National Testing Agency

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	88 Electronic Science 21st Aug 2024 Shift 1
Subject Name :	88 Electronic Science
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Electronic Science and General Paper

Group Number :	1
Group Id :	3421235
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General Paper

Section Id :	3421239
Section Number :	1
Section type :	Online
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Number of Questions :	42
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Section Marks :	100

Maximum Instruction Time : 0
Sub-Section Number : 1
Sub-Section Id : 34212325
Question Shuffling Allowed : No

Question Id : 342123617 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (1 to 5)

Question Label : Comprehension

The following table shows the percentage (%) distribution of students in M. Tech. (Computer Science) class, who got employment in the areas of Hardware, Software Quality Assurance (SQA), Software Development and others during the five years from 2019 to 2023, alongwith the average starting salaries of students per month (in Rs.) in these areas during the same years. The total numbers of students who passed out in the years 2019-2023 are 800, 600, 1100, 1200, and 1000, respectively. Based on the data in the table, answer the questions that follow

Employment – Area wise details of students

Employment Area	2019		2020		2021		2022		2023	
	I %	II ₹	I %	II ₹	I %	II ₹	I %	II ₹	I %	II ₹
Hardware	22	54500	17	63800	23	75500	19	89200	32	98100
SQA	36	51700	48	63900	43	76300	37	89600	32	102200
Software Development	19	52900	23	64400	21	70500	16	77600	20	86400
Other	23	42600	12	50900	13	60200	28	66400	16	75400

Where I represents percentage distribution of students who got employment and II represents the average starting salary of students per month (in ₹)

Sub questions

Question Number : 1 Question Id : 342123618 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In all the five years, the number of students getting employment in Hardware is _____ less than the number of students getting employment in SQA.

1. 826

2. 650

3. 734

4. 548

Question Number : 2 Question Id : 342123619 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What is the percentage increase in the average starting salary (per month) of employment in Hardware in the year 2023 with reference to the year 2019?

1. 60%

2. 32%

3. 96%

4. 80%

Question Number : 3 Question Id : 342123620 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What is the average monthly salary offered to an M. Tech. (Computer Science) student in 2020?

1. ₹ 60750

2. ₹ 63300

3. ₹ 63333

4. ₹ 64030

Question Number : 4 Question Id : 342123621 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In 2021, students getting employment in Hardware earned ₹ _____ lakhs more than those getting employment in Software Development (per annum).

1. 430

2. 337.92

3. 284.12

4. 324.3

Question Number : 5 Question Id : 342123622 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The average monthly salary offered to an M. Tech (Computer Science) student in 2023 is approximately _____% more than that in 2022.

1. 12.17

2. 17.14

3. 25

4. 5.43

Question Id : 342123617 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (1 to 5)

Question Label : Comprehension

निम्न तालिका में एम.टेक(कंप्यूटर विज्ञान) के उन विद्यार्थियों का प्रतिषत (%) वितरण दर्शाया गया हैं जिन्हें 2019 से 2023 के पांच वर्षों के दौरान हार्डवेयर, सोफ्टवेयर गुणवत्ता आश्वासन (एस क्यू ए), साफ्टवेयर विकास व अन्य क्षेत्रों मे रोजगार मिला। इसके साथ ही उन्हीं वर्षों के दौरान इन क्षेत्रों में विद्यार्थियों का औसत आरंभिक मासिक वेतन (₹ में) भी दर्शाया गया है। वर्ष 2019-2023 में उत्तीर्ण होने वाले विद्य़ार्थियों की संख्या क्रमशः 800, 600, 1100, 1200 व 1000 है। तालिका में प्रदत्त डेटा के आधार पर आगे पूछे गए प्रश्नों के उत्तर दीजिए:

विद्यार्थियों का रोजगार- क्षेत्र वार विवरण										
रोजगार क्षेत्र	2019		2020		2021		2022		2023	
	I %	II ₹	I %	II ₹	I %	II ₹	I %	II ₹	I %	II ₹
हार्डवेयर	22	54500	17	63800	23	75500	19	89200	32	98100
एस क्यू ए	36	51700	48	63900	43	76300	37	89600	32	102200
सॉफ्टवेयर विकास	19	52900	23	64400	21	70500	16	77600	20	86400
अन्य	23	42600	12	50900	13	60200	28	66400	16	75400

जहाँ I रोजगार प्राप्त करने वाले विद्यार्थियों का प्रतिशत वितरण दर्शाता है और II विद्यार्थियों का औसत मासिका प्रारंभिक वेतन (₹ में) दर्शाता है।

Sub questions

Question Number : 1 Question Id : 342123618 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

सभी पांच वर्षों मे , हार्डवेयर में रोजगार प्राप्त करने वाले विद्यार्थ्यों की संख्या एस क्यू ए में रोगजार प्राप्त करने वाले विद्यार्थियो की संख्या से _____कम है।

1. 826

2. 650

3. 734

4. 548

Question Number : 2 Question Id : 342123619 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

वर्ष 2023 में हार्डवेयर के क्षेत्र में रोजगार प्राप्त करने वालों के आरंभिक (मासिक) वेतन में वर्ष 2019 की तुलना में कितने प्रतिशत वृद्धि हुई हैं?

1. 60%

2. 32%

3. 96%

4. 80%

Question Number : 3 Question Id : 342123620 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

एम. टेक (कंप्यूटर विज्ञान) विद्यार्थी को वर्ष 2020 में प्रदत औसत मासिक वेतन कितना है?

1. ₹ 60750

2. ₹ 63300

3. ₹ 63333

4. ₹ 64030

Question Number : 4 Question Id : 342123621 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

वर्ष 2021 में, हार्डवेयर में रोजगार प्राप्त करने वाले विद्यार्थियों को सॉफ्टवेयर विकास में रोजगार प्राप्त करने वालों से ₹ _____ लाख (प्रति वर्ष) अधिक की आय हुयी।

1. 430

2. 337.92

3. 284.12

4. 324.3

Question Number : 5 Question Id : 342123622 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

एम टेक (कंप्यूटर विज्ञान) के विद्यार्थी का वर्ष 2023 में प्रदत्त औसत मासिका वेतन वर्ष 2022 की अपेक्षा लगभग_____% अधिक हैं।

1. 12.17

2. 17.14

3. 25

4. 5.43

Sub-Section Number : 2

Sub-Section Id : 34212326

Question Shuffling Allowed : Yes

Question Number : 6 Question Id : 342123623 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The number of digits an individual can report back without error in a single presentation represents

1. chunking

2. memory span

3. phonological loop

4. Time Zone

Question Number : 6 Question Id : 342123623 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

अंको की वह संख्या जो एक व्यक्ति एकल प्रस्तुति में त्रुटिरहित वापिस सूचित कर सकता है, प्रदर्शित करती है

1. चंकिंग
2. स्मृति अवधि (स्पैन)
3. स्वनिमिक (फोनोलॉजिकल) लूप
4. समय क्षेत्र

Question Number : 7 Question Id : 342123624 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A history teacher wants to create an interactive timeline showcasing the evolution of different art movements over centuries? Which tool would best support the creation of this multimedia presentation?

1. Prezi
2. Adobe Illustrator
3. Flipgrid
4. Google forms

Question Number : 7 Question Id : 342123624 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

एक इतिहास के शिक्षक अलग अलग कला गतिविधियों के शताब्दीपरंत अन्योन्यक्रियात्मक समय सीमा को दर्शाना चाहते हैं। निम्न कौन सा उपकरण मल्टीमीडिया प्रस्तुति की रचना में सबसे अधिक सहायक होगा?

1. प्रेज़ी
2. अडोब इलसट्रेटर
3. फ्लिपग्रिड
4. गूगल फॉर्म

Question Number : 8 Question Id : 342123625 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A collection of the student's work in an area, showing growth, self reflection, and achievements is known as:-

1. Modelling

2. Portfolio

3. Mastery goal

4. Problem solving

Question Number : 8 Question Id : 342123625 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

एक क्षेत्र में विद्यार्थी के काम का संग्रहण जो कि उसकी आत्म चिंतन और उपलब्धियाँ दिखायें को निम्न में से क्या कहते है?

1. प्रतिरुपण

2. पत्राधान (पोर्टफोलियो)

3. प्रभुत्त उद्देश्य

4. समस्या निवारण

Question Number : 9 Question Id : 342123626 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I **Swayamprabha Channel No.**		**LIST II** **Theme**	
A.	Channel 03 (PRABODH)	I.	Education and Home Science
B.	Channel 04 (SAARASWAT)	II.	Information, Communication and Management Studies
C.	Channel 05 (PRABANDHAN)	III.	Law and Legal Studies
D.	Channel 06 (VIDHIK)	IV.	Social and Behavioural Sciences

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

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

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

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

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

Question Number : 9 Question Id : 342123626 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

सूची I के साथ **सूची II** का मिलान कीजिए

सूची I **स्वयंप्रभा चैनल नंबर / नाम**		**सूची II** **चैनल विषय**	
A.	चैनल 03 (प्रबोध)	I.	शिक्षा और गृह विज्ञान
B.	चैनल 04 (सारस्वत)	II.	सूचना, संचार और प्रबंधन अध्ययन
C.	चैनल 05 (प्रबंधन)	III.	कानून और विधिक अध्ययन
D.	चैनल 06 (विधिक)	IV.	सामाजिक और व्यवहार सबंधी विज्ञान

नीचे दिए गए विकल्पों में से **सही** उत्तर का चयन कीजिए:

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

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

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

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

Question Number : 10 Question Id : 342123627 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Term		LIST II Meaning	
A.	Decision making	I.	The tendency to hold on a belief in the face of contradictory evidence.
B.	Confirmation bias	II.	The tendency to have more confidence in judgement and decisions than we should based on probability.
C.	Belief perseverance	III.	The tendency to search for and use information that supports our ideas rather than refuses them.
D.	Overconfidence bias	IV.	Evaluating alternatives and making choices among them.

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

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

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

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

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

Question Number : 10 Question Id : 342123627 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

सूची I के साथ **सूची II** का मिलान कीजिए

सूची I **पारिभाषिक शब्द**		**सूची II** **अर्थ**	
A.	निर्णय लेना	I.	व्याघाती सबूत के विषय में प्रतीति पकड़ने की प्रवृत्ति
B.	पुष्टि पूर्वग्रह	II.	संभाव्यता पर आधारित निर्णयों और फैसलों पर अपेक्षाकृत अति- विश्वास की प्रवृत्ति
C.	प्रतीति अध्यवसाय	III.	सूचना ढूँढ कर उसका प्रयोग जो कि हमारे विचारों को अस्वीकार करने के बजाय उनका समर्थन करे
D.	अति- विश्वास पूर्वग्रह	IV.	विकल्पों का मूल्यांकन और उनमें से चुनाव करना

नीचे दिए गए विकल्पों में से **सही** उत्तर का चयन कीजिए:

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

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

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

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

Question Number : 11 Question Id : 342123628 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following research approaches suggests that theory is an outcome of research?

1. deductive approach

2. inductive approach

3. quantitative approach

4. cross-sectional approach

Question Number : 11 Question Id : 342123628 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्न कौन सा शोध अभिगम यह दर्शाता है कि सिद्धांत शोध का परिणाम है

1. निगमनात्मक उपागम

2. आगमनात्मक उपागम

3. परिमाणात्मक उपागम

4. प्रतिनिध्यात्मक उपागम

Question Number : 12 Question Id : 342123629 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

When the sample has been randomly selected, which among the following may be expected in cross-sectional research designs?

A. strong external validity
B. weak external validity
C. weak internal validity
D. strong internal validity

Choose the ***most appropriate*** answer from the options given below:

1. Only A and C

2. Only A and D

3. Only B and C

4. Only B and D

Question Number : 12 Question Id : 342123629 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

जब प्रतिदर्श यादच्छिक रुप से चुना गया है, निम्न में से कौन सा प्रतिनिध्यात्मक शोध अभिकल्पना में अपेक्षित है?

A. मबजूत बाह्य वैधता
B. कमजोर बाह्य वैधता
C. कमजोर आन्तरिक वैधता
D. मजबूत आन्तरिक वैधता

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A और C

2. केवल A और D

3. केवल B और C

4. केवल B और D

Question Number : 13 Question Id : 342123630 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

If you want to understand the theoretical reasons that led researchers to conduct a study that appeared as a research article in a journal, you would read which of the following sections of the research article?

1. discussion

2. abstract

3. introduction

4. results

Question Number : 13 Question Id : 342123630 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

अगर आप सैद्धान्तिक कारणों को समझना चाहते है जिनके कारण शोधार्थियों ने एक अध्ययन संचलित किया जो कि एक पत्रिका (जनरल) में एक शोध पत्र के रुप में आया, तब आप निम्न दिए गए शोध पत्र के किस भाग को पढ़ेगे?

1. परिचर्या को

2. सार को

3. प्रस्तावना को

4. परिणामों को

Question Number : 14 Question Id : 342123631 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The students' t-test would be useful for?

A. comparing two groups to see whether their means differ.
B. comparing multiple groups (more than two) to see whether their means differ.
C. testing the significance of correlation coefficient.
D. testing the significance of regression coefficient.

Choose the ***most appropriate*** answer from the options given below:

1. Only A, B and C

2. Only B and D

3. Only A, C and D

4. Only A, B, C and D

Question Number : 14 Question Id : 342123631 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

विद्यार्थी (स्टूडेन्टस) टी टेस्ट के उपयोग है:

A. दो समूहों की तुलना करने हेतु यह देखने के लिए कि क्या उनके मध्यमान भिन्न हैं।
B. अनेक समूहों (दो से अधिक) की तुलना कर यह देखने के लिए कि क्या उनके मध्यमान भिन्न हैं।
C. सहसम्बंध गुणांक की सार्थकता जाचने के लिए।
D. समाश्रयण गुणांक की सार्थकता जाचने के लिए।

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A, B और C

2. केवल B और D

3. केवल A, C और D

4. केवल A, B, C और D

Question Number : 15 Question Id : 342123632 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Identify the probability sampling techniques?

A. simple random sampling
B. snowball sampling
C. stratified random sampling
D. convenience sampling

Choose the ***most appropriate*** answer from the options given below:

1. Only A and B

2. Only B and C

3. Only A and C

4. Only B and D

Question Number : 15 Question Id : 342123632 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

प्रायिकता प्रतिचयन तकनीकों को पहचानेः

A. साधारण यादृच्छिक प्रतिचयन
B. हिम कन्दुक (स्नोबॉल) प्रतिचयन
C. स्तरित यादृच्छिक प्रतिचयन
D. सुविधाजनक प्रतिचयन

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A और B

2. केवल B और C

3. केवल A और C

4. केवल B और D

Question Number : 16 Question Id : 342123633 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Description of 'actual words, written or spoken, used to tell a story' and images or pictures come under the category of

1. Discourse

2. Event

3. Law

4. Performance

Question Number : 16 Question Id : 342123633 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

किसी कहानी और बिम्बों या प्रतिबिम्बों का चित्रण करने के लिए प्रयोग किए गए लिखित या मौखिक वास्तविक शब्दों का वर्णन निम्नलिखित श्रेणी में आता है:

1. परिचर्चा

2. घटना

3. विधि

4. प्रदर्शन / निष्पादन

Question Number : 17 Question Id : 342123634 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The general context of communication is known as communication -

1. situation

2. position

3. praxis

4. convention

Question Number : 17 Question Id : 342123634 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

संप्रेषण का सामान्य संदर्भ निम्नलिखित के रुप में जाना जाता है

1. स्तिथि संप्रेषण

2. अवस्था संप्रेषण

3. क्रियाकलाप संप्रेषण

4. परंपरागत संप्रेषण

Question Number : 18 Question Id : 342123635 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following are essential elements of mass communication?

A. Electronic observation
B. Technological medium
C. Large audience
D. Professional communicators
E. Organizational structure

Choose the ***most appropriate*** answer from the options given below:

1. Only A, B, E

2. Only A, C, D

3. Only A, C, D, E

4. Only B, C, D, E

Question Number : 18 Question Id : 342123635 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्नलिखित कौन- से जन संचार माध्यमों के अनिवार्य तत्व हैं?

A. इलोक्ट्रनिक प्रेक्षण (इलेक्ट्रानिक आब्सर्वेशन)
B. प्रौद्योगिकीय माध्यम
C. विशाल श्रोतागण
D. पेशेवर संप्रेषक
E. संगठनात्मक ढाँचा

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A, B, E

2. केवल A, C, D

3. केवल A, C, D, E

4. केवल B, C, D, E

Question Number : 19 Question Id : 342123636 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following, in communication, are the rhetorical structures'?

A. paralanguage
B. clusters
C. form
D. genre
E. narrative

Choose the ***most appropriate*** answer from the options given below:

1. Only A, B, C, D

2. Only B, C, D, E

3. Only A, C, E

4. Only A, D, E

Question Number : 19 Question Id : 342123636 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्नलिखित कौन- सा संप्रेक्षण में शब्दाडंबरपूर्ण संरचना है?

A. भाषा में संचार के सहायक तत्व (पैरालैंग्वेज)
B. समूह
C. रुप-विधान
D. शैली
E. वर्णन

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A, B, C, D

2. केवल B, C, D, E

3. केवल A, C, E

4. केवल A, D, E

Question Number : 20 Question Id : 342123637 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Patterns of Communication		**LIST II Social Unit**	
A.	Physical situation	I.	Participants
B.	Persons involved in interaction	II.	Key
C.	Manner of communication enacted	III.	Instrumentality
D.	Channels of communication	IV.	Scene or setting

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

Question Number : 20 Question Id : 342123637 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

सूची I के साथ **सूची II** का मिलान कीजिए

सूची I संप्रेषण के नमूने (पैटर्न)		**सूची II सामाजिक इकाई**	
A.	भौतिक स्थिति	I.	सहभागी
B.	संवाद में संलग्न व्यक्ति	II.	मूल- भाव
C.	किए गए संप्रेषण का तरीका	III.	करणत्व
D.	संप्रेषण की सरणि (चैनल)	IV.	दृश्य या विन्यास

नीचे दिए गए विकल्पों में से **सही** उत्तर का चयन कीजिए:

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

Question Number : 21 Question Id : 342123638 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Working 9 hours a day, 12 persons complete a work in 25 days. Working 6 hours a day, 15 persons can do the same work in

1. 28 days

2. 29 days

3. 30 days

4. 32 days

Question Number : 21 Question Id : 342123638 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

प्रतिदिन 9 घंटे काम करके, 12 लोग एक कार्य को 25 दिनों में पूर्ण करते हैं। उसी काम को 15 लोग 6 घंटा प्रतिदिन काम करे कितने दिनों में पूरा करेंगे।

1. 28 दिनों में

2. 29 दिनों में

3. 30 दिनों में

4. 32 दिनों में

Question Number : 22 Question Id : 342123639 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In the letter series, some of the letters are missing. Complete the given letter series by choosing the correct alternatives from the options given below.
b_b_bb__bbb_bb_b

1. b b b b b a

2. b b a a a b

3. a b a b a b

4. a a b a a b

Question Number : 22 Question Id : 342123639 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

अक्षर श्रृंखला में कुछ अक्षर लुप्त हैं। दी गई अक्षर श्रृंखला को दिये गए निम्न विकल्पों में से एक का चयन करके पूरा करें।
b_b_bb__bbb_bb_b

1. b b b b b a

2. b b a a a b

3. a b a b a b

4. a a b a a b

Question Number : 23 Question Id : 342123640 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Three successive discounts of 30% on the marked price of an item are together equivalent to a single discount of

1. 90%

2. 27%

3. 65.7%

4. 78.2%

Question Number : 23 Question Id : 342123640 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

किसी वस्तु के अंकित मूल्य पर 30% का तीन क्रमिक बट्टा सकल रुप में निम्नांकित में से कितना एकल बट्टा के समान है?

1. 90%

2. 27%

3. 65.7%

4. 78.2%

Question Number : 24 Question Id : 342123641 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

In a certain coding language, if the word 'STORK' is coded as 'VQRON', then the word 'TIRED' will be coded as

1. V E T C F

2. W F U B G

3. W E T C G

4. V F U B F

Question Number : 24 Question Id : 342123641 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

एक निश्चित कूटलेखन भाषा में, शब्द 'STORK' को 'VQRON' से कूटित किया जाता है, तब शब्द 'TIRED'का कूट होगा।

1. V E T C F

2. W F U B G

3. W E T C G

4. V F U B F

Question Number : 25 Question Id : 342123642 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A person travels from X to Y at a speed of 50 km/hr and returns from Y to X by increasing his speed by 50%. His average speed during the journey is

1. 62.5 km / hr

2. 60 km / hr

3. 62 km / hr

4. 64 km / hr

Question Number : 25 Question Id : 342123642 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

एक व्यक्ति 50 किमी / घंटा की गति से X से Y तक यात्रा करता है और 50% अधिक गति से Y से X तक वापिस आता है। यात्रा के दौरान उसकी गति क्या होगी

1. 62.5 किमी / घं

2. 60 किमी / घं

3. 62 किमी / घं

4. 64 किमी / घं

Question Number : 26 Question Id : 342123643 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

"Molecules are in random motion. Qutub Minar is composed of Molecules. Therefore, Qutub Minar is in constant random motion." Identify the fallacy committed in the above statement.

1. Equivocation

2. Slippery slope

3. Hasty generalization

4. Fallacy of composition

Question Number : 26 Question Id : 342123643 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

अणु बेतरतीब रुप में गतिशील होते है। कुतुब मीनार अणुओं से बना है। इसलिए कुतुब मीनार निरंतर बेतरतीब रुप में गतिशील रहता है। उपर्युक्त कथन में आए तर्क दोष की पहचान करें

1. अनेकार्थकता

2. फिसलनयुक्त दलान

3. अविचारित सामान्यीकरण

4. संहति दोष

Question Number : 27 Question Id : 342123644 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

If the statement "Some birds are not mammals" is given as true, which of the following statements can be immediately inferred to be false?

