

PREVIEW QUESTION BANK(Dual)

Module Name : Electronic Science
Exam Date : 21-Jun-2023 Batch : 15:00-18:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negativ Marks																																							
Objective Question																																											
1	2151	The table given below shows the distribution percentage of number of candidates qualifying a Common Entrance Test (CET) in six cities A-F during the year 2020 and 2021, along with the ratio of males (M) to females (F) among the qualified candidates. The total number of qualified candidates in all the six cities together during 2020 and 2021 are 3800 and 4600 respectively. Based on the data in the table, answer the question that follows: <u>City-wise Distribution of CET Qualified Candidates.</u> <table border="1"> <thead> <tr> <th rowspan="2">Years</th><th colspan="2">2020</th><th colspan="2">2021</th></tr> <tr> <th>(Distribution % of Qualified Candidates</th><th>Ratio M:F</th><th>(Distribution % of Qualified Candidates</th><th>Ratio M:F</th></tr> </thead> <tbody> <tr> <td>A</td><td>13%</td><td>8:5</td><td>24%</td><td>5:7</td></tr> <tr> <td>B</td><td>27%</td><td>11:8</td><td>15%</td><td>12:11</td></tr> <tr> <td>C</td><td>11%</td><td>7:4</td><td>23%</td><td>15:8</td></tr> <tr> <td>D</td><td>20%</td><td>2:3</td><td>17%</td><td>8:9</td></tr> <tr> <td>E</td><td>8%</td><td>5:3</td><td>8%</td><td>1:3</td></tr> <tr> <td>F</td><td>21%</td><td>13:8</td><td>13%</td><td>5:8</td></tr> </tbody> </table> The difference between the number of male candidates qualified from City-B in 2020 and City-A in 2021 is 134 144 168 182	Years	2020		2021		(Distribution % of Qualified Candidates	Ratio M:F	(Distribution % of Qualified Candidates	Ratio M:F	A	13%	8:5	24%	5:7	B	27%	11:8	15%	12:11	C	11%	7:4	23%	15:8	D	20%	2:3	17%	8:9	E	8%	5:3	8%	1:3	F	21%	13:8	13%	5:8		
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नीचे दी गई तालिका में वर्ष 2020 और 2021 के दौरान छह शहरों A से F में आयोजित सामान्य प्रवेश परीक्षा (सी ई टी) में अर्हता प्राप्त करने वाले अभ्यर्थियों की संख्या का बंटन प्रतिशत, अर्हक पाए गए विद्यार्थियों में पुरुष (M) और महिला (F) के अनुपात सहित दर्शायी गयी है। वर्ष 2020 और 2021 सभी छः शहरों में आयोजित प्रवेश परीक्षा में अर्हक पाए गए उम्मीदवारों की कुल संख्या क्रमशः 3800 और 4600 है। तालिका में दिए गए आंकड़ों के आधार पर प्रश्न का उत्तर दीजिए।

सी ई टी में अर्हक पाए गए उम्मीदवारों का शहर-वार बंटन

वर्ष	2020		2021	
शहर	अर्हक उम्मीदवारों का बंटन (प्रतिशत में)	अनुपात	अर्हक उम्मीदवारों का बंटन (प्रतिशत में)	अनुपात
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वर्ष 2020 में शहर -B से अर्हता प्राप्त पुरुष अभ्यर्थियों की संख्या और वर्ष 2021 में शहर -A से अर्हता प्राप्त पुरुष अभ्यर्थियों की संख्या में कितना अंतर है?

1. 134
2. 144
3. 168
4. 182

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

2 2152

The table given below shows the distribution percentage of number of candidates qualifying a Common Entrance Test (CET) in six cities A-F during the year 2020 and 2021, along with the ratio of males (M) to females (F) among the qualified candidates. The total number of qualified candidates in all the six cities together during 2020 and 2021 are 3800 and 4600 respectively. Based on the data in the table, answer the question that follows:

City-wise Distribution of CET Qualified Candidates.

Years	2020		2021	
City	(Distribution % of Qualified Candidates)	Ratio	(Distribution % of Qualified Candidates)	Ratio
		M:F		M:F
A	13%	8:5	24%	5:7
B	27%	11:8	15%	12:11
C	11%	7:4	23%	15:8
D	20%	2:3	17%	8:9
E	8%	5:3	8%	1:3
F	21%	13:8	13%	5:8

The ratio of number of females qualified from City-D in 2020 to that of City-E in 2021 is

1. 23:13
2. 31:27
3. 35:23
4. 38:23

नीचे दी गई तालिका में वर्ष 2020 और 2021 के दौरान छह शहरों A से F में आयोजित सामान्य प्रवेश परीक्षा (सी ई टी) में अर्हता प्राप्त करने वाले अभ्यर्थियों की संख्या का बंटन प्रतिशत, अर्हक पाए गए विद्यार्थियों में पुरुष (M) और महिला (F) के अनुपात सहित दर्शाया गया है। वर्ष 2020 और 2021 सभी छः शहरों में आयोजित प्रवेश परीक्षा में अर्हक पाए गए उम्मीदवारों की कुल संख्या क्रमशः 3800 और 4600 है। तालिका में दिए गए आंकड़ों के आधार पर प्रश्न का उत्तर दीजिए।

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वर्ष 2020 में शहर -D से अर्हक पाई जानेवाली महिलाएं और वर्ष 2021 में शहर -E से अर्हक पाई जानेवाली महिलाओं की संख्या का अनुपात है:

1. 23:13
2. 31:27
3. 35:23
4. 38:23

A1 1

:

1

A2 2

:

2

A3 3

:

3
A4
:
4

Objective Question

3 2153

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F	21%	13:8	13%	5:8

The number of females qualified from City-F in 2020 is _____ % of the number of candidates qualified from City-E in the same year

1. 60
2. 75
3. 80
4. 100

नीचे दी गई तालिका में वर्ष 2020 और 2021 के दौरान छह शहरों A से F में आयोजित सामान्य प्रवेश परीक्षा (सी ई टी) में अर्हता प्राप्त करने वाले अभ्यर्थियों की संख्या का बंटन प्रतिशत, अर्हक पाए गए विद्यार्थियों में पुरुष (M) और महिला (F) के अनुपात सहित दर्शायी गयी है। वर्ष 2020 और 2021 सभी छः शहरों में आयोजित प्रवेश परीक्षा में अर्हक पाए गए उम्मीदवारों की कुल संख्या क्रमशः 3800 और 4600 है। तालिका में दिए गए आंकड़ों के आधार पर प्रश्न का उत्तर दीजिए।

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वर्ष 2020 में शहर -F से अर्हक पायी गयी महिलाओं की संख्या उसी वर्ष शहर -E से अर्हक पाये गये उम्मीदवारों की संख्या का कितना प्रतिशत है?

1. 60
2. 75
3. 80
4. 100

A1
:
1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

4 2154

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The number of females qualified from City-B in 2021 is approximately _____% more than the number of males qualified from City-E in the year 2020

1. 71.42
2. 73.68
3. 75.13
4. 77.56

नीचे दी गई तालिका में वर्ष 2020 और 2021 के दौरान छह शहरों A से F में आयोजित सामान्य प्रवेश परीक्षा (सी ई टी) में अर्हता प्राप्त करने वाले अभ्यर्थियों की संख्या का बंटन प्रतिशत, अर्हक पाए गए विद्यार्थियों में पुरुष (M) और महिला (F) के अनुपात सहित दर्शायी गयी है। वर्ष 2020 और 2021 सभी छः शहरों में आयोजित प्रवेश परीक्षा में अर्हक पाए गए उम्मीदवारों की कुल संख्या क्रमशः 3800 और 4600 है। तालिका में दिए गए आंकड़ों के आधार पर प्रश्न का उत्तर दीजिए।

सी ई टी में अर्हक पाए गए उम्मीदवारों का शहर-वार बंटन

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वर्ष 2021 में शहर -B से अर्हक पाई गई महिलाओं की संख्या वर्ष 2020 में शहर -E से अर्हक पाए गए पुरुषों की संख्या से लगभग कितने प्रतिशत अधिक है?

1. 71.42
2. 73.68
3. 75.13
4. 77.56

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

5 2155

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The average of the number of females qualified from all the six cities together in 2021 is

1. 320
2. 360
3. 400
4. 440

नीचे दी गई तालिका में वर्ष 2020 और 2021 के दौरान छह शहरों A से F में आयोजित सामान्य प्रवेश परीक्षा (सी ई टी) में अर्हता प्राप्त करने वाले अभ्यर्थियों की संख्या का बंटन प्रतिशत, अर्हक पाए गए विद्यार्थियों में पुरुष (M) और महिला (F) के अनुपात सहित दर्शाया गया है। वर्ष 2020 और 2021 सभी छः शहरों में आयोजित प्रवेश परीक्षा में अर्हक पाए गए उम्मीदवारों की कुल संख्या क्रमशः 3800 और 4600 है। तालिका में दिए गए आंकड़ों के आधार पर प्रश्न का उत्तर दीजिए।

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वर्ष 2021 में सभी छह शहरों से अर्हक पायी गयी महिलाओं की संख्या का औसत क्या है?

1. 320
2. 360
3. 400
4. 440

A1 1

:

1

A2 2

:

2

A3 3

:

3
A4
:
4

Objective Question

6 2156

In MOOCs (Massive Open Online Courses), an initiative under NME-ICT Programme, the fourth quadrant is related to:

1. e- content
2. Self-Assessment
3. e-Tutorial
4. Web Resources

एन एम ई-आई सी टी (NME-ICT) प्रोग्राम के अंतर्गत एक पहल में मूक (मैसिव ओपन ऑनलाइन कोर्सेज) में चतुर्थ चतुर्थांश निम्नांकित में से किससे संबंधित है?

1. ई- विषय वस्तु (कंटेंट)
2. स्व- मूल्यांकन
3. ई- ट्यूटोरियल
4. वेब संसाधन (रिसोर्सज)

A1
:
1

A2
:
2

A3
:
3

A4
:
4

Objective Question

7 2157

Match List I with List II

LIST I (Type of learning theory)		LIST II (Theorist)	
A.	Behavioral theory of learning	I.	Albert Bandura
B.	Individual constructivist theory of learning	II.	Lev Vygotsky
C.	Social constructivist theory of learning	III.	J. Piaget
D.	Social cognitive theory of learning	IV.	B.F. Skinner

Choose the correct answer from the options given below:

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

सूची I का सूची II से मिलान कीजिए

सूची I (अधिगम सिद्धांत का प्रकार)	सूची II (सिद्धांत के प्रतिपादक)
A. अधिगम का व्यवहारिक सिद्धांत	I. अल्बर्ट बंडुरा
B. अधिगम का वैयक्तिक रचनावादी सिद्धांत	II. लेव वाइगोत्स्की
C. अधिगम का सामाजिक रचनावादी सिद्धांत	III. जे. पियाजे
D. अधिगम का सामाजिक संज्ञानात्मक सिद्धांत	IV. बी. एफ. स्किनर

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

A1 1

:

1

A2 2

:

2

A3 3

:

3

A4 4

:

4

Objective Question

8 2158

Given below are two statements:

Statement I: In explicit long term memory bits of information may be stored and interrelated in terms of propositional networks.

Statement II: Implicit long term/ memories are out-of-awareness memories that can't affect thinking and behavior.

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

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

नीचे दो कथन दिए गए हैं:

कथन I : साध्यात्मक नेटवर्क के संदर्भ में स्पष्ट दीर्घावधिक स्मृति में सूचनाओं के अंश संग्रहित किये जा सकते हैं और उन्हें परस्पर संबद्ध किया जा सकता है।

कथन II: अस्पष्ट दीर्घावधिक स्मृतियां सचेतता से बाहर की स्मृतियां होती हैं जो चिंतन और व्यवहार को प्रभावित नहीं कर सकती हैं।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

1. दोनों कथन I और कथन II सही हैं
2. दोनों कथन I और कथन II गलत हैं
3. कथन I सही है, लेकिन कथन II गलत है
4. कथन I गलत है, लेकिन कथन II सही है

A1 1

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1

A2 2

:

2

		2
	A3	3
	:	3
	A4	4
	:	4
		4
Objective Question		
9	2159	A teacher is preparing a course of science. He/She wants to add an exercise that promotes collaboration and problem solving among learners. What kind of group should he/she form? 1. Independent student assignment 2. Teacher-centric groups 3. Student-centric groups 4. Social groups कोई अध्यापक/अध्यापिका विज्ञान का पाठ्यक्रम तैयार कर रहा/रही है। वह (अध्यापक/ अध्यापिका) कोई ऐसा अभ्यास जोड़ना चाहता है/चाहती है जिससे अधिगमार्ताओं में सहयोग और समस्या समाधान की भावना को बढ़ावा मिले तो इस दशा में संबंधित अध्यापक/अध्यापिका निम्नांकित में से किस प्रकार का समूह निर्माण करेगा/करेगी ? 1. स्वतंत्र विद्यार्थी समनुदेशन 2. अध्यापक-केन्द्रित समूह 3. विद्यार्थी-केन्द्रित समूह 4. सामाजिक समूह A1 1 : 1 A2 2 : 2 A3 3 : 3 A4 4 : 4
Objective Question		
10	2160	A teacher divided the students of a class into four small groups and in each group three students are present. They have to complete a project in online mode by adding all the related material. Which tool is most appropriate according to you? 1. Padlet 2. Camera 3. Quizzes 4. Screen-castomatic किसी शिक्षक ने एक कक्षा के विद्यार्थियों को चार छोटे-छोटे समूहों में विभक्त किया और प्रत्येक समूह में तीन विद्यार्थी उपस्थित हैं। सभी संबंधित सामग्री को जोड़कर उन्हें ऑनलाइन मोड में एक परियोजना को पूरा करना है। तो इस दशा में आपके अनुसार सर्वाधिक उपयुक्त युक्ति क्या है? 1. पैडलेट 2. कैमरा 3. क्विजस 4. स्क्रीन कास्टोमैटिक A1 1 : 1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

11 2161 One of the characteristics of probability sampling is

1. Population bias
2. sampling bias
3. Random selection
4. Accidental selection

प्रायिकता प्रतिचयन की विशेषताओं में से एक है:

1. जनसंख्या पूर्वाग्रह
2. प्रतिचयन पूर्वाग्रह
3. यादृच्छिक चयन
4. अकस्मात चयन

A1 1
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1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

12 2162 Covert research in ethnography is beset with

1. Personal issues
2. Ethical issues
3. Political issues
4. Historical issues

नृजाति वर्णन में प्रच्छन्न शोध निम्नांकित में से किससे परिपूर्ण है?

1. वैयक्तिक मुद्दे
2. नैतिक मुद्दे
3. राजनीतिक मुद्दे
4. ऐतिहासिक मुद्दे

A1 1
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1
A2 2
:
2

A3 3
:
3
A4 4
:
4

Objective Question

13 2163

Which of the following are characteristics of qualitative interview?

- A. It is less structured.
- B. It reflects researcher's concerns.
- C. The interview is allowed to ramble.
- D. The interview has standardized questions.
- E. It is flexible in approach.

Choose the most appropriate answer from the questions given below:

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

निम्नांकित में से क्या गुणात्मक साक्षात्कार की अभिलक्षणिक विशेषताएं हैं?

- A. यह अपेक्षाकृत कम संरचनाबद्ध होता है।
- B. इसमें शोधकर्ता के सरोकारों का प्रतिबिंब मिलता है।
- C. इस साक्षात्कार में बेसिर पैर की बातें करने की अनुमति होती है।
- D. इस साक्षात्कार में मानकीकृत प्रश्न होते हैं।
- E. यह दृष्टिकोण में नमनीय होता है।

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

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

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

14 2164

Which of the following factors must be taken into account in quantitative research?

- A. Measurement
- B. Causality
- C. Replication
- D. Exclusion of statistical analysis
- E. Less importance to standardisation

Choose the most appropriate answer from the questions given below:

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

परिमाणात्मक शोध में निम्नांकित में से किन कारकों पर अनिवार्यतः विचार किया जाना चाहिए?

- A. माप
- B. कारणता
- C. प्रतिकृति
- D. सांख्यिकीय विश्लेषण का अपवर्जन
- E. मानकीकरण को कम महत्व

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

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

A1
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1

A2
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2

A3
:

3

A4
:

4

Objective Question

15 2165

Given below are two statements:

Statement I: Gaining access to a public or social setting is an important issue in ethnographic research.

Statement II: There is no distinction between overt and covert ethnography in terms of access and participation.

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

- 1. Both Statement I and Statement II are true.
- 2. Both Statement I and Statement II are false.
- 3. Statement I is true but Statement II is false.
- 4. Statement I is false but Statement II is true.

