

National Testing Agency

Question Paper Name :	Electronics Communication and Information Engineering Eng 10th June 2023 Shift 2
Subject Name :	Electronics Communication and Information Engineering Eng
Creation Date :	2023-06-10 20:47:21
Duration :	120
Total Marks :	400
Display Marks:	Yes

Electronics Communication and Information Engineering

Group Number :	1
Group Id :	920906117
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	400
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Part A

Section Id :	920906233
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	21
Number of Questions to be attempted :	21
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	920906386
Question Shuffling Allowed :	No

Is Section Default? :

null

Question Id : 92090611751 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (1 to 5)

Question Label : Comprehension

Read the following passage and answer the next five questions by choosing the correct option:

Mara, a 24-year-old university student, seeks help for anxiety. She describes feeling paralyzed when thinking about climate change and the future; Leon, 51 and a father of three, requests treatment for panic attacks. They started last year after he and his family evacuated their home again due to wildfires; Isabel, a 16-year-old climate activist, wants support due to ruminating about the climate crisis to the extent that she can't focus on schoolwork.

The opening vignettes demonstrate that the climate change crisis is taking a toll on people's mental health. Uncertainty, unpredictability, and uncontrollability are three fundamental characteristics of climate change. Recent reviews have shown that the negative impacts of climate change are complex, manifest cognitively, emotionally, and physically and affect behaviours, relationships, and overall well-being. One such manifestation is anxiety related to the ongoing anthropogenic climate change or ecological doom, referred to as eco-anxiety.

The condition overlaps with other mental health disorders in the form of negative, and automatic reactions to a felt threat. However, most empirical studies on eco-anxiety to date surveyed the low-risk groups with smaller and unrepresentative samples. Rigorous research is needed to more completely understand it, clarify its distinct characteristics and contextual factors, and articulate its relationship with other mental health conditions.

Experiences of eco-anxiety often include dystopian thoughts and apocalyptic perceptions about the future, negative and sometimes intense emotions such as fear, anger, guilt, grief, and despair, as well as behavioural manifestations such as insomnia and panic attacks. Causes and triggers of eco-anxiety vary from direct exposure to traumatic extreme weather events like floods, hurricanes, and wildfires to maladaptation to long-term environmental changes like land loss, water scarcity, and pollution. It can also manifest in individuals without direct experience of climate change, simply from the awareness of the potential existential threat it presents.

Health professionals are improving ways to communicate climate concerns. Their voices are imperative for climate change communication and transformation. However, the urgency and complexity of ecological and climate crisis demand an interdisciplinary approach. Other disciplines can help advance these efforts by providing opportunities for innovative thinking and practice, such as with a sociological perspective regarding structures and connections in society; a political scientific approach to tension, conflict, and social movement; and communication strategies for patient-provider interaction, social support, community outreach, and public engagement.

Media coverage of ecological crisis can evoke eco-anxiety. Current messages about climate change are overwhelmingly negative, both linguistically and visually, contributing to a sense of doom and gloom. Hope is central to humanity's survival and flourishing. Yet some caution that hope alone is not a panacea.

Sub questions

Question Number : 1 Question Id : 92090611752 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Based on the information in the passage, it can be inferred that all of the following statements are true EXCEPT:

- (A) An interdisciplinary approach is required to facilitate communication regarding climate change crisis.
- (B) Linguistic and visual media provokes eco-anxiety.
- (C) Eco-anxiety, its characteristics and context have been fully understood through extensive research.
- (D) The negative impacts of climate change affect behaviour, relationships and overall well-being.

Choose the correct answer from the options given below :

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

Options :

- 92090646401. 1
- 92090646402. 2
- 92090646403. 3
- 92090646404. 4

Question Number : 2 Question Id : 92090611753 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match the words in List I with their meanings in List II :

List I	List II
(A) Apocalyptic	(I) Related to human existence
(B) Dystopian	(II) Short piece of writing or acting about a person, place or event
(C) Existential	(III) Prophesying a disaster or total destruction
(D) Vignettes	(IV) Relationship to an imagined society in which there is suffering and injustice

Choose the correct answer from the options given below:

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

Options :

92090646405. 1
92090646406. 2
92090646407. 3
92090646408. 4

Question Number : 3 Question Id : 92090611754 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

“Hope is central to humanity’s survival and flourishing. Yet some caution that hope alone is not a panacea”.

Through the underlined segment the writer is trying to:

- (1) instil fear about the seriousness of the problem of Eco-anxiety
- (2) warn that issue of Eco-anxiety can’t be taken lightly or ignored.
- (3) assure that hope will resolve the issue of Eco-anxiety.
- (4) mock the idea that hope and an optimistic approach can resolve the issue of Eco-anxiety.

Options :

92090646409. 1
92090646410. 2
92090646411. 3
92090646412. 4

Question Number : 4 Question Id : 92090611755 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List I with List II to complete the information on the basis of your reading from the passage.

- | List I | List II |
|--|---|
| (A) Manifestation of the negative impact of climate change | (I) Intense emotions like fear, grief, anger and insomnia |
| (B) Experience of Eco-anxiety includes | (II) Exposure to extreme weather and maladaptation to environmental changes |
| (C) Triggers of Eco-anxiety | (III) Uncertainty, Unpredictability, uncontrollability |
| (D) Fundamental characteristics of climate change | (IV) Cognitive, emotional and physical |

Choose the correct answer from the options given below:

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

Options :

92090646413. 1
92090646414. 2
92090646415. 3
92090646416. 4

Question Number : 5 Question Id : 92090611756 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Eco-anxiety can also manifest in individuals without direct experience of climate change. This happens because of :

- (1) their unstable mental health condition
- (2) they watch excessively negative media messages
- (3) they are fully aware of the potential existential threat it presents
- (4) they are poor communicators and do not share their fears with health professionals

Options :

92090646417. 1
92090646418. 2
92090646419. 3
92090646420. 4

Question Id : 92090611751 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (1 to 5)

Question Label : Comprehension

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The opening vignettes demonstrate that the climate change crisis is taking a toll on people's mental health. Uncertainty, unpredictability, and uncontrollability are three fundamental characteristics of climate change. Recent reviews have shown that the negative impacts of climate change are complex, manifest cognitively, emotionally, and physically and affect behaviours, relationships, and overall well-being. One such manifestation is anxiety related to the ongoing anthropogenic climate change or ecological doom, referred to as eco-anxiety.

The condition overlaps with other mental health disorders in the form of negative, and automatic reactions to a felt threat. However, most empirical studies on eco-anxiety to date surveyed the low-risk groups with smaller and unrepresentative samples. Rigorous research is needed to more completely understand it, clarify its distinct characteristics and contextual factors, and articulate its relationship with other mental health conditions.

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Health professionals are improving ways to communicate climate concerns. Their voices are imperative for climate change communication and transformation. However, the urgency and complexity of ecological and climate crisis demand an interdisciplinary approach. Other disciplines can help advance these efforts by providing opportunities for innovative thinking and practice, such as with a sociological perspective regarding structures and connections in society; a political scientific approach to tension, conflict, and social movement; and communication strategies for patient-provider interaction, social support, community outreach, and public engagement.

Media coverage of ecological crisis can evoke eco-anxiety. Current messages about climate change are overwhelmingly negative, both linguistically and visually, contributing to a sense of doom and gloom. Hope is central to humanity's survival and flourishing. Yet some caution that hope alone is not a panacea.

Sub questions

Question Number : 1 Question Id : 92090611752 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Based on the information in the passage, it can be inferred that all of the following statements are true EXCEPT:

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- (C) Eco-anxiety, its characteristics and context have been fully understood through extensive research.
- (D) The negative impacts of climate change affect behaviour, relationships and overall well-being.