1. Some mammals are not birds.

2. Some birds are mammals.

3. No birds are mammals.

4. All birds are mammals.

Question Number : 27 Question Id : 342123644 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

यदि कथन "कुछ पक्षी स्तनपायी नहीं होती है" को सही माना जाता है तो निम्नलिखित में से किस कथन के गलत होने का तत्काल अनुमान लगाया जा सकता है?

1. कुछ स्तनपायी पक्षी नहीं होते हैं।

2. कुछ पक्षी स्तनपायी होते हैं।

3. कोई भी पक्षी स्तनपायी नहीं होते हैं।

4. सभी पक्षी स्तनपायी होते हैं।

Question Number : 28 Question Id : 342123645 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements are logically equivalent?

A. Some non-birds are mammals.
B. Some birds are not mammals.
C. Some non-mammals are non-birds.
D. Some non-mammals are not non-birds.

Choose the ***most appropriate*** answer from the options given below:

1. A, B and C Only

2. A and C Only

3. C and D Only

4. B and D Only

Question Number : 28 Question Id : 342123645 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्नलिकित में से कौन-से कथन तार्किक दृष्टि से समतुल्य हैं?

A. कुछ गैर- पक्षी स्तनपायी होते हैं।
B. कुछ पक्षी स्तनपायी नहीं होते हैं।
C. कुछ गैर- स्तनपायी गैर- पक्षी होते हैं।
D. कुछ गैर- स्तनपायी गैर- पक्षी नहीं होते हैं।

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A, B और C

2. केवल A और C

3. केवल C और D

4. केवल B और D

Question Number : 29 Question Id : 342123646 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following is correct in the context of Syllogism?

A. With two negative premise; affirmative conclusion can be drawn.
B. Predicate of the conclusion is the minor term.
C. Middle term must be distributed at least once in the premises.
D. With two universal premises, particular conclusion can be drawn.
E. The term distributed in the conclusion must be distributed in the premises.

Choose the ***most appropriate*** answer from the options given below:

1. B and C Only

2. A and C Only

3. D and E Only

4. C and E Only

Question Number : 29 Question Id : 342123646 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

न्याय/तर्क-वाक्य के संदर्भ में निम्नलिखित में से कौनसे कथन सत्य हैं?

A. दो नकारात्मक प्रस्थापनाओं के साथ, सकारात्मक निष्कर्ष निकाला जा सकता है।
B. निष्कर्ष का विधेय लघु पद होता है।
C. मध्यम पद, प्रस्थापनाओं में कम से कम एक बार अवश्य वितरित होना चाहिए।
D. दो शाश्वत (सामान्य) प्रस्थापनाओं के साथ, विशिष्ट निष्कर्ष निकाला जा सकता है।
E. निष्कर्ष में वितरित पद प्रस्थापनाओं में अवश्य वितरित होना चाहिए।

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल B और C

2. केवल A और C

3. केवल D और E

4. केवल C और E

Question Number : 30 Question Id : 342123647 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

According to classical Indian school of logic (Nyāya) which fallacy is committed in the following argument "Anything that is thinkable is nameable because it is thinkable".

1. Asādhārana

2. Sāadhārana

3. Āsrayāsiddha

4. Svarupāsiddha

Question Number : 30 Question Id : 342123647 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

प्राचीन भारतीय तर्कशास्त्र (न्याय) के अनुसार निम्नलिखित युक्ति "कोई बात जो विचारणीय है, यह अभिधेय है क्योंकि वह विचारणीय है" में कौन सा तर्क दोष हैं

1. असाधारण

2. साधारण

3. आश्रयासिद्ध

4. स्वरुपासिद्ध

Question Number : 31 Question Id : 342123648 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following electronic technologies is the key technology for making the first generation electronic computer?

1. Transistor based

2. Integrated Circuit based

3. Vacuum Tube based

4. Dual Core CPU based

Question Number : 31 Question Id : 342123648 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्न में से कौन सी इलैक्ट्रोनिकी प्रौद्योगिकी प्रथम पीढ़ी के इलेक्ट्रनिकी कंप्यूटर बनाने हेतु प्रमुख प्रौद्योगिकी है?

1. ट्रांजिस्टर आधारित
2. एकीकृत परिपथ आधारित
3. वैक्यूम ट्यूब आधारित
4. द्वैत कोड़ सीपीयू आधारित

Question Number : 32 Question Id : 342123649 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements best describes a blog?

1. A website that allows multiple users to collaborate and create information.
2. A chronological list of posts on a website typically written by a single author about a subject.
3. A series of audio or video episodes that subscribers download or stream to their devices.
4. A standardised format that allows users to subscribe to view content updates from a creator.

Question Number : 32 Question Id : 342123649 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्न में से कौन सा कथन ब्लॉग का सर्वोत्तम वर्णन करता है?

1. एक वेबसाइट जो बहुल प्रयोक्ताओं को सहयोग करने और सूचना सृजन करने देती है।
2. वेबसाइट पर ऐसी पोस्टों की कालानुक्रमिक सूची जो प्ररुपी प्रकार से एक लेखक द्वारा एक विषय पर लिखी गई हो।
3. श्रव्य अथवा दृश्य (वीडियो) प्रसंगों की श्रृंखला जिसे ग्राहक अपनी युक्तियों पर डाउनलोड करते है अथवा प्रवाहित करते है।
4. एक मानकीकृत आरुप जो प्रयोक्ताओं को किसी रचनाकार से विषयवस्तु अपडेट देखने हेतु लेने की अनुमति देता है।

Question Number : 33 Question Id : 342123650 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Identify the sequence of words A-E that correctly fills the blanks in the following paragraph:
The _____ is the 'brain' of the computer and the _____ processor made by Intel is an example of this. The speed of the processor is measured in _____ . _____ is a volatile memory whereas _____ is used in most computers to hold a small special piece of software known as the 'boot up' program.

A. ROM
B. CPU
C. RAM
D. Pentium
E. Hertz

Choose the ***most appropriate*** answer from the options given below:

1. B, D, E, C, A

2. D, B, C, E, A

3. C, D, E, A, B

4. B, E, D, A, C

Question Number : 33 Question Id : 342123650 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्न अनुच्छेद में रिक्त स्थानों को सही रुप में भरने हेतु A-E शब्दों के सही क्रम की पहचान कीजिए:
_____ कंप्यूटर का मस्तिष्क होता है और इंटेल द्वारा बनाया गया _____ संसाधित्र इसका उदाहरण है। संसाधित्र की गति _____ में मापी जाती है। _____ लोपशील स्मृति होती है जबकि_____ का प्रयोग अधिकांश कंप्यूटरों में बूटअप प्रोग्राम के रुप में ज्ञात सॉफ्टवेयर के एक छोटे विशिष्ट टुकड़े को रखने के लिए किया जाता है।

A. आर ओ एम
B. सी पी यू
C. आर ए एम
D. पेंटियम
E. हर्टज

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. B, D, E, C, A

2. D, B, C, E, A

3. C, D, E, A, B

4. B, E, D, A, C

Question Number : 34 Question Id : 342123651 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

If $(L)_M$ represents a number L in base-M number system, then which of the following equalities are true?

A. $(127.125)_{10} = (1111111.001)_2$
B. $(127.125)_{10} = (1333.02)_4$
C. $(127.125)_{10} = (177.1)_8$
D. $(127.125)_{10} = (7F.2)_{16}$

Choose the ***most appropriate*** answer from the options given below:

1. A only

2. A and B only

3. A, B and C only

4. A, B, C and D

Question Number : 34 Question Id : 342123651 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

यदि $(L)_M$ आधार अंक प्रणाली में, संख्या को दर्शाता है, तो निम्न से कौन सी साम्यताएं सही है?

A. $(127.125)_{10} = (1111111.001)_2$
B. $(127.125)_{10} = (1333.02)_4$
C. $(127.125)_{10} = (177.1)_8$
D. $(127.125)_{10} = (7F.2)_{16}$

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A

2. केवल A और B

3. केवल A, B और C

4. केवल A, B, C और D

Question Number : 35 Question Id : 342123652 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I (Malware types)		**LIST II (Characteristics)**	
A.	Trojan Horse	I.	Propagates copies of itself through a network
B.	Worm	II.	Triggers action when certain condition occurs
C.	Logic Bomb	III.	Hooks standard OS calls to hide the existence of malware
D.	Rootkit	IV.	Contains unexpected covert effect

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

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

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

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

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

Question Number : 35 Question Id : 342123652 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

सूची I के साथ **सूची II** का मिलान कीजिए

सूची I (माल्वेयर)		**सूची II (विशिष्टताएं)**	
A.	ट्रोजन होर्स	I.	नेटवर्क के माध्यम से स्वयं की प्रतिलिपियां प्रसारित करता है
B.	वोर्म	II.	कतिपय स्थितियों के घटित होने पर क्रिया उत्पन्न करता है
C.	लॉजिक बोम्ब	III.	माल्वेयर के आस्तित्व को छिपाने के लिए मानक ओ एस कॉलों को हुक करता है
D.	रुटकिट	IV.	इसमें अनपेक्षित गुप्त प्रभाव शामिल है

नीचे दिए गए विकल्पों में से **सही** उत्तर का चयन कीजिए:

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

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

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

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

Question Number : 36 Question Id : 342123653 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The convention of Biological Diversity (CBD) was first opened for signature during

1. Conference on human environment

2. Earth Summit

3. Montreal Protocol

4. COP1

Question Number : 36 Question Id : 342123653 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

जैविक विविधता (CBD) पर सम्मेलन को प्रथम बार हस्ताक्षर के लिए निम्न किसके दौरान रखा गया।

1. मानव-वातावरण पर सम्मेलन के दौरान

2. भू- शिखर सम्मेलन

3. मानट्रील नयाचार

4. सी ओ पी- 1

Question Number : 37 Question Id : 342123654 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

To understand the Global Climate Change, GCM model are widely used. GCM stands for

A. Global Circulation Model
B. General Circulation Model
C. Global Climate Model
D. General Climate Model

Choose the ***most appropriate*** answer from the options given below:

1. Only A and B

2. Only B and C

3. Only C and D

4. Only A and D

Question Number : 37 Question Id : 342123654 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

भूमंडलीय जलवायु परिवर्तन को समझने के लिए जी.सी.एम. नमुने भरपूर प्रयोग किए जाते है, जी.सी.एम. से अभिप्रेत है?

A. ग्लोबल सरकुलेशन मॉडल
B. जनरल सरकुलेशन मॉडल
C. ग्लोबर क्लाइमेट मॉडल
D. जनरल क्लाइमेट मॉडल

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A और B

2. केवल B और C

3. केवल C और D

4. केवल A और D

Question Number : 38 Question Id : 342123655 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Dissolved Oxygen (DO), a water quality parameter, is essential in which of the following water bodies/sources?

A. River Water
B. Lake Water
C. Tap Water
D. Underground Water
E. Pond Water

Choose the ***most appropriate*** answer from the options given below:

1. A, B and E Only

2. C and D Only

3. B, D and E Only

4. A, C, D and E Only

Question Number : 38 Question Id : 342123655 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

विलीन ऑक्सीजन (DO) एक जल गुणता प्राचल, निम्न किन जल स्त्रोतों निकायो में आवश्यक है?

A. नदी जल
B. झील जल
C. नल का जल
D. भूमिगत जल
E. तालाब का जल

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A, B और E

2. केवल C और D

3. केवल B, D और E

4. केवल A, C, D और E

Question Number : 39 Question Id : 342123656 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In a breeder reactor

1. More fissile materials are produced than it is consumed

2. Less fissile materials are produced than it is consumed

3. Neutrons are slowed down by moderator

4. U-238 a fissile material is produced from Pu-239 a fertile material.

Question Number : 39 Question Id : 342123656 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

प्रजनक रियेक्टर में

1. विखण्डनीय पदार्थ खपत की तुलना में अधिक मात्रा में उत्पन्न होते हैं।

2. विखण्डनीय पदार्थ खपत की तुलना में कम मात्रा में उत्पन्न होते हैं।

3. प्रजनक रियेक्शन में न्यूट्रान विमंदक द्वारा मंदित होते है।

4. विखण्डनीय पदार्थ U-238 प्रजनक पदार्थ Pu-239 से बनाया जाता है

Question Number : 40 Question Id : 342123657 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

When a water body becomes extremely low in nutrient content, then it is called as

1. Dystrophic

2. Oligotrophic

3. Mesotrophic

4. Eutrophic

Question Number : 40 Question Id : 342123657 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

जब एक जलाशय के पोषक तत्व अत्याधिक रुप से कम हो जाते हैं, तब उसे क्या कहते हैं

1. दुष्पोषी (डिसट्रोफिक)

2. अल्पपोषी (आलिगोट्रोफिक)

3. मेजोट्राफिक

4. सुपोषणी (यूट्रॉफिक)

Question Number : 41 Question Id : 342123658 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

An important feature of the third five year plan was

1. Abolition of Education Commission.
2. Reduction in the number of colleges
3. Setting up examination research units in some universities
4. More emphasis on open book examination.

Question Number : 41 Question Id : 342123658 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

तीसरी पंच वर्षीय योजना का एक महत्वपूर्ण अभिलक्षण हैं:

1. शिक्षा आयोग का उन्मूलन
2. महाविद्यालयों की संख्या में कटौती
3. कुछ विश्वविद्यालयों में परीक्षा प्रशिक्षण ईकाईयां
4. खुली पुस्तक परीक्षा पर अधिक बल

Question Number : 42 Question Id : 342123659 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The National Education Pollicy, 2020 aims to create

1. fragmented universities
2. online universities
3. knowledge hubs
4. corporate clusters of education

Question Number : 42 Question Id : 342123659 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

राष्ट्रीय शिक्षा नीति 2020 निम्न में से क्या स्थापित करने के लिए उद्देशित है:

1. भागीकृत विश्वविद्यालयों

2. ऑनलाइन विश्वविद्यालयों

3. ज्ञान क्रेदों

4. शिक्षा के कारपोरेट समूह

Question Number : 43 Question Id : 342123660 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Dr. Baba Saheb Ambedkar was associated with:

A. Presidency College, Kolkata
B. Khalsa College, Mumbai
C. Siddharth College, Mumbai
D. Milind College, Aurangabad
E. National College, Bengaluru

Choose the ***most appropriate*** answer from the options given below:

1. Only A, B, C

2. Only B, C, D

3. Only C, D, E

4. Only A, D, E

Question Number : 43 Question Id : 342123660 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

डा. बाबा साहेब अम्बेडकर निम्न में से किस से जुड़े थे?

A. प्रेसिडेंसी कॉलिज, कोलकाता
B. खालसा कॉलिज, मुम्बई
C. सिद्दार्थ कॉलिज, मुम्बई
D. मिलिन्द कॉलिज, औरंगाबाद
E. नेशनल कॉलिज, बंगलूरू

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A, B, C

2. केवल B, C, D

3. केवल C, D, E

4. केवल A, D, E

Question Number : 44 Question Id : 342123661 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following universities were multi-disciplinary in ancient India?

A. Banaras Hindu University
B. Takshashila
C. Nalanda
D. Vallabhi
E. Vikramshila

Choose the ***most appropriate*** answer from the options given below:

1. Only A, B, C

2. Only A, C, E

3. Only A, D, E

4. Only B, C, D, E

Question Number : 44 Question Id : 342123661 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्न में से कौन से विश्वविद्यालय प्राचीन भारत के समय बहुविषयक थे?

A. बनारस हिन्दु विश्वविद्यालय
B. तक्षशिला
C. नालंदा
D. वल्लभी
E. विक्रमशिला

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A, B, C

2. केवल A, C, E

3. केवल A, D, E

4. केवल B, C, D, E

Question Number : 45 Question Id : 342123662 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The National Education Policy, 2020 recommended the integration of humanities at the undergraduate level with subjects of

A. Science
B. Technology
C. Engineering
D. Mathematics
E. Propaganda techniques

Choose the ***most appropriate*** answer from the options given below:

1. Only A, B, C, D

2. Only B, C, E

3. Only A, C, D, E

4. Only A, B, D, E

Question Number : 45 Question Id : 342123662 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

राष्ट्रीय शिक्षा नीति- 2020 ने, पुर्वस्नातक स्थर पर मानविकी के एकीकरण की संस्तुति किन विषयों के साथ की थी?

A. विज्ञान
B. प्रौद्योगिकी
C. अभियांत्रिक
D. गणित
E. अधिप्रचार तकनीकियां

नीचे दिए गए विकल्पों में से ***सही*** उत्तर का चयन कीजिए:

1. केवल A, B, C, D

2. केवल B, C, E

3. केवल A, C, D, E

4. केवल A, B, D, E

Sub-Section Number : 3
Sub-Section Id : 34212327
Question Shuffling Allowed : No

Question Id : 342123663 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix
Question Numbers : (46 to 50)
Question Label : Comprehension

A. K. Ramajujan was one of those thinkers, like Freud (whom he greatly, though not uncritically, admired), who so transform our way of looking at a subject that we are in danger of undervaluing their contribution, since we have come to take for granted precisely what they taught us, as we view the subject through their eyes. At a time when the American Indo-logical establishment regarded native Indian scholars merely as sources of information about language and texts, like the raw fiber that were taken from India to be processed in British mills, but seldom as scholars who might have their on ideas about how to process those texts, Raman taught them all how to weave a theory, a folktale, a poem, a book. Raman taught the all how to weave a theory, a folktale, a poem, a book. Long before it was politically respectable, let alone politically correct, to study the works of women or of 'illiterate' peasants, Raman valued their poetry, their stories and their counter-systems. At a time when Indian literature meant Sanskrit, and Sanskrit meant Greek and Latin, Raman arrived in Chicago to join Edward C. Dimock and the other 'founding fathers' in proclaiming to the world the relevance of Tamil and Bengali and the other mother tongues. Without so much as raising his gentle voice, he blazed a great path through the centre of Indological studies. He gave us so many new paradigms that no Indologist can now think about India without thinking through his thoughts

Sub questions

Question Number : 46 Question Id : 342123664 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Who is A.K Ramanujan compared to in the text?

1. Chomsky
2. Sigmund Freud
3. Brunvand
4. British Mill Owners

Question Number : 47 Question Id : 342123665 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What did Ramanujan teach in America?

1. Process raw fibers in British mills
2. Weave theories, folktales, poems and books
3. Only Sanskrit literature
4. Only English Literature

Question Number : 48 Question Id : 342123666 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The languages that Ramanujan tried to bring to limelight in Indological studies is

1. Greek and Latin
2. Only Sanskrit
3. Tamil, Bengali and other mother tongues
4. French and German

Question Number : 49 Question Id : 342123667 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Ramanujan emphasised on

1. The criticism on the British mills
2. Creating controversies in American Indological Studies
3. A path through Indological Studies
4. The study of Western languages only

Question Number : 50 Question Id : 342123668 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Who were the 'Founding Fathers' that Ramanujan joined in Chicago?

1. British Mill Owners
2. American Indo-logical establishment leaders
3. Edward C. Dimock and others
4. Greek and Latin scholars

Question Id : 342123663 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (46 to 50)

Question Label : Comprehension

निम्नलिखित गद्यांश को सावधानी पूर्वक पढ़े और इसके अंत में दिए गए प्रश्नों के उत्तर दे:
ए. के रामानुजन, उन विचारकों जैसे फ्रॉयॉ (जिसकी वह अत्याधिक गैर- आलोचनात्मक तौर पर नहीं, प्रशंसा करते है) में से एक विचारक थे जिन्होंने हमारे किसी विषय के आवलोकन के स्वरुप को इस प्रकार परिवर्तित कर दिया कि हम उनके योगदान के अवमूल्यन की आशंका में है, चूंकि हमें इस यथातथ्य स्वीकार करना है कि उन्होंने हमें क्या पढ़ाया है जैसा कि हम उनकी दृष्टि से विषय को अवलोकित करते है। एक समय जब स्वदेशी भारतीय विद्वानों को अमेरिकन भारतीय तर्कशास्त्रीय संस्थानों द्वारा केवल भाषाओं और पाठों के बारे में एक सूचना के स्रोत माना जाता था, वे उन कच्चे तन्तु जैसे उन्हे ब्रिटिश मिलों में प्रसंस्करण हेतु भारत से लाया जाता था लेकिन यदाकदा उन विद्वानों के तौर पर, जिनके अपने विचार हो कि उन पाठों को किस प्रकार प्रसंस्करण किया जाए, रामन ने उन्हें यह सब सिखाया कि कैसे एक सिद्धांत लोककथा,कविता, पुस्तक को रचित किया जाता है। महिलाओं अथवा अशिक्षित किसानों के कामो के अध्ययन को राजनीतिक तौर पर सही माने जाने की बात तो छोड़ ही दीजिए, राजनीतिक रुप से सम्मानीय माने जाने से बहुत पहले ही रामन ने उनकी कविताओं और उनकी कहानियों, उनकी जवाबी प्रणालियों को महत्व दिया। ऐसे समय में जब भारतीय साहित्य का आशय संस्कृत से था और संस्कृत का आशय ग्रीक और लेटिन से था, रामन ने शिकागो पहुचकर एडवर्ड सी डिमॉक और अन्य प्रवर्तक जनको के साथ मिलकर विश्व में तमिल एवं बंगाली तथा अन्य मातृभाषाओं की प्रासंगिकता की उद्घोषणा की। उन्होंने सौम्य स्वर में सामान्य तौर पर भारतीय तर्कशास्त्रीय अध्ययनों के केन्द्र के माध्यम से एक उच्च मार्ग को प्रेरित किया। उन्होंने हमें अनेकानेक उन नवीन प्रतिमानों से अवगत कराया जिन पर कोई भारतीय तर्कशास्त्री उनके विचारों से परे सोचकर, अब भारत के बारे में कुछ और सोच नहीं सकता है।

Sub questions

Question Number : 46 Question Id : 342123664 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

एस पाठ में ए. के. रामानुजन की किससे तुलना की गई है?