नीचे दो कथन दिए गए हैं:

कथन I : किसी सार्वजनिक या सामाजिक स्थापना का अभिगम प्राप्त करना नृजातीय शोध में एक महत्त्वपूर्ण विषय है।

कथन II : अभिगम और सहभगिता के संदर्भ में प्रकट और प्रच्छन्न नृजाति वर्णन के मध्य कोई अंतर नहीं है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

1. दोनों कथन I और कथन II सत्य हैं।
2. दोनों कथन I और कथन II असत्य हैं।
3. कथन I सत्य है, लेकिन कथन II असत्य है।
4. कथन I असत्य है, लेकिन कथन II सत्य है।

A1
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1

A2
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2

A3
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3

A4
:

4

Objective Question

16 2166

In Communication, metonyms reflect

1. Reality
2. Artificiality
3. Fantasy
4. Hidden secrets

संप्रेषण में चित्र परावृत्तियों (मेटानिम्स) से प्रदर्शित होते/होती हैं:

1. वास्तविकता
2. कृत्रिमता
3. भ्रांति
4. गुप्त रहस्य

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

17 2167

Mass media mostly operate in

1. Personal Sphere
2. Bureaucratic Sphere
3. Public Sphere
4. Ethical Sphere

जनसंचार माध्यम अधिकांशतः संचालित होते हैं

1. वैयक्तिक क्षेत्र में
2. नौकरशाही क्षेत्र में
3. सार्वजनिक क्षेत्र में
4. नैतिक क्षेत्र में

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

18 2168 The criteria for good public service communication by media are:

- A. Limit on audience action and reaction
- B. Subjective slant
- C. Evenhandedness
- D. Avoidance of rancour
- E. Separating facts from opinion

Choose the most appropriate answer from the questions given below:

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

माडिया द्वारा उत्तम लोक सेवा संप्रेषण के मानदंड हैं:

- A. श्रोताओं की क्रिया और प्रतिक्रिया की सीमा
- B. व्यक्तिनिष्ठ झुकाव
- C. समान व्यवहार
- D. विद्वेष का परिहार
- E. तथ्यों को मत से पृथक करना

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

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

A1 1
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1
A2 2
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2
A3 3
:
3
A4 4
:
4

Objective Question

19 2169

Given below are two statements:

Statement I: A large portion of mediated cultural transmission involves traditions, language, beliefs, attitudes and values from one generation to another.

Statement II: Such a process will contribute for the unconscious cultural development of individuals in the society.

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

नीचे दो कथन दिए गए हैं:

कथन I : व्यवहित सांस्कृतिक पारंपरण के एक बड़े हिस्से में परंपराएं, भाषा, मान्यताएं अभिवृत्तियां और मूल्य का एक पीढ़ी से दूसरी पीढ़ी में अन्तरण शामिल होता है।

कथन II : इस तरह की प्रक्रिया का समाज में व्यक्तियों के अचेतन सांस्कृतिक विकास में योगदान होगा।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

1. दोनों कथन I और कथन II सत्य हैं
2. दोनों कथन I और कथन II असत्य हैं
3. कथन I सत्य है, लेकिन कथन II असत्य है
4. कथन I असत्य है, लेकिन कथन II सत्य है

A1 1
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1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

20 2170

Given below are two statements:

Statement I: The circular model of communication does not favour feedback.

Statement II: The linear model of communication demands continuity of communication and enables immediate feedback.

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

नीचे दो कथन दिए गए हैं:

कथन I : संप्रेषण का चक्रिय प्रतिरूप (मॉडल) प्रतिपुष्टि के पक्ष में नहीं होता है।

कथन II : संप्रेषण के रेखीय मॉडल में संप्रेषण की सातत्यता अपेक्षित होती है और इससे तत्काल प्रतिपुष्टि प्राप्त करने में सुविधा होती है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

1. दोनों कथन I और कथन II सत्य हैं
2. दोनों कथन I और कथन II असत्य हैं
3. कथन I सत्य है, लेकिन कथन II असत्य है
4. कथन I असत्य है, लेकिन कथन II सत्य है

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

21 2171

Find the next term in the series given below:

2, 6, 12, 20.....

1. 24
2. 28
3. 30
4. 36

नीचे दी गई श्रृंखला में अगला पद ज्ञात कीजिए:

2, 6, 12, 20.....

1. 24
2. 28
3. 30
4. 36

A1
:

1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

22 2172

12 Men are assigned a job to be finished in 30 days. After 10 days it is observed that only $\frac{1}{6}$ th of the job is completed. How many extra men are required to be deployed to do the rest of the job so that the job is completed within scheduled time?

1. 20
2. 22
3. 18
4. 16

किसी कार्य को 30 दिन में पूर्ण करने के लिए 12 व्यक्तियों को नियत किया जाता है। 10 दिन पश्चात यह पाया जाता है कि कार्य का केवल $\frac{1}{6}$ भाग ही पूर्ण हुआ है। निर्धारित समय में शेष कार्य को पूर्ण करने के लिए कितने अतिरिक्त व्यक्तियों को नियुक्त करने की आवश्यकता है?

1. 20
2. 22
3. 18
4. 16

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

23 2173

A batsman has a certain average of runs for 16 innings. In the 17th inning he makes a score of 85 runs, thus increasing his average by 3 runs. What is average of the batsman after 17th innings?

1. 35
2. 37
3. 45
4. 40

एक बल्लेबाज का 16 पारियों के रनों का कुछ औसत है। 17वीं पारी में उसने 85 रन बनाए, जिससे उसका औसत 3 रन बढ़ जाता है। 17वीं पारी के बाद बल्लेबाज का औसत कितना है?

1. 35
2. 37
3. 45
4. 40

A1 1
:
1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

24 2174 Find a single discount equivalent to a series discount of 20%, 10% and 5%

1. 30 %
2. 31.6%
3. 30.6%
4. 32%

20%, 10% और 5% की क्रमिक छूट के बराबर एकल छूट ज्ञात कीजिए:

1. 30 %
2. 31.6%
3. 30.6%
4. 32%

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

25 2175 A man walks 1km towards east and then turns southwards and walks 5 km. Again he turns to east and walks 2 kms. After this he turns to the north and walks 9 kms. How far is the man from his starting point?

1. 5 km
2. 6 km
3. 6.5 km
4. 7 km

एक व्यक्ति पूर्व की ओर 1 किमी चलता है और फिर दक्षिण की ओर मुड़ता है और 5 किमी चलता है। पुनः वह पूर्व की ओर मुड़ता है और 2 किमी चलत है। इसके पश्चात वह उत्तर की ओर मुड़ता है और 9 किमी चलता है। अपने आरंभिक बिन्दु से व्यक्ति कितनी दूर है?

1. 5 किमी
2. 6 किमी
3. 6.5 किमी
4. 7 किमी

A1 1
:
1
A2 2
:
2

		2
	A3	3
	:	
		3
	A4	4
	:	
		4
Objective Question		
26	2176	Which informal fallacy is committed in the following statements- " Your argument that I should stop stealing chocolates from the corner store is no good. You told me yourself just a month ago that you, too, stole chocolates when you were a kid". 1. Red Herring 2. Strawman 3. Missing the point (Ignoratio Elenchi) 4. Ad hominem निम्नलिखित कथन में कौन-सा अनाकारिक तर्कदोष है-"आपका तर्ककथन कि मुझे कोने पर स्थित दुकान (स्टोर) से चॉकलेट चुराना बंद कर देना चाहिए अच्छा नहीं है। आपने स्वयं मुझे ठीक एक माह पूर्व बताया था कि आपने भी चॉकलेट तब चुराए थे जब आप बच्चे थे।" 1. रेड हेरिंग 2. घास- पुतला तर्कदोष (स्ट्रॉमैन) 3. बिन्दु से भटक जाना (अर्थान्तर सिद्धिदोष) 4. व्यक्ति विशेष के लिए (एड होमिनेम) A1 1 : 1 A2 2 : 2 A3 3 : 3 A4 4 : 4
Objective Question		
27	2177	Which of the following statements is contrapositive of "All whales are mammals"? 1. Some whales are mammals. 2. All non-mammals are non-whales. 3. Some mammals are whales. 4. All mammals are whales. निम्नलिखित कौन-सा कथन "सभी व्हेल मछलियाँ स्तनधारी होती है," का प्रतिपरिवर्ती है? 1. कुछ व्हेल मछली स्तनधारी होती हैं। 2. सभी गैर- स्तनधारी, गैर-व्हेल मछली होते हैं। 3. कुछ स्तनाधारी व्हेल मछली होते हैं। 4. सभी स्तनधारी व्हेल मछली होते हैं। A1 1 : 1 A2 2 : 2

		A3 3 : 3 A4 4 : 4
Objective Question		
28	2178	Which of the following is contradictory to the statement- "No birds are mammals"? 1. Some birds are not mammals. 2. Some birds are mammals. 3. All birds are mammals. 4. All mammals are birds. "कोई भी पक्षी स्तनधारी नहीं है" कथन से निम्नलिखित कौन-सा व्याघाती है? 1. कुछ पक्षी स्तनधारी नहीं है। 2. कुछ पक्षी स्तनधारी हैं। 3. सभी पक्षी स्तनधारी हैं। 4. सभी स्तनधारी पक्षी हैं। A1 1 : 1 A2 2 : 2 A3 3 : 3 A4 4 : 4
Objective Question		
29	2179	If the statement "Some animals are birds" is given as true. Which of the following statements can be immediately inferred to be false? 1. No animals are birds. 2. All animals are birds. 3. Some animals are not birds. 4. All animals cannot fly. यदि कथन "कुछ जानवर पक्षी हैं" सत्य के रूप में दिया गया है। निम्नलिखित में से किस कथन के असत्य होने के बारे में तात्कालिक रूप से अनुमान लगाया जा सकता है? 1. कोई जानवर पक्षी नहीं है। 2. सभी जानवर पक्षी हैं। 3. कुछ जानवर पक्षी नहीं हैं। 4. सभी जानवर उड़ नहीं सकते। A1 1 : 1 A2 2 : 2 A3 3 : 3

		3
	A4	4
	:	4
		4
Objective Question		
30	2180	Given below are two statements: Statement I: According to Classical Indian School of logic (Nyaya) the middle term must be present in the minor term. Statement II: According to Nyaya School the middle term must be absent in all negative instances in which the major term is absent. In the light of the above statements, choose the most appropriate answer from the options given below: - Both Statement I and Statement II are correct. - Both Statement I and Statement II are incorrect. - Statement I is correct but Statement II is incorrect. - Statement I is incorrect but Statement II is correct. नीचे दो कथन दिए गए हैं: कथन I : तर्क (न्याय) के भारतीय शास्त्रीय मत के अनुसार मध्य पद, लघु पद में अनिवार्यतः रहना चाहिए। कथन II : न्याय मत के अनुसार मध्य पद उन सभी नकारात्मक उदाहरणों में अवश्य अनुपस्थित होना चाहिए जिनमें मुख्य पद अनुपस्थित होता है। उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए: - दोनों कथन I और कथन II सही हैं। - दोनों कथन I और कथन II गलत हैं। - कथन I सही है, लेकिन कथन II गलत है। - कथन I गलत है, लेकिन कथन II सही है। A1 1 : 1 A2 2 : 2 A3 3 : 3 A4 4 : 4
Objective Question		
31	2181	In 1965, Gordon Moore, Co-founder of Intel, made a prediction about the future of computer processing. What does his prediction, known as Moore's Law, say? - As technology continues to advance, computer chips will become obsolete. - Computer processing power will double every 18 months to two year. - There will eventually be no need for transistors in high tech electronics. - As the number of transistors increases, computer processing power will be reduced by half every two years.

इंटेल् के सह-संस्थापक गोर्डन मूर ने वर्ष 1965 में कंप्यूटर प्रसंस्करण के भविष्य के बारे में भविष्यवाणी की थी। उनके द्वारा की गई भविष्यवाणी, जो मूर नियम के नाम से विख्यात है, में क्या कहा गया है?

1. जैसे-जैसे प्रौद्योगिकी उन्नत होगी कंप्यूटर के चिप प्रचलन से बाहर हो जायेंगे।
2. प्रत्येक 18 माह से दो वर्ष में कंप्यूटर प्रसंस्करण शक्ति दोगुनी हो जाएगी।
3. अंततः उच्च प्रौद्योगिकी इलेक्ट्रॉनिक्स में ट्रांजिस्टर्स की कोई आवश्यकता नहीं होगी।
4. ट्रांजिस्टर की संख्या बढ़ने की दशा में प्रत्येक दो वर्ष में कंप्यूटर प्रसंस्करण शक्ति घटकर आधी हो जाएगी।

A1
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A2
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2

A3
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3

A4
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4

Objective Question

32 2182

The action of illegally installing malicious code which redirects a person to a fraudulent website with the purpose of obtaining that person's bank details is called

1. Phishing
2. Pharming
3. Spamming
4. Smishing

किसी व्यक्ति के बैंककारी व्यौरे प्राप्त करने के प्रयोजनार्थ उस व्यक्ति को धोखाघड़ी वाली वेबसाइट पर पुनः निर्देशित करने के लिए अवैध रूप से दुर्भावपूर्ण कोड संस्थापित करने की क्रिया कहलाती है:

1. फिशिंग
2. फार्मिंग
3. स्पैमिंग
4. स्मिशिंग

A1
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1

A2
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2

A3
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3

A4
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4

Objective Question

33 2183

Both Wi-Fi and Bluetooth offer wireless communication between devices. Bluetooth is useful when

- A. Transferring data between two or more devices which are less than 30 meters apart.
- B. The speed of data transmission is not critical.
- C. Using high bandwidth applications (for example, sending music files from a mobile phone to a headset).

Choose the most appropriate answer from the questions given below

- 1. A and B only
- 2. A and C only
- 3. B and C only
- 4. A, B and C

वाई-फाई (Wi-Fi) और ब्लूटूथ दोनों के माध्यम से विभिन्न उपकरणों के मध्य बेतार का संचार होता है। ब्लूटूथ उस दशा में उपयोगी होता है जब

- A. 30 मीटर से कम दूरी पर रखे गए दो या दो से अधिक उपकरणों के मध्य डाटा अंतरित किया जाना हो
- B. डाटा संरचना की गति महत्वपूर्ण नहीं होती है
- C. उच्च बैंड विड्थ प्रयोग (यथा- किसी मोबाइल फोन से हैड सेट में म्यूजिक फाइल भेजना) का उपयोग करना हो

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

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

A1
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1

A2
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2

A3
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3

A4
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4

Objective Question

34 2184

Match List I with List II

LIST I (Question)		LIST II (Value)	
A.	If the broadband data download rate is 40 megabits per second, then how many seconds will it takes to download a 60 megabytes file?	I.	64000
B.	Base -10 (denary) value of the binary number: 1000001	II.	12
C.	Number of 8 megabyte files that can be stored on a backup memory device having 500 gigabyte of storage.	III.	17
D.	What hexadecimal value is obtained when the two hexadecimal digits B and C are added together?	IV.	65

Choose the correct answer from the options given below:

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

सूची I का सूची II से मिलान कीजिए

सूची I (प्रश्न)		सूची II (मान)
A.	यदि ब्रॉड बैंड डाटा डाउनलोड की दर 40 मेगाबिट प्रति सेकेंड है तो 60 मेगाबाइट की फाइल डाउनलोड करने में कितना सेकेंड लगेगा	I. 64000
B.	द्विआधारी संख्या 1000001 का बेस 10- (दशाधारी) मान	II. 12
C.	500 गीगाबाइट संग्रह वाले उपकरण की बैकअप मेमोरी में संग्रहित की जाने के 8 मेगाबाइट वाले फाइलों की संख्या	III. 17
D.	दो षोडष आधारी अंक- B और C को एक साथ जोड़ने पर कौन सा षोडष आधारी मान प्राप्त होता है।	IV. 65

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

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

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

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

A1
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A2
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A3
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A4
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4

Objective Question

35 2185

Given below are two statements:

Statement I: .mp4 and .gif are two file extensions used with files containing moving images.

Statement II: .rar and .zip are two file extensions used with files containing compressed data.

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

- Both Statement I and Statement II are true.
- Both Statement I and Statement II are false.
- Statement I is true but Statement II is false.
- Statement I is true but Statement II is false.

नीचे दो कथन दिए गए हैं:

कथन I : .mp4 और .gif चलायमान चित्र वाली फाइलों के साथ प्रयुक्त होने वाली दो फाइल विस्तार हैं।

कथन II : .rar और .zip संपीड़ित डाटा वाली फाइलों के साथ प्रयुक्त होने वाली दो फाइल विस्तार हैं।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

- दोनों कथन I और कथन II सत्य हैं।
- दोनों कथन I और कथन II असत्य हैं।
- कथन I सत्य है, लेकिन कथन II असत्य है।
- कथन I असत्य है, लेकिन कथन II सत्य है।

A1
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1

A2 2
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2
A3 3
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3
A4 4
:
4

Objective Question

36 2186

Which of the following activities has contributed maximum to global warming?

1. Industrial processes
2. Deforestation
3. Agriculture
4. Fossil fuel combustion

वैश्विक तापन में निम्नांकित में से किसका सर्वाधिक योगदान है?