Choose the correct answer from the options given below :

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

Options :

92090646401. 1

92090646402. 2

92090646403. 3

92090646404. 4

Question Number : 2 Question Id : 92090611753 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match the words in List I with their meanings in List II :

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(C) Existential	(III) Prophesying a disaster or total destruction
(D) Vignettes	(IV) Relationship to an imagined society in which there is suffering and injustice

Choose the correct answer from the options given below:

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

Options :

92090646405. 1
92090646406. 2
92090646407. 3
92090646408. 4

Question Number : 3 Question Id : 92090611754 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

“Hope is central to humanity’s survival and flourishing. Yet some caution that hope alone is not a panacea”.

Through the underlined segment the writer is trying to:

- (1) instil fear about the seriousness of the problem of Eco-anxiety
- (2) warn that issue of Eco-anxiety can’t be taken lightly or ignored.
- (3) assure that hope will resolve the issue of Eco-anxiety.
- (4) mock the idea that hope and an optimistic approach can resolve the issue of Eco-anxiety.

Options :

92090646409. 1
92090646410. 2
92090646411. 3
92090646412. 4

Question Number : 4 Question Id : 92090611755 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List I with List II to complete the information on the basis of your reading from the passage.

- | List I | List II |
|--|---|
| (A) Manifestation of the negative impact of climate change | (I) Intense emotions like fear, grief, anger and insomnia |
| (B) Experience of Eco-anxiety includes | (II) Exposure to extreme weather and maladaptation to environmental changes |
| (C) Triggers of Eco-anxiety | (III) Uncertainty, Unpredictability, uncontrollability |
| (D) Fundamental characteristics of climate change | (IV) Cognitive, emotional and physical |

Choose the correct answer from the options given below:

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

Options :

92090646413. 1
92090646414. 2
92090646415. 3
92090646416. 4

Question Number : 5 Question Id : 92090611756 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Eco-anxiety can also manifest in individuals without direct experience of climate change. This happens because of :

- (1) their unstable mental health condition
- (2) they watch excessively negative media messages
- (3) they are fully aware of the potential existential threat it presents
- (4) they are poor communicators and do not share their fears with health professionals

Options :

92090646417. 1
92090646418. 2
92090646419. 3
92090646420. 4

Sub-Section Number :

2

Sub-Section Id :

920906387

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 6 Question Id : 92090611757 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match the blanks in List I with the appropriate phrasal verb in List II :

- | List I | List II |
|--|----------------------|
| (A) Students usually speak French during class by occasionally ___ English. | (I) fell-out |
| (B) The English professor wanted to ___ the importance of additional reading to his students | (II) lapse into |
| (C) Capital punishment was ___ several years ago in Britain. | (III) done away with |
| (D) I ___ with my brother over a trifle. | (IV) drive home |

Choose the correct answer from the options given below:

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

Options :

92090646421. 1
92090646422. 2
92090646423. 3
92090646424. 4

Question Number : 6 Question Id : 92090611757 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match the blanks in List I with the appropriate phrasal verb in List II :

- | List I | List II |
|---|----------------------|
| (A) Students usually speak French during class by occasionally ____ English. | (I) fell-out |
| (B) The English professor wanted to ____ the importance of additional reading to his students | (II) lapse into |
| (C) Capital punishment was ____ several years ago in Britain. | (III) done away with |
| (D) I ____ with my brother over a trifle. | (IV) drive home |

Choose the correct answer from the options given below:

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

Options :

- 92090646421. 1
- 92090646422. 2
- 92090646423. 3
- 92090646424. 4

Question Number : 7 Question Id : 92090611758 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The correctly spelt word from the given options is:-

- | | |
|------------------|-------------------|
| (1) IDEOSYNCRASY | (2) IDEOSINCRASY |
| (3) IDIOSYNCRASY | (4) IDAOOSYNCRASY |

Options :

- 92090646425. 1
- 92090646426. 2
- 92090646427. 3
- 92090646428. 4

Question Number : 7 Question Id : 92090611758 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The correctly spelt word from the given options is:-

- (1) IDEOSYNCRASY (2) IDEOSINCRASY
(3) IDIOSYNCRASY (4) IDAOSYNCRASY

Options :

92090646425. 1
92090646426. 2
92090646427. 3
92090646428. 4

Question Number : 8 Question Id : 92090611759 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Fill in the blanks with appropriate prepositions from the options given below:

ED had filed the fifth chargesheet ___ the case __ May 4 and named Sisodia ___ an accused __ a case concerning irregularities in the excise policy for the first time.

- (1) in, on, as, in (2) in, with, as, in
(3) in, on, with, for (4) in, on, in, as

Options :

92090646429. 1
92090646430. 2
92090646431. 3
92090646432. 4

Question Number : 8 Question Id : 92090611759 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Fill in the blanks with appropriate prepositions from the options given below:

ED had filed the fifth chargesheet ___ the case __ May 4 and named Sisodia ___ an accused __ a case concerning irregularities in the excise policy for the first time.

- (1) in, on, as, in (2) in, with, as, in
(3) in, on, with, for (4) in, on, in, as

Options :

92090646429. 1
92090646430. 2
92090646431. 3
92090646432. 4

Question Number : 9 Question Id : 92090611760 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

An admirably stylish manner of doing things effortlessly:

- | | |
|-------------|---------------|
| (1) Pariah | (2) Panache |
| (3) Perjury | (4) Petrology |

Options :

- 92090646433. 1
- 92090646434. 2
- 92090646435. 3
- 92090646436. 4

Question Number : 9 Question Id : 92090611760 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

An admirably stylish manner of doing things effortlessly:

- | | |
|-------------|---------------|
| (1) Pariah | (2) Panache |
| (3) Perjury | (4) Petrology |

Options :

- 92090646433. 1
- 92090646434. 2
- 92090646435. 3
- 92090646436. 4

Question Number : 10 Question Id : 92090611761 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Synonym of the word "TRAIT" is :

- | | |
|------------|--------------------|
| (1) Symbol | (2) Characteristic |
| (3) Colour | (4) Habit |

Options :

- 92090646437. 1
- 92090646438. 2
- 92090646439. 3
- 92090646440. 4

Question Number : 10 Question Id : 92090611761 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Synonym of the word "TRAIT" is :

- | | |
|------------|--------------------|
| (1) Symbol | (2) Characteristic |
| (3) Colour | (4) Habit |

Options :

- 92090646437. 1
- 92090646438. 2
- 92090646439. 3
- 92090646440. 4

Question Number : 11 Question Id : 92090611762 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If $\cos \theta = \frac{10}{26}$, then find the value of $\cot \theta$:

- | | |
|---------------------|--------------------|
| (1) $\frac{12}{25}$ | (2) $\frac{5}{12}$ |
| (3) $\frac{12}{5}$ | (4) $\frac{6}{5}$ |

Options :

- 92090646441. 1
- 92090646442. 2
- 92090646443. 3
- 92090646444. 4

Question Number : 11 Question Id : 92090611762 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If $\cos \theta = \frac{10}{26}$, then find the value of $\cot \theta$:

- | | |
|---------------------|--------------------|
| (1) $\frac{12}{25}$ | (2) $\frac{5}{12}$ |
| (3) $\frac{12}{5}$ | (4) $\frac{6}{5}$ |

Options :

- 92090646441. 1

92090646442. 2

92090646443. 3

92090646444. 4

Question Number : 12 Question Id : 92090611763 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A journey takes 35 minutes while moving with a speed of 32 km/h. How long would the journey take (in minutes) moving at a speed of 40 km/h?

(1) 28

(2) 24

(3) 30

(4) 33

Options :

92090646445. 1

92090646446. 2

92090646447. 3

92090646448. 4

Question Number : 12 Question Id : 92090611763 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A journey takes 35 minutes while moving with a speed of 32 km/h. How long would the journey take (in minutes) moving at a speed of 40 km/h?