1. चाम्स्की
2. सिग्मंड फ्रॉयड
3. ब्रूनवांड
4. ब्रिटिश मिल मालिक

Question Number : 47 Question Id : 342123665 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

रामानुजन ने अमेरिका में क्या पढ़ाया था

1. ब्रिटिश मिलों में कच्चे तन्तु का प्रसंस्करण
2. सिद्दांतो, लोककथाओं कविताओं एवं पुस्तकों की रचना
3. केवल संस्कृत साहित्य
4. केवल अंग्रेजी साहित्य

Question Number : 48 Question Id : 342123666 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

रामानुजन ने तर्कशास्त्रीय अध्ययनों में किन भाषाओं को प्रकाश -बिन्दु बनाने का प्रयत्न किया

1. ग्रीक और लेटिन
2. केवल संस्कृत
3. तमिल, बंगाली एवं अन्य मातृभाषाएं
4. फ्रैंच एवं जर्मन

Question Number : 49 Question Id : 342123667 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

रामानुजन ने किस पर विशेष जोर दिया?

1. ब्रिटिश मिलों की आलोचना
2. अमेरिकन भारतीय तर्कशास्त्रीय अध्ययनों में विवाद उत्पन्न करना
3. भारतीय तर्कशास्त्रीय अध्ययनों के माध्यम से एक पथ
4. केवल पश्चिमी भाषाओं का अध्ययन

Question Number : 50 Question Id : 342123668 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

वे कौन से 'प्रवर्तक जनक' थे जिनके साथ रामानुजन शिकागों में शामिल हुए?

1. ब्रिटिश मिल मालिक

2. अमेरिकन तर्कशास्त्रीय संस्थानों के अग्रणी

3. एडवर्ड सी. डिमॉर्क एवं अन्य

4. ग्रीक एवं लेटिन विद्वान

Electronic Science

Section Id :	34212310
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	92
Number of Questions to be attempted :	92
Section Marks :	200
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	34212328
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 342123669 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

With regard to the quantum efficiency of a Photodiode, which of the following is not correct?

1. The depletion region must be kept thin to reduce the transit time.

2. The depletion region must be sufficiently thick to allow a large fraction of incident light.

3. Germanium Photodiodes & Group III-V Photodiodes have high quantum efficiency

4. Silicon Photodiodes can reach 100% quantum efficiency near the 0.8-0.9 μm region with an antireflection coating.

Question Number : 51 Question Id : 342123669 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

With regard to the quantum efficiency of a Photodiode, which of the following is not correct?

1. The depletion region must be kept thin to reduce the transit time.
2. The depletion region must be sufficiently thick to allow a large fraction of incident light.
3. Germanium Photodiodes & Group III-V Photodiodes have high quantum efficiency
4. Silicon Photodiodes can reach 100% quantum efficiency near the 0.8-0.9 μm region with an antireflection coating.

Question Number : 52 Question Id : 342123670 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Compared with the GaAs and InP based HBTs, the Si/SiGe HBT has a lower cutoff frequency because of :

1. Lower mobilities in Si
2. Higher mobilities in Si
3. Lower mobilties in Ge
4. Higher mobilities in Ge

Question Number : 52 Question Id : 342123670 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Compared with the GaAs and InP based HBTs, the Si/SiGe HBT has a lower cutoff frequency because of :

1. Lower mobilities in Si
2. Higher mobilities in Si
3. Lower mobilties in Ge
4. Higher mobilities in Ge

Question Number : 53 Question Id : 342123671 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The band gap of a semiconductor material that can be considered for making solar cell will be

1. < 1 eV

2. Between 2 & 3 eV

3. Between 1 & 2 eV

4. >3 eV

Question Number : 53 Question Id : 342123671 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The band gap of a semiconductor material that can be considered for making solar cell will be

1. < 1 eV

2. Between 2 & 3 eV

3. Between 1 & 2 eV

4. >3 eV

Question Number : 54 Question Id : 342123672 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A silicon sample is doped with 10^{10} Arsenic atoms/cm^3. What is the equilibrium hole concentration P_o at 300°K if the intrinsic hole & electron concentration is $n_i = 1.5 \times 10^{10}$ atoms/cm^3.

1. 1.5×10^{10} cm^{-3}

2. 2.25×10^{10} cm^{-3}

3. 3.25×10^{10} cm^{-3}

4. 4.25×10^{10} cm^{-3}

Question Number : 54 Question Id : 342123672 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A silicon sample is doped with 10^{10} Arsenic atoms/cm^3. What is the equilibrium hole concentration P_o at 300°K if the intrinsic hole & electron concentration is $n_i = 1.5 \times 10^{10}$ atoms/cm^3.

1. 1.5×10^{10} cm^{-3}

2. 2.25×10^{10} cm^{-3}

3. 3.25×10^{10} cm^{-3}

4. 4.25×10^{10} cm^{-3}

Question Number : 55 Question Id : 342123673 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The most important requirement of an effective metallization scheme in VLSI is that metal must adhere to the silicon in the window & to the oxide that defines the window. In this respect, which of the following metals in unlikely to be used directly on SiO_2?

1. Al

2. Ti

3. Ta

4. W

Question Number : 55 Question Id : 342123673 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The most important requirement of an effective metallization scheme in VLSI is that metal must adhere to the silicon in the window & to the oxide that defines the window. In this respect, which of the following metals in unlikely to be used directly on SiO_2?

1. Al

2. Ti

3. Ta

4. W

Question Number : 56 Question Id : 342123674 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

During the oxidation process, which of the following statements is not correct?

1. The rate constant for wet oxidation of silicon increases with decreasing temperature.
2. The wet oxidation is governed by the equation $Si + 2H_2O \rightarrow SiO_2 + 2H_2$
3. For a growth of an oxide of thickness 'd', a layer of silicon with thickness of 0.88d is consumed.
4. During the oxidation process, the Si - SiO_2 interface moves into silicon.

Question Number : 56 Question Id : 342123674 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

During the oxidation process, which of the following statements is not correct?

1. The rate constant for wet oxidation of silicon increases with decreasing temperature.
2. The wet oxidation is governed by the equation $Si + 2H_2O \rightarrow SiO_2 + 2H_2$
3. For a growth of an oxide of thickness 'd', a layer of silicon with thickness of 0.88d is consumed.
4. During the oxidation process, the Si - SiO_2 interface moves into silicon.

Question Number : 57 Question Id : 342123675 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In a charge coupled device, the charge storage and transfer action is controlled by one of the following :

1. Drain Electrode
2. Gate Electrodes
3. Source Electrodes
4. Back of the Substrate

Question Number : 57 Question Id : 342123675 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

In a charge coupled device, the charge storage and transfer action is controlled by one of the following :

1. Drain Electrode

2. Gate Electrodes

3. Source Electrodes

4. Back of the Substrate

Question Number : 58 Question Id : 342123676 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

In crystal growth, the doping concentration in the crystal C_s is given by :

$$C_S = K_o C_o \left(1 - \frac{M}{M_o}\right)^{K_o - 1}$$

where K_0 = equilibrium segregation coefficient

C_0 = initial doping concentration in the melt

M_0 = initial weight

M = Weight of the grown crystal

As crystal growth progresses, the composition initially at K_0C_0 will increase continually for -

1. $K_0 < 1$

2. $K_0 > 1$

3. $K_0 \cong 1$

4. $K_0 = 0$

Question Number : 58 Question Id : 342123676 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

In crystal growth, the doping concentration in the crystal C_s is given by :

$$C_S = K_o C_o \left(1 - \frac{M}{M_o}\right)^{K_o - 1}$$

where K_0 = equilibrium segregation coefficient

C_0 = initial doping concentration in the melt

M_0 = initial weight

M = Weight of the grown crystal

As crystal growth progresses, the composition initially at K_0C_0 will increase continually for -

1. $K_0 < 1$

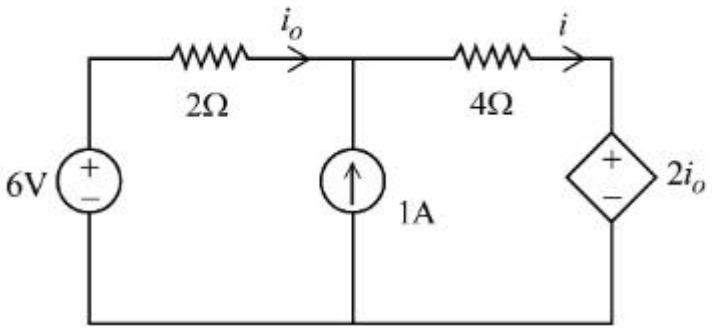
2. $K_0 > 1$

3. $K_0 \cong 1$

4. $K_0 = 0$

Question Number : 59 Question Id : 342123677 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Find i_o and i for the given circuit using the superposition theorem :



1. $i_o = 0.10A$, $i = 1.10A$

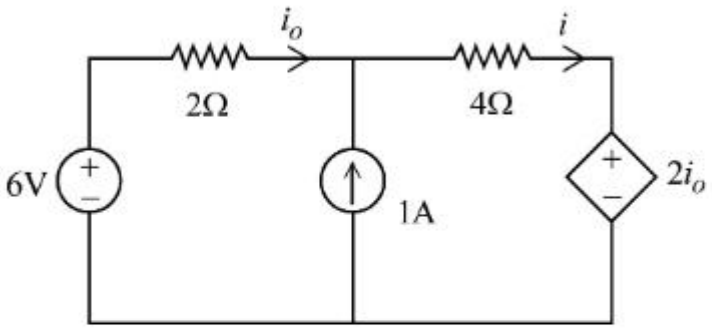
2. $i_o = 0.25A$, $i = 1.25A$

3. $i_o = 1.25A$, $i = 0.25A$

4. $i_o = 0.15A$, $i = 1.15A$

Question Number : 59 Question Id : 342123677 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Find i_o and i for the given circuit using the superposition theorem :



1. $i_o = 0.10A$, $i = 1.10A$

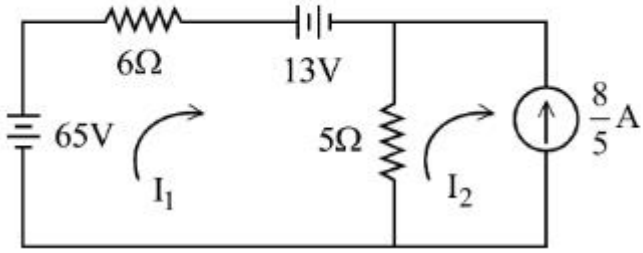
2. $i_o = 0.25A$, $i = 1.25A$

3. $i_o = 1.25A$, $i = 0.25A$

4. $i_o = 0.15A$, $i = 1.15A$

Question Number : 60 Question Id : 342123678 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Using Mesh analysis find current I_1, for the circuit given below :



1. 3A

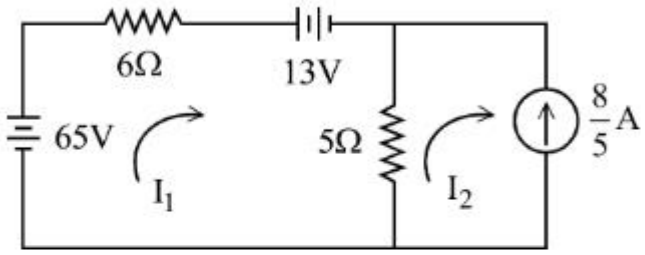
2. 6A

3. 4A

4. 7A

Question Number : 60 Question Id : 342123678 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

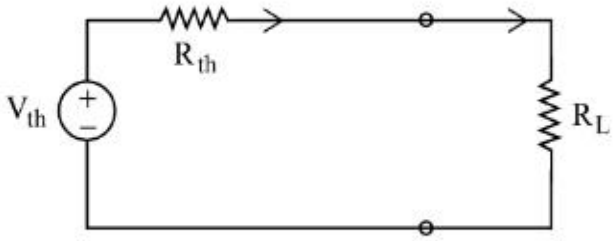
Using Mesh analysis find current I_1, for the circuit given below :



1. 3A
2. 6A
3. 4A
4. 7A

Question Number : 61 Question Id : 342123679 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

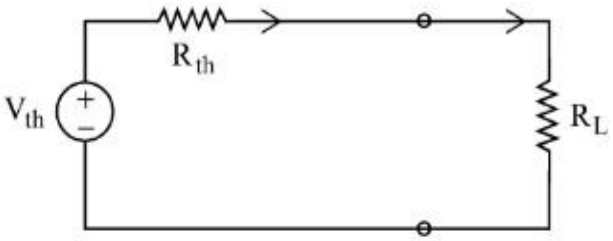
For the given circuit, the maximum power delivered to the load shall be :



1. $\frac{V_{th}^2}{R_{th}}$
2. $\frac{V_{th}^2}{2R_{th}}$
3. $\frac{V_{th}^2}{4R_{th}}$
4. $\frac{V_{th}^2}{8R_{th}}$

Question Number : 61 Question Id : 342123679 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For the given circuit, the maximum power delivered to the load shall be :



1. $\frac{V_{th}^2}{R_{th}}$

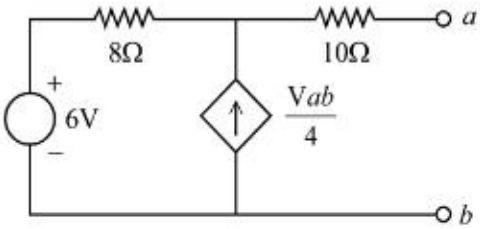
2. $\frac{V_{th}^2}{2R_{th}}$

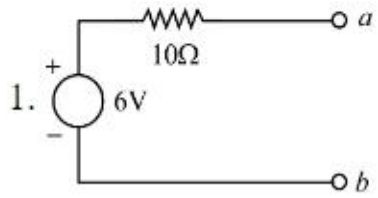
3. $\frac{V_{th}^2}{4R_{th}}$

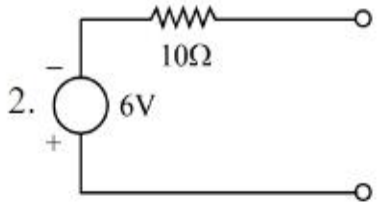
4. $\frac{V_{th}^2}{8R_{th}}$

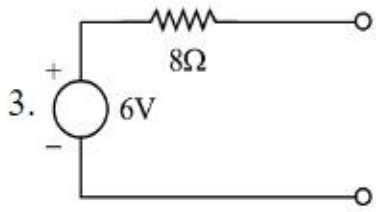
Question Number : 62 Question Id : 342123680 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

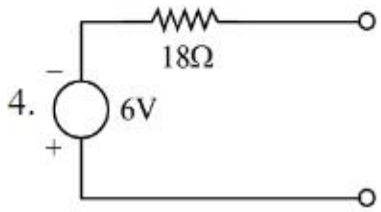
For the given circuit, the Thevenin's Equivalent circuit at a – b will be :



1.


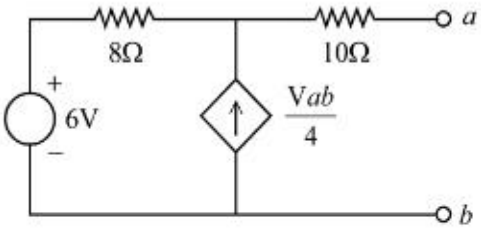
2.


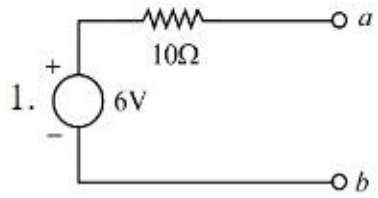
3.


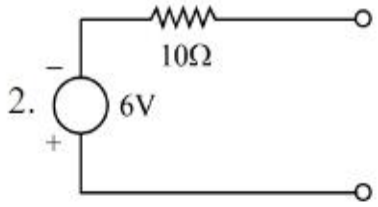
4.


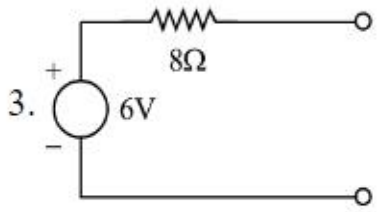
Question Number : 62 Question Id : 342123680 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

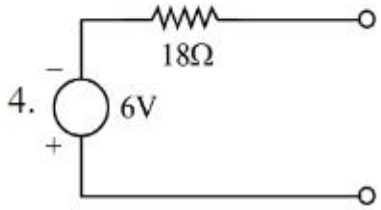
For the given circuit, the Thevenin's Equivalent circuit at a – b will be :



1.


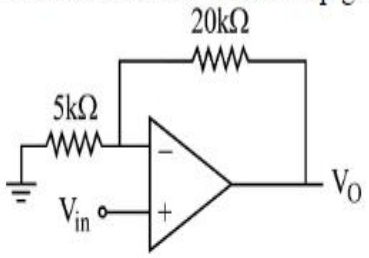
2.


3.


4.


Question Number : 63 Question Id : 342123681 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

An operational amplifier as shown below has a poor open loop voltage gain of 45 but otherwise it is ideal. Find the closed loop gain of the amplifier.



1. 5

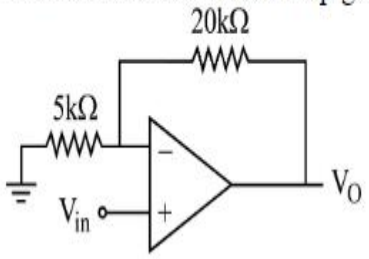
2. – 4

3. 4.5

4. 4

Question Number : 63 Question Id : 342123681 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

An operational amplifier as shown below has a poor open loop voltage gain of 45 but otherwise it is ideal. Find the closed loop gain of the amplifier.



1. 5

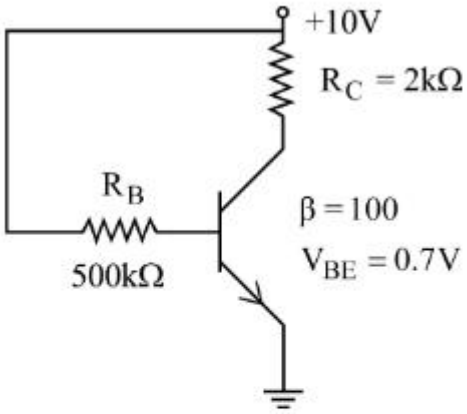
2. – 4

3. 4.5

4. 4

Question Number : 64 Question Id : 342123682 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

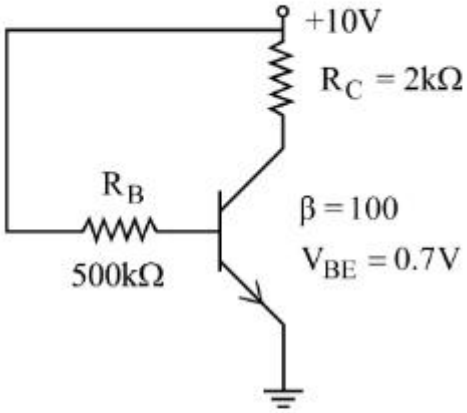
The operating point for the given transistor circuit is



1. (6V, 3mA)
2. (10V, 5mA)
3. (5V, 2mA)
4. (6.28V, 1.86mA)

Question Number : 64 Question Id : 342123682 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The operating point for the given transistor circuit is

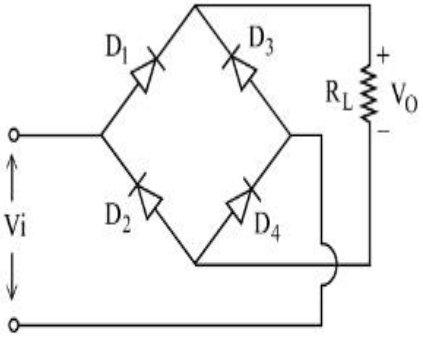


1. (6V, 3mA)
2. (10V, 5mA)
3. (5V, 2mA)
4. (6.28V, 1.86mA)

Question Number : 65 Question Id : 342123683 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

The bridge rectifier circuit as shown below has the following parameters : $V_i = 30V$, $R_L = 300\Omega$ and the diodes have $V_F = 0.7V$. The peak output voltage and peak output current value is



1. 30V, 100mA

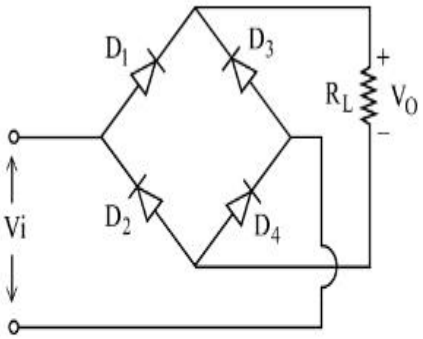
2. 42.42V, 141.4mA

3. 41V, 137mA

4. 28.6V, 95.33mA

Question Number : 65 Question Id : 342123683 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

The bridge rectifier circuit as shown below has the following parameters : $V_i = 30V$, $R_L = 300\Omega$ and the diodes have $V_F = 0.7V$. The peak output voltage and peak output current value is



1. 30V, 100mA

2. 42.42V, 141.4mA

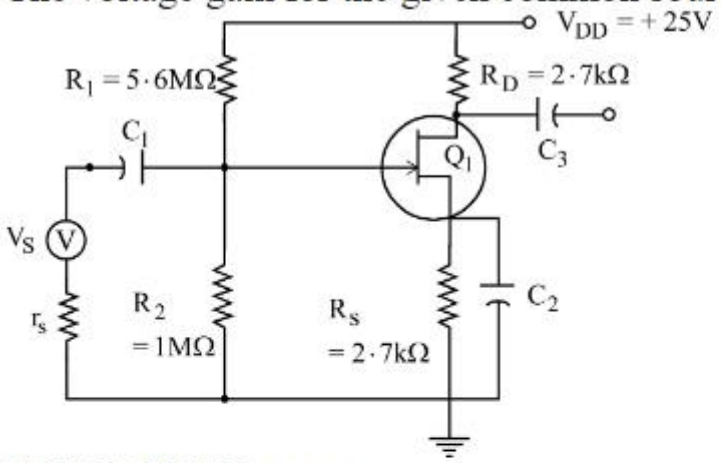
3. 41V, 137mA

4. 28.6V, 95.33mA

Question Number : 66 Question Id : 342123684 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

The voltage gain for the given common source FET circuit is



FET 2N5457 Parameters:
$Y_{os} = 10\ \mu S$, $Y_{fs} = 3000\ \mu S$

1. – 3

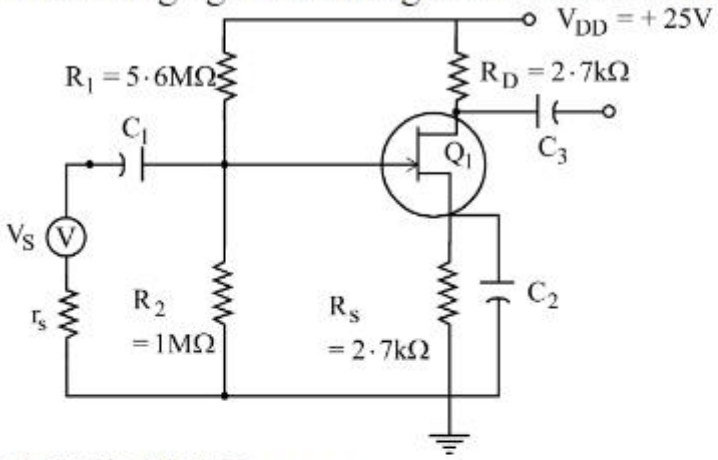
2. – 7.9

3. 2.54

4. – 5

Question Number : 66 Question Id : 342123684 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The voltage gain for the given common source FET circuit is



FET 2N5457 Parameters:
$Y_{os} = 10\ \mu S$, $Y_{fs} = 3000\ \mu S$

1. – 3

2. – 7.9

3. 2.54

4. – 5

Question Number : 67 Question Id : 342123685 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

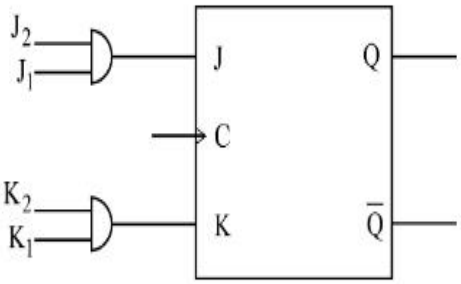
The following serial data is applied to the Flip Flop shown below. What will be resulting serial data that appear on the Q output? There is one clock pulse for each bit time, also assume that the, Q is initially 0. The right most bits are applied first.