1. औद्योगिक प्रक्रम
2. निर्वनीकरण
3. कृषि कार्य
4. जीवश्म ईंधन का दहन

A1 1
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1
A2 2
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2
A3 3
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3
A4 4
:
4

Objective Question

37 2187

A 30 dB increase in noise pollution level represents:

1. 30 -fold increase in sound intensity
2. 100- fold increase in sound intensity
3. 1000- fold increase in sound intensity
4. 15- fold increase in sound intensity

ध्वनि प्रदूषण के स्तर में 30 डेसिबल की वृद्धि निम्नांकित में से किसका द्योतक है:

1. ध्वनि की तीव्रता में 30 गुणा वृद्धि
2. ध्वनि की तीव्रता में 100 गुणा वृद्धि
3. ध्वनि की तीव्रता में 1000 गुणा वृद्धि
4. ध्वनि की तीव्रता में 15 गुणा वृद्धि

A1 1
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1
A2 2
:
2

A3 3
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3
A4 4
:
4

Objective Question

38 2188 Turbidity, one of the important water quality parameters, is measured in

1. Color units
2. pH units
3. NTU
4. Microgram/m³

जल के महत्त्वपूर्ण गुणवत्ता प्राचलों में से एक, अविलता, का मापन किया जाता है:

1. कलर यूनिट में
2. पी एच यूनिट में
3. एन टी यू में
4. माइक्रोग्राम/ मीटर³ में

A1 1
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1

A2 2
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2

A3 3
:
3

A4 4
:
4

Objective Question

39 2189 In case of nuclear energy, the objective of enrichment process is

1. Separation of Uranium from its ores
2. Increasing the concentration of fissile ²³⁵U
3. Increasing the concentration of ²³⁸U
4. Enhancing the quantity of moderator

नाभिकीय ऊर्जा के मामले में संवर्धन प्रक्रम का उद्देश्य है:

1. यूरेनियम का उसके अयस्क से पृथक्करण
2. विखण्डक ²³⁵U का सांद्रण बढ़ाना
3. ²³⁸U का सांद्रण बढ़ाना
4. मंदक की मात्रा बढ़ाना

A1 1
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1

A2 2
:
2

A3 3
:
3

		3
	A4	4
	:	4
		4
Objective Question		
40	2190	International Solar Alliance (ISA) was launched in the year
		1. 2015 2. 2016 3. 2017 4. 2018
		अन्तरराष्ट्रीय सौर संधि (आई एस ए) का शुभारंभ किस वर्ष हुआ:
		1. 2015 2. 2016 3. 2017 4. 2018
	A1	1
	:	1
	A2	2
	:	2
	A3	3
	:	3
	A4	4
	:	4
Objective Question		
41	2191	National Council for Vocational Education and Training (NCVET) is under:
		1. Ministry of Education 2. University Grants Commission (UGC) 3. Ministry of Skill Development and Entrepreneurship 4. All India Council for Technical Education
		राष्ट्रीय व्यवसायिक शिक्षा एवं प्रशिक्षण परिषद (एन सी वी ई टी) निम्नांकित में से किसके अधीन है:
		1. शिक्षा मंत्रालय 2. विश्वविद्यालय अनुदान आयोग (यू जी सी) 3. कौशल विकास और उद्यमिता मंत्रालय 4. अखिल भारतीय तकनीकी शिक्षा परिषद
	A1	1
	:	1
	A2	2
	:	2
	A3	3
	:	3
	A4	4
	:	4

4

Objective Question

42 2192 A section of the Muslim Community opened a number of Azad schools in Uttar Pradesh and led by Maulana Mohammad Ali in 1920 established the Jamia Milia Islamia or Muslim National University in which of the following Indian Cities?

1. Delhi
2. Hyderabad
3. Lucknow
4. Aligarh

उत्तरप्रदेश में मुस्लिम समुदाय के एक वर्ग ने बहुत से आजाद स्कूल खोले और मौलाना मोहम्मद अली के नेतृत्व में वर्ष 1920 में जामिया मिलिया इस्लामिया या मुस्लिम राष्ट्रीय विश्वविद्यालय की स्थापना भारत के किस शहर में हुई थी?

1. दिल्ली
2. हैदराबाद
3. लखनऊ
4. अलीगढ़

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

43 2193 Which of the following were considered as Vedangas in the ancient education system of India?

- A. Metrics
- B. Grammar
- C. Phonetics
- D. Ritual
- E. Astrology

Choose the most appropriate answer from the questions given below:

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

भारत की प्राचीन शिक्षा प्रणाली में निम्नांकित में से किन्हें वेदांग माना जाता था?

- A. छंद शास्त्र (मेट्रिक्स)
- B. व्याकरण (ग्रामर)
- C. शिक्षा (फोनेटिक्स)
- D. कल्प (रिचुअल)
- E. ज्योतिष (एस्ट्रोलोजी)

नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए

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

A1
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1

A2
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A3
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A4
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Objective Question

44 2194

National Skill Qualification Framework (NSQF) is a competency based framework related to

- 1. Knowledge, Skills and Attitude
- 2. Understanding, Application and Analysis
- 3. Knowledge, Skills and Aptitude
- 4. Understanding, Analysis and Synthesis

राष्ट्रीय कौशल अर्हता फ्रेमवर्क (एन एस क्यू एफ) अभिक्षमता आधारित फ्रेमवर्क है, यह निम्नांकित में से किससे संबंधित है?

- 1. ज्ञान, कौशल और अभिवृत्ति
- 2. समझ, अनुप्रयोग और विश्लेषण
- 3. ज्ञान, कौशल और अभिरुचि
- 4. समझ, विश्लेषण और संश्लेषण

A1
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1

A2
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A3
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3

A4
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4

Objective Question

45 2195

According to NEP 2020, match the functions of independence verticals of HECI

Match List I with List II

LIST I (Verticals of HECI)	LIST II (Functions)
A. NHERC	I. Accreditation of institution
B. NAC	II. Academic standard setting
C. HEGC	III. Regulator for higher education
D. GEC	IV. Funding and financing of higher education

Choose the correct answer from the options given below:

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

नई शिक्षा नीति, 2020 के अनुसार एच ई सी आई के स्वतंत्र अंगको के कार्यकरण को समेकित कीजिए

सूची I का सूची II से मिलान कीजिए

सूची I (एच ई सी आई के अंगक)	सूची II (कार्यकरण)
A. एन. एच. ई. आर. सी.	I. संस्थाओं का प्रत्यापन
B. एन. ए. सी.	II. अकादमिक स्तर निर्धारण
C. एच. ई. जी. सी.	III. उच्च शिक्षा का विनियामक
D. जी. ई. सी.	IV. उच्च शिक्षा का निधियन और वित्त पोषण

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

A1 1

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1

A2 2

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2

A3 3

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3

A4 4

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4

Objective Question

46 2196

Read the passage and answer the question given below:

Alternatives are not lacking in the world. What is indeed missing is an alternative thinking of alternatives, whenever it is said that there are very interesting things happening in Asia, Africa and Latin America, the Western answer is that developed countries do not have same problems. As such, the West does not need their kinds of solutions. There are two inferences from this: First, the understanding of the world is much broader than the western understanding of the world. This means that the progressive transformation of the world may also occur in ways not foreseen by western thinking. It includes critical western thinking. Second, the diversity of the world is infinite. It is a diversity that encompasses very distinct modes of being, thinking and feeling: ways of conceiving of time and the relations among human beings and between humans and non-humans, ways of facing the past and the future and of collectively organizing life, the production of goods and services, as well as leisure. This immensity of alternatives of life, comforts and interaction with the world is largely wasted because the theories and concepts developed in the global North and employed in the entire academic world do not identify such alternatives. When they do, they do not valorize them as being valid contributions towards constructing a better society. The knowledge of the south is dubbed as outmoded and considered as no knowledge at all.

What is the western reaction to the things happening in Asia, Africa and Latin America?

1. The West is yet to reach their stage.
2. The West has the same issues as theirs.
3. The West does not have the same problems.
4. The West has plenty of alternatives.

निम्नांकित गद्यांश को पढ़िए और प्रश्न का उत्तर दें:

विश्व में विकल्पों की कमी नहीं है। वस्तुतः कमी इस बात की है विकल्पों के बारे में वैकल्पिक चिंतन नहीं उपलब्ध है। जब कभी भी ऐसा कहा जाता है कि एशिया, अफ्रीका और लैटिन अमेरिका में बहुत रोचक घटनाएं घटित हो रही हैं, पश्चिमी देशों का प्रत्युत्तर है कि विकसित देशों में इस तरह की समस्या नहीं है। इस प्रकार, पश्चिमी देशों को इस प्रकार के समाधानों की आवश्यकता नहीं है। इससे दो निष्कर्ष निकलते हैं: प्रथमतः विश्व की समझ पश्चिमी देशों की विश्व के बारे में समझ की तुलना में बहुत अधिक व्यापक है। इसका अभिप्राय यह है कि विश्व का उत्तरोत्तर रूपांतर उन तरीकों से भी हो सकता है जिसके संबंध में पश्चिमी देशों के चिंतन में पूर्वानुमान नहीं किया गया है। इसमें पश्चिमी देशों का आलोचनात्मक चिंतन सम्मिलित है। द्वितीयतः विश्व की विविधता अपरिमित है। यह ऐसी विविधता है जिसमें अति विशिष्ट प्रकार के अस्तित्व, चिन्तन और अनुभव, काल की संकल्पना निर्माण और मानव के मध्य संबंध और मानव एवं मानव के अतिरिक्त अन्य जीवों के बीच संबंध की विधियां, भूत और भविष्य का सामना करने और सामूहिक रूप से जीवन को संगठित करने, माल उत्पादन और सेवाओं के साथ-साथ अवकाश की विधियां समाहित हैं। जीवन, सुख और विश्व के साथ अन्तः क्रिया के विकल्पों की व्यापकता अधिकार व्यर्थ हो जाती है क्योंकि विश्व के उत्तरी देशों में विकसित सिद्धांत और अवधारणाओं ने जो समग्र शैक्षिक जगत में भी प्रयुक्त होती हैं, इस तरह के विकल्पों को नहीं पहचाना है। जब वे ऐसा करती हैं तो वे बेहतर समाज के निर्माण की दिशा में वैध योगदान के रूप में इनका मूल्य-वर्धन नहीं करती हैं। दक्षिण के ज्ञान को अनद्यतन (पुराना) होने की संज्ञा दी जाती है और इसे तनिक भी ज्ञान नहीं माना जाता है।

एशिया, अफ्रीका और लैटिन अमेरिका में घटित होने वाली चीजों के बारे में पश्चिमी देशों की क्या प्रतिक्रिया है?

1. पश्चिमी देशों ने अब तक उनके स्तर को नहीं प्राप्त किया है।
2. पश्चिमी देश उन्हीं समस्याओं का सामना कर रहे हैं, जैसा कि वे।
3. पश्चिमी देशों में समान समस्याएं नहीं हैं।
4. पश्चिमी देशों के पास पर्याप्त विकल्प उपलब्ध हैं।

A1 1

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1

A2 2

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2

A3 3

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3

A4 4

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4

Objective Question

47 2197

Read the passage and answer the question given below:

Alternatives are not lacking in the world. What is indeed missing is an alternative thinking of alternatives, whenever it is said that there are very interesting things happening in Asia, Africa and Latin America, the Western answer is that developed countries do not have same problems. As such, the West does not need their kinds of solutions. There are two inferences from this: First, the understanding of the world is much broader than the western understanding of the world. This means that the progressive transformation of the world may also occur in ways not foreseen by western thinking. It includes critical western thinking. Second, the diversity of the world is infinite. It is a diversity that encompasses very distinct modes of being, thinking and feeling: ways of conceiving of time and the relations among human beings and between humans and non-humans, ways of facing the past and the future and of collectively organizing life, the production of goods and services, as well as leisure. This immensity of alternatives of life, comforts and interaction with the world is largely wasted because the theories and concepts developed in the global North and employed in the entire academic world do not identify such alternatives. When they do, they do not valorize them as being valid contributions towards constructing a better society. The knowledge of the south is dubbed as outmoded and considered as no knowledge at all.

The West should know that

1. Developing nations need western solutions.
2. The world is more than what the West understands.
3. The West should not share knowledge with others.
4. It is always advisable to keep the world divided.

निम्नांकित गद्यांश को पढ़िए और प्रश्न का उत्तर दें:

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पश्चिमी देशों को ज्ञात होना चाहिए कि

1. विकासशील राष्ट्रों को पश्चिमी देशों द्वारा उपलब्ध कराए जाने वाले समाधानों की आवश्यकता है।
2. विश्व पश्चिमी देशों की समझ से कहीं अधिक है।
3. पश्चिमी देशों को अन्य देशों के साथ ज्ञान साझा नहीं करना चाहिए।
4. विश्व को विभक्त रखना सदैव श्रेयस्कर है।

A1 1
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A2 2
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2

A3 3
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A4 4
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4

Objective Question

48 2198

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The diversity of the world is reflected in:

- A. Production of goods and leisure
- B. Collective organisation of life
- C. Conceiving time
- D. Relations among human beings

Choose the most appropriate answer from the questions given below:

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

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वैश्विक विविधता इनमें परिलक्षित होती है:

- A. माल उत्पादन और अवकाश
- B. जीवन का सामूहिक व्यवस्थापन
- C. काल का संकल्पना निर्माण
- D. मानव के मध्य संबंध

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

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

A1 1
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1

A2 2
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2
A3 3
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3
A4 4
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4

Objective Question

49 2199

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The Western theories and concepts

1. reject the alternative knowledge.
2. valorize the knowledge of the South.
3. support the creation of single knowledge world.
4. identify the immensity of alternative ways of life and interaction.

निम्नांकित गद्यांश को पढ़िए और प्रश्न का उत्तर दें:

विश्व में विकल्पों की कमी नहीं है। वस्तुतः कमी इस बात की है विकल्पों के बारे में वैकल्पिक चिंतन नहीं उपलब्ध है। जब कभी भी ऐसा कहा जाता है कि एशिया, अफ्रीका और लैटिन अमेरिका में बहुत रोचक घटनाएं घटित हो रही हैं, पश्चिमी देशों का प्रत्युत्तर है कि विकसित देशों में इस तरह की समस्या नहीं है। इस प्रकार, पश्चिमी देशों को इस प्रकार के समाधानों की आवश्यकता नहीं है। इससे दो निष्कर्ष निकलते हैं: प्रथमतः विश्व की समझ पश्चिमी देशों की विश्व के बारे में समझ की तुलना में बहुत अधिक व्यापक है। इसका अभिप्राय यह है कि विश्व का उत्तरोत्तर रुपांतर उन तरीकों से भी हो सकता है जिसके संबंध में पश्चिमी देशों के चिंतन में पूर्वानुमान नहीं किया गया है। इसमें पश्चिमी देशों का आलोचनात्मक चिंतन सम्मिलित है। द्वितीयतः विश्व की विविधता अपरिमित है। यह ऐसी विविधता है जिसमें अति विशिष्ट प्रकार के अस्तित्व, चिन्तन और अनुभव, काल की संकल्पना निर्माण और मानव के मध्य संबंध और मानव एवं मानव के अतिरिक्त अन्य जीवों के बीच संबंध की विधियां, भूत और भविष्य का सामना करने और सामूहिक रूप से जीवन को संगठित करने, माल उत्पादन और सेवाओं के साथ-साथ अवकाश की विधियां समाहित हैं। जीवन, सुख और विश्व के साथ अन्तः क्रिया के विकल्पों की व्यापकता अधिकार व्यर्थ हो जाती है क्योंकि विश्व के उत्तरी देशों में विकसित सिद्धांत और अवधारणाओं ने जो समग्र शैक्षिक जगत में भी प्रयुक्त होती हैं, इस तरह के विकल्पों को नहीं पहचाना है। जब वे ऐसा करती हैं तो वे बेहतर समाज के निर्माण की दिशा में वैध योगदान के रूप में इनका मूल्य-वर्धन नहीं करती हैं। दक्षिण के ज्ञान को अनद्यतन (पुराना) होने की संज्ञा दी जाती है और इसे तनिक भी ज्ञान नहीं माना जाता है।

पश्चिमी देशों के सिद्धांत और उनकी संकल्पनाओं ने

1. वैकल्पिक ज्ञान को अस्वीकृत कर दिया है।
2. दक्षिण के ज्ञान का मूल्यवर्धन किया है।
3. एकल ज्ञान आधारित विश्व के सृजन का समर्थन किया है।
4. जीवन और अन्तः क्रिया की वैकल्पिक विधियों की व्यापकता को पहचाना है।

A1 1
:
1
A2 2
:
2

A3 3
:
3
A4 4
:
4

Objective Question

50 2200

Read the passage and answer the question given below:

Alternatives are not lacking in the world. What is indeed missing is an alternative thinking of alternatives, whenever it is said that there are very interesting things happening in Asia, Africa and Latin America, the Western answer is that developed countries do not have same problems. As such, the West does not need their kinds of solutions. There are two inferences from this: First, the understanding of the world is much broader than the western understanding of the world. This means that the progressive transformation of the world may also occur in ways not foreseen by western thinking. It includes critical western thinking. Second, the diversity of the world is infinite. It is a diversity that encompasses very distinct modes of being, thinking and feeling: ways of conceiving of time and the relations among human beings and between humans and non-humans, ways of facing the past and the future and of collectively organizing life, the production of goods and services, as well as leisure. This immensity of alternatives of life, comforts and interaction with the world is largely wasted because the theories and concepts developed in the global North and employed in the entire academic world do not identify such alternatives. When they do, they do not valorize them as being valid contributions towards constructing a better society. The knowledge of the south is dubbed as outmoded and considered as no knowledge at all.

The author of the passage

1. is critical of alternative thinking.
2. favors the recognition of alternative thinking and solution.
3. emphasizes the adoption of Western concepts.
4. suggests uniformity of problems and solutions.

