0 = \frac{R_3}{4R_1C_1R_2}$$

**Options :**

5362289589. 1

5362289590. 2

5362289591. 3

5362289592. 4

**Question Number : 149 Question Id : 5362282463 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

A triangular wave generator can be formed by connecting

- (1) an integrator to square wave generator
- (2) a differentiator to square wave generator
- (3) a differentiator to quadrature oscillator
- (4) an integrator to quadrature oscillator

**Options :**

5362289593. 1

5362289594. 2

5362289595. 3

5362289596. 4

**Question Number : 150 Question Id : 5362282464 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 2 Wrong Marks : 0**

Square wave generator is also called

- (1) one-shot multivibrator
- (2) sample and hold circuit
- (3) free- running multivibrator
- (4) voltage-to-current convertor

**Options :**

5362289597. 1

5362289598. 2

5362289599. 3

5362289600. 4