(1) 28

(2) 24

(3) 30

(4) 33

Options :

92090646445. 1

92090646446. 2

92090646447. 3

92090646448. 4

Question Number : 13 Question Id : 92090611764 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Ananya bought a shirt marked for ₹ 1,000 and paid ₹ 714 after availing two successive discounts of 15% and x%. Find the value of x.

(1) 12.5

(2) 15

(3) 16

(4) 20

Options :

92090646449. 1

92090646450. 2

92090646451. 3

92090646452. 4

Question Number : 13 Question Id : 92090611764 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Ananya bought a shirt marked for ₹ 1,000 and paid ₹ 714 after availing two successive discounts of 15% and x%. Find the value of x.

(1) 12.5

(2) 15

(3) 16

(4) 20

Options :

92090646449. 1

92090646450. 2

92090646451. 3

92090646452. 4

Question Number : 14 Question Id : 92090611765 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A cone of height at 24 cm and base radius 6 cm is made of modelling clay. A child reshapes it in the form of a sphere. The radius of the sphere is:

(1) 1 cm

(2) 2 cm

(3) 6 cm

(4) 8 cm

Options :

92090646453. 1

92090646454. 2

92090646455. 3

92090646456. 4

Question Number : 14 Question Id : 92090611765 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A cone of height at 24 cm and base radius 6 cm is made of modelling clay. A child reshapes it in the form of a sphere. The radius of the sphere is:

(1) 1 cm

(2) 2 cm

(3) 6 cm

(4) 8 cm

Options :

92090646453. 1
92090646454. 2
92090646455. 3
92090646456. 4

Question Number : 15 Question Id : 92090611766 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A sum of ₹ 7,700 is lent on simple interest in two parts in such a way that the interest on the first part at 20% p.a. for 5 years is equal to the interest on the other part at 9% p.a. for 6 years. Find the smaller part of the sums lent in two parts.

- (1) ₹ 2,400 (2) ₹ 5,000
(3) ₹ 5,300 (4) ₹ 2,700

Options :

92090646457. 1
92090646458. 2
92090646459. 3
92090646460. 4

Question Number : 15 Question Id : 92090611766 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A sum of ₹ 7,700 is lent on simple interest in two parts in such a way that the interest on the first part at 20% p.a. for 5 years is equal to the interest on the other part at 9% p.a. for 6 years. Find the smaller part of the sums lent in two parts.

- (1) ₹ 2,400 (2) ₹ 5,000
(3) ₹ 5,300 (4) ₹ 2,700

Options :

92090646457. 1
92090646458. 2
92090646459. 3
92090646460. 4

Question Number : 16 Question Id : 92090611767 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which interchange of signs in the equation which when made will make the equation correct.

$$20 + 20 \div 20 - 20 \times 20 = 20$$

- (1) + and \div (2) + and -
(3) + and \times (4) \times and \div

Options :

92090646461. 1
92090646462. 2
92090646463. 3
92090646464. 4

Question Number : 16 Question Id : 92090611767 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which interchange of signs in the equation which when made will make the equation correct.

$$20 + 20 \div 20 - 20 \times 20 = 20$$

- (1) + and \div (2) + and -
(3) + and \times (4) \times and \div

Options :

92090646461. 1
92090646462. 2
92090646463. 3
92090646464. 4

Question Number : 17 Question Id : 92090611768 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which value can come at place of ?, which will give same relationship on the left and right side of :: ?

$$5369 : 4258 :: 9875 : ?$$

- (1) 8763 (2) 8764
(3) 7764 (4) 7763

Options :

92090646465. 1
92090646466. 2
92090646467. 3
92090646468. 4

Question Number : 17 Question Id : 92090611768 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which value can come at place of ?, which will give same relationship on the left and right side of :: ?

5369 : 4258 :: 9875 : ?

- | | |
|----------|----------|
| (1) 8763 | (2) 8764 |
| (3) 7764 | (4) 7763 |

Options :

- 92090646465. 1
- 92090646466. 2
- 92090646467. 3
- 92090646468. 4

Question Number : 18 Question Id : 92090611769 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Milind said to Monu, "That boy playing is the younger of two brothers of the daughter of my father's wife". How is the boy who is playing is related to Milind:

- | | |
|-------------|--------------------|
| (1) Brother | (2) Brother-in-law |
| (3) Son | (4) Cousin |

Options :

- 92090646469. 1
- 92090646470. 2
- 92090646471. 3
- 92090646472. 4

Question Number : 18 Question Id : 92090611769 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Milind said to Monu, "That boy playing is the younger of two brothers of the daughter of my father's wife". How is the boy who is playing is related to Milind:

- | | |
|-------------|--------------------|
| (1) Brother | (2) Brother-in-law |
| (3) Son | (4) Cousin |

Options :

- 92090646469. 1
- 92090646470. 2

92090646471. 3

92090646472. 4

Question Number : 19 Question Id : 92090611770 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Consider the statement and decide which of the assumption is implicit in the statement:

Statement : A physics teacher in the class announced to keep a copy of
“Principles of physics” written by Haliday Resnick.

Assumptions:

(I) Every student can afford to buy the book.

(II) The book is well-written

- (1) If only assumption I is implicit
- (2) If only assumption II is implicit
- (3) If neither I nor II is implicit
- (4) If both assumption I and II are implicit

Options :

92090646473. 1

92090646474. 2

92090646475. 3

92090646476. 4

Question Number : 19 Question Id : 92090611770 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Consider the statement and decide which of the assumption is implicit in the statement:

Statement : A physics teacher in the class announced to keep a copy of
“Principles of physics” written by Haliday Resnick.

Assumptions:

(I) Every student can afford to buy the book.

(II) The book is well-written

- (1) If only assumption I is implicit
- (2) If only assumption II is implicit
- (3) If neither I nor II is implicit
- (4) If both assumption I and II are implicit

Options :

92090646473. 1

92090646474. 2

92090646475. 3

92090646476. 4

Question Number : 20 Question Id : 92090611771 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which conclusion would follow on the basis of given statements:

Statements : (A) All pens are chalks.
(B) All chairs are chalks.

Conclusions : (I) Some pens are chairs.
(II) Some chalks are pens.

- (1) If conclusion (I) follows
- (2) If conclusion (II) follows
- (3) If either conclusion (I) or (II) follows
- (4) Both conclusion (I) and (II) follows

Options :

92090646477. 1

92090646478. 2

92090646479. 3

92090646480. 4

Question Number : 20 Question Id : 92090611771 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which conclusion would follow on the basis of given statements:

Statements : (A) All pens are chalks.
(B) All chairs are chalks.
Conclusions : (I) Some pens are chairs.
(II) Some chalks are pens.

- (1) If conclusion (I) follows
- (2) If conclusion (II) follows
- (3) If either conclusion (I) or (II) follows
- (4) Both conclusion (I) and (II) follows

Options :

- 92090646477. 1
- 92090646478. 2
- 92090646479. 3
- 92090646480. 4

Question Number : 21 Question Id : 92090611772 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which feature acts as a watershed between the Indus and Gangetic river basins?

- | | |
|--------------------|--------------------|
| (1) Aravalli Ridge | (2) Shivalik Hills |
| (3) Vindhyan Range | (4) Satpura Hills |

Options :

- 92090646481. 1
- 92090646482. 2
- 92090646483. 3
- 92090646484. 4

Question Number : 21 Question Id : 92090611772 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which feature acts as a watershed between the Indus and Gangetic river basins?