निम्नांकित गद्यांश को पढ़िए और प्रश्न का उत्तर दें:

विश्व में विकल्पों की कमी नहीं है। वस्तुतः कमी इस बात की है विकल्पों के बारे में वैकल्पिक चिंतन नहीं उपलब्ध है। जब कभी भी ऐसा कहा जाता है कि एशिया, अफ्रीका और लैटिन अमेरिका में बहुत रोचक घटनाएं घटित हो रही हैं, पश्चिमी देशों का प्रत्युत्तर है कि विकसित देशों में इस तरह की समस्या नहीं है। इस प्रकार, पश्चिमी देशों को इस प्रकार के समाधानों की आवश्यकता नहीं है। इससे दो निष्कर्ष निकलते हैं: प्रथमतः विश्व की समझ पश्चिमी देशों की विश्व के बारे में समझ की तुलना में बहुत अधिक व्यापक है। इसका अभिप्राय यह है कि विश्व का उत्तरोत्तर रुपांतर उन तरीकों से भी हो सकता है जिसके संबंध में पश्चिमी देशों के चिंतन में पूर्वानुमान नहीं किया गया है। इसमें पश्चिमी देशों का आलोचनात्मक चिंतन सम्मिलित है। द्वितीयतः विश्व की विविधता अपरिमित है। यह ऐसी विविधता है जिसमें अति विशिष्ट प्रकार के अस्तित्व, चिन्तन और अनुभव, काल की संकल्पना निर्माण और मानव के मध्य संबंध और मानव एवं मानव के अतिरिक्त अन्य जीवों के बीच संबंध की विधियां, भूत और भविष्य का सामना करने और सामूहिक रूप से जीवन को संगठित करने, माल उत्पादन और सेवाओं के साथ-साथ अवकाश की विधियां समाहित हैं। जीवन, सुख और विश्व के साथ अन्तः क्रिया के विकल्पों की व्यापकता अधिकार व्यर्थ हो जाती है क्योंकि विश्व के उत्तरी देशों में विकसित सिद्धांत और अवधारणाओं ने जो समग्र शैक्षिक जगत में भी प्रयुक्त होती हैं, इस तरह के विकल्पों को नहीं पहचाना है। जब वे ऐसा करती हैं तो वे बेहतर समाज के निर्माण की दिशा में वैध योगदान के रूप में इनका मूल्य-वर्धन नहीं करती हैं। दक्षिण के ज्ञान को अनद्यतन (पुराना) होने की संज्ञा दी जाती है और इसे तनिक भी ज्ञान नहीं माना जाता है।

गद्यांश का लेखक

1. वैकल्पिक चिंतन की आलोचना करता है।
2. वैकल्पिक चिंतन और समाधान को मान्यता देने के पक्ष में है।
3. पश्चिमी संकल्पनाओं को अंगीकार करने पर बल देता है।
4. समस्याओं और उनके समाधान की एकरूपता की ओर संकेत करता है।

A1 1
:
1
A2 2
:
2
A3 3
:
3

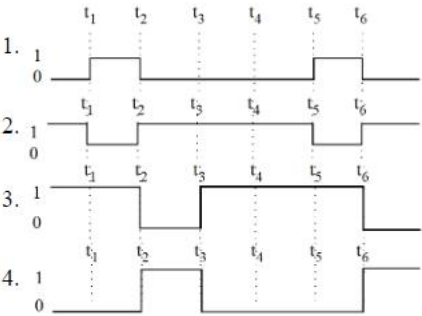
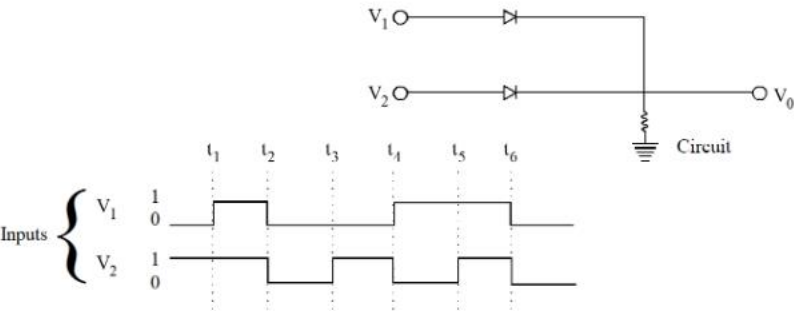
A4

:

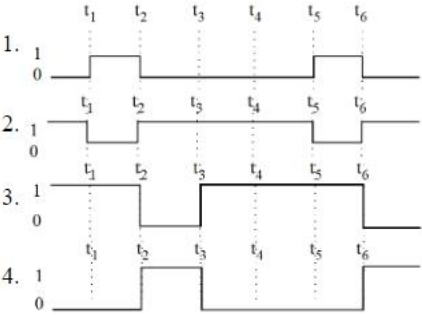
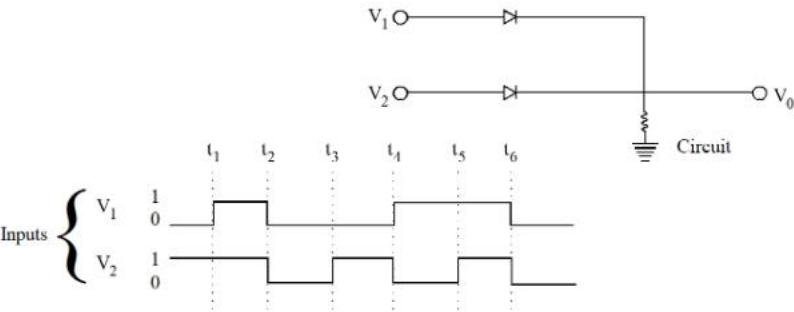
4

Objective Question

51 88001 In the following circuit, for the given inputs V_1 and V_2 , the correct option for output V_0 is



In the following circuit, for the given inputs V_1 and V_2 , the correct option for output V_0 is



A1

:

1

1

A2

:

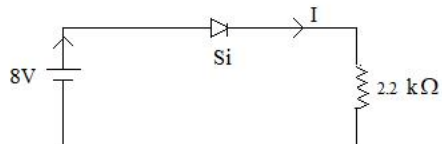
2

2

A3 3
:
3
A4 4
:
4

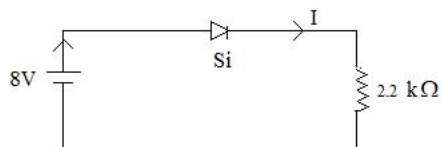
Objective Question

52 88002 The value of current I flowing in the given circuit is:



1. 3.63 mA
2. 3.32 mA
3. 3.5 mA
4. 3.18 mA

The value of current I flowing in the given circuit is:



1. 3.63 mA
2. 3.32 mA
3. 3.5 mA
4. 3.18 mA

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

53 88003 Choose the correct statement out of the following

1. BJT is slower than FET and its power consumption is larger than FET.
2. BJT is slower than FET and its power consumption is smaller than FET.
3. BJT is faster than FET and its power consumption is larger than FET.
4. BJT is faster than FET and its power consumption is smaller than FET.

Choose the correct statement out of the following

1. BJT is slower than FET and its power consumption is larger than FET.
2. BJT is slower than FET and its power consumption is smaller than FET.
3. BJT is faster than FET and its power consumption is larger than FET.
4. BJT is faster than FET and its power consumption is smaller than FET.

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

54 88004 In a pn junction diode, depletion layer is formed due to

1. doping
2. barrier potential
3. biasing
4. recombination

In a pn junction diode, depletion layer is formed due to

1. doping
2. barrier potential
3. biasing
4. recombination

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

55 88005 To form the integrated circuits, VLSI technology uses

1. transistors
2. diodes
3. switches
4. vacuum tubes

To form the integrated circuits, VLSI technology uses

1. transistors
2. diodes
3. switches
4. vacuum tubes

A1 1
:
1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

56 88006 CMOS inverter has following minimum number of region of operation.

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

CMOS inverter has following minimum number of region of operation.

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

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

57 88007 Czochralski system of crystal growth is a

1. Liquid-solid mono-component growth system
2. Solid-solid mono-component growth system
3. Liquid-solid bi-component growth system
4. Solid-solid bi-component growth system

Czochralski system of crystal growth is a

1. Liquid-solid mono-component growth system
2. Solid-solid mono-component growth system
3. Liquid-solid bi-component growth system
4. Solid-solid bi-component growth system

A1 1
:
1
A2 2
:
2

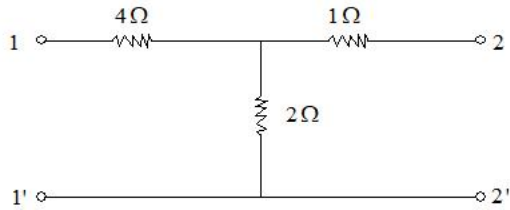
		A3 3 : 3 A4 4 : 4
Objective Question		
58	88008	The thermal oxidation of silicon single crystal producer stacking faults lying on the plane. 1. 111 2. 110 3. 100 4. 101 The thermal oxidation of silicon single crystal producer stacking faults lying on the plane. 1. 111 2. 110 3. 100 4. 101 A1 1 : 1 A2 2 : 2 A3 3 : 3 A4 4 : 4
Objective Question		
59	88009	The theorem, required to maintain the minimum return loss in a network, is 1. Thevenin theorem 2. Superposition theorem 3. Norton theorem 4. Maximum power transfer theorem The theorem, required to maintain the minimum return loss in a network, is 1. Thevenin theorem 2. Superposition theorem 3. Norton theorem 4. Maximum power transfer theorem A1 1 : 1 A2 2 : 2 A3 3 : 3

A4 4
:
4

Objective Question

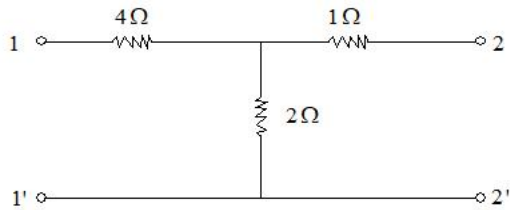
60 88010

For the two-port network shown in figure, the z-parameter metrix is given by



1. $\begin{bmatrix} 6 & 2 \\ 2 & 3 \end{bmatrix} \Omega$
2. $\begin{bmatrix} 3 & 2 \\ 6 & 2 \end{bmatrix} \Omega$
3. $\begin{bmatrix} 6 & 3 \\ 2 & 2 \end{bmatrix} \Omega$
4. $\begin{bmatrix} 2 & 6 \\ 3 & 2 \end{bmatrix} \Omega$

For the two-port network shown in figure, the z-parameter metrix is given by



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3. $\begin{bmatrix} 6 & 3 \\ 2 & 2 \end{bmatrix} \Omega$
4. $\begin{bmatrix} 2 & 6 \\ 3 & 2 \end{bmatrix} \Omega$

A1 1
:

1

A2 2
:

2

A3 3
:

3

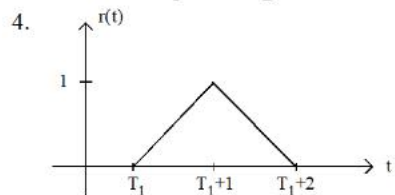
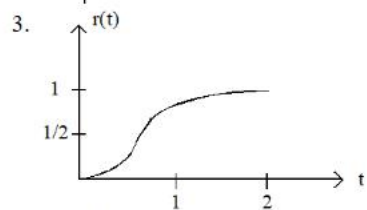
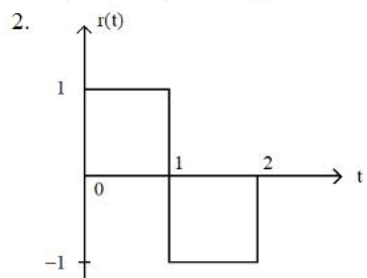
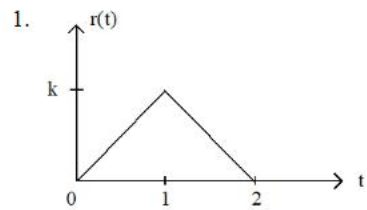
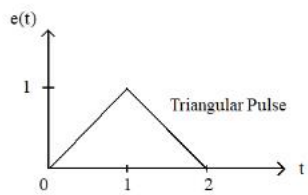
A4 4
:

4

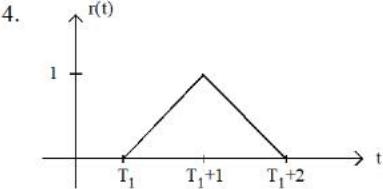
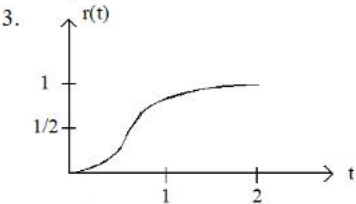
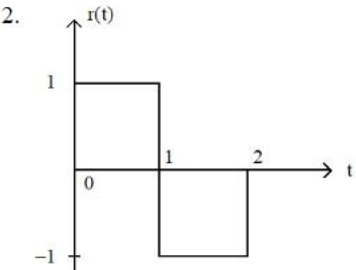
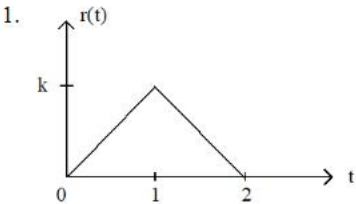
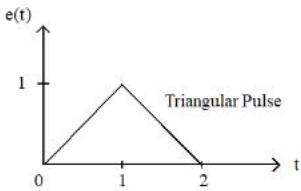
Objective Question

61 88011

An integrator output of the given triangular pulse is



An integrator output of the given triangular pulse is



A1
:

1

A2
:

2

A3
:

3

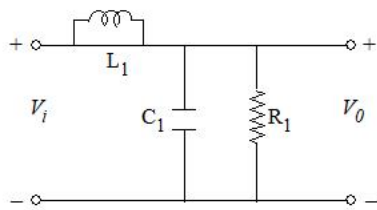
A4
:

4

Objective Question

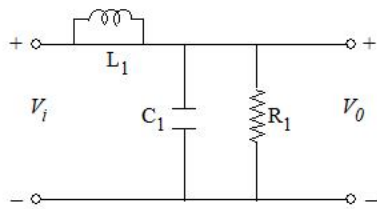
62 88012

The given R-L-C circuit is of a



1. band pass filter
2. high pass filter
3. low pass filter
4. all pass filter

The given R-L-C circuit is of a



1. band pass filter
2. high pass filter
3. low pass filter
4. all pass filter

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

63 88013 The bandwidth of an ideal OPAMP in open loop configuration is

1. 0
2. ∞
3. 1
4. 100

The bandwidth of an ideal OPAMP in open loop configuration is

1. 0
2. ∞
3. 1
4. 100

A1 1
:

1

1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

64 88014

What will be the 'change in roll off' when the order of a filter changes from 1st to 2nd ?

1. 10 dB/decade
2. 20 dB/decade
3. 30 dB/decade
4. 40 dB/decade

What will be the 'change in roll off' when the order of a filter changes from 1st to 2nd ?

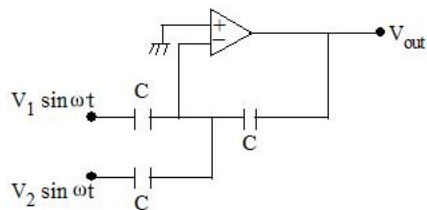
1. 10 dB/decade
2. 20 dB/decade
3. 30 dB/decade
4. 40 dB/decade

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

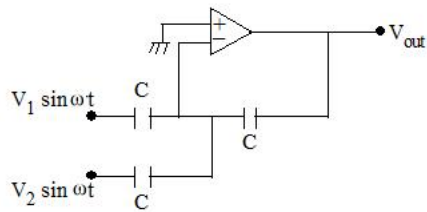
65 88015

If OPAMP is ideal, then V_{out} of the given figure will be



1. zero
2. $(V_1 + V_2) \sin \omega t$
3. $(V_1 - V_2) \sin \omega t$
4. $-(V_1 + V_2) \sin \omega t$

If OPAMP is ideal, then V_{out} of the given figure will be



1. zero
2. $(V_1 + V_2) \sin \omega t$
3. $(V_1 - V_2) \sin \omega t$
4. $-(V_1 + V_2) \sin \omega t$

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

66 88016 An ideal OPAMP is an ideal

1. voltage controlled voltage source
2. voltage controlled current source
3. current controlled current source
4. current controlled voltage source

An ideal OPAMP is an ideal

1. voltage controlled voltage source
2. voltage controlled current source
3. current controlled current source
4. current controlled voltage source

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

67 88017

The correct equivalent expression for $AB + \overline{A+B}$ is

1. $A \oplus B$
2. $A \odot B$
3. $A \times B$
4. $\overline{A} \cdot B$

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1. $A \oplus B$
2. $A \odot B$
3. $A \times B$
4. $\overline{A} \cdot B$

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

68 88018 If the output of a logic gate is zero when all its inputs are at logic 1. The gate is either

1. a NAND or an AND
2. a NOR or an X-NOR
3. a NAND or an X-OR
4. a NAND or an X-NOR

If the output of a logic gate is zero when all its inputs are at logic 1. The gate is either

1. a NAND or an AND
2. a NOR or an X-NOR
3. a NAND or an X-OR
4. a NAND or an X-NOR

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

69 88019

For realization of two - input Ex-OR gate, the minimum number of required NAND gates are

1. five
2. six
3. four
4. three

For realization of two - input Ex-OR gate, the minimum number of required NAND gates are

1. five
2. six
3. four
4. three

A1 1

:

1

A2 2

:

2

A3 3

:

3

A4 4

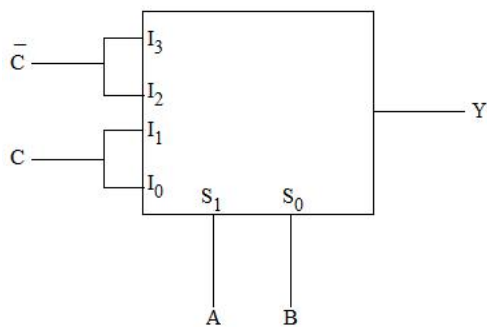
:

4

Objective Question

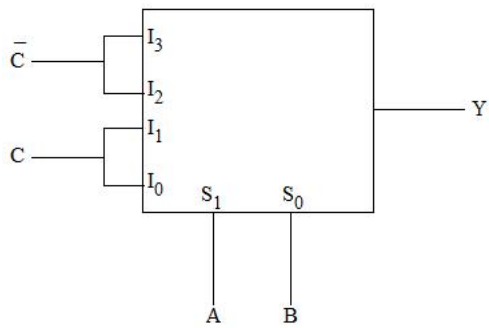
70 88020

For the given 4×1 MUX, the output y is



1. $\overline{A \oplus C}$
2. $A \oplus C$
3. $B \odot C$
4. $\overline{B \odot C}$

For the given 4×1 MUX, the output y is



1. $\overline{A \oplus C}$
2. $A \oplus C$
3. $B \odot C$
4. $\overline{B \odot C}$

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

71 88021 In "JZ Next" instruction of 8051 microcontroller, which register's content is checked to see if it is zero?