J_1 = 10110110

J_2 = 11011001

K_1 = 10010110

K_2 = 11011011



1. 011100000

2. 000011100

3. 101001000

4. 110100100

Question Number : 67 Question Id : 342123685 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

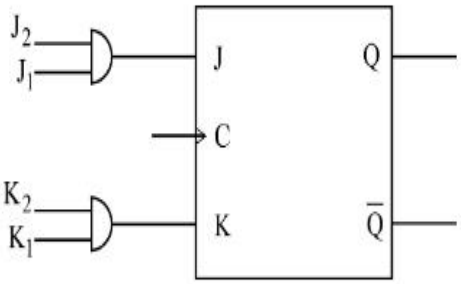
The following serial data is applied to the Flip Flop shown below. What will be resulting serial data that appear on the Q output? There is one clock pulse for each bit time, also assume that the, Q is initially 0. The right most bits are applied first.

J_1 = 10110110

J_2 = 11011001

K_1 = 10010110

K_2 = 11011011



1. 011100000

2. 000011100

3. 101001000

4. 110100100

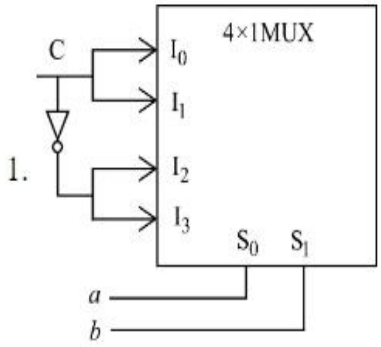
Question Number : 68 Question Id : 342123686 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The following function is a implemented using 4 × 1 MUX, with 'a' and 'b' as select lines.

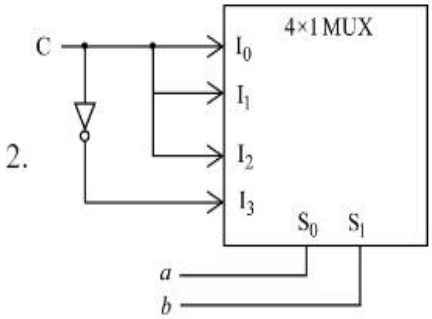
$$F(a,b,c)=\sum_{m}(1,3,5,6)$$

Choose the correct multipexer Implementation.

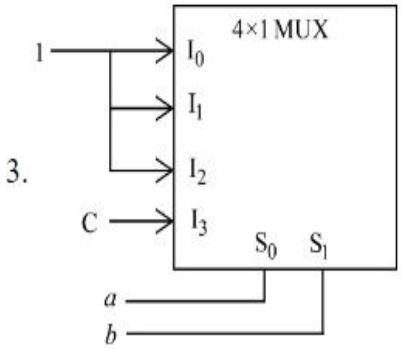
1.



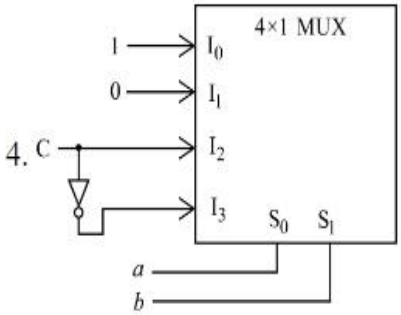
2.



3.



4.



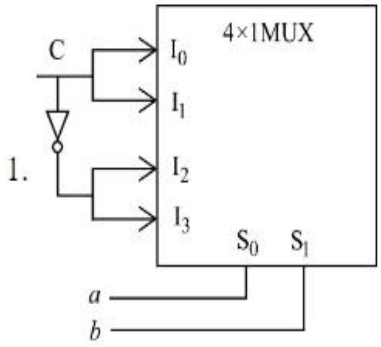
Question Number : 68 Question Id : 342123686 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The following function is a implemented using 4 × 1 MUX, with 'a' and 'b' as select lines.

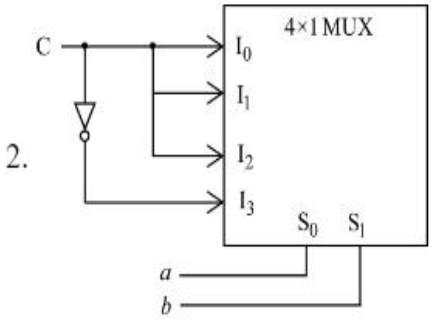
$$F(a,b,c)=\sum_{m}(1,3,5,6)$$

Choose the correct multipexer Implementation.

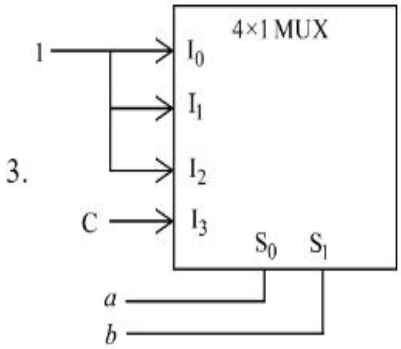
1.



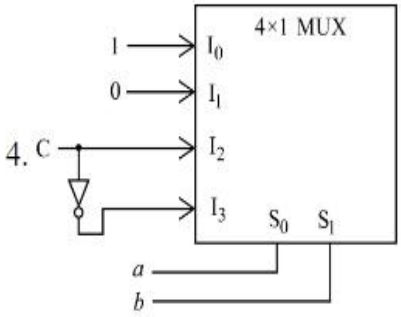
2.



3.



4.



Question Number : 69 Question Id : 342123687 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The min terms for the following 'f_{min}' will be

$f_{min} = \overline{A}\,\overline{C} + \overline{A}\,D + \overline{A}\,B + B\,D$

1. $f = \sum_{m}(0,1,5,6,9,13,15)$

2. $f = \sum_{m}(2,8,9,10,12,14)$

3. $f = \sum_{m}(0,1,3,4,5,6,7,13,15)$

4. $f = \sum_{m}(1,5,7,9,10,12,14,15)$

Question Number : 69 Question Id : 342123687 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The min terms for the following 'f_{min}' will be

$f_{min} = \overline{A}\,\overline{C} + \overline{A}\,D + \overline{A}\,B + B\,D$

1. $f = \sum_{m}(0,1,5,6,9,13,15)$

2. $f = \sum_{m}(2,8,9,10,12,14)$

3. $f = \sum_{m}(0,1,3,4,5,6,7,13,15)$

4. $f = \sum_{m}(1,5,7,9,10,12,14,15)$

Question Number : 70 Question Id : 342123688 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A 6 - bit DAC has a step size of 50 mV. The full - scale output voltage and percentage resolution for this will be?

1. 5V, 1.587%

2. 3.15V, 98.413%

3. 5V, 33.33%

4. 3.15V, 1.587%

Question Number : 70 Question Id : 342123688 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A 6 - bit DAC has a step size of 50 mV. The full - scale output voltage and percentage resolution for this will be?

1. 5V, 1.587%

2. 3.15V, 98.413%

3. 5V, 33.33%

4. 3.15V, 1.587%

Question Number : 71 Question Id : 342123689 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What will be the content of register AX when the following set of instructions are executed in 8086 microprocessor?
MOV AX, 31H
ADD AL, 39H
AAA

1. 0070H

2. 006AH

3. 0100H

4. 116AH

Question Number : 71 Question Id : 342123689 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What will be the content of register AX when the following set of instructions are executed in 8086 microprocessor?
MOV AX, 31H
ADD AL, 39H
AAA

1. 0070H

2. 006AH

3. 0100H

4. 116AH

Question Number : 72 Question Id : 342123690 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The 8-bit stack pointer (SP) register is used by the 8051 to hold an internal RAM address that is called the top of the stack. When the 8051 is reset, what is the value of SP?

1. 00 H

2. 07 H

3. 20 H

4. FF H

Question Number : 72 Question Id : 342123690 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The 8-bit stack pointer (SP) register is used by the 8051 to hold an internal RAM address that is called the top of the stack. When the 8051 is reset, what is the value of SP?

1. 00 H

2. 07 H

3. 20 H

4. FF H

Question Number : 73 Question Id : 342123691 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

The default offset register for code segment register (CS) in 8086 is

1. SP
2. DI
3. IP
4. BX

Question Number : 73 Question Id : 342123691 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The default offset register for code segment register (CS) in 8086 is

1. SP
2. DI
3. IP
4. BX

Question Number : 74 Question Id : 342123692 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For the Instruction (in case of 8051)
DIV AB
Which of the following statements is not correct?

1. The overflow flag is cleared to 0 unless B holds 00H before the DIV
2. The overflow flag is set to 1 to show division by 0
3. The carry flag is always set
4. This instruction put the integer part of quotient in register A & the integer part of the remainder in register B.

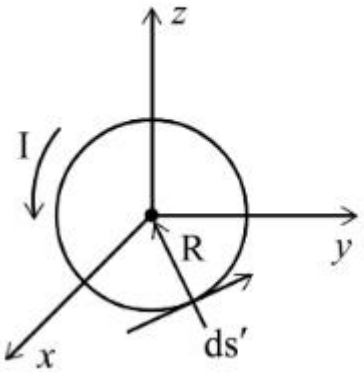
Question Number : 74 Question Id : 342123692 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For the Instruction (in case of 8051)
DIV AB
Which of the following statements is not correct?

1. The overflow flag is cleared to 0 unless B holds 00H before the DIV
2. The overflow flag is set to 1 to show division by 0
3. The carry flag is always set
4. This instruction put the integer part of quotient in register A & the integer part of the remainder in register B.

Question Number : 75 Question Id : 342123693 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

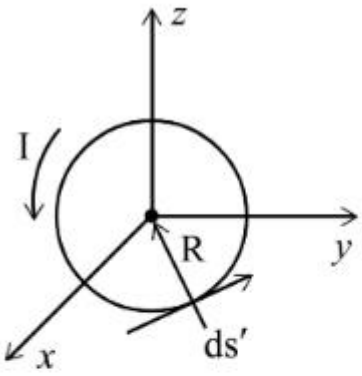
The magnetic field at the centre of the loop i.e H(0,0,0) is given by



1. $\frac{I}{R}\hat{z}$
2. $\frac{I}{2R}\hat{z}$
3. $\frac{I}{4R}\hat{z}$
4. $\frac{I}{6R}\hat{z}$

Question Number : 75 Question Id : 342123693 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The magnetic field at the centre of the loop i.e H(0,0,0) is given by



1. $\frac{I}{R}\hat{z}$

2. $\frac{I}{2R}\hat{z}$

3. $\frac{I}{4R}\hat{z}$

4. $\frac{I}{6R}\hat{z}$

Question Number : 76 Question Id : 342123694 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The Doppler frequency seen by a stationary radar with a (CW) transmit frequency of 5 GHz and target radial velocity of 100 km/hr is :

1. 387 Hz

2. 256 Hz

3. 428 Hz

4. 927 Hz

Question Number : 76 Question Id : 342123694 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The Doppler frequency seen by a stationary radar with a (CW) transmit frequency of 5 GHz and target radial velocity of 100 km/hr is :

1. 387 Hz

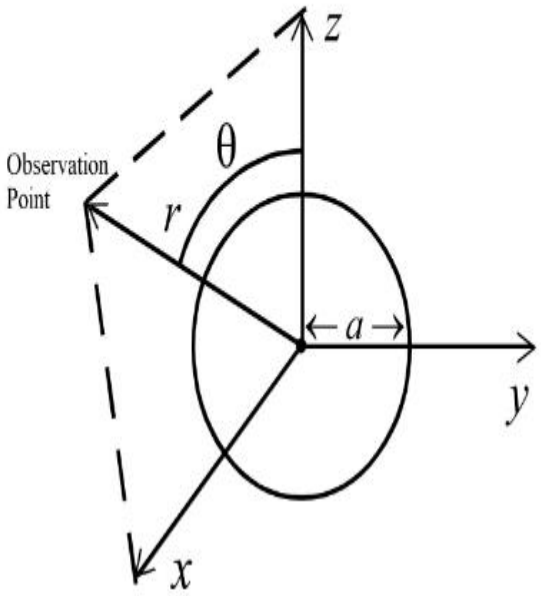
2. 256 Hz

3. 428 Hz

4. 927 Hz

Question Number : 77 Question Id : 342123695 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The circular loop of radius 'a' as shown in the figure carries a current I. The magnetic field (in the spherical coordinate system) at the observation point is :



1. $H_r = \frac{I(\pi a^2)\cos\theta}{2\pi r^3}$

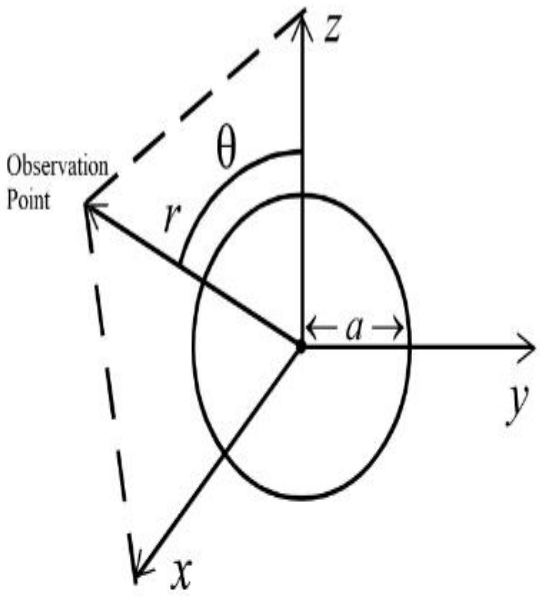
2. $H_r = \frac{I(\pi a^2)\cos\theta}{2\pi r^2}$

3. $H_r = \frac{I(\pi a^2)\sin\theta}{2\pi r^3}$

4. $H_r = \frac{I(\pi a^2)\sin\theta}{4\pi r^3}$

Question Number : 77 Question Id : 342123695 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The circular loop of radius 'a' as shown in the figure carries a current I. The magnetic field (in the spherical coordinate system) at the observation point is :



1. $H_r = \frac{I(\pi a^2)\cos\theta}{2\pi r^3}$

2. $H_r = \frac{I(\pi a^2)\cos\theta}{2\pi r^2}$

3. $H_r = \frac{I(\pi a^2)\sin\theta}{2\pi r^3}$

4. $H_r = \frac{I(\pi a^2)\sin\theta}{4\pi r^3}$

Question Number : 78 Question Id : 342123696 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

When a plane electromagnetic wave from medium 1 (ϵ_1) is incident normally on the surface of a perfect dielectric (i.e medium 2 with ϵ_2), then what is the relationship of the electric field strength of the reflected wave (E_r) to the electric field strength of the incident wave. (assuming that permeabilities (μ) of known insulators do not differ appreciably from free space i.e $\mu_1 = \mu_2 = \mu_0$)

1. $\frac{E_r}{E_i} = \frac{\sqrt{\epsilon_2} - \sqrt{\epsilon_1}}{\sqrt{\epsilon_1} + \sqrt{\epsilon_2}}$

2. $\frac{E_r}{E_i} = \frac{2\sqrt{\epsilon_1}}{\sqrt{\epsilon_1} + \sqrt{\epsilon_2}}$

3. $\frac{E_r}{E_i} = \frac{2\sqrt{\epsilon_2}}{\sqrt{\epsilon_1} + \sqrt{\epsilon_2}}$

4. $\frac{E_r}{E_i} = \frac{\sqrt{\epsilon_1} - \sqrt{\epsilon_2}}{\sqrt{\epsilon_1} + \sqrt{\epsilon_2}}$

Question Number : 78 Question Id : 342123696 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

When a plane electromagnetic wave from medium 1 (ϵ_1) is incident normally on the surface of a perfect dielectric (i.e medium 2 with ϵ_2), then what is the relationship of the electric field strength of the reflected wave (E_r) to the electric field strength of the incident wave. (assuming that permeabilities (μ) of known insulators do not differ appreciably from free space i.e $\mu_1 = \mu_2 = \mu_0$)

1. $\frac{E_r}{E_i} = \frac{\sqrt{\epsilon_2} - \sqrt{\epsilon_1}}{\sqrt{\epsilon_1} + \sqrt{\epsilon_2}}$

2. $\frac{E_r}{E_i} = \frac{2\sqrt{\epsilon_1}}{\sqrt{\epsilon_1} + \sqrt{\epsilon_2}}$

3. $\frac{E_r}{E_i} = \frac{2\sqrt{\epsilon_2}}{\sqrt{\epsilon_1} + \sqrt{\epsilon_2}}$

4. $\frac{E_r}{E_i} = \frac{\sqrt{\epsilon_1} - \sqrt{\epsilon_2}}{\sqrt{\epsilon_1} + \sqrt{\epsilon_2}}$

Question Number : 79 Question Id : 342123697 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For an QPSK modulator with an input data rate (f_b) of 10 Mbps and a carrier frequency of 70MHz, the minimum double - sided Nyquist Bandwidth and Baud rate will be :

1. 2.5 MHz and 5 Megabaud

2. 5 MHz and 5 Megabaud

3. 5 MHz and 2.5 Megabaud

4. 5 KHz and 2.5 Megabaud

Question Number : 79 Question Id : 342123697 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For an QPSK modulator with an input data rate (f_b) of 10 Mbps and a carrier frequency of 70MHz, the minimum double - sided Nyquist Bandwidth and Baud rate will be :

1. 2.5 MHz and 5 Megabaud

2. 5 MHz and 5 Megabaud

3. 5 MHz and 2.5 Megabaud

4. 5 KHz and 2.5 Megabaud

Question Number : 80 Question Id : 342123698 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a single mode optical fiber cable with attenuation of 0.25dB/km, the optical power (in dBm), 100 Km away, from a 0.1 mW light source will be :

1. –10 dBm

2. –25dBm

3. –30dBm

4. –35dBm

Question Number : 80 Question Id : 342123698 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a single mode optical fiber cable with attenuation of 0.25dB/km, the optical power (in dBm), 100 Km away, from a 0.1 mW light source will be :

1. –10 dBm

2. –25dBm

3. –30dBm

4. –35dBm

Question Number : 81 Question Id : 342123699 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a standard telephone circuit with a signal-to-noise power ratio of 1000 and a BW of 2.7 KHz, the Shannon limit for Information capacity approximately is :

1. 26.9 Kbps

2. 2.7 Kbps

3. 3.32 Kbps

4. 29.6 Kbps

Question Number : 81 Question Id : 342123699 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a standard telephone circuit with a signal-to-noise power ratio of 1000 and a BW of 2.7 KHz, the Shannon limit for Information capacity approximately is :

1. 26.9 Kbps

2. 2.7 Kbps

3. 3.32 Kbps

4. 29.6 Kbps

Question Number : 82 Question Id : 342123700 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For an angle modulated signal
$X(t) = 3 \cos [2\pi 10^6 t + 2 \sin (2\pi 10^3 t)]$
Its maximum phase deviation and maximum frequency deviation respectively are

1. 3 rad & 10^6 Hz

2. 2 rad & 10^3 Hz

3. 2 rad & 2×10^3 Hz

4. 3 rad & 2×10^6 Hz

Question Number : 82 Question Id : 342123700 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For an angle modulated signal

$X(t) = 3 \cos [2\pi\ 10^6 t + 2 \sin (2\pi\ 10^3\ t)]$

Its maximum phase deviation and maximum frequency deviation respectively are

1. 3 rad & 10^6 Hz
2. 2 rad & 10^3 Hz
3. 2 rad & 2×10^3 Hz
4. 3 rad & 2×10^6 Hz

Question Number : 83 Question Id : 342123701 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The output of a control system is

$c(t) = 1 + 0.25e^{-50t} - 1.25e^{-10t}$

For an unit step input, its undamped natural frequency and damping ratio will be

1. 50 rad/s & 1.34
2. 500 rad/s & 0.5
3. 22.36 rad /s & 0.35
4. 22.36 rad/s & 1.34

Question Number : 83 Question Id : 342123701 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The output of a control system is