- (1) Aravalli Ridge (2) Shivalik Hills
(3) Vindhyan Range (4) Satpura Hills

Options :

92090646481. 1
92090646482. 2
92090646483. 3
92090646484. 4

Question Number : 22 Question Id : 92090611773 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List I with List II :

List I (Name of committee)	List II (Various sector of India Economy)
(A) Bimal Jalan Committee	(I) Corporate Governance
(B) Birla Committee	(II) Improving national highways in India
(C) S R Harhim Committee	(III) Urban poverty
(D) Chaturvedi	(IV) Market infrastructure Instruments

Choose the correct answer from the options given below:

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

Options :

92090646485. 1
92090646486. 2
92090646487. 3
92090646488. 4

Question Number : 22 Question Id : 92090611773 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List I with List II :

List I (Name of committee)	List II (Various sector of India Economy)
(A) Bimal Jalan Committee	(I) Corporate Governance
(B) Birla Committee	(II) Improving national highways in India
(C) S R Harhim Committee	(III) Urban poverty
(D) Chaturvedi	(IV) Market infrastructure Instruments

Choose the correct answer from the options given below:

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

Options :

- 92090646485. 1
- 92090646486. 2
- 92090646487. 3
- 92090646488. 4

**Question Number : 23 Question Id : 92090611774 Question Type : MCQ Option Shuffling : No Is
Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum
Instruction Time : 0**

Correct Marks : 4 Wrong Marks : 1

'Digi Yatra' facility has been implemented at ____ in the country.

- (1) Railway station
- (2) Airport
- (3) Inter State Bus Terminal(ISBT)
- (4) Port

Options :

- 92090646489. 1
- 92090646490. 2
- 92090646491. 3
- 92090646492. 4

**Question Number : 23 Question Id : 92090611774 Question Type : MCQ Option Shuffling : No Is
Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum
Instruction Time : 0**

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement I : Gross Domestic product (GDP) is the final value of the goods and services produced within the geographical boundaries of a country during a year.

Statement II : Net Domestic Product (NDP) equals to the GDP plus depreciation (value loss of an asset) on country capital goods

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

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

Options :

92090646493. 1

92090646494. 2

92090646495. 3

92090646496. 4

Question Number : 25 Question Id : 92090611776 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The 'GEM' portal of Government of India deals with _____

- | | |
|------------------------|------------------------------------|
| (1) Public Procurement | (2) Distance learning |
| (3) Tele medicine | (4) Aadhar based digital signature |

Options :

92090646497. 1

92090646498. 2

92090646499. 3

92090646500. 4

Question Number : 25 Question Id : 92090611776 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The 'GEM' portal of Government of India deals with _____

- (1) Public Procurement (2) Distance learning
(3) Tele medicine (4) Aadhar based digital signature

Options :

92090646497. 1
92090646498. 2
92090646499. 3
92090646500. 4

Part B: Electronics Communication and Information Engineering

Section Id :	920906234
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	75
Number of Questions to be attempted :	75
Section Marks :	300
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	920906388
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 26 Question Id : 92090611777 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If $u = \log \tan\left(\frac{\pi}{4} + \frac{\theta}{2}\right)$, then the value of $\tanh \frac{4}{2}$ will be equal to

1. $\tan \theta$
2. $2 \tan \theta$
3. $\tan 2\theta$
4. $\tan \frac{\theta}{2}$

Options :

92090646501. 1

92090646502. 2

92090646503. 3

92090646504. 4

Question Number : 26 Question Id : 92090611777 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि $u = \log \tan\left(\frac{\pi}{4} + \frac{\theta}{2}\right)$ तो $\tanh \frac{4}{2}$ का मान क्या होगा?

(1) $\tan \theta$

(2) $2 \tan \theta$

(3) $\tan 2\theta$

(4) $\tan \frac{\theta}{2}$

Options :

92090646501. 1

92090646502. 2

92090646503. 3

92090646504. 4

Question Number : 27 Question Id : 92090611778 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The required solution of $(x^2 - y^2 - z^2)p + 2xyq = 2xz$, will be

1. $x^2 - y^2 - z^2 = zf(y/z)$

2. $x^2 + y^2 + z^2 = zf(yz)$

3. $x^2 + y^2 + z^2 = zf(y/z)$

4. $x^2 - y^2 - z^2 = zf(z/y)$

Options :

92090646505. 1

92090646506. 2

92090646507. 3

92090646508. 4

Question Number : 27 Question Id : 92090611778 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$(x^2 - y^2 - z^2)p + 2xyq = 2xz$ का आवश्यक हल क्या होगा?

(1) $x^2 - y^2 - z^2 = zf(y/z)$

(2) $x^2 + y^2 + z^2 = zf(yz)$

(3) $x^2 + y^2 + z^2 = zf(y/z)$

(4) $x^2 - y^2 - z^2 = zf(z/y)$

Options :

92090646505. 1

92090646506. 2

92090646507. 3

92090646508. 4

Question Number : 28 Question Id : 92090611779 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$$\begin{vmatrix} 1+a & 1 & 1 & 1 \\ 1 & 1+b & 1 & 1 \\ 1 & 1 & 1+c & 1 \\ 1 & 1 & 1 & 1+d \end{vmatrix} \text{ is equal to}$$

1. $\frac{1}{abcd} \left(1 + \frac{1}{a} + \frac{1}{b} + \frac{1}{c} + \frac{1}{d} \right)$

2. $abcd(1+a+b+c+d)$

3. $\frac{1}{abcd} (1+a+b+c+d)$

4. $abcd \left(1 + \frac{1}{a} + \frac{1}{b} + \frac{1}{c} + \frac{1}{d} \right)$

Options :

92090646509. 1

92090646510. 2

92090646511. 3

92090646512. 4

Question Number : 28 Question Id : 92090611779 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$$\begin{vmatrix} 1+a & 1 & 1 & 1 \\ 1 & 1+b & 1 & 1 \\ 1 & 1 & 1+c & 1 \\ 1 & 1 & 1 & 1+d \end{vmatrix} \text{ किसके बराबर है?}$$

(1) $\frac{1}{abcd} \left(1 + \frac{1}{a} + \frac{1}{b} + \frac{1}{c} + \frac{1}{d} \right)$

(2) $abcd(1+a+b+c+d)$

(3) $\frac{1}{abcd}(1+a+b+c+d)$

(4) $abcd \left(1 + \frac{1}{a} + \frac{1}{b} + \frac{1}{c} + \frac{1}{d} \right)$

Options :

92090646509. 1

92090646510. 2

92090646511. 3

92090646512. 4

Question Number : 29 Question Id : 92090611780 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In a game, the chances of winning of 'A' and 'B' is 2 : 3. The chances of winning of B of at least 3 games out of 5 games played is

1. 34%

2. 68%

3. 40%

4. 32%

Options :

92090646513. 1

92090646514. 2

92090646515. 3

92090646516. 4

Question Number : 29 Question Id : 92090611780 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

किसी खेल में 'A' और 'B' के जीतने की संभावनाओं का अनुपात 2 : 3 है। यदि कुल 5 खेल खेलें जाए तो 'B' के कम से कम 3 खेल जीतने की संभावना (प्रतिशत में) क्या होगी?

- (1) 34% (2) 68%
(3) 40% (4) 32%

Options :

92090646513. 1
92090646514. 2
92090646515. 3
92090646516. 4

Question Number : 30 Question Id : 92090611781 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Laplace transform and Z-transform are related by

1. $S = \ln Z$
2. $S = \frac{\ln Z}{T}$
3. $S = Z$
4. $S = T \ln Z$

Options :

92090646517. 1
92090646518. 2
92090646519. 3
92090646520. 4

Question Number : 30 Question Id : 92090611781 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

लाप्लास रूपांतर और Z-रूपांतर किससे संबंधित हैं?