1. A
2. B
3. R1
4. R2

In "JZ Next" instruction of 8051 microcontroller, which register's content is checked to see if it is zero?

1. A
2. B
3. R1
4. R2

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

72	88022	Using 8051 assembly language programming numbers 54 H and 98 H are added. After addition the status of CY, AC and P flags are respectively: 1. 0, 0, 1 2. 0, 1, 0 3. 0, 0, 0 4. 1, 0, 0 Using 8051 assembly language programming numbers 54 H and 98 H are added. After addition the status of CY, AC and P flags are respectively: 1. 0, 0, 1 2. 0, 1, 0 3. 0, 0, 0 4. 1, 0, 0 A1 1 : 1 A2 2 : 2 A3 3 : 3 A4 4 : 4
----	-------	---

Objective Question

73	88023	Find the delay generated by Timer 0 in the following code of 8051 microcontroller : clock period = 1.085 μs. <pre> MOV TMOD, #01H MOV TLO, #3DH MOV THO, #0A2H. SET B TRO Loop : J N B TFO, LOOP CLR TRO CLR TFO </pre> 1. 26.043 ms 2. 19.93 ms 3. 30.043 ms 4. 12.93 ms
----	-------	--

Find the delay generated by Timer 0 in the following code of 8051 microcontroller : clock period = 1.085 μ s.

```
MOV TMOD, #01H
```

```
MOV TLO, #3DH
```

```
MOV THO, #0A2H.
```

```
SETB TRO
```

```
Loop : JNB TFO, LOOP
```

```
CLR TRO
```

```
CLR TFO
```

1. 26.043 ms
2. 19.93 ms
3. 30.043 ms
4. 12.93 ms

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

74 88024

In 8051 microcontroller, one machine cycle lasts in 12 oscillation period. Crystal oscillator's frequency is 11.0592 MHz. Find how long it takes to execute instruction MOV R4, # 25.

1. 1.085 μ s
2. 0.75 μ s
3. 0.60 μ s
4. 1.5 μ s

In 8051 microcontroller, one machine cycle lasts in 12 oscillation period. Crystal oscillator's frequency is 11.0592 MHz. Find how long it takes to execute instruction MOV R4, # 25.

1. 1.085 μ s
2. 0.75 μ s
3. 0.60 μ s
4. 1.5 μ s

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:
4

Objective Question

75 88025 If the axial ratio of an electromagnetic wave is zero dB. Then, the wave is:

1. circularly polarized
2. elliptically polarized
3. horizontally polarized
4. vertically polarized

If the axial ratio of an electromagnetic wave is zero dB. Then, the wave is:

1. circularly polarized
2. elliptically polarized
3. horizontally polarized
4. vertically polarized

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

76 88026 If a rectangular waveguide is filled with a dielectric material of relative dielectric constant 4, then the ratio of its cut-off frequency in TE₂ mode with that of for the case of same sized air-filled waveguide, will be:

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

If a rectangular waveguide is filled with a dielectric material of relative dielectric constant 4, then the ratio of its cut-off frequency in TE₂ mode with that of for the case of same sized air-filled waveguide, will be:

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

4

Objective Question

77 88027

If the effective area of an antenna becomes $\frac{2A}{3}$ from its initial value of 'A', while keeping its operating frequency same. Then, the antenna gain becomes $\left(\frac{2x+4}{15}\right)$ times of its initial value. The value of x will be:

1. 1.5
2. 9
3. 6
4. 3

If the effective area of an antenna becomes $\frac{2A}{3}$ from its initial value of 'A', while keeping its operating frequency same. Then, the antenna gain becomes $\left(\frac{2x+4}{15}\right)$ times of its initial value. The value of x will be:

1. 1.5
2. 9
3. 6
4. 3

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

78 88028

The x and y components of an Electromagnetic wave travelling in +z direction in free space are :

$$E_x = 5 \sin(\omega t - \beta z) \frac{V}{m}$$

$$E_y = 15 \cos(\omega t - \beta z) \frac{V}{m}$$

If the average power per unit area conveyed by the wave is $S \frac{W}{m^2}$, and intrinsic impedance of the free space is 377Ω , then

1. wave is circularly polarized, and S = 0.33
2. wave is elliptically polarized, and S=0.33
3. wave is circularly polarized, and S = 125
4. wave is elliptically polarized, and S = 125

The x and y components of an Electromagnetic wave travelling in +z direction in free space are :

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$$E_y = 15 \cos(\omega t - \beta z) \frac{V}{m}$$

If the average power per unit area conveyed by the wave is $S \frac{W}{m^2}$, and intrinsic impedance of the free space is 377Ω , then

1. wave is circularly polarized, and $S = 0.33$
2. wave is elliptically polarized, and $S = 0.33$
3. wave is circularly polarized, and $S = 125$
4. wave is elliptically polarized, and $S = 125$

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

79 88029 If numerical aperture and fractional refractive index of an optical fibre are 0.22 and 0.012, respectively. The refractive index of core (μ_1) and cladding (μ_2) will be

1. $\mu_1 = 9.16, \mu_2 = 9.05$
2. $\mu_1 = 1.42, \mu_2 = 1.40$
3. $\mu_1 = 1.40, \mu_2 = 1.42$
4. $\mu_1 = 9.16, \mu_2 = 9.14$

If numerical aperture and fractional refractive index of an optical fibre are 0.22 and 0.012, respectively. The refractive index of core (μ_1) and cladding (μ_2) will be

1. $\mu_1 = 9.16, \mu_2 = 9.05$
2. $\mu_1 = 1.42, \mu_2 = 1.40$
3. $\mu_1 = 1.40, \mu_2 = 1.42$
4. $\mu_1 = 9.16, \mu_2 = 9.14$

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

80	88030	Consider an AM (amplitude modulated) signal $s(t) = 20 \left[1 + 0.9 \cos 2\pi \times 10^4 t \right] \cos 2\pi \times 10^6 t$ The power efficiency (η) in the AM signal is 1. 28.82% 2. 30% 3. 25% 4. 35% Consider an AM (amplitude modulated) signal $s(t) = 20 \left[1 + 0.9 \cos 2\pi \times 10^4 t \right] \cos 2\pi \times 10^6 t$ The power efficiency (η) in the AM signal is 1. 28.82% 2. 30% 3. 25% 4. 35% A1 : 1 A2 : 2 A3 : 3 A4 : 4
----	-------	---

Objective Question

81	88031	Consider an FM signal $s(t) = 10 \sin \left(4\pi \times 10^6 t + 9 \cos \left(2\pi \times 10^3 t \right) \right)$ the frequency deviation and bandwidth of FM wave are 1. 9 kHz, 20 kHz 2. 10 kHz, 30 kHz 3. 9 kHz, 30 kHz 4. 10 kHz, 20 kHz Consider an FM signal $s(t) = 10 \sin \left(4\pi \times 10^6 t + 9 \cos \left(2\pi \times 10^3 t \right) \right)$ the frequency deviation and bandwidth of FM wave are 1. 9 kHz, 20 kHz 2. 10 kHz, 30 kHz 3. 9 kHz, 30 kHz 4. 10 kHz, 20 kHz A1 : 1
----	-------	---

1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

82 88032

A signal $m(t)$ of bandwidth $B=4$ kHz is transmitted using a binary companded PCM with $\mu = 100$ and $L = 64$. The total number of bits for encoding and output SNR are respectively

1. 6, 27.49
2. 32, 39.49
3. 6, 39.49
4. 32, 27.49

A signal $m(t)$ of bandwidth $B=4$ kHz is transmitted using a binary companded PCM with $\mu = 100$ and $L = 64$. The total number of bits for encoding and output SNR are respectively

1. 6, 27.49
2. 32, 39.49
3. 6, 39.49
4. 32, 27.49

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

83 88033

The number of sign changes in the first column of Routh array reveals.

1. the number of roots of the characteristic polynomial in right half plane.
2. the number of open-loop zeros in right half plane.
3. the number of zeros of the system in right half plane.
4. the number of open loop poles in right half plane.

The number of sign changes in the first column of Routh array reveals.

1. the number of roots of the characteristic polynomial in right half plane.
2. the number of open-loop zeros in right half plane.
3. the number of zeros of the system in right half plane.
4. the number of open loop poles in right half plane.

A1 1
:
1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

84 88034

Three blocks having transfer functions $G_1(s) = \frac{1}{s+2}$, $G_2(s) = \frac{1}{s+5}$ and $G_3(s) = \frac{s+1}{s+3}$ are cascaded. The equivalent transfer function is:

1. $\frac{s+1}{(s+2)(s+3)(s+5)}$
2. $-\frac{s+1}{(s+2)(s+3)(s+5)}$
3. $-\frac{(s^3+10s^2+30s+31)}{(s+2)(s+3)(s+5)}$
4. $\frac{s^3+10s^2+30s+31}{(s+2)(s+3)(s+5)}$

Three blocks having transfer functions $G_1(s) = \frac{1}{s+2}$, $G_2(s) = \frac{1}{s+5}$ and $G_3(s) = \frac{s+1}{s+3}$ are cascaded. The equivalent transfer function is:

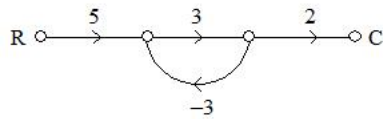
1. $\frac{s+1}{(s+2)(s+3)(s+5)}$
2. $-\frac{s+1}{(s+2)(s+3)(s+5)}$
3. $-\frac{(s^3+10s^2+30s+31)}{(s+2)(s+3)(s+5)}$
4. $\frac{s^3+10s^2+30s+31}{(s+2)(s+3)(s+5)}$

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

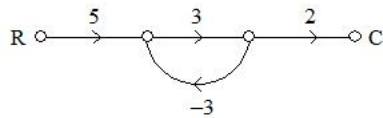
85 88035

The transfer function of the given signal flow graph is



1. Five
2. Three
3. Thirty
4. Four

The transfer function of the given signal flow graph is



1. Five
2. Three
3. Thirty
4. Four

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

86 88036

If the gain margin of a certain feedback system is 20 dB, the Nyquist plot will cross the negative real axis at the point S equal to

1. 0.1
2. 0.2
3. -0.1
4. -0.2

If the gain margin of a certain feedback system is 20 dB, the Nyquist plot will cross the negative real axis at the point S equal to

1. 0.1
2. 0.2
3. -0.1
4. -0.2

A1
:

1

A2
:

2

A3
:

3

A4 4
:
4

Objective Question

87 88037 A strain gauge having a resistance $100\ \Omega$ and gauge factor of 2 is connected in series with a ballast resistance of $100\ \Omega$ across 12 V supply. When no stress is applied, the voltage across the gauge is

1. 6 V
2. 0.5V
3. 12V
4. 24V

A strain gauge having a resistance $100\ \Omega$ and gauge factor of 2 is connected in series with a ballast resistance of $100\ \Omega$ across 12 V supply. When no stress is applied, the voltage across the gauge is

1. 6 V
2. 0.5V
3. 12V
4. 24V

A1 1
:
1

A2 2
:
2

A3 3
:
3

A4 4
:
4

Objective Question

88 88038 A plane wave is propagating in a uniform medium with propagation constant $(0.6\pi + j0.4\pi)$ its wavelength is

1. 10 m
2. 20 m
3. 30 m
4. 5 m

A plane wave is propagating in a uniform medium with propagation constant $(0.6\pi + j0.4\pi)$ its wavelength is

1. 10 m
2. 20 m
3. 30 m
4. 5 m

A1 1
:
1

A2 2
:
2

A3 3
:
3

A4 4
:
4

4

Objective Question

89 88039 VSWR of a circuit is found as 3. The value of S_{11} in dB will be {Given, $\log_{10}(5) = 0.6989$ }

1. -3
2. -6
3. 6
4. 3

VSWR of a circuit is found as 3. The value of S_{11} in dB will be {Given, $\log_{10}(5) = 0.6989$ }

1. -3
2. -6
3. 6
4. 3

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

90 88040 The unit of $\left(\sigma E + \frac{\partial D}{\partial t}\right)$ is

1. Ampere / meter²
2. Ampere / meter
3. Ampere - meter²
4. Ampere - meter

The unit of $\left(\sigma E + \frac{\partial D}{\partial t}\right)$ is

1. Ampere / meter²
2. Ampere / meter
3. Ampere - meter²
4. Ampere - meter

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:
4

Objective Question

91 88041 For MOSFET, consider the following statements

- A. In triode region, FET works as voltage variable resistor
- B. For p-channel MOSFET, if $V_{SG} > |V_{Tp}|$, then transistor will be in off mode
- C. Amplification factor is inversly proportional to the value of V_{GS}/V_p .
- D. In saturation region, FET is used as amplifier.
- E. For depletion MOSFET, channel is diffused and current flows even if V_{GS} is zero

Choose the correct answer from the options given below :

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

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- A. In triode region, FET works as voltage variable resistor
- B. For p-channel MOSFET, if $V_{SG} > |V_{Tp}|$, then transistor will be in off mode
- C. Amplification factor is inversly proportional to the value of V_{GS}/V_p .
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- E. For depletion MOSFET, channel is diffused and current flows even if V_{GS} is zero

Choose the correct answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

92 88042 An electromagnetic wave is propagating in free space. Identify the correct situation out of the following

- 1. $\oint \vec{E} \cdot d\vec{l} = 0$
- 2. $\vec{\nabla} \times \vec{E} = 0$
- 3. $\oint \vec{E} \cdot d\vec{l} = V_{emf}$
- 4. $\vec{\nabla} \cdot \vec{J} = \rho_v$

An electromagnetic wave is propagating in free space. Identify the correct situation out of the following

1. $\oint \vec{E} \cdot d\vec{l} = 0$
2. $\vec{\nabla} \times \vec{E} = 0$
3. $\oint \vec{E} \cdot d\vec{l} = V_{emf}$
4. $\vec{\nabla} \cdot \vec{J} = \rho_v$

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

93 88043 The desired properties of metallization for integrated circuits are

- A. low resistivity.
- B. low conductivity.
- C. easy to etch for pattern generation.
- D. tough to etch for pattern generation.
- E. no contamination with device or wafers.

Choose the correct answer from the options given below :

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

The desired properties of metallization for integrated circuits are

- A. low resistivity.
- B. low conductivity.
- C. easy to etch for pattern generation.
- D. tough to etch for pattern generation.
- E. no contamination with device or wafers.

Choose the correct answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

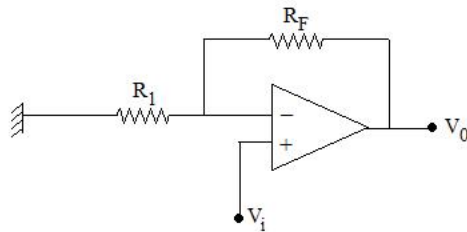
A4 4
:
4

Objective Question

94 88044

Given below are two statements :

Statement I : Voltage gain $\frac{V_0}{V_i} = 1 + \frac{R_F}{R_1}$ is obtained for the given circuit only when the open loop gain of OPAMP will be ∞ .



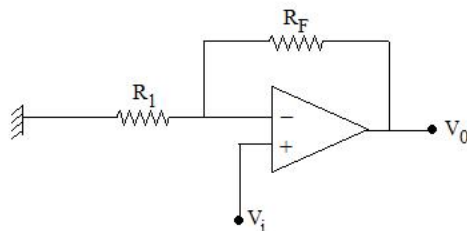
Statement II : Gain of the OPAMP decreases with increase in frequency due to capacitance within the OPAMP.

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

1. Both Statement I and Statement II are correct.
2. Both Statement I and Statement II are incorrect.
3. Statement I is correct but Statement II is incorrect.
4. Statement I is incorrect but Statement II is correct.