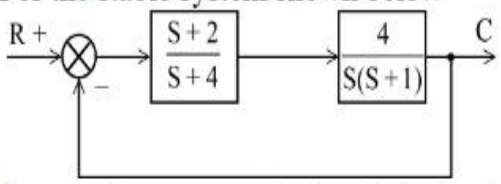
$c(t) = 1 + 0.25e^{-50t} - 1.25e^{-10t}$

For an unit step input, its undamped natural frequency and damping ratio will be

1. 50 rad/s & 1.34
2. 500 rad/s & 0.5
3. 22.36 rad /s & 0.35
4. 22.36 rad/s & 1.34

Question Number : 84 Question Id : 342123702 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For the stable system shown below



Its velocity error constant and steady state error for unit ramp input respectively will be

1. ∞ , 0

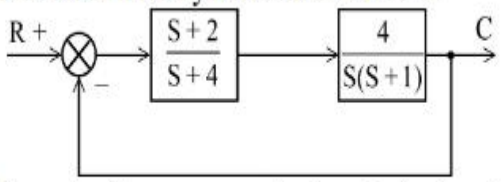
2. 0, ∞

3. 2, ½

4. 4, 2

Question Number : 84 Question Id : 342123702 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For the stable system shown below



Its velocity error constant and steady state error for unit ramp input respectively will be

1. ∞ , 0

2. 0, ∞

3. 2, ½

4. 4, 2

Question Number : 85 Question Id : 342123703 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A thyristor having the equivalent capacitance of the depletion layer of reverse biased junction as 20 picofarad can be fired with a dv/dt of 120 V/μsec. The capacitive current flowing through the junction will be :

1. 1.8 mA

2. 2.4 mA

3. 3.6 mA

4. 5.9 mA

Question Number : 85 Question Id : 342123703 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A thyristor having the equivalent capacitance of the depletion layer of reverse biased junction as 20 picofarad can be fired with a dv/dt of 120 V/μsec. The capacitive current flowing through the junction will be :

1. 1.8 mA

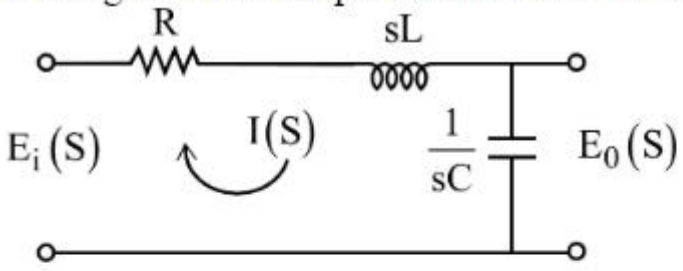
2. 2.4 mA

3. 3.6 mA

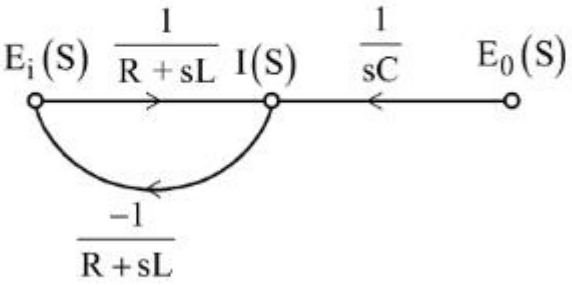
4. 5.9 mA

Question Number : 86 Question Id : 342123704 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

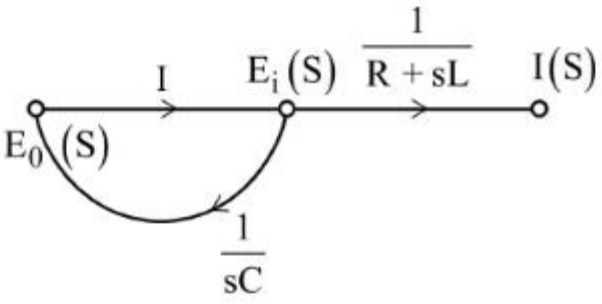
The Signal Flow Graph for the series RLC circuit given below is ?



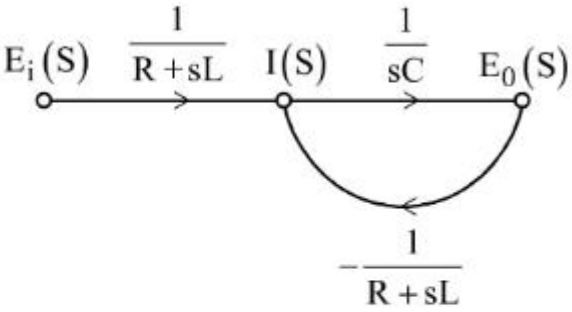
1.



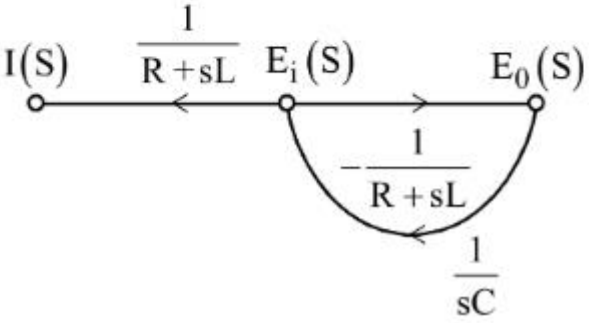
2.



3.

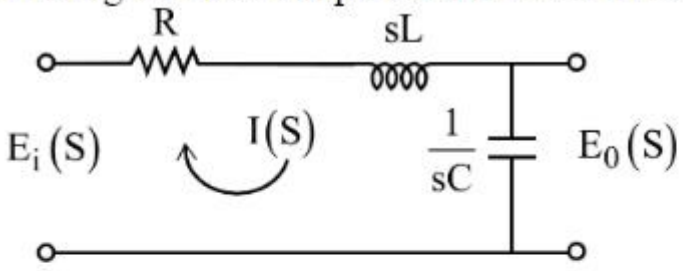


4.

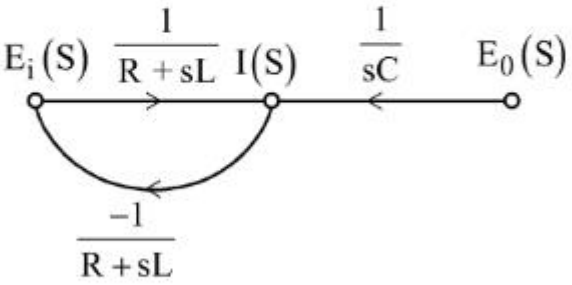


Question Number : 86 Question Id : 342123704 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

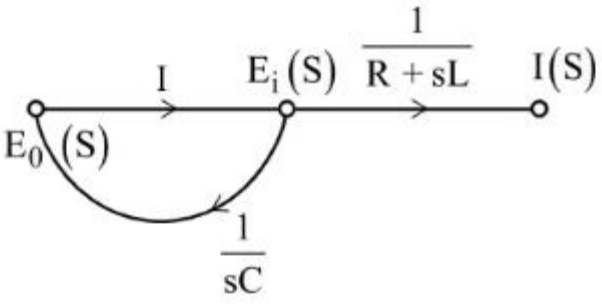
The Signal Flow Graph for the series RLC circuit given below is ?



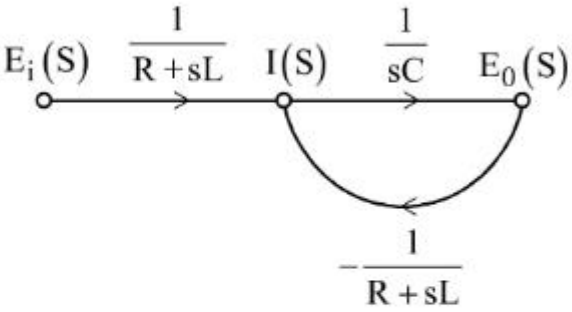
1.



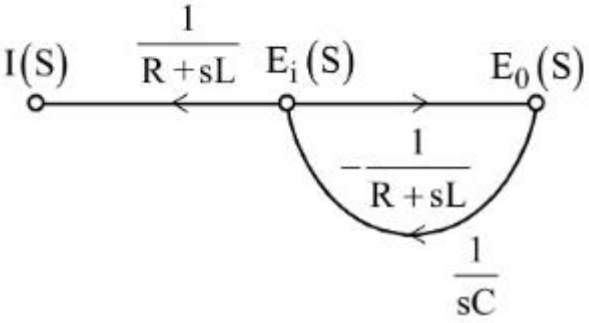
2.



3.



4.



Question Number : 87 Question Id : 342123705 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A piezoelectric transducer having a wafer of piezoelectric crystal material with a relative permittivity of 700 is sandwiched between two plated electrodes. The plate dimensions is 5mm × 5mm. The piezoelectric crystal material has a thickness 2mm. When a force of 10N is applied, the piezoelectric transducer produces an output voltage of 40V. The respective value of its voltage sensitivity and charge sensitivity is ?

1. 0.04Vm/N, 247.52 pC/N

2. 0.05 Vm/N, 309.4 pC/N

3. 0.04 Vm/N, 261.12 pC/N

4. 0.05 Vm/N, 319.8 pC/N

Question Number : 87 Question Id : 342123705 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A piezoelectric transducer having a wafer of piezoelectric crystal material with a relative permittivity of 700 is sandwiched between two plated electrodes. The plate dimensions is 5mm × 5mm. The piezoelectric crystal material has a thickness 2mm. When a force of 10N is applied, the piezoelectric transducer produces an output voltage of 40V. The respective value of its voltage sensitivity and charge sensitivity is ?

1. 0.04Vm/N, 247.52 pC/N

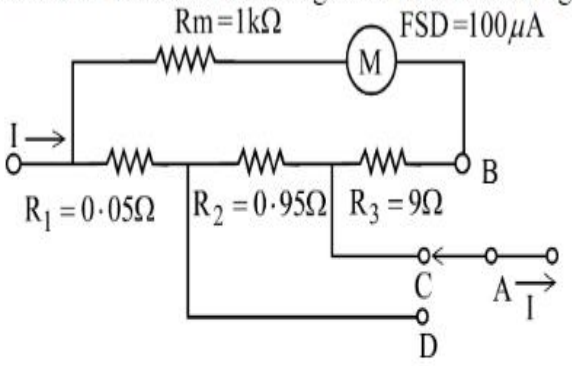
2. 0.05 Vm/N, 309.4 pC/N

3. 0.04 Vm/N, 261.12 pC/N

4. 0.05 Vm/N, 319.8 pC/N

Question Number : 88 Question Id : 342123706 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A PMMC instrument has a three - resister Ayrton shunt connected in parallel with it to make an ammeter as shown in the figure. The current range of the ammeter when connected to C is



1. 10 mA

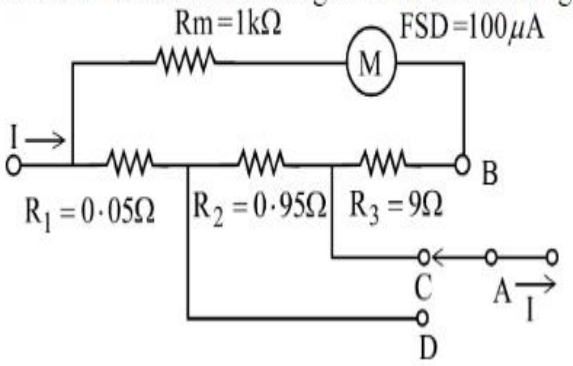
2. 1 mA

3. 100 mA

4. 1A

Question Number : 88 Question Id : 342123706 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A PMMC instrument has a three - resister Ayrton shunt connected in parallel with it to make an ammeter as shown in the figure. The current range of the ammeter when connected to C is



1. 10 mA

2. 1 mA

3. 100 mA

4. 1A

Question Number : 89 Question Id : 342123707 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A parallel - plate capacitive transducer having air as dielectric between the plates, plate area is 50mm×50mm and plate spacing is 0.5mm. The displacement causes the capacitance to change by 10pF. The sensitivity of the capacitive displacement transducer is

1. 50.23 pF/mm

2. 66.67 pF/mm

3. 61.25 pF/mm

4. 59.12 pF/mm

Question Number : 89 Question Id : 342123707 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A parallel - plate capacitive transducer having air as dielectric between the plates, plate area is 50mm×50mm and plate spacing is 0.5mm. The displacement causes the capacitance to change by 10pF. The sensitivity of the capacitive displacement transducer is

1. 50.23 pF/mm

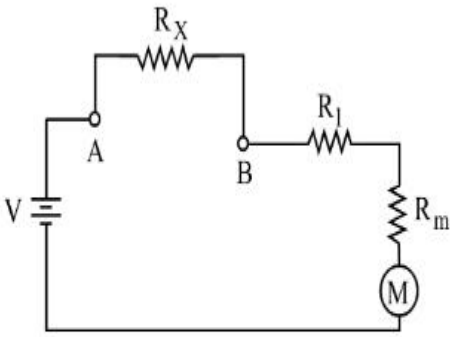
2. 66.67 pF/mm

3. 61.25 pF/mm

4. 59.12 pF/mm

Question Number : 90 Question Id : 342123708 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The accuracy of the series ohmmeter circuit consisting of a PMMC instrument with a series connected standard Resistor R_1 as shown in the given figure when the pointer is at 0.5 FSD is?
(The meter used has 1% accuracy, Assume $R_m \ll R_1$)



1. 2%

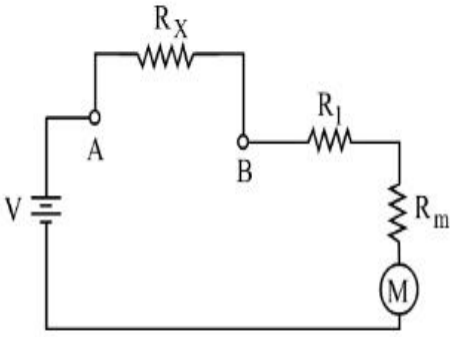
2. 6.25%

3. 4%

4. 1%

Question Number : 90 Question Id : 342123708 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The accuracy of the series ohmmeter circuit consisting of a PMMC instrument with a series connected standard Resistor R_1 as shown in the given figure when the pointer is at 0.5 FSD is?
(The meter used has 1% accuracy, Assume $R_m \ll R_1$)



1. 2%

2. 6.25%

3. 4%

4. 1%

Question Number : 91 Question Id : 342123709 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following in the increasing order of their electron mobility at 300K ($cm^{2/}V.s$)

A. Si
B. Ge
C. GaP
D. InAs

1. (A), (B), (C), (D)

2. (B), (C), (D), (A)

3. (C), (B), (D), (A)

4. (C), (A), (B), (D)

Question Number : 91 Question Id : 342123709 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following in the increasing order of their electron mobility at 300K ($cm^{2/}V.s$)

A. Si
B. Ge
C. GaP
D. InAs

1. (A), (B), (C), (D)

2. (B), (C), (D), (A)

3. (C), (B), (D), (A)

4. (C), (A), (B), (D)

Question Number : 92 Question Id : 342123710 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following in the decreasing order of their Bandgap (eV) at 300K.

A. GaAs
B. Si
C. Ge
D. ZnO
E. InSb

1. A, B, C, D, E

2. B, A, D, E, C

3. C, D, B, A, E

4. D, A, B, C, E

Question Number : 92 Question Id : 342123710 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following in the decreasing order of their Bandgap (eV) at 300K.

A. GaAs
B. Si
C. Ge
D. ZnO
E. InSb

1. A, B, C, D, E

2. B, A, D, E, C

3. C, D, B, A, E

4. D, A, B, C, E

Question Number : 93 Question Id : 342123711 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following materials with regard to their thermal conductivities when used in packaging in the units k(W/cm-°c) in the decreasing order.

A. Silicon
B. Au
C. Epoxy (fused Silica filler)
D. Alumina ($Al_2 O_3$)
E. Common Cu Alloys

1. (A), (C), (B), (D), (E)

2. (A), (C), (D), (B), (E)

3. (B), (E), (A), (C), (D)

4. (B), (E), (A), (D), (C)

Question Number : 93 Question Id : 342123711 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following materials with regard to their thermal conductivities when used in packaging in the units k(W/cm-°c) in the decreasing order.

A. Silicon
B. Au
C. Epoxy (fused Silica filler)
D. Alumina ($Al_2 O_3$)
E. Common Cu Alloys

1. (A), (C), (B), (D), (E)

2. (A), (C), (D), (B), (E)

3. (B), (E), (A), (C), (D)

4. (B), (E), (A), (D), (C)

Question Number : 94 Question Id : 342123712 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following with respect to their segregation coefficient in the increasing order.

A. Al
B. As
C. B
D. C
E. P

1. (A), (D), (B), (C), (E)

2. (A), (D), (B), (E), (C)

3. (B), (A), (C), (D), (E)

4. (B), (C), (D), (A), (E)

Question Number : 94 Question Id : 342123712 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following with respect to their segregation coefficient in the increasing order.

A. Al
B. As
C. B
D. C
E. P

1. (A), (D), (B), (C), (E)

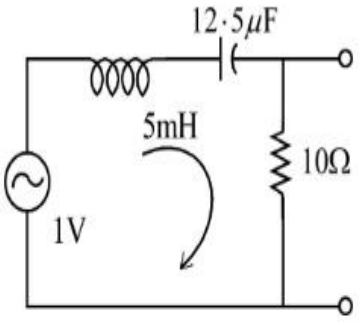
2. (A), (D), (B), (E), (C)

3. (B), (A), (C), (D), (E)

4. (B), (C), (D), (A), (E)

Question Number : 95 Question Id : 342123713 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a series RLC circuit given below, arrange the driving point impedance |z| in descending order.



A. |z| at ω = 4800 Hz
B. |z| at ω = 4000 Hz
C. |z| at ω = 3200 Hz
D. |z| at ω = 4400 Hz

1. C, B, D, A

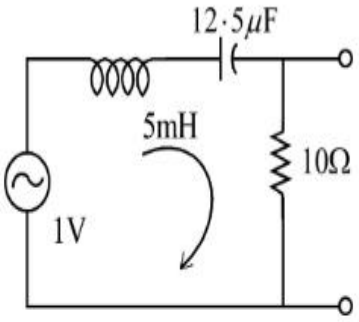
2. C, A, D, B

3. A, D, B, C

4. A, B , C, D

Question Number : 95 Question Id : 342123713 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a series RLC circuit given below, arrange the driving point impedance |z| in descending order.



A. |z| at ω = 4800 Hz
B. |z| at ω = 4000 Hz
C. |z| at ω = 3200 Hz
D. |z| at ω = 4400 Hz

1. C, B, D, A

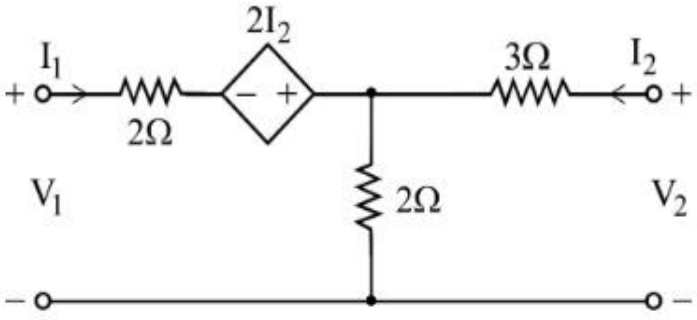
2. C, A, D, B

3. A, D, B, C

4. A, B , C, D

Question Number : 96 Question Id : 342123714 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For the circuit given below, arrange the Z-parameters in descending order.



A. Z_{11}
B. Z_{21}
C. Z_{12}
D. Z_{22}

1. A, D, C, B

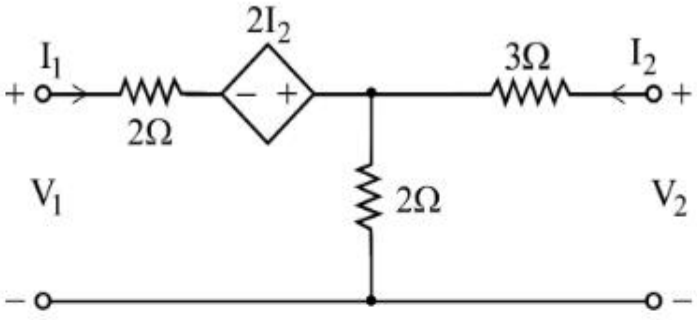
2. D, A, B, C

3. D, C, B, A

4. A, C, D, B

Question Number : 96 Question Id : 342123714 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For the circuit given below, arrange the Z-parameters in descending order.



A. Z_{11}
B. Z_{21}
C. Z_{12}
D. Z_{22}

1. A, D, C, B

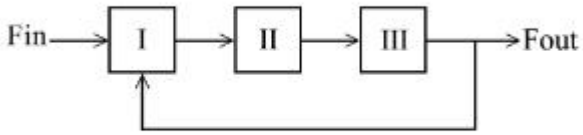
2. D, A, B, C

3. D, C, B, A

4. A, C, D, B

Question Number : 97 Question Id : 342123715 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Identify I, II and III in the block diagram of phase lock loop.



A. Phase Detector
B. Voltage controlled oscillator
C. Low Pass Filter

1. A, B, C

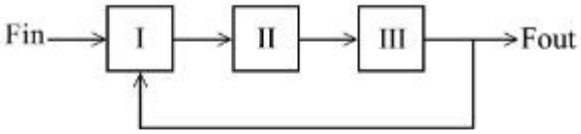
2. A, C, B

3. B, C, A

4. B, A, C

Question Number : 97 Question Id : 342123715 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Identify I, II and III in the block diagram of phase lock loop.