- (1) $S = \ln Z$ (2) $S = \frac{\ln Z}{T}$
(3) $S = Z$ (4) $S = T \ln Z$

Options :

92090646517. 1
92090646518. 2

92090646519. 3

92090646520. 4

Question Number : 31 Question Id : 92090611782 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A $100\ \mu\text{F}$ capacitor (C_1) is initially charged to accumulate $150\ \mu\text{C}$. One unchanged capacitor (C_2) $350\ \mu\text{F}$ is parallelly connected to first one. In steady state, C_1 will have

1. $3.33\ \mu\text{C}$
2. $33.33\ \mu\text{C}$
3. $333.3\ \mu\text{C}$
4. $0.33\ \mu\text{C}$

Options :

92090646521. 1

92090646522. 2

92090646523. 3

92090646524. 4

Question Number : 31 Question Id : 92090611782 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक $100\ \mu\text{F}$ (C_1) के संधारित्र को $150\ \mu\text{C}$ आवेश को संचित करने के लिए प्रारंभ में आवेशित किया जाता है। एक $350\ \mu\text{F}$ (C_2) के अनावेशित संधारित्र को पहले संधारित्र के साथ समांतर क्रम में जोड़ा जाता है स्थायी अवस्था में C_1 का मान क्या होगा?

- | | |
|--------------------------|--------------------------|
| (1) $3.33\ \mu\text{C}$ | (2) $33.33\ \mu\text{C}$ |
| (3) $333.3\ \mu\text{C}$ | (4) $0.33\ \mu\text{C}$ |

Options :

92090646521. 1

92090646522. 2

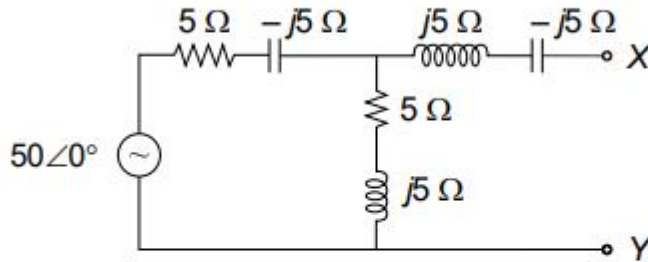
92090646523. 3

92090646524. 4

Question Number : 32 Question Id : 92090611783 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

For the circuit given below, Thevenin's equivalent impedance (Z_{Th}) of the circuit is given as



1. $5 + j5 \Omega$
2. $5 - j5 \Omega$
3. $j5 \Omega$
4. 5Ω

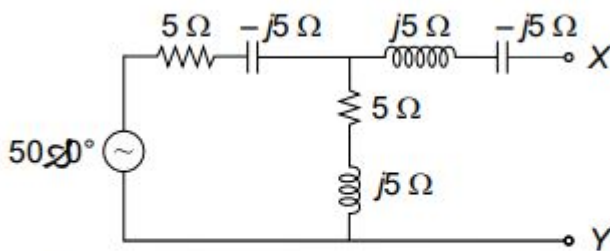
Options :

92090646525. 1
92090646526. 2
92090646527. 3
92090646528. 4

Question Number : 32 Question Id : 92090611783 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

दिए गए विद्युत परिपथ में परिपथ के थेवेनिन तुल्य प्रतिबाधा का मान क्या होगा?



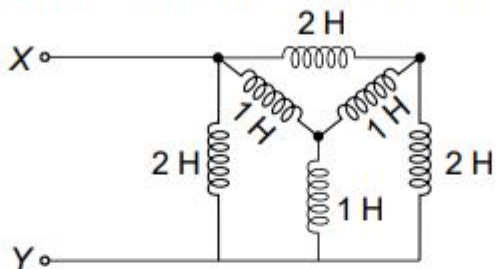
- | | |
|---------------------|---------------------|
| (1) $5 + j5 \Omega$ | (2) $5 - j5 \Omega$ |
| (3) $j5 \Omega$ | (4) 5Ω |

Options :

92090646525. 1
92090646526. 2
92090646527. 3
92090646528. 4

Question Number : 33 Question Id : 92090611784 Question Type : MCQ Option Shuffling : No Is
 Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum
 Instruction Time : 0
 Correct Marks : 4 Wrong Marks : 1

For the circuit shown in the figure, the inductance across X-Y is



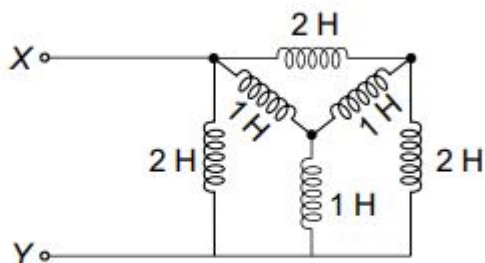
1. 1 H
2. 0.8 H
3. 1.8 H
4. 2 H

Options :

92090646529. 1
 92090646530. 2
 92090646531. 3
 92090646532. 4

Question Number : 33 Question Id : 92090611784 Question Type : MCQ Option Shuffling : No Is
 Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum
 Instruction Time : 0
 Correct Marks : 4 Wrong Marks : 1

दिए गए विद्युत परिपथ में, X-Y के बीच प्रेरकत्व का मान क्या हो गा?



- | | |
|-----------|-----------|
| (1) 1 H | (2) 0.8 H |
| (3) 1.8 H | (4) 2 H |

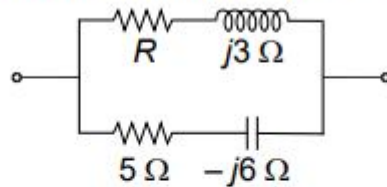
Options :

92090646529. 1
 92090646530. 2
 92090646531. 3
 92090646532. 4

Question Number : 34 Question Id : 92090611785 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Value of R such that the circuit, shown below, is resonant



1. 5Ω
2. 6.43Ω
3. 4.63Ω
4. 2Ω

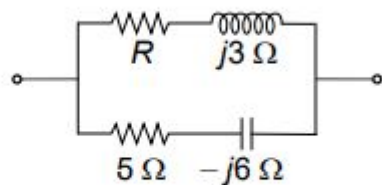
Options :

92090646533. 1
 92090646534. 2
 92090646535. 3
 92090646536. 4

Question Number : 34 Question Id : 92090611785 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

' R ' के किस मान के लिए, दिया गया परिपथ अनुनादी है।



- | | |
|-------------------|-------------------|
| (1) 5Ω | (2) 6.43Ω |
| (3) 4.63Ω | (4) 2Ω |

Options :

92090646533. 1

92090646534. 2

92090646535. 3

92090646536. 4

Question Number : 35 Question Id : 92090611786 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If Port-2 of a 2-port network is terminated with 73Ω and $ABCD$ parameter of 2-port network are $A=C=3$, $B=5$ and $D=-2$; input impedance of that network is

1. 73Ω
2. 50Ω
3. 1.03Ω
4. 14.8Ω

Options :

92090646537. 1

92090646538. 2

92090646539. 3

92090646540. 4

Question Number : 35 Question Id : 92090611786 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि किसी 2-प्रद्वारा (पोर्ट) परिपथ का प्रद्वार (पोर्ट)-2, 73Ω के प्रतिरोध के साथ टरमिनेट होता है और 2-प्रद्वार (पोर्ट) परिपथ के $ABCD$ प्रायाल हैं, $A=C=3$, $B=5$ और $D=-2$ तो परिपथ की निवेश प्रतिबाधा का मान क्या होगा?