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Statement I : Voltage gain $\frac{V_0}{V_i} = 1 + \frac{R_F}{R_1}$ is obtained for the given circuit only when the open loop gain of OPAMP will be ∞ .



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A1 1
:

1

A2 2
:

2

A3 3
:

3

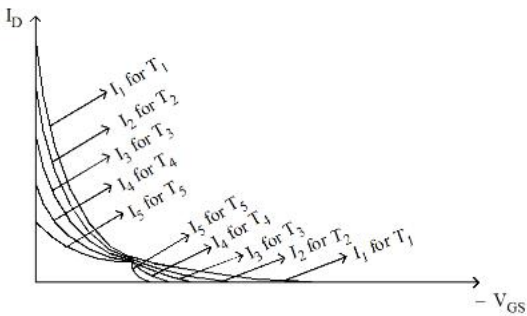
A4 4
:

4

Objective Question

95 88045

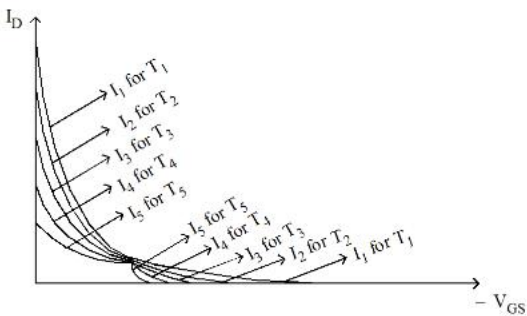
Transfer characteristics for n-channel FET as a function of temperature T is shown in the figure



Choose the correct answer from the options given below :

1. $T_1 > T_2 > T_3 > T_4 > T_5$
2. $T_1 < T_2 < T_3 < T_4 < T_5$
3. $T_1 = T_2 = T_3 = T_4 = T_5 = 0\text{ K}$
4. $T_1 = T_2 = T_3 = T_4 = T_5 = \text{constant (Near room temperature)}$

Transfer characteristics for n-channel FET as a function of temperature T is shown in the figure



Choose the correct answer from the options given below :

1. $T_1 > T_2 > T_3 > T_4 > T_5$
2. $T_1 < T_2 < T_3 < T_4 < T_5$
3. $T_1 = T_2 = T_3 = T_4 = T_5 = 0\text{ K}$
4. $T_1 = T_2 = T_3 = T_4 = T_5 = \text{constant (Near room temperature)}$

- A1
:
1
- A2
:
2
- A3
:
3
- A4
:
4

Objective Question

96 88046

The poles of an analog system are related to the corresponding poles of the digital system by the selection $z = e^{ST}$.

- A. Analog system poles in the left half of S-plane map on to digital system poles inside the circle $|z| = 1$.
- B. Analog system zeros in the left half of S-plane map on to digital system zeros inside the circle $|z| = 1$.
- C. Analog system poles on the imaginary axis of s-plane map onto digital system zeros that on the unit circle $|z| = 1$.
- D. Analog system zeros on the imaginary axis of s-plane map on to digital system zeros on the unit circle $|z| = 1$.
- E. Analog system zeros on the real axis of s-plane map on to digital system zero on the circle $|z| = 2$.

Choose the correct answer from the options given below :

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

The poles of an analog system are related to the corresponding poles of the digital system by the selection $z = e^{ST}$.

- A. Analog system poles in the left half of S-plane map on to digital system poles inside the circle $|z| = 1$.
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- D. Analog system zeros on the imaginary axis of s-plane map on to digital system zeros on the unit circle $|z| = 1$.
- E. Analog system zeros on the real axis of s-plane map on to digital system zero on the circle $|z| = 2$.

Choose the correct answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

97 88047 Which of the following sentences are correct ?

- A. Gain of active filter can be more than 1.
- B. Gain of passive filter can be more than 1.
- C. Butterworth filter changes the roll off of output as its order changes.
- D. Phase of output at cutoff frequency in butterworth filter does not change with its order.
- E. Feedback is not needed in any filter circuit

Choose the correct answer from the options given below :

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

Which of the following sentences are correct ?

- A. Gain of active filter can be more than 1.
- B. Gain of passive filter can be more than 1.
- C. Butterworth filter changes the roll off of output as its order changes.
- D. Phase of output at cutoff frequency in butterworth filter does not change with its order.
- E. Feedback is not needed in any filter circuit

Choose the correct answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

98 88048

The differences between the oscillators and amplifiers are

- A. Oscillators do not have any input voltage
- B. Amplifiers do not have any input voltage
- C. Oscillators do not have positive feedback
- D. Amplifiers do not have positive feedback
- E. Both of them are stable circuit

Choose the correct answer from the options given below :

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

The differences between the oscillators and amplifiers are

- A. Oscillators do not have any input voltage
- B. Amplifiers do not have any input voltage
- C. Oscillators do not have positive feedback
- D. Amplifiers do not have positive feedback
- E. Both of them are stable circuit

Choose the correct answer from the options given below :

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

A1 1
:

1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

99 88049 The toggle condition appears in J-K flip-flop when

- A. $J=1, K=1$
- B. $J=0, K=0$
- C. $J=0, K=1$
- D. $J=1, K=0$
- E. $J=0, K=1$ and $J=1, K=0$

Choose the correct answer from the options given below :

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

The toggle condition appears in J-K flip-flop when

- A. $J=1, K=1$
- B. $J=0, K=0$
- C. $J=0, K=1$
- D. $J=1, K=0$
- E. $J=0, K=1$ and $J=1, K=0$

Choose the correct answer from the options given below :

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

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

100 88050

A binary ripple counter is used to count up to the following. Arrange the number of flip-flops required in ascending order to count the following.

- A. 65535_{10}
- B. 63_{10}
- C. 4095_{10}
- D. 255_{10}
- E. 127_{10}

Choose the correct answer from the options given below :

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

A binary ripple counter is used to count up to the following. Arrange the number of flip-flops required in ascending order to count the following.

- A. 65535_{10}
- B. 63_{10}
- C. 4095_{10}
- D. 255_{10}
- E. 127_{10}

Choose the correct answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

101 88051

Advantage of segmented memory in 8086 is

- A. Allows the memory capacity to be 1M byte, although the actual address is of 16 bit size.
- B. Allows the placing of code and data portions of the same program in different parts of memory.
- C. Allows the memory capacity to be 2M byte, although the actual address is of 16 bit size.
- D. Allows the placing of code and data portion of the same program in same parts of memory.
- E. Allows the memory capacity to be 1M byte, although the actual address is of 20 bit size

Choose the correct answer from the options given below :

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

Advantage of segmented memory in 8086 is

- A. Allows the memory capacity to be 1M byte, although the actual address is of 16 bit size.
- B. Allows the placing of code and data portions of the same program in different parts of memory.
- C. Allows the memory capacity to be 2M byte, although the actual address is of 16 bit size.
- D. Allows the placing of code and data portion of the same program in same parts of memory.
- E. Allows the memory capacity to be 1M byte, although the actual address is of 20 bit size

Choose the correct answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

102 88052 Which of the following statements are correct for a microcontroller ?

- A. A microcontroller has on-chip I/O ports
- B. A microcontroller has a fixed amount of RAM on the chip
- C. The flag register in the 8051 is called program standard word
- D. Auxiliary carry flag is set when there is a carry from D3 to D4 during an ADD or SUB operation
- E. Overflow flag is only used to detect errors in unsigned arithmetic operations.

Choose the correct answer from the options given below :

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

Which of the following statements are correct for a microcontroller ?

- A. A microcontroller has on-chip I/O ports
- B. A microcontroller has a fixed amount of RAM on the chip
- C. The flag register in the 8051 is called program standard word
- D. Auxiliary carry flag is set when there is a carry from D3 to D4 during an ADD or SUB operation
- E. Overflow flag is only used to detect errors in unsigned arithmetic operations.

Choose the correct answer from the options given below :

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

A1 1
:

1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

103 88053

For a half wave dipole antenna

- A. The average value of current is 0.64 (unit).
- B. The ratio of electric field intensity just near to the antenna surface and the potential developed on the antenna surface after reception of signal, is equal to the effective height
- C. Effective aperture will remain same if antenna gain will be improved by some technique.
- D. The effective height will be $0.64 l$, where l is the physical length of antenna.
- E. If length of antenna becomes $l = 0.1\lambda$, then its current distribution become triangular.

Choose the correct answer from the options given below :

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

For a half wave dipole antenna

- A. The average value of current is 0.64 (unit).
- B. The ratio of electric field intensity just near to the antenna surface and the potential developed on the antenna surface after reception of signal, is equal to the effective height
- C. Effective aperture will remain same if antenna gain will be improved by some technique.
- D. The effective height will be $0.64 l$, where l is the physical length of antenna.
- E. If length of antenna becomes $l = 0.1\lambda$, then its current distribution become triangular.

Choose the correct answer from the options given below :

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

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

104 88054

Consider the following statements

- A. Reflection coefficient is change in the magnitude of reflected wave with constant phase with respect to incident wave.
- B. Transmission coefficient is change in the magnitude and phase of transmitted wave with respect to incident wave
- C. On smith chart, $\frac{\lambda}{2}$ distance is equivalent to 2π .
- D. For distortion less line, $RL = GC$
- E. Directivity of an antenna can be less than 1 (unity).

Choose the most appropriate answer from the options given below :

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

Consider the following statements

- A. Reflection coefficient is change in the magnitude of reflected wave with constant phase with respect to incident wave.
- B. Transmission coefficient is change in the magnitude and phase of transmitted wave with respect to incident wave
- C. On smith chart, $\frac{\lambda}{2}$ distance is equivalent to 2π .
- D. For distortion less line, $RL = GC$
- E. Directivity of an antenna can be less than 1 (unity).

Choose the most appropriate answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

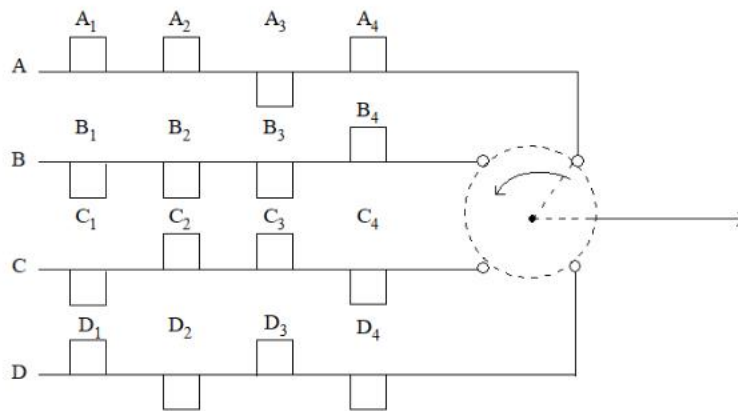
A4 4
:

4

Objective Question

105 88055

Time division multiplexing of digital signal (Where A_i, B_i, C_i, D_i represents respective bits of different channels, $i = 1$ to 4) given in the figure:

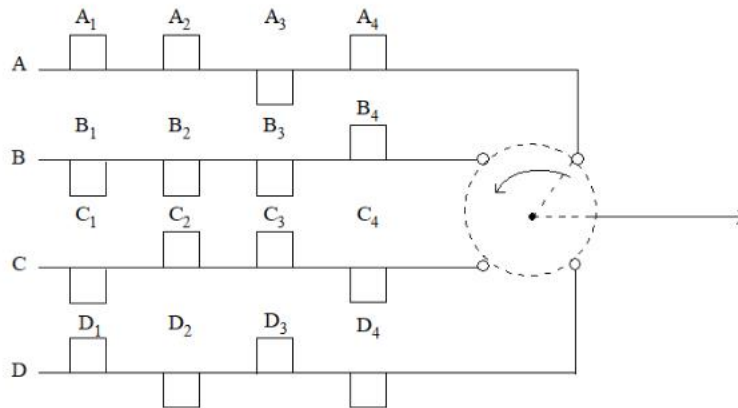


- A. $A_1B_1C_1D_1$ (All channels have same bit rate)
- B. $A_1A_2B_1B_2C_1D_1C_2D_2$ (All channels have same bit rate)
- C. $A_1B_1A_2C_1A_3D_1$ (channel A bit rate is 3 times more than that of channels B, C, D)
- D. $A_1B_1C_1A_2D_1$ (channel A bit rate is 3-times more than that of channels B, C, D)
- E. $A_1B_1A_2C_1A_3D_1$ (All channel have same bit rate)

Choose the correct answer from the options given below :

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

Time division multiplexing of digital signal (Where A_i, B_i, C_i, D_i represents respective bits of different channels, $i = 1$ to 4) given in the figure:



- A. $A_1B_1C_1D_1$ (All channels have same bit rate)
- B. $A_1A_2B_1B_2C_1D_1C_2D_2$ (All channels have same bit rate)
- C. $A_1B_1A_2C_1A_3D_1$ (channel A bit rate is 3 times more than that of channels B, C, D)
- D. $A_1B_1C_1A_2D_1$ (channel A bit rate is 3-times more than that of channels B, C, D)
- E. $A_1B_1A_2C_1A_3D_1$ (All channel have same bit rate)

Choose the correct answer from the options given below :

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

A1 1
:

1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

106 88056

Which of the following statements are correct for optical fiber?

- A. Optical fiber operates in the 800 to 1600 nm wave length band
- B. 3rd generation links operated at 1500 nm provides lowest attenuation.
- C. Light is propagating in optical fiber by total internal reflection
- D. The core with refractive index (n_1) is surrounded by a solid dielectric cladding of refractive index $n_2 > n_1$.
- E. Light is mainly confined within cladding of optical fiber.

Choose the most appropriate answer from the options given below :

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

Which of the following statements are correct for optical fiber?

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- C. Light is propagating in optical fiber by total internal reflection
- D. The core with refractive index (n_1) is surrounded by a solid dielectric cladding of refractive index $n_2 > n_1$.
- E. Light is mainly confined within cladding of optical fiber.

Choose the most appropriate answer from the options given below :

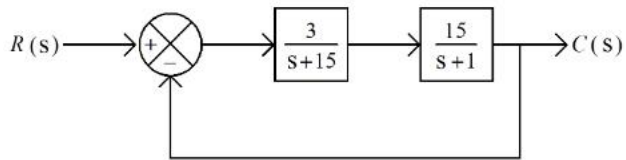
- 1. A, B, D only
- 2. A, B, C only
- 3. B, C, E only
- 4. C, D, E only

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

107 88057

The block diagram of a control system is given below

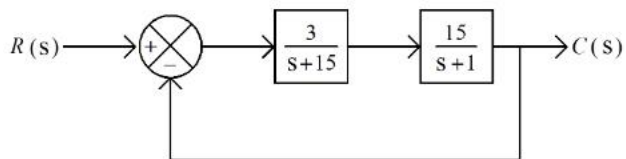


- A. The root of characteristics equation is 6
- B. The root of characteristics equation is -6
- C. The root of characteristics equation is 5
- D. The root of characteristics equation is -10
- E. The root of characteristics equation is -5

Choose the most appropriate answer from the options given below :

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

The block diagram of a control system is given below



- A. The root of characteristics equation is 6
- B. The root of characteristics equation is -6
- C. The root of characteristics equation is 5
- D. The root of characteristics equation is -10
- E. The root of characteristics equation is -5

Choose the most appropriate answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

108 88058

Which of the following statement are correct for PI controller?

- A. PI controller increases the system type by 1, therefore it improves the steady state error by one order.
- B. PI controller reduce the rise time
- C. PI controller increase the bandwidth.
- D. PI controller is a high pass filter.
- E. PI controller adds a pole at $S=0$ to the forward path transfer function, hence type of system increased by 1.

Choose the most appropriate answer from the options given below :

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

Which of the following statement are correct for PI controller?

- A. PI controller increases the system type by 1, therefore it improves the steady state error by one order.
- B. PI controller reduce the rise time
- C. PI controller increase the bandwidth.
- D. PI controller is a high pass filter.
- E. PI controller adds a pole at $S=0$ to the forward path transfer function, hence type of system increased by 1.

Choose the most appropriate answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

109 88059

Which of the following statements are correct

- A. Megnetostrictive transducer operation depends on the change of permeability of magnetic material is when strained.
- B. Potentiometer is an active transducer.
- C. Turbine flow meters are volumetric flow meters
- D. Any metal can be thermistor.
- E. Thermocouples are used in high accuracy measurements.

Choose the most appropriate answer from the options given below :

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

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- B. Potentiometer is an active transducer.
- C. Turbine flow meters are volumetric flow meters
- D. Any metal can be thermistor.
- E. Thermocouples are used in high accuracy measurements.

Choose the most appropriate answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

110 88060

Which of the following statements are correct ?

- A. Hygrometer measures the value of humidity directly
- B. Hygrometer measures the value of humidity indirectly
- C. Wien's bridge is used to measure the frequency of the signal
- D. Wien's bridge is used to measure the amplitude of the signal
- E. Bimetallic strip is a thermal expansion detector.

Choose the most appropriate answer from the options given below :

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

Which of the following statements are correct ?

- A. Hygrometer measures the value of humidity directly
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- C. Wien's bridge is used to measure the frequency of the signal
- D. Wien's bridge is used to measure the amplitude of the signal
- E. Bimetallic strip is a thermal expansion detector.