A. Phase Detector
B. Voltage controlled oscillator
C. Low Pass Filter

1. A, B, C

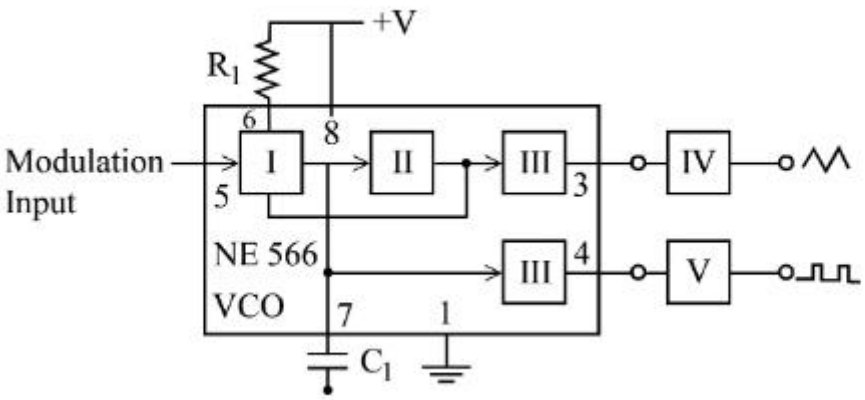
2. A, C, B

3. B, C, A

4. B, A, C

Question Number : 98 Question Id : 342123716 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Identify the block numbered from I to V in the following diagram



A. Current source
B. Integrator
C. Buffer amplifier
D. Differentiator
E. Schmitt Trigger

1. A, D, E, B, C

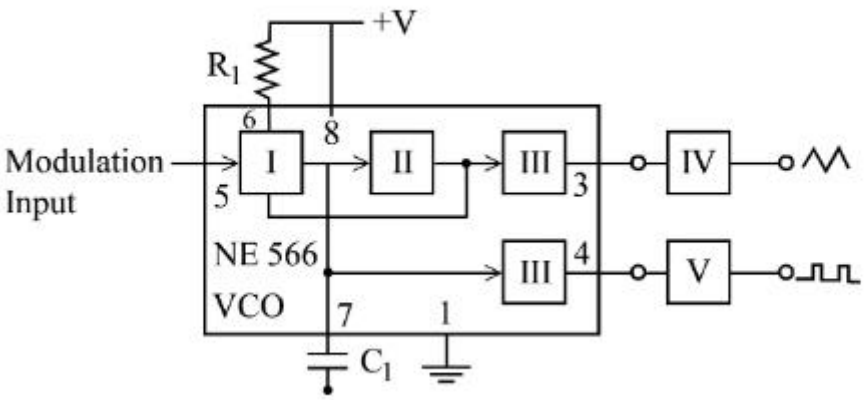
2. A, E, C, D, B

3. B, D, A, C, E

4. A, E, C, B, D

Question Number : 98 Question Id : 342123716 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Identify the block numbered from I to V in the following diagram



A. Current source
B. Integrator
C. Buffer amplifier
D. Differentiator
E. Schmitt Trigger

1. A, D, E, B, C

2. A, E, C, D, B

3. B, D, A, C, E

4. A, E, C, B, D

Question Number : 99 Question Id : 342123717 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following logic families in increasing order of their noise margin

A. TTL (Transistor - Transistor Logic)
B. ECL (Emitter coupled logic)
C. MOS (Metal oxide semiconductor logic)
D. IIL (Integrated Injection logic)

1. B, D, A, C

2. A, C, B, D

3. C, B, D, A

4. D, C, A, B

Question Number : 99 Question Id : 342123717 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following logic families in increasing order of their noise margin

A. TTL (Transistor - Transistor Logic)
B. ECL (Emitter coupled logic)
C. MOS (Metal oxide semiconductor logic)
D. IIL (Integrated Injection logic)

1. B, D, A, C

2. A, C, B, D

3. C, B, D, A

4. D, C, A, B

Question Number : 100 Question Id : 342123718 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a 4-bit counter arrange the following counters in increasing order of their valid counts.

A. Ring counter
B. Johnson counter
C. Decade counter
D. Ripple counter

1. B, A, D, C

2. A, C, B, D

3. A, B, C, D

4. C, D, B, A

Question Number : 100 Question Id : 342123718 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a 4-bit counter arrange the following counters in increasing order of their valid counts.

A. Ring counter
B. Johnson counter
C. Decade counter
D. Ripple counter

1. B, A, D, C

2. A, C, B, D

3. A, B, C, D

4. C, D, B, A

Question Number : 101 Question Id : 342123719 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Following set of instructions in 8086 searches a table of 100 bytes for 0AH. Select the correct option

```
MOV CX, 100
MOV AL, 0AH
```

A. STC
B. CLC
C. CLD
D. REPNE SCASB
E. JCXZ Not_FOUND

```
NOT FOUND : END
```

1. A, D, B, E, C

2. B, D, A, E, C

3. C, D, A, E, B

4. B, D, C, E, A

Question Number : 101 Question Id : 342123719 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Following set of instructions in 8086 searches a table of 100 bytes for 0AH. Select the correct option

MOV CX, 100
MOV AL, 0AH

A. STC
B. CLC
C. CLD
D. REPNE SCASB
E. JCXZ Not_FOUND

NOT FOUND : END

1. A, D, B, E, C

2. B, D, A, E, C

3. C, D, A, E, B

4. B, D, C, E, A

Question Number : 102 Question Id : 342123720 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following Antennas on the basis of increasing order of directivity

A. Short dipole HPBW = 90°
B. $\lambda/4$ monopole
C. Isotropic (hypothetical)
D. Hemispherical radiator
E. $\lambda/2$ monopole

1. B, D, C, A, E

2. E, B, D, A, C

3. C, A, D, B, E

4. D, C, A, E, B

Question Number : 102 Question Id : 342123720 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the following Antennas on the basis of increasing order of directivity

A. Short dipole HPBW = 90°
B. $\lambda/4$ monopole
C. Isotropic (hypothetical)
D. Hemispherical radiator
E. $\lambda/2$ monopole

1. B, D, C, A, E

2. E, B, D, A, C

3. C, A, D, B, E

4. D, C, A, E, B

Question Number : 103 Question Id : 342123721 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a super heterodyne receiver the correct sequence of block to receive a signal is

A. Mixer
B. RF stage
C. Antenna
D. Detector
E. IF Amplifier

1. C, D, A, B, E

2. C, B, A, E, D

3. D, E, B, A, C

4. D, C, B, A, E

Question Number : 103 Question Id : 342123721 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For a super heterodyne receiver the correct sequence of block to receive a signal is

A. Mixer
B. RF stage
C. Antenna
D. Detector
E. IF Amplifier

1. C, D, A, B, E

2. C, B, A, E, D

3. D, E, B, A, C

4. D, C, B, A, E

Question Number : 104 Question Id : 342123722 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For single - phase full-wave firing pulse generator using, inverse cosine control principle, arrange the different sections of the circuit starting from input AC supply to the gate of the SCR

A. Clock pulse generator
B. Isolating transformer
C. 90° phase shift circuit to obtain cosine timing wave.
D. Level comparator
E. Pulse - output Flip Flop

1. B, D, A, C, E

2. C, B, D, A, E

3. B, E, A, C, D

4. B, A, E, C, D

Question Number : 104 Question Id : 342123722 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For single - phase full-wave firing pulse generator using, inverse cosine control principle, arrange the different sections of the circuit starting from input AC supply to the gate of the SCR

A. Clock pulse generator
B. Isolating transformer
C. 90° phase shift circuit to obtain cosine timing wave.
D. Level comparator
E. Pulse - output Flip Flop

1. B, D, A, C, E

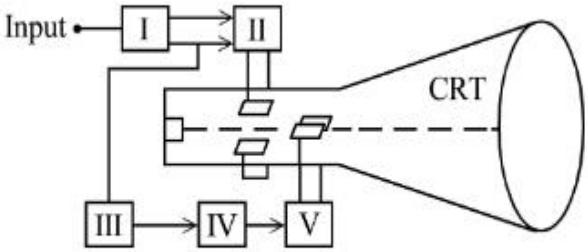
2. C, B, D, A, E

3. B, E, A, C, D

4. B, A, E, C, D

Question Number : 105 Question Id : 342123723 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Identify the blocks numbered from I to V in the following diagram of CRO



A. Trigger Circuit
B. Horizontal Amplifier
C. Delay line
D. Time Base generator
E. Vertical Amplifier

1. E, A, C, D, B

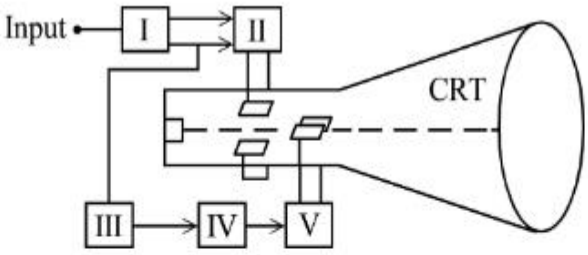
2. E, C, D, A,B

3. E, C, A, D, B

4. E, C, A, B, D

Question Number : 105 Question Id : 342123723 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Identify the blocks numbered from I to V in the following diagram of CRO



A. Trigger Circuit
B. Horizontal Amplifier
C. Delay line
D. Time Base generator
E. Vertical Amplifier

1. E, A, C, D, B

2. E, C, D, A,B

3. E, C, A, D, B

4. E, C, A, B, D

Question Number : 106 Question Id : 342123724 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements are correct when effective mass of an electron is taken into consideration

A. The electron effective mass is independent of the semiconductor properties.
B. Electrons near top of the V.B. have negative effective mass
C. The C.B. electron effective mass has a strong dependence on the value of bandgap
D. The effective mass decreases as the bandgap increases.

1. (A) & (C) only

2. (A) & (D) only

3. (B) & (C) only

4. (B) & (D) only

Question Number : 106 Question Id : 342123724 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements are correct when effective mass of an electron is taken into consideration

A. The electron effective mass is independent of the semiconductor properties.
B. Electrons near top of the V.B. have negative effective mass
C. The C.B. electron effective mass has a strong dependence on the value of bandgap
D. The effective mass decreases as the bandgap increases.

1. (A) & (C) only

2. (A) & (D) only

3. (B) & (C) only

4. (B) & (D) only

Question Number : 107 Question Id : 342123725 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The effective density of states in the conduction band N_C (cm^{-3}) for Si & GaAs at 300K are

A. Si = 2.86×10^{19}
B. Si = 2.66×10^{19}
C. GaAs = 4.7×10^{17}
D. GaAs = 7.0×10^{18}

1. (A) & (C)

2. (A) & (D)

3. (B) & (C)

4. (B) & (D)

Question Number : 107 Question Id : 342123725 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The effective density of states in the conduction band N_C (cm^{-3}) for Si & GaAs at 300K are

A. Si = 2.86×10^{19}
B. Si = 2.66×10^{19}
C. GaAs = 4.7×10^{17}
D. GaAs = 7.0×10^{18}

1. (A) & (C)

2. (A) & (D)

3. (B) & (C)

4. (B) & (D)

Question Number : 108 Question Id : 342123726 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The peak concentration in the lateral autodoping profile is a function of the following parameters :

A. Temperature
B. Surface concentration in the buried layer
C. Applied voltage
D. Growth rate

1. (A) & (B) only

2. (A) & (C) only

3. (A), (B) & (C) only

4. (A), (B) & (D) only

Question Number : 108 Question Id : 342123726 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The peak concentration in the lateral autodoping profile is a function of the following parameters
:

A. Temperature
B. Surface concentration in the buried layer
C. Applied voltage
D. Growth rate

1. (A) & (B) only

2. (A) & (C) only

3. (A), (B) & (C) only

4. (A), (B) & (D) only

Question Number : 109 Question Id : 342123727 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The high frequency and high speed issues of the MOSFET are controlled by the following through the channel

A. Capacitance charging times
B. Capacitance discharging times
C. Transit time of the carriers
D. Series resistances associated with the source & the drain

1. A & B only

2. A & C only

3. A & D only

4. B & D only

Question Number : 109 Question Id : 342123727 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The high frequency and high speed issues of the MOSFET are controlled by the following through the channel

A. Capacitance charging times
B. Capacitance discharging times
C. Transit time of the carriers
D. Series resistances associated with the source & the drain

1. A & B only

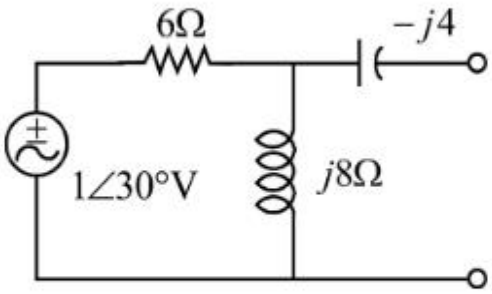
2. A & C only

3. A & D only

4. B & D only

Question Number : 110 Question Id : 342123728 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A. The V_{th}, Z_{th} and I_{sc} values for the circuit given below are given as



A. $Z_{th} = 32\angle -10{\cdot}48°\,\Omega$

B. $V_{th} = 0{\cdot}5\angle 24{\cdot}67°\,V$

C. $Z_{th} = \dfrac{32 + j24}{6 + j8}\Omega$

D. $V_{th} = \dfrac{8\angle 120°}{6 + j8}V$

E. $I_{SC} = 0{\cdot}2\angle 83{\cdot}1°A$

1. (A), (B) & (E) only

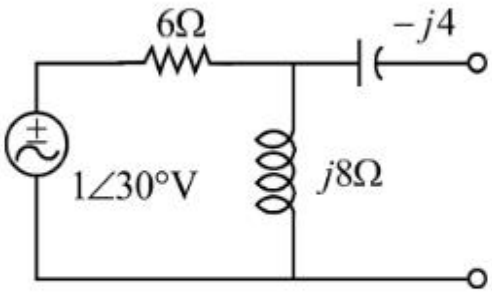
2. (B), (C) & (E) only

3. (C), (D) & (E) only

4. (A), (D) & (E) only

Question Number : 110 Question Id : 342123728 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A. The V_{th}, Z_{th} and I_{sc} values for the circuit given below are given as



A. $Z_{th} = 32\angle -10{\cdot}48°\,\Omega$

B. $V_{th} = 0{\cdot}5\angle 24{\cdot}67°\,V$

C. $Z_{th} = \dfrac{32 + j24}{6 + j8}\Omega$

D. $V_{th} = \dfrac{8\angle 120°}{6 + j8}V$

E. $I_{SC} = 0{\cdot}2\angle 83{\cdot}1°A$

1. (A), (B) & (E) only

2. (B), (C) & (E) only

3. (C), (D) & (E) only

4. (A), (D) & (E) only

Question Number : 111 Question Id : 342123729 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

If a coil draws 0.5 A from a 120V, 60Hz source at a 0.7 lagging power factor, then

A. Coil resistance is 240Ω
B. Power factor angle is $\cos^{-1}(0.7)$
C. Coil impendence is 168 + j171. 4Ω
D. Power factor angle is 32.38°
E. Coil induction is 0.455 H

1. (A) and (B) only

2. (C) and (E) only

3. (D) and (E) only

4. (A) and (E) only

Question Number : 111 Question Id : 342123729 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

If a coil draws 0.5 A from a 120V, 60Hz source at a 0.7 lagging power factor, then

A. Coil resistance is 240Ω
B. Power factor angle is $\cos^{-1}(0.7)$
C. Coil impendence is 168 + j171. 4Ω
D. Power factor angle is 32.38°
E. Coil induction is 0.455 H

1. (A) and (B) only

2. (C) and (E) only

3. (D) and (E) only

4. (A) and (E) only

Question Number : 112 Question Id : 342123730 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Following is true for a closed loop op-amp based non-inverting amplifier :

A. It is a voltage shunt feedback amplifier

B. It has its bandwidth under feedback given by $\frac{(UGB)\cdot K}{A_F}$; K = Attenuation factor

A_F = Closed loop gain

C. It has its input resistance under feedback given by $R_i(1 + AB)$; R_i = input resistance

A = Open loop gain

B = Feedback gain

D. It is a voltage series feedback amplifier

1. A and C only

2. A and B only

3. B and D only

4. C and D only

Question Number : 112 Question Id : 342123730 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Following is true for a closed loop op-amp based non-inverting amplifier :

A. It is a voltage shunt feedback amplifier

B. It has its bandwidth under feedback given by $\frac{(UGB)\cdot K}{A_F}$; K = Attenuation factor

A_F = Closed loop gain

C. It has its input resistance under feedback given by $R_i(1 + AB)$; R_i = input resistance

A = Open loop gain

B = Feedback gain

D. It is a voltage series feedback amplifier

1. A and C only

2. A and B only

3. B and D only

4. C and D only

Question Number : 113 Question Id : 342123731 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements are correct about the basic transistor amplifier configuration?

A. The voltage gain of CB amplifier is higher than the voltage gain of CC amplifier
B. The CB amplifier has low input impedance and a low current gain
C. The CC amplifier has high input impendence and a low current gain
D. The CC amplifier has low output impendence and a high current gain
E. The CC amplifier has low input impendence and a low current gain

1. A, B and D only

2. A, B and C only

3. A, B and E only

4. A and B only

Question Number : 113 Question Id : 342123731 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements are correct about the basic transistor amplifier configuration?

A. The voltage gain of CB amplifier is higher than the voltage gain of CC amplifier
B. The CB amplifier has low input impedance and a low current gain
C. The CC amplifier has high input impendence and a low current gain
D. The CC amplifier has low output impendence and a high current gain
E. The CC amplifier has low input impendence and a low current gain

1. A, B and D only

2. A, B and C only

3. A, B and E only

4. A and B only

Question Number : 114 Question Id : 342123732 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For asynchronous sequential circuits

A. Memory elements are either unclocked FFs or time delay elements
B. Change in input signal can affect memory elements upon activation of clock signal also
C. Can operate faster than synchronous circuit because of absence of clock signal
D. Easier to design

1. A & C only

2. A, C & D only

3. A, B & C only

4. C & D only

Question Number : 114 Question Id : 342123732 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For asynchronous sequential circuits

A. Memory elements are either unclocked FFs or time delay elements
B. Change in input signal can affect memory elements upon activation of clock signal also
C. Can operate faster than synchronous circuit because of absence of clock signal
D. Easier to design

1. A & C only

2. A, C & D only

3. A, B & C only

4. C & D only

Question Number : 115 Question Id : 342123733 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Hardware descriptive language (HDL)

A. Describe logic diagrams and complex digital circuits
B. Describes behavior of analog circuits using simulation techniques
C. Two HDL supported by IEEE are VHDL and Verilog HDL
D. Both Verilog and VHDL are based on 'C' Programming

1. A & D only

2. A & C only

3. A, C & D only

4. B, C & D only

Question Number : 115 Question Id : 342123733 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Hardware descriptive language (HDL)

A. Describe logic diagrams and complex digital circuits
B. Describes behavior of analog circuits using simulation techniques
C. Two HDL supported by IEEE are VHDL and Verilog HDL
D. Both Verilog and VHDL are based on 'C' Programming

1. A & D only

2. A & C only

3. A, C & D only

4. B, C & D only

Question Number : 116 Question Id : 342123734 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For the 8051 microcontroller, during its operations in the serial data mode 2 - (Multi Processor Mode) which of the following statements are correct :-

A. 11 bits are transmitted
B. The baudrate = $\frac{2^{SMOD}}{64d}$ x oscillator frequency

C. The baudrate = $\frac{2^{SMOD}}{32d}$ x (timer1 overflow frequency)
D. The start bit is not discarded
E. The stop bit is discarded

1. A & C only

2. A & D only

3. B & E only

4. A, B & E only

Question Number : 116 Question Id : 342123734 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For the 8051 microcontroller, during its operations in the serial data mode 2 - (Multi Processor Mode) which of the following statements are correct :-

A. 11 bits are transmitted
B. The baudrate = $\frac{2^{SMOD}}{64d}$ x oscillator frequency

C. The baudrate = $\frac{2^{SMOD}}{32d}$ x (timer1 overflow frequency)
D. The start bit is not discarded
E. The stop bit is discarded

1. A & C only

2. A & D only

3. B & E only

4. A, B & E only

Question Number : 117 Question Id : 342123735 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For 8086 microprocessor interrupt system, which of the following statements are true?

A. Type 0 - Divide Error
B. Type 1 - 1 byte break
C. Type 2 - single step
D. Type 4 - overflow (INTO)

1. (A) and (C) only

2. (B) and (D) only

3. (B) and (C) only

4. (A) and (D) only

Question Number : 117 Question Id : 342123735 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For 8086 microprocessor interrupt system, which of the following statements are true?