- | | |
|-------------------|-------------------|
| (1) 73Ω | (2) 50Ω |
| (3) 1.03Ω | (4) 14.8Ω |

Options :

92090646537. 1

92090646538. 2

92090646539. 3

92090646540. 4

Question Number : 36 Question Id : 92090611787 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A voltage of 100 V dc is applied across two capacitors in series having capacitances $C_1 = 200 \mu\text{F}$ and $C_2 = 20 \mu\text{F}$. A voltage drop across C_1 is given as

1. 81.82 V
2. 8.182 V
3. 1.818 V
4. 18.18 V

Options :

92090646541. 1
92090646542. 2
92090646543. 3
92090646544. 4

Question Number : 36 Question Id : 92090611787 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

श्रेणी क्रम में जुड़े $C_1 = 200 \mu\text{F}$ और $C_2 = 20 \mu\text{F}$ धारिता के दो संधित्रों से एक 100 V की दिष्ट वोल्टेज आरोपित किया गया है. C_1 के मध्य वोल्टेज पतन कितना होगा?

- | | |
|-------------|-------------|
| (1) 81.82 V | (2) 8.182 V |
| (3) 1.818 V | (4) 18.18 V |

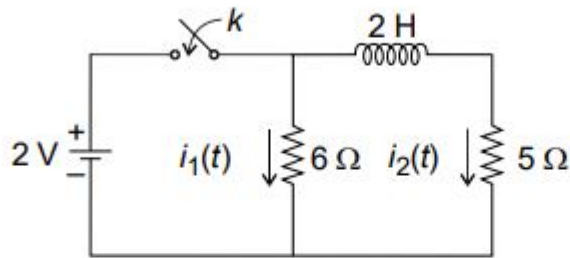
Options :

92090646541. 1
92090646542. 2
92090646543. 3
92090646544. 4

Question Number : 37 Question Id : 92090611788 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

For a circuit shown below, when switch is closed, the current $I_2(s)$ is (assume $i(0^+) = 0$)



1. $I_2(s) = \frac{1}{s+2.5}$
2. $I_2(s) = \frac{1}{s(s+2.5)}$
3. $I_2(s) = \frac{s}{s+2.5}$
4. $I_2(s) = \frac{s+2.5}{s(s+5)}$

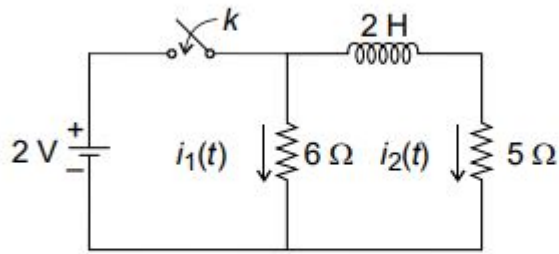
Options :

- 92090646545. 1
- 92090646546. 2
- 92090646547. 3
- 92090646548. 4

Question Number : 37 Question Id : 92090611788 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

दिए गए परिपथ में, जब स्विच को बंद किया जाता है तो विद्युत धारा $I_2(s)$ का मान क्या होगा?
(माना $i(0^+) = 0$)



(1) $I_2(s) = \frac{1}{s+2.5}$

(2) $I_2(s) = \frac{1}{s(s+2.5)}$

(3) $I_2(s) = \frac{s}{s+2.5}$

(4) $I_2(s) = \frac{s+2.5}{s(s+5)}$

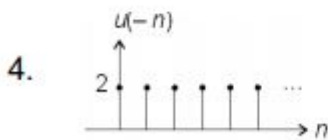
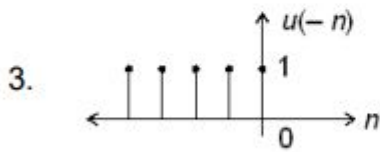
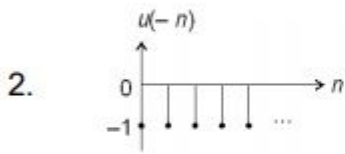
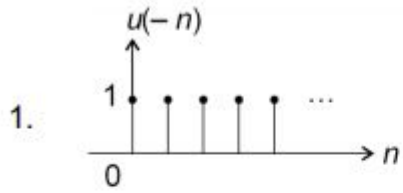
Options :

- 92090646545. 1
- 92090646546. 2
- 92090646547. 3
- 92090646548. 4

Question Number : 38 Question Id : 92090611789 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Identify the correct sketch of $u(-n)$.



Options :

92090646549. 1

92090646550. 2

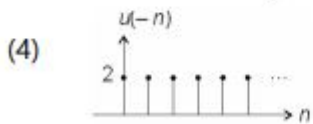
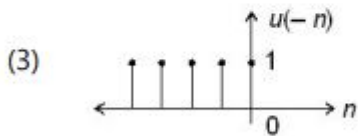
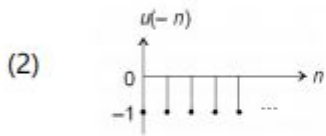
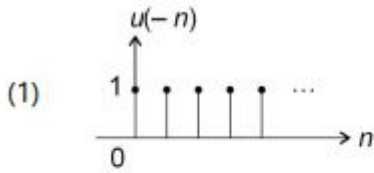
92090646551. 3

92090646552. 4

Question Number : 38 Question Id : 92090611789 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$u(-n)$ के सही रेखाचित्र को पहचानिए।



Options :

92090646549. 1

92090646550. 2

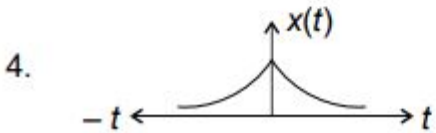
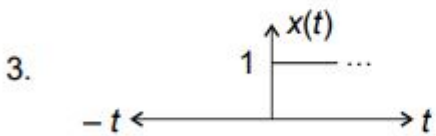
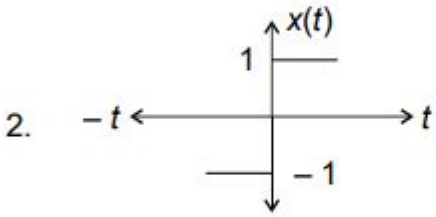
92090646551. 3

92090646552. 4

Question Number : 39 Question Id : 92090611790 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A signum function $x(t)$ is represented by



Options :

92090646553. 1

92090646554. 2

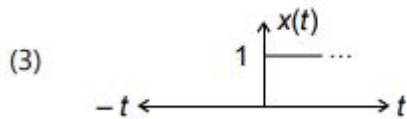
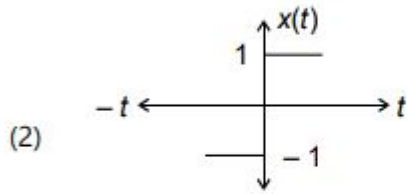
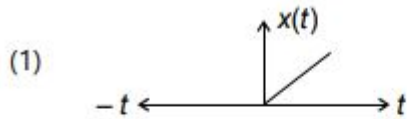
92090646555. 3

92090646556. 4

Question Number : 39 Question Id : 92090611790 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक चिह्न फलन को किससे प्रदर्शित किया जाता है?



Options :

- 92090646553. 1
- 92090646554. 2
- 92090646555. 3
- 92090646556. 4

Question Number : 40 Question Id : 92090611791 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The conduction band edge, E_C , in a semiconductor represents

- 1. electron potential energy
- 2. electron kinetic energy
- 3. hole potential energy
- 4. hole kinetic energy

Options :

- 92090646557. 1
- 92090646558. 2
- 92090646559. 3
- 92090646560. 4

Question Number : 40 Question Id : 92090611791 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक अर्धचालक का चालन बैन्ड ' E_c ' कोर क्या दर्शाता है?

- | | |
|------------------------------|---------------------------|
| (1) इलेक्ट्रान स्थितिज ऊर्जा | (2) इलेक्ट्रान गतिज ऊर्जा |
| (3) कोटर स्थितिज ऊर्जा | (4) कोटर गतिज ऊर्जा |

Options :

92090646557. 1

92090646558. 2

92090646559. 3

92090646560. 4

Question Number : 41 Question Id : 92090611792 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Maximum electric field in a $P-N$ junction in equilibrium is located

1. at the junction
2. in the P -type region
3. in the N -type region
4. at the metallic contacts

Options :

92090646561. 1

92090646562. 2

92090646563. 3

92090646564. 4

Question Number : 41 Question Id : 92090611792 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक p-n संधि (जंक्शन) का साम्यावस्था में, अधिकतम विद्युत क्षेत्र कहाँ स्थित होता है?