Choose the most appropriate answer from the options given below :

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

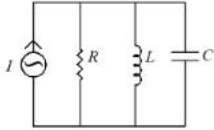
A1 1
:

1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

111 88061 In a parallel RLC circuit shown in figure at resonance

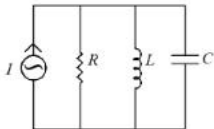


- A. Current I flows through the resistor
- B. Total current flowing through LC combination is zero
- C. Current flows in the inductor is zero
- D. total current flowing through LC combination is 2 A
- E. Current flows in the capacitor is zero

Choose the most appropriate answer from the options given below :

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

In a parallel RLC circuit shown in figure at resonance



- A. Current I flows through the resistor
- B. Total current flowing through LC combination is zero
- C. Current flows in the inductor is zero
- D. total current flowing through LC combination is 2 A
- E. Current flows in the capacitor is zero

Choose the most appropriate answer from the options given below :

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

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

- 112 88062 Routh-Hurwitz criterion applicable for
- A. absolute stability
 - B. the number of roots lying on the right half of the S-plane
 - C. the gain margin and phase margin
 - D. the phase crossover frequency
 - E. the gain crossover frequency

Choose the most appropriate answer from the options given below :

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

Routh-Hurwitz criterion applicable for

- A. absolute stability
- B. the number of roots lying on the right half of the S-plane
- C. the gain margin and phase margin
- D. the phase crossover frequency
- E. the gain crossover frequency

Choose the most appropriate answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

- 113 88063 Consider the following statements for photo diode (PD) and Avalanche Photo Diode (APD)
- A. The response time of APD is larger than PD
 - B. Photo current is a diffusion current for PD and APD
 - C. APD can handle greater amount of power in comparison to PD
 - D. Photo current is a minority carrier current for PD and APD
 - E. compare to ordinary pn diode, power handling capacity of PD is higher.

Choose the correct answer from the options given below :

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

Consider the following statements for photo diode (PD) and Avalanche Photo Diode (APD)

- A. The response time of APD is larger than PD
- B. Photo current is a diffusion current for PD and APD
- C. APD can handle greater amount of power in comparison to PD
- D. Photo current is a minority carrier current for PD and APD
- E. compare to ordinary pn diode, power handling capacity of PD is higher.

Choose the correct answer from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

114 88064 The application of SiO₂ in VLSI technology is mainly

- A. to use it as a 'Mask'.
- B. to provide electrical isolation.
- C. to provide surface activation.
- D. to provide electrical conduction.
- E. as a etching material.

Choose the most appropriate answer from the options given below :

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

The application of SiO₂ in VLSI technology is mainly

- A. to use it as a 'Mask'.
- B. to provide electrical isolation.
- C. to provide surface activation.
- D. to provide electrical conduction.
- E. as a etching material.

Choose the most appropriate answer from the options given below :

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

A1 1
:

1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

115 88065

As per the Maxwell's equations and their applications {Let all symbols are used with their usual meaning}

- A. The tangential component of electric flux density, at a conducting surface, is a non zero quantity.
- B. Electric field intensity can be found as $E = \nabla V$.
- C. For a time varying field the value of $\oint \vec{E} \cdot d\vec{l}$ will be non-zero
- D. The value of current flowing in the wire will be equal to $\oint \vec{H} \cdot d\vec{l}$
- E. The magneto static field is conservative in nature.

Choose the correct answer from the options given below :

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

As per the Maxwell's equations and their applications {Let all symbols are used with their usual meaning}

- A. The tangential component of electric flux density, at a conducting surface, is a non zero quantity.
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- D. The value of current flowing in the wire will be equal to $\oint \vec{H} \cdot d\vec{l}$
- E. The magneto static field is conservative in nature.

Choose the correct answer from the options given below :

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

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

116 88066

Match List I with List II

LIST I (Signal - space diagram)		LIST II (Modulation technique)	
A.		I.	M-ary QAM, M = 16
B.		II.	Coherent QPSK
C.		III.	Coherent binary FSK
D.		IV.	Coherent binary PSK

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I (Signal - space diagram)		LIST II (Modulation technique)	
A.		I.	M-ary QAM, M = 16
B.		II.	Coherent QPSK
C.		III.	Coherent binary FSK
D.		IV.	Coherent binary PSK

Choose the correct answer from the options given below:

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

A1 1
:

1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

117 88067

Match List I with List II

LIST I (Transfer function)		LIST II (Controller)	
A.	$\frac{K_1S + K_2 + K_3S^2}{S}$	I.	P-controller
B.	K_1	II.	PI-controller
C.	$\frac{K_1S + K_2}{S}$	III.	PD-controller
D.	$K_1 + K_2S$	IV.	PID - controller

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I (Transfer function)		LIST II (Controller)	
A.	$\frac{K_1S + K_2 + K_3S^2}{S}$	I.	P-controller
B.	K_1	II.	PI-controller
C.	$\frac{K_1S + K_2}{S}$	III.	PD-controller
D.	$K_1 + K_2S$	IV.	PID - controller

Choose the correct answer from the options given below:

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

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

118 88068

Match List I with List II

LIST I (Diagram)		LIST II (Sequential Circuit)	
A.		I.	Edge triggered S-R flip flop
B.		II.	D Flip flop to SR flip flop
C.		III.	Gated Latch clocked flip flop
D.		IV.	Gated D Latch

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I (Diagram)		LIST II (Sequential Circuit)	
A.		I.	Edge triggered S-R flip flop
B.		II.	D Flip flop to SR flip flop
C.		III.	Gated Latch clocked flip flop
D.		IV.	Gated D Latch

Choose the correct answer from the options given below:

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

A1 1

:

1

A2 2

:

2
A3
:
3
A4
:
4

Objective Question

119 88069

Match List I with List II

LIST I		LIST II	
A.	Stroboscope	I.	Changes its electrical resistance with temperature
B.	Bolometer	II.	Generate thermoelectric emf
C.	Thermocouple	III.	Changes pressure to displacement
D.	Diaphragm	IV.	For measurement of rotary motion

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I		LIST II	
A.	Stroboscope	I.	Changes its electrical resistance with temperature
B.	Bolometer	II.	Generate thermoelectric emf
C.	Thermocouple	III.	Changes pressure to displacement
D.	Diaphragm	IV.	For measurement of rotary motion

Choose the correct answer from the options given below:

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

A1
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1
A2
:
2
A3
:
3
A4
:
4

Objective Question

120 88070

Match List I with List II

LIST I		LIST II	
A.	Butterworth filter of order '2'	I.	Impedance matching
B.	Buffer	II.	CMRR = ∞ (infinity)
C.	Schmitt Trigger	III.	Positive feedback
D.	Ideal OPAMP	IV.	40 dB/decade roll off

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I		LIST II	
A.	Butterworth filter of order '2'	I.	Impedance matching
B.	Buffer	II.	CMRR = ∞ (infinity)
C.	Schmitt Trigger	III.	Positive feedback
D.	Ideal OPAMP	IV.	40 dB/decade roll off

Choose the correct answer from the options given below:

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

A1
:
1

A2
:
2

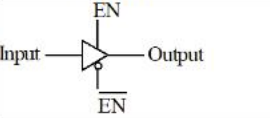
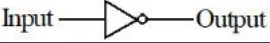
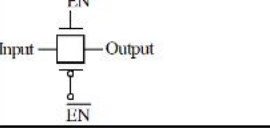
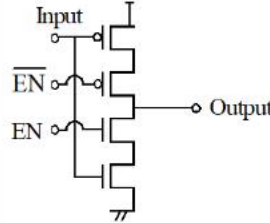
A3
:
3

A4
:
4

Objective Question

121 88071

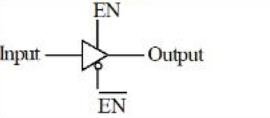
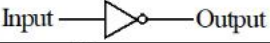
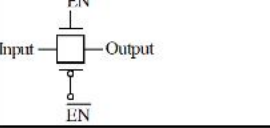
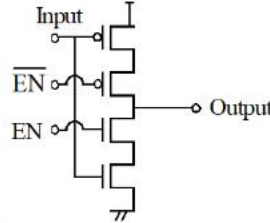
Match List I with List II

LIST I		LIST II	
A.	Transmission gate	I.	
B.	Tristate Buffer	II.	
C.	Inverter	III.	
D.	Tristate inverter	IV.	

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I		LIST II	
A.	Transmission gate	I.	
B.	Tristate Buffer	II.	
C.	Inverter	III.	
D.	Tristate inverter	IV.	

Choose the correct answer from the options given below:

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

A1 1

:

1

A2 2

:

2

A3 3
:
3
A4 4
:
4

Objective Question

122 88072

Match List I with List II

LIST I		LIST II	
A.	LED	I.	Photo resistive effect
B.	LCD	II.	Photo conductive effect
C.	LDR	III.	dynamic scattering of light
D.	Photo Diode	IV.	electro - luminescence

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I		LIST II	
A.	LED	I.	Photo resistive effect
B.	LCD	II.	Photo conductive effect
C.	LDR	III.	dynamic scattering of light
D.	Photo Diode	IV.	electro - luminescence

Choose the correct answer from the options given below:

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

A1 1
:
1

A2 2
:
2

A3 3
:
3

A4 4
:
4

Objective Question

123 88073

Match List I with List II

LIST I (characteristic of resonant RLC circuit)		LIST II (Series circuit)	
A.	Resonant frequency	I.	$\frac{1}{\omega_0 RC}$
B.	Quality factor	II.	$\frac{1}{R} \sqrt{\frac{L}{C}}$
C.	Half-power frequencies	III.	$\omega_0 \sqrt{1 + \left(\frac{1}{2Q}\right)^2} \pm \frac{\omega_0}{2Q}$
D.	Bandwidth	IV.	$\frac{1}{\sqrt{LC}}$

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I (characteristic of resonant RLC circuit)		LIST II (Series circuit)	
A.	Resonant frequency	I.	$\frac{1}{\omega_0 RC}$
B.	Quality factor	II.	$\frac{1}{R} \sqrt{\frac{L}{C}}$
C.	Half-power frequencies	III.	$\omega_0 \sqrt{1 + \left(\frac{1}{2Q}\right)^2} \pm \frac{\omega_0}{2Q}$
D.	Bandwidth	IV.	$\frac{1}{\sqrt{LC}}$

Choose the correct answer from the options given below:

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

A1 1

:

1

A2 2

:

2

A3 3

:

3

A4 4

:

4

Objective Question

124 88074

Match List I with List II

LIST I (instruction of 8051 microcontroller)	LIST II (Addressing mode)
A. MOV A, # 32 H	I. Register addressing mode
B. MOV R 6, A	II. Register Indirect addressing mode
C. MOV R4, 7 FH	III. Immediate Addressing mode
D. MOV A, @ RO	IV. Direct Addressing mode

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I (instruction of 8051 microcontroller)	LIST II (Addressing mode)
A. MOV A, # 32 H	I. Register addressing mode
B. MOV R 6, A	II. Register Indirect addressing mode
C. MOV R4, 7 FH	III. Immediate Addressing mode
D. MOV A, @ RO	IV. Direct Addressing mode

Choose the correct answer from the options given below:

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

A1

:

1

A2

:

2

A3

:

3

A4

:

4

Objective Question

125 88075 Match List I with List II for Smith chart

LIST I (Parameter)	LIST II (Centre)
A. Constant resistance circle	I. (0, 1)
B. Constant reactance circle	II. $\left(\frac{r}{1+r}, 0\right)$
C. All the constant resistance and reactance circle pass through	III. $\left(1, \frac{1}{X}\right)$
D. A point of a practice case	IV. (1, 0)

Choose the correct answer from the options given below:

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

Match List I with List II for Smith chart

LIST I (Parameter)		LIST II (Centre)
A.	Constant resistance circle	I. $(0, 1)$
B.	Constant reactance circle	II. $\left(\frac{r}{1+r}, 0\right)$
C.	All the constant resistance and reactance circle pass through	III. $\left(1, \frac{1}{X}\right)$
D.	A point of a practice case	IV. $(1, 0)$

Choose the correct answer from the options given below:

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

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

126 88076

Arrange the following amplifiers as per their efficiency from highest to lowest

- A. class B amplifier
- B. class C amplifier
- C. class A amplifier
- D. class AB amplifier
- E. class D amplifier

Choose the correct answer from the options given below :

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

Arrange the following amplifiers as per their efficiency from highest to lowest

- A. class B amplifier
- B. class C amplifier
- C. class A amplifier
- D. class AB amplifier
- E. class D amplifier

Choose the correct answer from the options given below :

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

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

127 88077

consider a unity feedback control system for an open loop transfer function $G(s) = \frac{5}{s(s+1)}$. Arrange the time constant in ascending order at different value of damping ratio of

- A. $\zeta=3$
- B. $\zeta=7$
- C. $\zeta=1$
- D. $\zeta=10$
- E. $\zeta=5$

Choose the correct answer from the options given below :

- 1. $A < D < C < B < E$
- 2. $B < D < A < C < E$
- 3. $C < D < A < C < E$
- 4. $D < B < E < A < C$

consider a unity feedback control system for an open loop transfer function $G(s) = \frac{5}{s(s+1)}$. Arrange the time constant in ascending order at different value of damping ratio of

- A. $\zeta=3$
- B. $\zeta=7$
- C. $\zeta=1$
- D. $\zeta=10$
- E. $\zeta=5$

Choose the correct answer from the options given below :

- 1. $A < D < C < B < E$
- 2. $B < D < A < C < E$
- 3. $C < D < A < C < E$
- 4. $D < B < E < A < C$

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

128 88078 The major processing steps of BJT IC fabrication in VLSI technology are

- A. Oxidation
- B. Diffusion
- C. Crystal growth
- D. Photolithography
- E. Epitaxial layer formation

Choose the correct ascending order from the options given below :

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

The major processing steps of BJT IC fabrication in VLSI technology are

- A. Oxidation
- B. Diffusion
- C. Crystal growth
- D. Photolithography
- E. Epitaxial layer formation

Choose the correct ascending order from the options given below :

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

A1 1
:

1

A2 2
:

2

A3 3
:

3

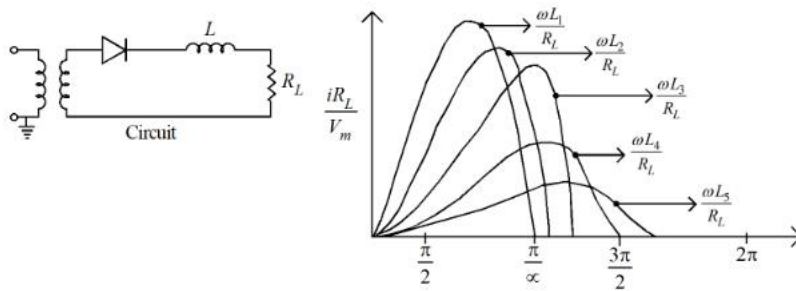
A4 4
:

4

Objective Question

129 88079

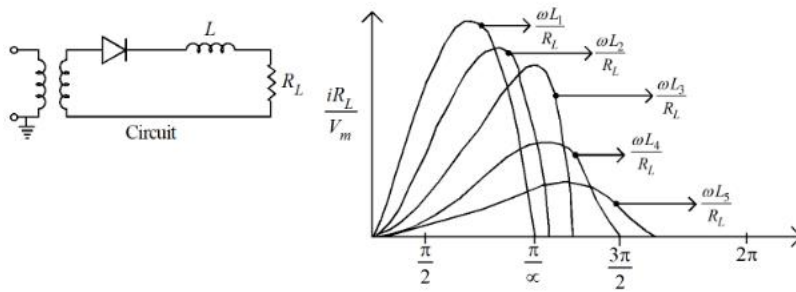
For the different values of 'L' while keeping 'R_L' as constant, following graph is obtained from the given circuit.



Choose the correct ascending order from the options given below for the different values of 'L' :

1. $L_1 > L_2 > L_3 > L_4 > L_5$
2. $L_1 < L_2 < L_3 < L_4 < L_5$
3. $L_1 = L_2 = L_3 = L_4 = L_5 = 0$
4. $L_1 = L_2 = L_3 = L_4 = L_5 = 1 \text{ nH}$

For the different values of 'L' while keeping 'R_L' as constant, following graph is obtained from the given circuit.