A. Type 0 - Divide Error
B. Type 1 - 1 byte break
C. Type 2 - single step
D. Type 4 - overflow (INTO)

1. (A) and (C) only

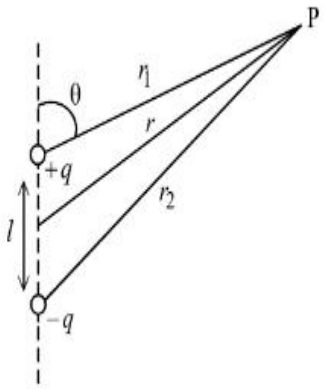
2. (B) and (D) only

3. (B) and (C) only

4. (A) and (D) only

Question Number : 118 Question Id : 342123736 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For an infinitesimal electric dipole depicted in the figure below, the potential at point P and electric field components are given :



A. $V_P = \frac{1}{4\pi\varepsilon}\frac{ql\cos\theta}{r^2}\left(for\ l^2 << r^2\right)$

B. $E_r = \frac{ql\sin\theta}{4\pi\varepsilon r^3}$

C. $E_\phi = 0$

D. $V_P = \frac{1}{4\pi\varepsilon}\frac{ql\cos\theta}{r^3}$

1. (B) and (C) only

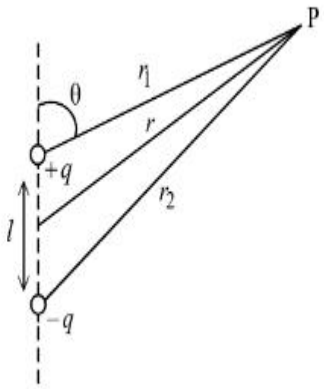
2. (A) and (C) only

3. (C) and (D) only

4. (A) and (B) only

Question Number : 118 Question Id : 342123736 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For an infinitesimal electric dipole depicted in the figure below, the potential at point P and electric field components are given :



A. $V_P = \frac{1}{4\pi\varepsilon}\frac{ql\cos\theta}{r^2}\left(for\ l^2 << r^2\right)$

B. $E_r = \frac{ql\sin\theta}{4\pi\varepsilon r^3}$

C. $E_\phi = 0$

D. $V_P = \frac{1}{4\pi\varepsilon}\frac{ql\cos\theta}{r^3}$

1. (B) and (C) only

2. (A) and (C) only

3. (C) and (D) only

4. (A) and (B) only

Question Number : 119 Question Id : 342123737 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For microwave sources and devices

A. In two cavity klystron, the cavity close to cathode is known as buncher cavity which modulates the electron beam
B. The interaction of electron beam and RF field in the TWT is discontinuous over the entire length of the circuit .
C. Split anode magnetron uses a dynamic positive resistance between three anode elements.
D. In Gunn diode, the stable amplification mode is defined in the region where product of frequency times the length is 10^3cm/sec
E. IMPATT diode exhibit differential negative resistance due to impact ionization avalanche effect which causes carrier current and AC voltage to be out phase by 90°

1. (B) and (C) only

2. (C) and (D) only

3. (B) and (D) only

4. (A) and (E) only

Question Number : 119 Question Id : 342123737 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For microwave sources and devices

A. In two cavity klystron, the cavity close to cathode is known as buncher cavity which modulates the electron beam
B. The interaction of electron beam and RF field in the TWT is discontinuous over the entire length of the circuit .
C. Split anode magnetron uses a dynamic positive resistance between three anode elements.
D. In Gunn diode, the stable amplification mode is defined in the region where product of frequency times the length is 10^3cm/sec
E. IMPATT diode exhibit differential negative resistance due to impact ionization avalanche effect which causes carrier current and AC voltage to be out phase by 90°

1. (B) and (C) only

2. (C) and (D) only

3. (B) and (D) only

4. (A) and (E) only

Question Number : 120 Question Id : 342123738 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

In case of Avalanche Photo Detector (APD)

A. APD is more sensitive than PIN photo diode
B. APD is a PIN structure
C. A high electric field intensity is required in APD
D. There is less noise generation in APD as compared to PIN photo diode

1. A & B only

2. B & C only

3. A & D only

4. A & C only

Question Number : 120 Question Id : 342123738 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In case of Avalanche Photo Detector (APD)

A. APD is more sensitive than PIN photo diode
B. APD is a PIN structure
C. A high electric field intensity is required in APD
D. There is less noise generation in APD as compared to PIN photo diode

1. A & B only

2. B & C only

3. A & D only

4. A & C only

Question Number : 121 Question Id : 342123739 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In data communication, MODEMs

A. The word MODEM is contraction derived from words Modulation and Demodulation
B. MODEM is an interface between digital terminal equipments to analog communication facilities
C. A MODEM transmitter is analog-to-digital converter (ADC)
D. The output of a MODEM is, a digital signal carrying analog information

1. A, B & C only

2. B, C & D only

3. A & B only

4. A & D only

Question Number : 121 Question Id : 342123739 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In data communication, MODEMs

A. The word MODEM is contraction derived from words Modulation and Demodulation
B. MODEM is an interface between digital terminal equipments to analog communication facilities
C. A MODEM transmitter is analog-to-digital converter (ADC)
D. The output of a MODEM is, a digital signal carrying analog information

1. A, B & C only

2. B, C & D only

3. A & B only

4. A & D only

Question Number : 122 Question Id : 342123740 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Comparison of open loop and close loop control system

A. Open loop systems are more stable in comparison to close loop system
B. Open loop system are more reliable in comparison to close loop system
C. Open loop systems are easy to build in comparison to close loop system
D. Open loop system can be optimized while close loop cannot be optimized

1. A & D only

2. C & D only

3. A & C only

4. B & D only

Question Number : 122 Question Id : 342123740 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Comparison of open loop and close loop control system

A. Open loop systems are more stable in comparison to close loop system
B. Open loop system are more reliable in comparison to close loop system
C. Open loop systems are easy to build in comparison to close loop system
D. Open loop system can be optimized while close loop cannot be optimized

1. A & D only

2. C & D only

3. A & C only

4. B & D only

Question Number : 123 Question Id : 342123741 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For SCR

A. I^2t rating of the SCR represents the capability to withstand the overload current for the specified time, where the current (I) is the rms value for the time interval t.
B. The negative gate bias decreases the forward blocking capability and maximizes the false triggering possibility during high dv/dt operation
C. Resistance at the gate increases the dv/dt capability and lowers the turn-off time
D. The gate non trigger voltage is the maximum DC gate voltage that maybe applied between gate and anode for which the device can maintain its rated blocking voltage.
E. The turn-off time becomes shorter due to introduction of Au Atoms in silicon, which serve as 'traps' for carriers, but it increases ON state loss.

1. A and B only

2. B and C only

3. A and D only

4. C and E only

Question Number : 123 Question Id : 342123741 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For SCR

A. I^2t rating of the SCR represents the capability to withstand the overload current for the specified time, where the current (I) is the rms value for the time interval t.
B. The negative gate bias decreases the forward blocking capability and maximizes the false triggering possibility during high dv/dt operation
C. Resistance at the gate increases the dv/dt capability and lowers the turn-off time
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E. The turn-off time becomes shorter due to introduction of Au Atoms in silicon, which serve as 'traps' for carriers, but it increases ON state loss.

1. A and B only

2. B and C only

3. A and D only

4. C and E only

Question Number : 124 Question Id : 342123742 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For an electrodynamic wattmeter, which of the following statements are correct?

A. It measures average power over a time period
B. The moving coil is called as the voltage coil
C. The field coil are connected in parallel with the load
D. The field coils are called as the voltage coils.
E. The moving coil is connected in parallel with the load.

1. A, C and D only

2. A, B and E only

3. A, D and E only

4. A, B and C only

Question Number : 124 Question Id : 342123742 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For an electrodynamic wattmeter, which of the following statements are correct?

A. It measures average power over a time period
B. The moving coil is called as the voltage coil
C. The field coil are connected in parallel with the load
D. The field coils are called as the voltage coils.
E. The moving coil is connected in parallel with the load.

1. A, C and D only

2. A, B and E only

3. A, D and E only

4. A, B and C only

Question Number : 125 Question Id : 342123743 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements are correct?

A. Light Dependent Resistors (LDRs) are based on Photo conductive Effect.
B. In LDRs, resistance increases from its dark resistance value with increase in light intensity.
C. LDRs are slow responding to changes in light intensity.
D. Photodiodes can be operated only in the photoconductive region
E. Photodiodes have a faster switching time than Photo-transistors

1. A, C, and D only

2. A, B, and E only

3. A, B, and D only

4. A, C, and E only

Question Number : 125 Question Id : 342123743 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements are correct?

A. Light Dependent Resistors (LDRs) are based on Photo conductive Effect.
B. In LDRs, resistance increases from its dark resistance value with increase in light intensity.
C. LDRs are slow responding to changes in light intensity.
D. Photodiodes can be operated only in the photoconductive region
E. Photodiodes have a faster switching time than Photo-transistors

1. A, C, and D only

2. A, B, and E only

3. A, B, and D only

4. A, C, and E only

Question Number : 126 Question Id : 342123744 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II.** Breakdown Electric fields in the following materials

LIST I Name of the material		**LIST II Breakdown Electric field (V/cm)**	
A.	GaAs	I.	10^5
B.	SiC	II.	4×10^5
C.	Si_3N_4	III.	$2\text{-}3\times10^6$
D.	Ge	IV.	10^7

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-IV, B-II, C-III, D-I

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

Question Number : 126 Question Id : 342123744 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II.** Breakdown Electric fields in the following materials

LIST I Name of the material		LIST II Breakdown Electric field (V/cm)	
A.	GaAs	I.	10^5
B.	SiC	II.	4×10^5
C.	Si_3N_4	III.	$2\text{-}3\times10^6$
D.	Ge	IV.	10^7

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-IV, B-II, C-III, D-I

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

Question Number : 127 Question Id : 342123745 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II.** Identify the correct combinations

LIST I		LIST II	
A.	Ion - implantation	I.	HRP - 206
B.	Lithography	II.	Ohmic Contact
C.	Metallization	III.	TAB
D.	Packaging	IV.	Nuclear Stopping

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

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

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

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

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

Question Number : 127 Question Id : 342123745 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II.** Identify the correct combinations

LIST I		LIST II	
A.	Ion - implantation	I.	HRP - 206
B.	Lithography	II.	Ohmic Contact
C.	Metallization	III.	TAB
D.	Packaging	IV.	Nuclear Stopping

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

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

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

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

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

Question Number : 128 Question Id : 342123746 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Time domain		LIST II Frequency domain	
A.	$y(t) = x(-t)$	I.	$\frac{1}{(a + j2\pi f)^2}$
B.	$x(t) = te^{-at}, u(t)\ a>o$	II.	$X(f) = -X(-f)$
C.	$y(t) = x(at)$	III.	$Y(f) = X(-f)$
D.	$x(t)$, odd; $x(t) = -x(-t)$	IV.	$Y(f) = \frac{1}{\lvert a \rvert} X\left(\frac{f}{a}\right)$

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

Question Number : 128 Question Id : 342123746 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

	LIST I Time domain		**LIST II Frequency domain**
A.	$y(t) = x(-t)$	I.	$\frac{1}{(a + j2\pi f)^2}$
B.	$x(t) = te^{-at}, u(t)\ a>o$	II.	$X(f) = -X(-f)$
C.	$y(t) = x(at)$	III.	$Y(f) = X(-f)$
D.	$x(t)$, odd; $x(t) = -x(-t)$	IV.	$Y(f) = \frac{1}{\lvert a \rvert} X\left(\frac{f}{a}\right)$

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

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

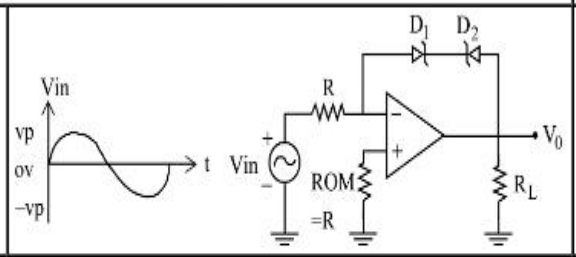
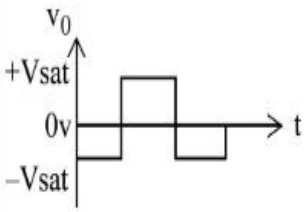
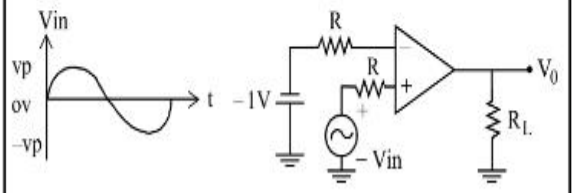
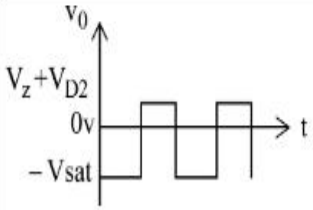
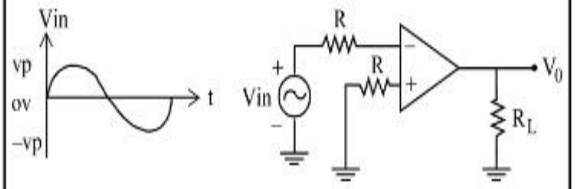
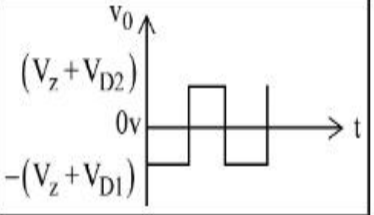
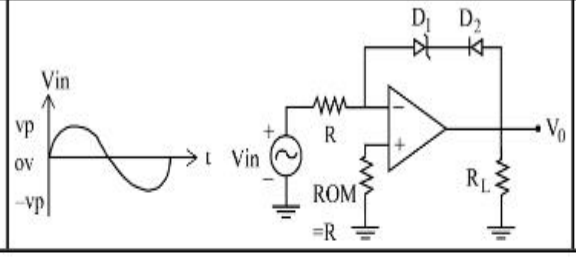
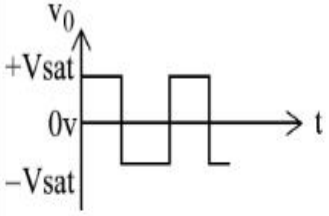
2. A-III, B-I, C-IV, D-II

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

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

Question Number : 129 Question Id : 342123747 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Input		LIST II Output	
A.		I.	
B.		II.	
C.		III.	
D.		IV.	

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

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

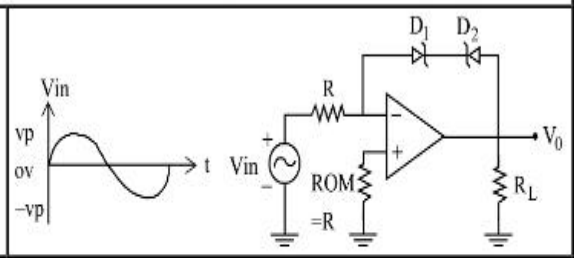
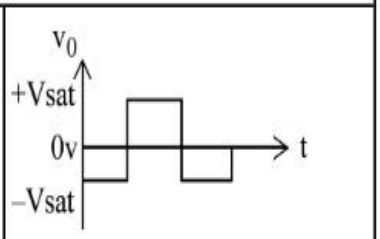
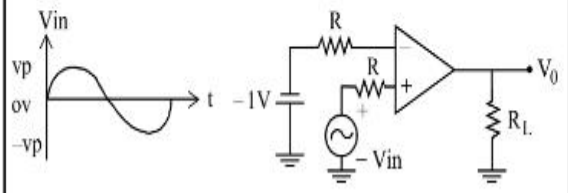
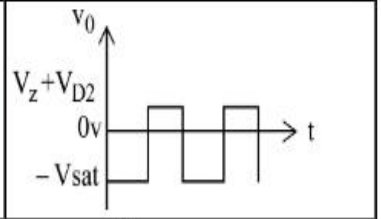
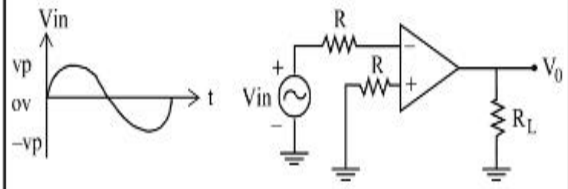
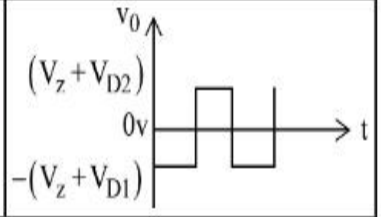
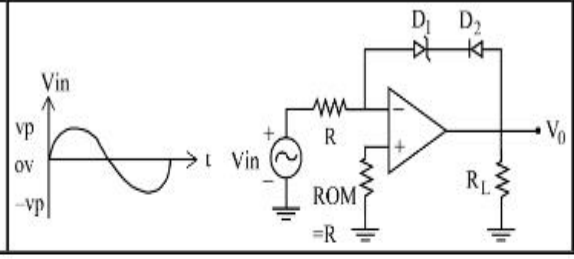
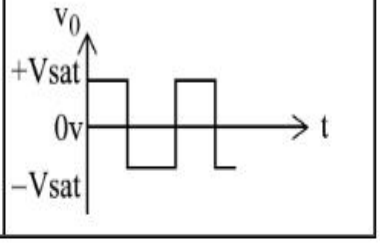
2. A-III, B-IV, C-I, D-II

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

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

Question Number : 129 Question Id : 342123747 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Input		LIST II Output	
A.		I.	
B.		II.	
C.		III.	
D.		IV.	

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

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

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

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

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

Question Number : 130 Question Id : 342123748 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I **Programmable logic devices**		**LIST II** **Synthesizing/Erasing Options**	
A.	PROM	I.	Both AND and OR array are programmable
B.	PLA	II.	Can be Reprogrammed
C.	PAL	III.	AND array is fixed and OR array is programmable
D.	EEPROM	IV.	OR array is fixed and AND array is programmable

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

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

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

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

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

Question Number : 130 Question Id : 342123748 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I **Programmable logic devices**		**LIST II** **Synthesizing/Erasing Options**	
A.	PROM	I.	Both AND and OR array are programmable
B.	PLA	II.	Can be Reprogrammed
C.	PAL	III.	AND array is fixed and OR array is programmable
D.	EEPROM	IV.	OR array is fixed and AND array is programmable

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

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

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

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

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

Question Number : 131 Question Id : 342123749 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Interrupt		**LIST II Address (HEX)**	
A.	IE0	I.	0003
B.	IE1	II.	000B
C.	TF0	III.	0013
D.	TF1	IV.	001B

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

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

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

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

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

Question Number : 131 Question Id : 342123749 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Interrupt		**LIST II Address (HEX)**	
A.	IE0	I.	0003
B.	IE1	II.	000B
C.	TF0	III.	0013
D.	TF1	IV.	001B

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

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

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

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

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

Question Number : 132 Question Id : 342123750 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II** For 8051 microcontroller

LIST I Timer mode		**LIST II Operation**	
A.	Mode 0	I.	16 - bit timer/counter
B.	Mode 1	II.	Two 8-bit timers using timer 0
C.	Mode 2	III.	13 bit timer/counter
D.	Mode 3	IV.	Auto - reload of TL from TH

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

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

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

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

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

Question Number : 132 Question Id : 342123750 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II** For 8051 microcontroller

LIST I Timer mode		**LIST II Operation**	
A.	Mode 0	I.	16 - bit timer/counter
B.	Mode 1	II.	Two 8-bit timers using timer 0
C.	Mode 2	III.	13 bit timer/counter
D.	Mode 3	IV.	Auto - reload of TL from TH

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

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

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

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

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

Question Number : 133 Question Id : 342123751 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Maxwell's Equation		**LIST II Word statement and /or Integral counterpart**	
A.	$\nabla \times H = \dot{D} + J$	I.	Electromotive force around a close path is equal to the time derivative of the magnetic displacement through any surface bounded by path
B.	$\nabla \times E = -B$	II.	$\oint D \cdot da = \int \rho \, dV$
C.	$\nabla \cdot D = \rho$	III.	The net magnetic flux emerging through any closed surface is zero
D.	$\nabla \cdot B = 0$	IV.	$\oint H \cdot ds = \int (\dot{D} + J) \cdot da$

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

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

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

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

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

Question Number : 133 Question Id : 342123751 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I **Maxwell's Equation**		**LIST II** **Word statement and /or Integral counterpart**	
A.	$\nabla \times H = \dot{D} + J$	I.	Electromotive force around a close path is equal to the time derivative of the magnetic displacement through any surface bounded by path
B.	$\nabla \times E = -B$	II.	$\oint D \cdot da = \int \rho \, dV$
C.	$\nabla \cdot D = \rho$	III.	The net magnetic flux emerging through any closed surface is zero
D.	$\nabla \cdot B = 0$	IV.	$\oint H \cdot ds = \int (\dot{D} + J) \cdot da$

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

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

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

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

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

Question Number : 134 Question Id : 342123752 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II** For a coaxial cable in which the dielectric has inner radius 'a' and outer radius 'b' where σ is conductivity.

LIST I Transmission line parameter		**LIST II Expression**	
A.	Capacitance per unit length	I.	$\frac{2\pi\sigma}{\ln\left(\frac{b}{a}\right)}$
B.	Conductance per unit length	II.	$\frac{1}{2\pi}\sqrt{\frac{\mu}{\varepsilon}}\ln\left(\frac{b}{a}\right)$
C.	Inductance per unit length	III.	$\frac{2\pi\varepsilon}{\ln\left(\frac{b}{a}\right)}$
D.	Characteristic impendence	IV.	$\frac{\mu}{2\pi}\ln\left(\frac{b}{a}\right)$

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

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

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

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

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

Question Number : 134 Question Id : 342123752 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II** For a coaxial cable in which the dielectric has inner radius 'a' and outer radius 'b' where σ is conductivity.

LIST I Transmission line parameter		LIST II Expression	
A.	Capacitance per unit length	I.	$\frac{2\pi\sigma}{\ln\left(\frac{b}{a}\right)}$
B.	Conductance per unit length	II.	$\frac{1}{2\pi}\sqrt{\frac{\mu}{\varepsilon}}\ln\left(\frac{b}{a}\right)$
C.	Inductance per unit length	III.	$\frac{2\pi\varepsilon}{\ln\left(\frac{b}{a}\right)}$
D.	Characteristic impendence	IV.	$\frac{\mu}{2\pi}\ln\left(\frac{b}{a}\right)$

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

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

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

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

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

Question Number : 135 Question Id : 342123753 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Multiplexing Type		**LIST II No. of Channels**	
A.	T1 carrier system	I.	96, 64 kbps channels
B.	T2 carrier system	II.	672, 64 kbps channels
C.	T3 carrier system	III.	24, 64 kbps channels
D.	T4 carrier system	IV.	4032, 64 kbps channels

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

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

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

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

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

Question Number : 135 Question Id : 342123753 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Multiplexing Type		**LIST II No. of Channels**	
A.	T1 carrier system	I.	96, 64 kbps channels
B.	T2 carrier system	II.	672, 64 kbps channels
C.	T3 carrier system	III.	24, 64 kbps channels
D.	T4 carrier system	IV.	4032, 64 kbps channels

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

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

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

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

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

Question Number : 136 Question Id : 342123754 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Satellite Band		**LIST II Uplink Frequency (GHz)**	
A.	C- Band	I.	7.9 - 8.4
B.	X - Band	II.	27 - 30
C.	Ku - Band	III.	5.9 - 6.4
D.	Ka - Band	IV.	14 - 14.5

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

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

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

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

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

Question Number : 136 Question Id : 342123754 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Satellite Band		**LIST II Uplink Frequency (GHz)**	
A.	C- Band	I.	7.9 - 8.4
B.	X - Band	II.	27 - 30
C.	Ku - Band	III.	5.9 - 6.4
D.	Ka - Band	IV.	14 - 14.5

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

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

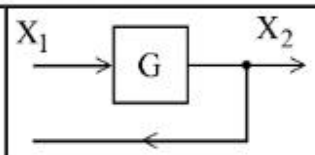
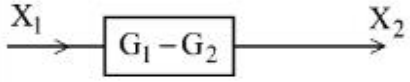
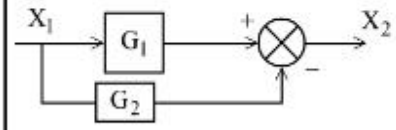
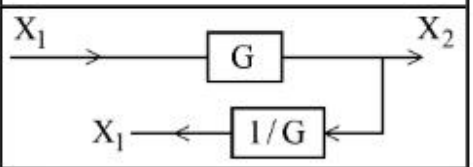
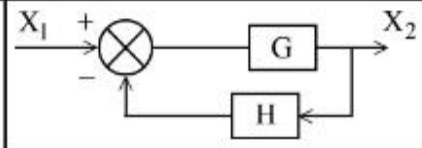
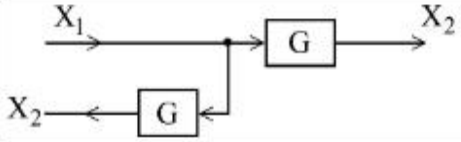
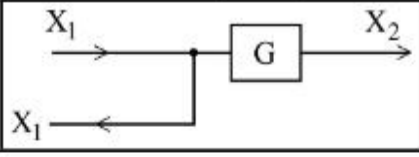
2. A-III, B-II, C-IV, D-I

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

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

Question Number : 137 Question Id : 342123755 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

	LIST I **Original diagram**		**LIST II** **Equivalent Diagram**
A.		I.	
B.		II.	
C.		III.	
D.		IV.	