- | | |
|------------------------|------------------------|
| (1) संधि (जंक्शन) पर | (2) p-टाइप क्षेत्र में |
| (3) n-टाइप क्षेत्र में | (4) धातु-संपर्क पर |

Options :

- 92090646561. 1
- 92090646562. 2
- 92090646563. 3
- 92090646564. 4

Question Number : 42 Question Id : 92090611793 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In a silicon sample doped with N-type impurities, the Fermi level (E_F) is situated 0.35 eV away from the intrinsic Fermi level (E_i). If the energy bandgap (E_g) of silicon at 300 K is considered to be 1.10 eV, what is the separation between the Fermi level (E_F) and the valence band edge (E_V)?

- 1. 0.20 eV
- 2. 0.30 eV
- 3. 1.45 eV
- 4. 0.90 eV

Options :

- 92090646565. 1
- 92090646566. 2
- 92090646567. 3
- 92090646568. 4

Question Number : 42 Question Id : 92090611793 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक सिलिकॉन नमूने को N-टाइप अपद्वय से अपार्मिश्ट किया जाता है, निज फर्मी स्तर (E_i) से फर्मी स्तर (E_F) 0.35 eV दूर स्थित है। यदि सिलिकॉन का ऊर्जा बैंड अंतराल (E_g), 300 K ताप पर 1.10 eV है, तो फर्मी स्तर E_F और संयोजकता बैंड E_V के बीच की दूरी क्या होगी।

- | | |
|-------------|-------------|
| (1) 0.20 eV | (2) 0.30 eV |
| (3) 1.45 eV | (4) 0.90 eV |

Options :

- 92090646565. 1
- 92090646566. 2
- 92090646567. 3
- 92090646568. 4

Question Number : 43 Question Id : 92090611794 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In which quadrant of the current-voltage characteristic does a solar cell operate?

- 1. First
- 2. Second
- 3. Third
- 4. Fourth

Options :

- 92090646569. 1
- 92090646570. 2
- 92090646571. 3
- 92090646572. 4

Question Number : 43 Question Id : 92090611794 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक सोलर सेल, विद्युत-धारा विभव (वोल्टता) अभिलक्षण के किस चतुर्थांश में चालित हैं?

- | | |
|-----------|-----------|
| (1) पहले | (2) दूसरे |
| (3) तीसरे | (4) चौथे |

Options :

- 92090646569. 1
- 92090646570. 2
- 92090646571. 3
- 92090646572. 4

Question Number : 44 Question Id : 92090611795 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The characteristics of an ideal op-amp are (where BW = Bandwidth, SR = Slew Rate)

1. $BW = \infty$, $CMRR = \infty$, $SR = \infty$
2. $BW = \infty$, $CMRR = \infty$, $SR = 0$
3. $BW = \infty$, $CMRR = 0$, $SR = 0$
4. $BW = \infty$, $CMRR = 0$, $SR = \infty$

Options :

- 92090646573. 1
- 92090646574. 2
- 92090646575. 3
- 92090646576. 4

Question Number : 44 Question Id : 92090611795 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक आदर्श op-amp के अभिलक्षण हैं -

(जहां BW = बैंड की चौड़ाई, SR = द्रुत घूर्णन दर)

- | | |
|---|--|
| (1) $BW = \infty$, $CMRR = \infty$, $SR = \infty$ | (2) $BW = \infty$, $CMRR = \infty$, $SR = 0$ |
| (3) $BW = \infty$, $CMRR = 0$, $SR = 0$ | (4) $BW = \infty$, $CMRR = 0$, $SR = \infty$ |

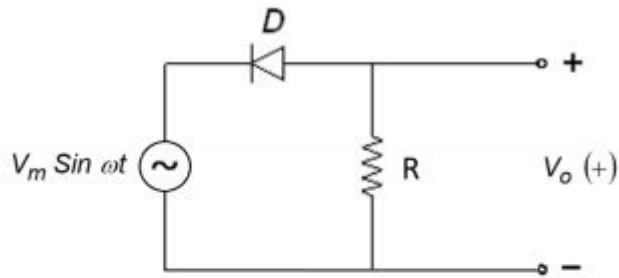
Options :

- 92090646573. 1
- 92090646574. 2
- 92090646575. 3
- 92090646576. 4

Question Number : 45 Question Id : 92090611796 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The average value of $V_o(t)$ of the given circuit will be



1. 0
2. $-\frac{V_m}{\pi}$
3. $-\frac{V_m}{\sqrt{2}}$
4. $-V_m$

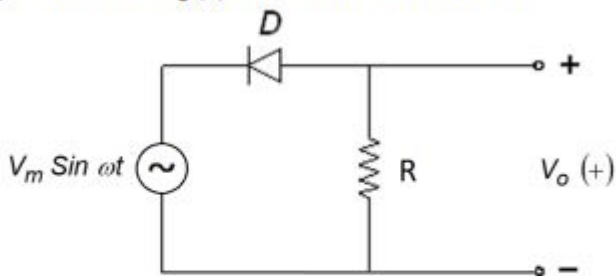
Options :

92090646577. 1
 92090646578. 2
 92090646579. 3
 92090646580. 4

Question Number : 45 Question Id : 92090611796 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

दिए गए विद्युत परिपथ के $V_o(t)$ का औसत मान क्या होगा?



- | | |
|-----------------------------|------------------------|
| (1) 0 | (2) $-\frac{V_m}{\pi}$ |
| (3) $-\frac{V_m}{\sqrt{2}}$ | (4) $-V_m$ |

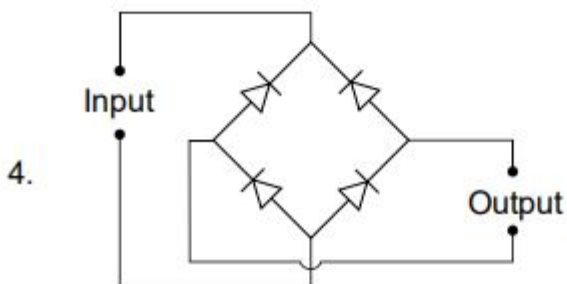
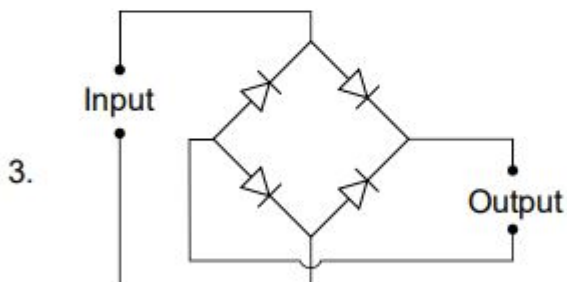
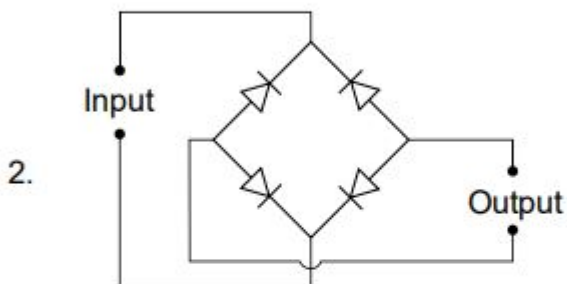
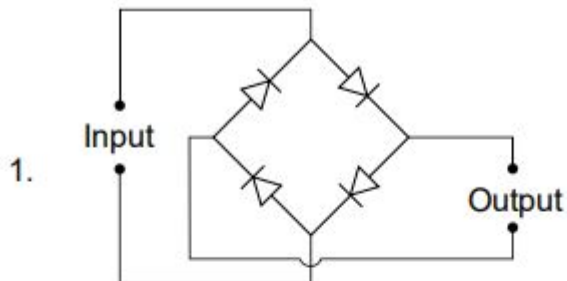
Options :