Choose the correct ascending order from the options given below for the different values of 'L' :

1. $L_1 > L_2 > L_3 > L_4 > L_5$
2. $L_1 < L_2 < L_3 < L_4 < L_5$
3. $L_1 = L_2 = L_3 = L_4 = L_5 = 0$
4. $L_1 = L_2 = L_3 = L_4 = L_5 = 1 \text{ nH}$

A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

130 88080

MEMS devices are within the size range of

1. 1 pm to 1 nm
2. 1 nm to 1 μm
3. 1 mm to 1 cm
4. 1 μm to 1 mm

MEMS devices are within the size range of

1. 1 pm to 1 nm
2. 1 nm to 1 μ m
3. 1 mm to 1 cm
4. 1 μ m to 1 mm

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

131 88081

The open loop transfer function of a unity feedback control system is given by $G(s) = \frac{25}{s(s+5)}$. The natural frequency of oscillator is fixed. Arrange the damped frequency of oscillation for the following damping ratio in ascending order

A. $\xi = 0.5$

B. $\xi = 0.1$

C. $\xi = 0.3$

D. $\xi = 0.25$

E. $\xi = 0.4$

Choose the correct answer from the options given below :

1. $D < A < B < E < C$
2. $A < E < C < D < B$
3. $B < D < C < E < A$
4. $A < B < C < D < E$

The open loop transfer function of a unity feedback control system is given by $G(s) = \frac{25}{s(s+5)}$. The natural frequency of oscillator is fixed. Arrange the damped frequency of oscillation for the following damping ratio in ascending order

A. $\xi = 0.5$

B. $\xi = 0.1$

C. $\xi = 0.3$

D. $\xi = 0.25$

E. $\xi = 0.4$

Choose the correct answer from the options given below :

1. $D < A < B < E < C$
2. $A < E < C < D < B$
3. $B < D < C < E < A$
4. $A < B < C < D < E$

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

132 88082

The value of ratio of v_p/v_0 as a function of wavelength λ_0 for several TE modes in a hollow waveguide of square cross - section will be in the sequence of {Let v_0 = phase velocity in air, λ_0 = wavelength in air, v_p = phase velocity in waveguide}

- A. TE₄₂
- B. TE₂₀
- C. TE₁₀
- D. TE₃₁
- E. TE₁₁

Choose the correct answer from the options given below :

- 1. C > E > A > B > D
- 2. A > D > B > E > C
- 3. C > E > B > D > A
- 4. A > D > C > E > B

The value of ratio of v_p/v_0 as a function of wavelength λ_0 for several TE modes in a hollow waveguide of square cross - section will be in the sequence of {Let v_0 = phase velocity in air, λ_0 = wavelength in air, v_p = phase velocity in waveguide}

- A. TE₄₂
- B. TE₂₀
- C. TE₁₀
- D. TE₃₁
- E. TE₁₁

Choose the correct answer from the options given below :

- 1. C > E > A > B > D
- 2. A > D > B > E > C
- 3. C > E > B > D > A
- 4. A > D > C > E > B

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

133 88083

Match List I with List II

LIST I (IC classification)	LIST II (Number of transistors used)
A. VLSI	I. $1000 < \text{Number of transistors} < 10,000$
B. MSI	II. Number of transistors $> 10,000$
C. LSI	III. Number of transistors < 100
D. SSI	IV. $100 < \text{Number of transistors} < 1,000$

Choose the correct answer from the options given below:

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

Match List I with List II

LIST I (IC classification)	LIST II (Number of transistors used)
A. VLSI	I. $1000 < \text{Number of transistors} < 10,000$
B. MSI	II. Number of transistors $> 10,000$
C. LSI	III. Number of transistors < 100
D. SSI	IV. $100 < \text{Number of transistors} < 1,000$

Choose the correct answer from the options given below:

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

A1 1

:

1

A2 2

:

2

A3 3

:

3

A4 4

:

4

Objective Question

134 88084

A two stage receiving system operates at 30 MHz bandwidth. Calculate noise figure (F) of the system for following values of G_1 (dB) and arrange them in ascending order. Assuming F_1 (dB) = 2 dB, F_2 (dB) = 9 dB

- A. $G_1 = 10$ dB
- B. $G_1 = 20$ dB
- C. $G_1 = 50$ dB
- D. $G_1 = 30$ dB
- E. $G_1 = 40$ dB

Choose the correct answer from the options given below :

1. $C < E < D < B < A$
2. $A < C < E < D < B$
3. $B < A < C < E < D$
4. $D < B < A < C < E$

A two stage receiving system operates at 30 MHz bandwidth. Calculate noise figure (F) of the system for following values of G_1 (dB) and arrange them in ascending order. Assuming F_1 (dB) = 2 dB, F_2 (dB) = 9 dB

- A. $G_1 = 10$ dB
- B. $G_1 = 20$ dB
- C. $G_1 = 50$ dB
- D. $G_1 = 30$ dB
- E. $G_1 = 40$ dB

Choose the correct answer from the options given below :

- 1. $C < E < D < B < A$
- 2. $A < C < E < D < B$
- 3. $B < A < C < E < D$
- 4. $D < B < A < C < E$

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

135 88085

Following multiplexers have to be designed by different MUX. Arrange the number of MUX required in descending order

- A. Construct 4 : 1 MUX by using 2 : 1 MUX
- B. Construct 16 : 1 MUX by using 4 : 1 MUX
- C. Construct 64 : 1 MUX by using 4 : 1 MUX
- D. Construct 64 : 1 MUX by using 8 : 1 MUX
- E. Construct 256 : 1 MUX by using 8 : 1 MUX

Choose the correct answer from the options given below :

- 1. $C > B > D > A > E$
- 2. $A > B > C > D > E$
- 3. $E > C > D > B > A$
- 4. $B > A > D > C > E$

Following multiplexers have to be designed by different MUX. Arrange the number of MUX required in descending order

- A. Construct 4 : 1 MUX by using 2 : 1 MUX
- B. Construct 16 : 1 MUX by using 4 : 1 MUX
- C. Construct 64 : 1 MUX by using 4 : 1 MUX
- D. Construct 64 : 1 MUX by using 8 : 1 MUX
- E. Construct 256 : 1 MUX by using 8 : 1 MUX

Choose the correct answer from the options given below :

- 1. $C > B > D > A > E$
- 2. $A > B > C > D > E$
- 3. $E > C > D > B > A$
- 4. $B > A > D > C > E$

A1 1
:

1

A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

136 88086

Given below are two statements :

Statement I : Phase velocity of an electromagnetic wave in a bounded medium can be greater than the speed of light in an unbounded medium.

Statement II : Frequency of electromagnetic wave is affected by the permittivity of the medium.

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Given below are two statements :

Statement I : Phase velocity of an electromagnetic wave in a bounded medium can be greater than the speed of light in an unbounded medium.

Statement II : Frequency of electromagnetic wave is affected by the permittivity of the medium.

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

A1 1
:
1
A2 2
:
2
A3 3
:
3
A4 4
:
4

Objective Question

137 88087

Given below are two statements :

Statement I : For negative feedback systems, the open loop gain decreases by a certain factor.

Statement II : Negative feedback systems are better in terms of system stability

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

Given below are two statements :

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

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3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

138 88088

Given below are two statements :

Statement I : In 8051 micro-controller register banks and stack reserves 32 bytes from locations 00 to 1F Hex

Statement II : Bit-Addressable RAM locations are 20 H to 2 F H.

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

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Given below are two statements :

Statement I : In 8051 micro-controller register banks and stack reserves 32 bytes from locations 00 to 1F Hex

Statement II : Bit-Addressable RAM locations are 20 H to 2 F H.

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

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3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

139 88089

Given below are two statements :

Statement I : When an electron is brought near the surface of a metal in any dielectric medium, an image charge of opposite polarity is included inside the metal at the same distance from the surface as that of the electron in the dielectric medium.

Statement II : In the case of metal-semiconductor junction, an electron in the semiconductor also creates an image charge in the metal which decreases the energy barrier height.

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

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Statement I : When an electron is brought near the surface of a metal in any dielectric medium, an image charge of opposite polarity is included inside the metal at the same distance from the surface as that of the electron in the dielectric medium.

Statement II : In the case of metal-semiconductor junction, an electron in the semiconductor also creates an image charge in the metal which decreases the energy barrier height.

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

A1
:

1

A2
:

2

A3
:

3

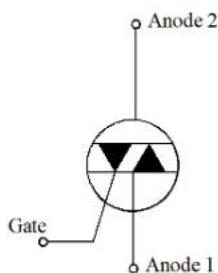
A4
:

4

Objective Question

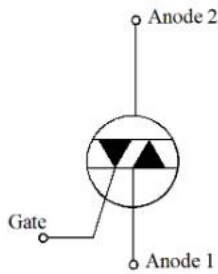
140 88090

The following symbol represents



1. MOSFET
2. DIAC
3. TRIAC
4. SCR

The following symbol represents



1. MOSFET
2. DIAC
3. TRIAC
4. SCR

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

141 88091

Fourier transformer and Laplace transform are the significant mathematical tools used for signal and system analysis. The limitations of Fourier transform is that it is not defined for some of the signals. Therefore for such signals analysis Laplace transform is used to overcome the drawback of Fourier transform. Due to availability of convergence factor Laplace transform is completely integrable and hence defined for those signals for which Fourier transform is not absolutely integrable.

The LTI is represented by differential equation. The system response is obtained by solving the given differential equation. Any differential equation is converted in to simpler algebraic equation by Laplace transform.

Laplace transform is equivalent to Fourier transform when, the real term (σ) of complex frequency $S = \sigma + j\omega$, should be

1. $\sigma = 0$
2. $\sigma = 1$
3. $\sigma = -1$
4. $\sigma = \infty$ (infinity)

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A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

142 88092

Fourier transformer and Laplace transform are the significant mathematical tools used for signal and system analysis. The limitations of Fourier transform is that it is not defined for some of the signals. Therefore for such signals analysis Laplace transform is used to overcome the drawback of Fourier transform. Due to availability of convergence factor Laplace transform is completely integrable and hence defined for those signals for which Fourier transform is not absolutely integrable.

The LTI is represented by differential equation. The system response is obtained by solving the given differential equation. Any differential equation is converted in to simpler algebraic equation by Laplace transform.

Laplace transform is defined when

1. $\int_{-\infty}^{\infty} |x^2(t)| e^{-\sigma t} dt < \infty$
2. $\int_{-\infty}^{\infty} |x(t)| dt < \infty$
3. $\int_{-\infty}^{\infty} |x(t)|^2 e^{-\sigma t} dt < \infty$
4. $\int_{-\infty}^{\infty} |x(t)| e^{-\sigma t} dt < \infty$

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A1
:

1

A2
:

2

A3
:

3

A4
:

4

Objective Question

143 88093

Fourier transformer and Laplace transform are the significant mathematical tools used for signal and system analysis. The limitations of Fourier transform is that it is not defined for some of the signals. Therefore for such signals analysis Laplace transform is used to overcome the drawback of Fourier transform. Due to availability of convergence factor Laplace transform is completely integrable and hence defined for those signals for which Fourier transform is not absolutely integrable.

The LTI is represented by differential equation. The system response is obtained by solving the given differential equation. Any differential equation is converted in to simpler algebraic equation by Laplace transform.

If $x(t) = e^{-ct} - e^{-dt} u(-t)$, Laplace transform of $x(t)$ is

1. $X(s) = \frac{2s + c + d}{(s + c)(s + d)}$
2. $X(s) = \frac{1}{(s - c)} + \frac{1}{s - d}$
3. $X(s) = \frac{1}{s + c} - \frac{1}{s - d}$
4. $X(s) = \frac{2s - c - d}{(s + c)(s + d)}$

Fourier transformer and Laplace transform are the significant mathematical tools used for signal and system analysis. The limitations of Fourier transform is that it is not defined for some of the signals. Therefore for such signals analysis Laplace transform is used to overcome the drawback of Fourier transform. Due to availability of convergence factor Laplace transform is completely integrable and hence defined for those signals for which Fourier transform is not absolutely integrable.

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3. $X(s) = \frac{1}{s + c} - \frac{1}{s - d}$
4. $X(s) = \frac{2s - c - d}{(s + c)(s + d)}$

A1 1

:

1

A2 2

:

2

A3 3

:

3

A4 4

:

4

Objective Question

144 88094

Fourier transformer and Laplace transform are the significant mathematical tools used for signal and system analysis. The limitations of Fourier transform is that it is not defined for some of the signals. Therefore for such signals analysis Laplace transform is used to overcome the drawback of Fourier transform. Due to availability of convergence factor Laplace transform is completely integrable and hence defined for those signals for which Fourier transform is not absolutely integrable.

The LTI is represented by differential equation. The system response is obtained by solving the given differential equation. Any differential equation is converted in to simpler algebraic equation by Laplace transform.

For an arbitrary input $x(t) = [e^{-at} u(t)] - [e^{-bt} u(t)]$ the region of convergence (R) is

1. $a < R < b$
2. $-a < R < -b$
3. $a < R < -b$
4. $-a < R < b$

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4. $-a < R < b$

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

145 88095

Fourier transformer and Laplace transform are the significant mathematical tools used for signal and system analysis. The limitations of Fourier transform is that it is not defined for some of the signals. Therefore for such signals analysis Laplace transform is used to overcome the drawback of Fourier transform. Due to availability of convergence factor Laplace transform is completely integrable and hence defined for those signals for which Fourier transform is not absolutely integrable.

The LTI is represented by differential equation. The system response is obtained by solving the given differential equation. Any differential equation is converted in to simpler algebraic equation by Laplace transform.

For two signals $x_1(t)$ and $x_2(t)$. The correct Laplace transform expression for

$x_1(t) \cdot x_2(t)$ is :

1. $X_1(s) \cdot X_2(s)$
2. $X_1(s) + X_2(s)$
3. $X_1(s) + 2\pi j X_2(s)$
4. $\frac{1}{2\pi j} [X_1(s) * X_2(s)]$

Fourier transformer and Laplace transform are the significant mathematical tools used for signal and system analysis. The limitations of Fourier transform is that it is not defined for some of the signals. Therefore for such signals analysis Laplace transform is used to overcome the drawback of Fourier transform. Due to availability of convergence factor Laplace transform is completely integrable and hence defined for those signals for which Fourier transform is not absolutely integrable.

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3. $X_1(s) + 2\pi j X_2(s)$
4. $\frac{1}{2\pi j} [X_1(s) * X_2(s)]$

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

146 88096

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
3	MOV RO, # 25H
4	MOV R1, # 0AH
5	MOV R2, #06H
6	PUSH 8
7	PUSH 9.
8	PUSH 0AH
.	.
.	.
.	.
V	V
20	POP 8

what is stored in SP register after the execution of line 1.

1. 4F H
2. 5F H
3. 3F H
4. 6F H

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
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.	.
.	.
.	.
V	V
20	POP 8

what is stored in SP register after the execution of line 1.

1. 4F H
2. 5F H
3. 3F H
4. 6F H

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

147 88097

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
3	MOV RO, # 25H
4	MOV R1, # 0AH
5	MOV R2, #06H
6	PUSH 8
7	PUSH 9.
8	PUSH 0AH
.	.
.	.
.	.
V	V
20	POP 8

What is the memory location of the stack where the first data byte will be stored?

1. 4FH
2. 50H
3. 51H
4. 52H

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
3	MOV RO, # 25H
4	MOV R1, # 0AH
5	MOV R2, #06H
6	PUSH 8
7	PUSH 9.
8	PUSH 0AH
.	.
.	.
.	.
V	V
20	POP 8

What is the memory location of the stack where the first data byte will be stored?

1. 4FH
2. 50H
3. 51H
4. 52H

A1 1
:

1

A2 2
:

2

A3 3
:

3

A4 4
:

4

Objective Question

148 88098

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
3	MOV RO, # 25H
4	MOV R1, # 0AH
5	MOV R2, #06H
6	PUSH 8
7	PUSH 9.
8	PUSH 0AH
.	.
.	.
.	.
V	V
20	POP 8

What is stored in memory location 50 H when line 6 (PUSH 8) is executed ?

1. 0A H
2. 06 H
3. 25 H
4. 4F H

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
3	MOV RO, # 25H
4	MOV R1, # 0AH
5	MOV R2, #06H
6	PUSH 8
7	PUSH 9.
8	PUSH 0AH
.	.
.	.
.	.
V	V
20	POP 8

What is stored in memory location 50 H when line 6 (PUSH 8) is executed ?

1. 0A H
2. 06 H
3. 25 H
4. 4F H

A1 1
:

1

A2 2
:

2

A3 3
:

3
A4
:
4
4

Objective Question

149 88099

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
3	MOV RO, # 25H
4	MOV R1, # 0AH
5	MOV R2, #06H
6	PUSH 8
7	PUSH 9.
8	PUSH 0AH
.	.
.	.
.	.
V	V
20	POP 8

After the execution of line 7 (PUSH 9) what is the address in the SP register and what is stored in stack memory location 51 H.

1. 25H, 25H
2. 52H, 25H
3. 50H, 0AH
4. 51H, 0AH

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
3	MOV RO, # 25H
4	MOV R1, # 0AH
5	MOV R2, #06H
6	PUSH 8
7	PUSH 9.
8	PUSH 0AH
.	.
.	.
.	.
V	V
20	POP 8

After the execution of line 7 (PUSH 9) what is the address in the SP register and what is stored in stack memory location 51 H.

1. 25H, 25H
2. 52H, 25H
3. 50H, 0AH
4. 51H, 0AH

A1
:
1
1
A2
:
2

2
A3 3
:
3
A4 4
:
4

Objective Question

150 88100

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
3	MOV RO, # 25H
4	MOV R1, # 0AH
5	MOV R2, #06H
6	PUSH 8
7	PUSH 9.
8	PUSH 0AH
.	.
.	.
.	.
V	V
20	POP 8

Specify the content of register R0 after the recention of line 20 (POP 8)

1. 06H
2. 0AH
3. 25 H
4. 4FH

Line No.	Mnemonics
1	MOV SP, # 4F H
2	SET B PSW. 3
3	MOV RO, # 25H
4	MOV R1, # 0AH
5	MOV R2, #06H
6	PUSH 8
7	PUSH 9.
8	PUSH 0AH
.	.
.	.
.	.
V	V
20	POP 8

Specify the content of register R0 after the recention of line 20 (POP 8)

1. 06H
2. 0AH
3. 25 H
4. 4FH

A1 1
:

			1
		A2	2
		:	
			2
		A3	3
		:	
			3
		A4	4
		:	
			4