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

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

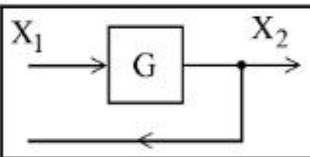
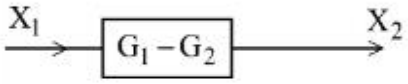
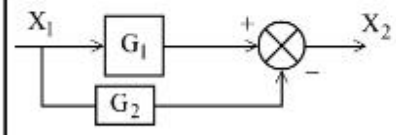
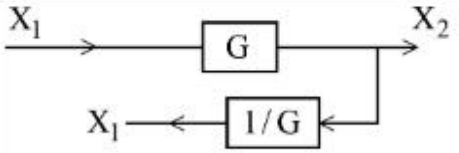
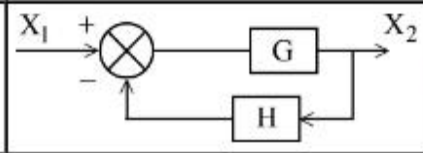
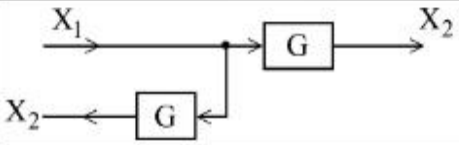
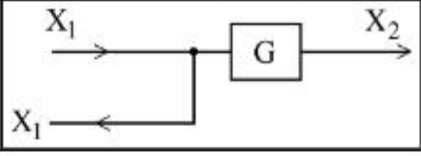
2. A-III, B-I, C-IV, D-II

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

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

Question Number : 137 Question Id : 342123755 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

	LIST I **Original diagram**		**LIST II** **Equivalent Diagram**
A.		I.	
B.		II.	
C.		III.	
D.		IV.	

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

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

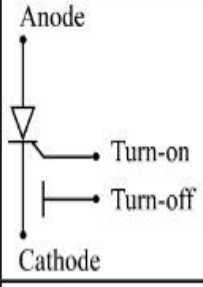
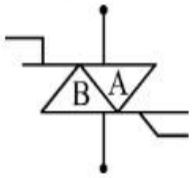
2. A-III, B-I, C-IV, D-II

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

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

Question Number : 138 Question Id : 342123756 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Thyristor Type		**LIST II Symbol/Properties**	
A.	BCT	I.	Normally operated in Quadrant I^+ (positive gate voltage and gate current or Quadrant III^- (negative gate voltage and gate current)
B.	RCT	II.	
C.	ETO	III.	
D.	TRIAC	IV.	Thyristor with a built-in antiparallel diode

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

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

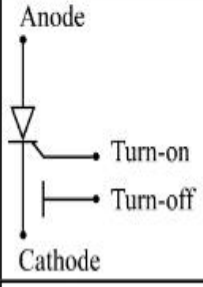
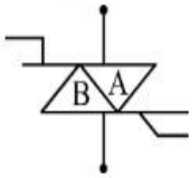
2. A-II, B-I, C-III, D-IV

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

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

Question Number : 138 Question Id : 342123756 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Thyristor Type		**LIST II Symbol/Properties**	
A.	BCT	I.	Normally operated in Quadrant I^+ (positive gate voltage and gate current or Quadrant III^- (negative gate voltage and gate current)
B.	RCT	II.	
C.	ETO	III.	
D.	TRIAC	IV.	Thyristor with a built-in antiparallel diode

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

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

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

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

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

Question Number : 139 Question Id : 342123757 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Thermocouple		**LIST II Temperature range**	
A.	K type chromel - alumel thermocouple	I.	0 to 1500° C
B.	T Type Copper - constantan thermocouple	II.	-200 to + 1200° C
C.	S Type Platinum - Platinum (90%) rhodium (10%) thermocouple	III.	-150 to + 350° C
D.	J Type Iron - constantan thermocouple	IV.	-150 to +1000° C

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

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

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

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

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

Question Number : 139 Question Id : 342123757 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with **List-II**

LIST I Thermocouple		**LIST II Temperature range**	
A.	K type chromel - alumel thermocouple	I.	0 to 1500° C
B.	T Type Copper - constantan thermocouple	II.	-200 to + 1200° C
C.	S Type Platinum - Platinum (90%) rhodium (10%) thermocouple	III.	-150 to + 350° C
D.	J Type Iron - constantan thermocouple	IV.	-150 to +1000° C

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

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

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

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

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

Question Number : 140 Question Id : 342123758 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with List-II that pertains to EEG signals and normal ECG wave patterns

LIST I		LIST II	
A.	Gamma (γ)	I.	0.12 - 0.2 s
B.	Theta (θ)	II.	0.05 - 0.10 s
C.	QRS interval	III.	4-8 Hz
D.	PR interval	IV.	22-30Hz

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

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

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

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

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

Question Number : 140 Question Id : 342123758 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match the **List-I** with List-II that pertains to EEG signals and normal ECG wave patterns

LIST I		LIST II	
A.	Gamma (γ)	I.	0.12 - 0.2 s
B.	Theta (θ)	II.	0.05 - 0.10 s
C.	QRS interval	III.	4-8 Hz
D.	PR interval	IV.	22-30Hz

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

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

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

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

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

Sub-Section Number : 2

Sub-Section Id : 34212329

Question Shuffling Allowed : No

Question Id : 342123759 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (141 to 145)

Question Label : Comprehension

Mobile telephone services began in the 1940's and were called MTS's (Mobile Telephone Systems or sometimes manual telephone systems, as all calls were handled by an operator). MTS systems utilized frequency modulation and were generally assigned a single carrier frequency in the 35 MHz to 45 MHz range that was used by both the mobile unit and the base station. Cellular telephone systems offer a relatively high user capacity within a limited frequency spectrum providing a significant innovation in solving inherent mobile telephone communication problems, such as spectral congestion and user capacity. Cellular telephone systems replaced mobile systems serving large area (cells) operating with a single base station and a single high power transmitter with many smaller area (cells), each cell with its own base station and low power transmitters.

Sub questions

Question Number : 141 Question Id : 342123760 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Number of cells in a cluster in hexagonal cellular communication system with i = 3 and j = 2, will be

1. 7

2. 12

3. 19

4. 24

Question Number : 142 Question Id : 342123761 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

To increase the capacity of a cellular system which of the following is used?

1. Cell splitting and cell sectoring

2. Co-channel reuse ratio

3. Honey comb pattern

4. Increase the cluster size

Question Number : 143 Question Id : 342123762 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

GSM (Global systems for Mobile Communication), bands for Phase I and II operates respectively at

1. 900 MHz and 1800 MHz
2. 900 MHz and 2100 MHz
3. 1800 MHz and 2400 MHz
4. 1800 MHz and 2100 MHz

Question Number : 144 Question Id : 342123763 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Telephone Traffic in measured

1. With Echo cancelers
2. by the relative congestion
3. in terms of grade service
4. In Erlangs

Question Number : 145 Question Id : 342123764 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What will be total capacity of a cellular telephone system comprising of 10 clusters with 7 cells in each clusters and there are 10 channels in each cell.

1. 70
2. 700
3. 100
4. 7000

Question Id : 342123759 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Question Numbers : (141 to 145)

Question Label : Comprehension

Mobile telephone services began in the 1940's and were called MTS's (Mobile Telephone Systems or sometimes manual telephone systems, as all calls were handled by an operator). MTS systems utilized frequency modulation and were generally assigned a single carrier frequency in the 35 MHz to 45 MHz range that was used by both the mobile unit and the base station. Cellular telephone systems offer a relatively high user capacity within a limited frequency spectrum providing a significant innovation in solving inherent mobile telephone communication problems, such as spectral congestion and user capacity. Cellular telephone systems replaced mobile systems serving large area (cells) operating with a single base station and a single high power transmitter with many smaller area (cells), each cell with its own base station and low power transmitters.

Sub questions

Question Number : 141 Question Id : 342123760 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Number of cells in a cluster in hexagonal cellular communication system with i = 3 and j = 2, will be

1. 7

2. 12

3. 19

4. 24

Question Number : 142 Question Id : 342123761 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

To increase the capacity of a cellular system which of the following is used?

1. Cell splitting and cell sectoring

2. Co-channel reuse ratio

3. Honey comb pattern

4. Increase the cluster size

Question Number : 143 Question Id : 342123762 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

GSM (Global systems for Mobile Communication), bands for Phase I and II operates respectively at

1. 900 MHz and 1800 MHz
2. 900 MHz and 2100 MHz
3. 1800 MHz and 2400 MHz
4. 1800 MHz and 2100 MHz

Question Number : 144 Question Id : 342123763 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Telephone Traffic in measured

1. With Echo cancelers
2. by the relative congestion
3. in terms of grade service
4. In Erlangs

Question Number : 145 Question Id : 342123764 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What will be total capacity of a cellular telephone system comprising of 10 clusters with 7 cells in each clusters and there are 10 channels in each cell.

1. 70
2. 700
3. 100
4. 7000

Sub-Section Number : 3
Sub-Section Id : 34212330
Question Shuffling Allowed : No

Question Id : 342123765 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (146 to 150)

Question Label : Comprehension

A signal x(t) is a continuous – time signal if it is a continuous variable. A discrete time signal is often identified as a sequence of numbers denoted by x[n] where n is an integer. The z-transform is a useful tool in the analysis of discrete time signal and systems. A sequence can be represented in terms of linear combination of complex exponentials using Discrete Time Fourier Transform (DTFT), however for finite length sequence there is another representation called the Discrete Fourier Transform (DFT). DFT is used to perform digital filtering and evaluating the frequency response of a linear shift-invariant system.

Sub questions

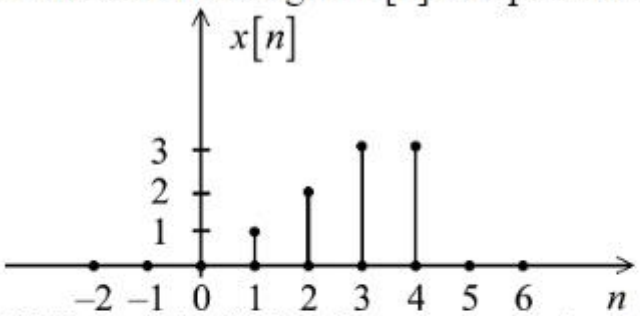
Question Number : 146 Question Id : 342123766 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The output y(t) of a continuous - time LTI system is found to be $4e^{-3t}\,u(t)$, when the input x(t) is u(t). If the input x(t) is $e^{-t}u(t)$ then y(t) is

1. $(2e^{-t} - 6e^{3t})\,u(t)$
2. $(-2e^{-t} + 6e^{-3t})\,u(t)$
3. $(-2e^{t} + 6e^{3t})\,u(t)$
4. $(2e^{-t} + 6e^{-3t})\,u(t)$

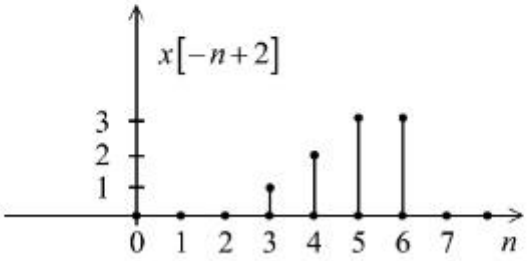
Question Number : 147 Question Id : 342123767 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A discrete time signal x[n] is represented as

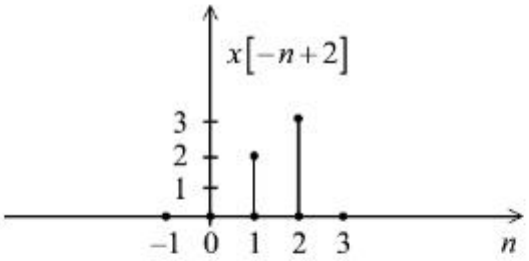


Which of the following correspond to x [–n + 2]

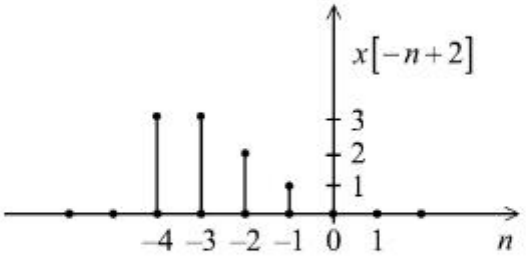
1.



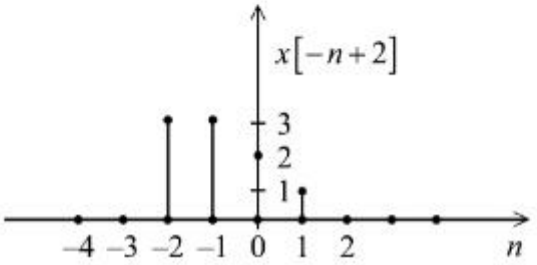
2.



3.



4.



Question Number : 148 Question Id : 342123768 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In order to recover a finite length sequence x[n] of length N from equally spaced samples of fourier transform, the minimum number of samples of fourier transform to be taken is

1. N

2. N/2

3. 2N

4. N/4

Question Number : 149 Question Id : 342123769 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

For given sequences i.e,
$x_1(n) = \delta(n) + \delta(n-1) - \delta(n-2) - \delta(n-3)$
$x_2(n) = \delta(n) - \delta(n-2) + \delta(n-4)$
Given, N=5
The circular convolution $x_3(n)$, of the two sequences shall be

1. $x_3(n) = \{3, 0, 2, 0, 2\}$

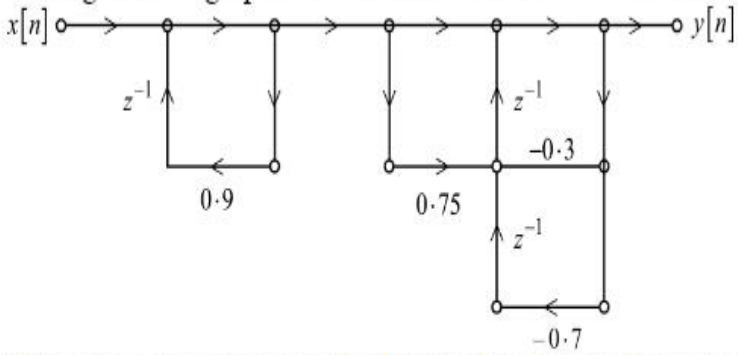
2. $x_3(n) = \{1, 0, -4, 1, 2\}$

3. $x_3(n) = \{2, 0, -3, 0, 1\}$

4. $x_3(n) = \{3, 0, -3, -2, 2\}$

Question Number : 150 Question Id : 342123770 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The signal flow graph of a causal linear shift invariant filter is given below



Using the concept of cascade of first and second order systems realized in direct form II, the expression of H(z) is :

1. $H(z)=\frac{\left(1-0\cdot75z^{-1}\right)}{\left(1-0\cdot9z^{-1}\right)\left(1-0\cdot3z^{-1}-0\cdot7z^{-2}\right)}$

2. $H(s)=\frac{\left(1-0\cdot75z^{-1}\right)}{\left(1-0\cdot9z^{-1}\right)\left(1+0\cdot3z^{-1}+0\cdot7z^{-2}\right)}$

3. $H(z)=\frac{\left(1+0\cdot75z^{-1}\right)}{\left(1-0\cdot9z^{-1}\right)\left(1+0\cdot3z^{-1}+0\cdot7z^{-2}\right)}$

4. $H(z)=\frac{\left(1+0\cdot75z^{-1}\right)}{\left(1+0\cdot9z^{-1}\right)\left(1-0\cdot3z^{-1}-0\cdot7z^{-2}\right)}$

Question Id : 342123765 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Question Numbers : (146 to 150)

Question Label : Comprehension

A signal x(t) is a continuous – time signal if it is a continuous variable. A discrete time signal is often identified as a sequence of numbers denoted by x[n] where n is an integer. The z-transform is a useful tool in the analysis of discrete time signal and systems. A sequence can be represented in terms of linear combination of complex exponentials using Discrete Time Fourier Transform (DTFT), however for finite length sequence there is another representation called the Discrete Fourier Transform (DFT). DFT is used to perform digital filtering and evaluating the frequency response of a linear shift-invariant system.

Sub questions

Question Number : 146 Question Id : 342123766 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

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3. $(-2e^{t} + 6e^{3t})\,u(t)$
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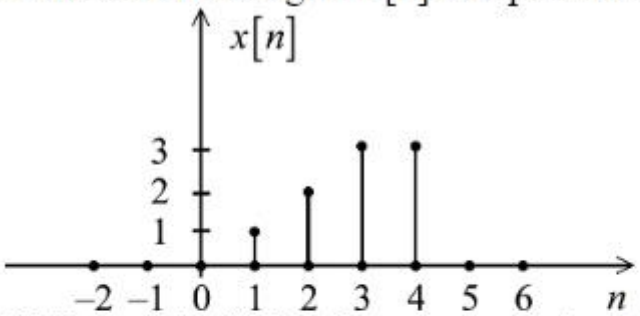
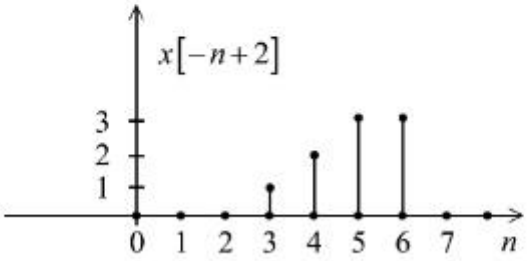
Question Number : 147 Question Id : 342123767 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A discrete time signal x[n] is represented as

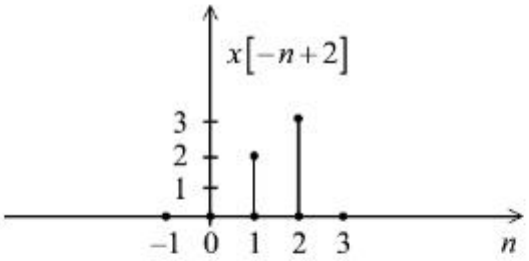


Which of the following correspond to x [–n + 2]

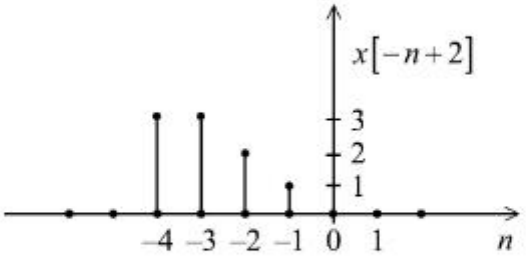
1.



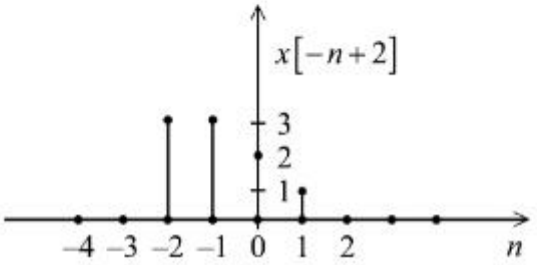
2.



3.



4.



Question Number : 148 Question Id : 342123768 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

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4. N/4

Question Number : 149 Question Id : 342123769 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

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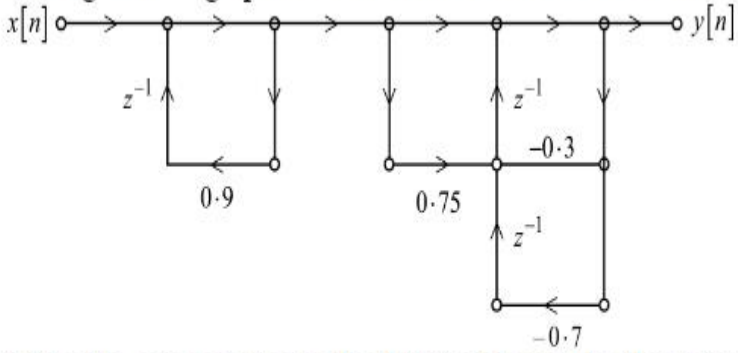
4. $x_3(n) = \{3, 0, -3, -2, 2\}$

Question Number : 150 Question Id : 342123770 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The signal flow graph of a causal linear shift invariant filter is given below



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3. $H(z)=\frac{\left(1+0\cdot75z^{-1}\right)}{\left(1-0\cdot9z^{-1}\right)\left(1+0\cdot3z^{-1}+0\cdot7z^{-2}\right)}$

4. $H(z)=\frac{\left(1+0\cdot75z^{-1}\right)}{\left(1+0\cdot9z^{-1}\right)\left(1-0\cdot3z^{-1}-0\cdot7z^{-2}\right)}$