92090646577. 1
 92090646578. 2
 92090646579. 3
 92090646580. 4

Question Number : 46 Question Id : 92090611797 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The correct full-wave rectifier circuit is



Options :

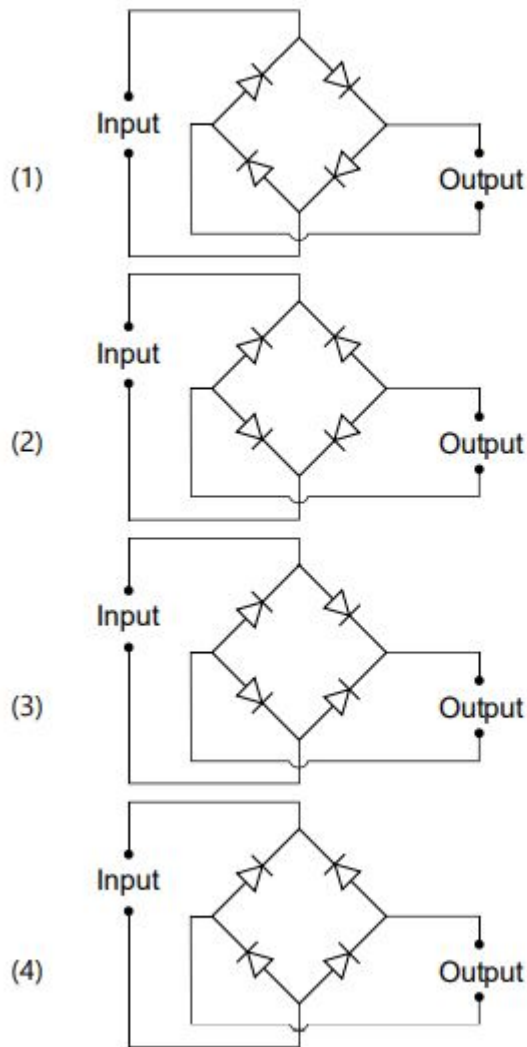
- 92090646581. 1
- 92090646582. 2
- 92090646583. 3
- 92090646584. 4

Question Number : 46 Question Id : 92090611797 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

कौन सा उचित पूर्ण तरंग दिष्टकारी परिपथ को दर्शाता है?



Options :

92090646581. 1

92090646582. 2

92090646583. 3

92090646584. 4

Question Number : 47 Question Id : 92090611798 Question Type : MCQ Option Shuffling : No Is
Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum
Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

For the monostable multivibrator timer 555 circuit with $R_A = 7.5 \text{ k}\Omega$ and $C = 0.1 \text{ }\mu\text{F}$, find out the period of the output waveform.

1. 0.325 ms
2. 0.625 ms
3. 0.125 ms
4. 0.825 ms

Options :

92090646585. 1
92090646586. 2
92090646587. 3
92090646588. 4

Question Number : 47 Question Id : 92090611798 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$R_A = 7.5 \text{ k}\Omega$ ब $C = 0.1 \text{ }\mu\text{F}$ के मोनोस्टेबल मल्टीवाइब्रेटर टाइमर 555 परिपथ के लिए निर्गत तरंगरूप का आवर्तकाल ज्ञात कीजिए:

- | | |
|--------------|--------------|
| (1) 0.325 ms | (2) 0.625 ms |
| (3) 0.125 ms | (4) 0.825 ms |

Options :

92090646585. 1
92090646586. 2
92090646587. 3
92090646588. 4

Question Number : 48 Question Id : 92090611799 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The frequency of oscillations at the output of an astable multivibrator using Schmitt trigger directly depends on

1. delay
2. product of resistor and capacitor (RC)
3. resistor, R , only
4. capacitor, C , only

Options :

92090646589. 1
92090646590. 2
92090646591. 3
92090646592. 4

Question Number : 48 Question Id : 92090611799 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक स्वचलित बहुकंपित्र जिसमें श्मिट ट्रिगर का उपयोग हुआ है, उसके निर्गत पर दोलन की आवृत्ति से किस पर निर्भर करती है?

- | | |
|--------------------------|---|
| (1) विलंब पर | (2) प्रतिरोध और संधारित्र के गुणनफल पर (RC) |
| (3) केवल प्रतिरोध R पर | (4) केवल संधारित्र C पर? |

Options :

92090646589. 1
92090646590. 2
92090646591. 3
92090646592. 4

Question Number : 49 Question Id : 92090611800 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

An $m : n$ decoder is used to enable 16 devices. The value of m is

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

Options :

- 92090646593. 1
- 92090646594. 2
- 92090646595. 3
- 92090646596. 4

Question Number : 49 Question Id : 92090611800 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक $m:n$ विकोडक का उपयोग युक्तियों में होता है। m का मान क्या हो गा?

- | | |
|--------|-------|
| (1) 16 | (2) 8 |
| (3) 2 | (4) 4 |

Options :

- 92090646593. 1
- 92090646594. 2
- 92090646595. 3
- 92090646596. 4

Question Number : 50 Question Id : 92090611801 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A sample-and-hold circuit consists of

1. unity gain amplifiers and capacitors
2. resistors only
3. inductors only
4. XOR logic gates

Options :

- 92090646597. 1
- 92090646598. 2
- 92090646599. 3
- 92090646600. 4

Question Number : 50 Question Id : 92090611801 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक प्रतिदर्श-और-बंधन परिपथ (सेम्पल-एंड-होल्ड परिपथ) किस का बना होता है?

- | | |
|---------------------------|------------------------------|
| (1) एकक लब्धि प्रवर्धक का | (2) केवल प्रतिरोध का |
| (3) केवल प्रेरक का | (4) XOR तर्क द्वारा (गेट) का |

Options :

- 92090646597. 1
- 92090646598. 2
- 92090646599. 3
- 92090646600. 4

Question Number : 51 Question Id : 92090611802 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A *D* flip-flop can be operated in toggle mode by connecting

- 1. *D* and *Q*
- 2. *D* and clock
- 3. \bar{Q} and *D*
- 4. *Q* and \bar{Q}

Options :

- 92090646601. 1
- 92090646602. 2
- 92090646603. 3
- 92090646604. 4

Question Number : 51 Question Id : 92090611802 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक *D*-अलट फ्लॉप (फ्लिप फ्लॉप) परिपथ का, टॉगल (गिल्ली) मोड में संचालन करने के लिए किन्हें जोड़ा जाता है?

- | | |
|------------------------------|---------------------------------|
| (1) <i>D</i> और <i>Q</i> को | (2) <i>D</i> और घड़ी (clock) को |
| (3) \bar{Q} और <i>Q</i> को | (4) <i>Q</i> और \bar{Q} को |

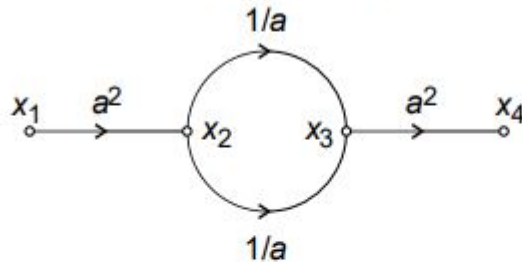
Options :

- 92090646601. 1
- 92090646602. 2
- 92090646603. 3

Question Number : 52 Question Id : 92090611803 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The overall transmittance for the signal flow graph shown in figure is



1. a^3
2. a^2
3. $2a^2$
4. $2a^3$

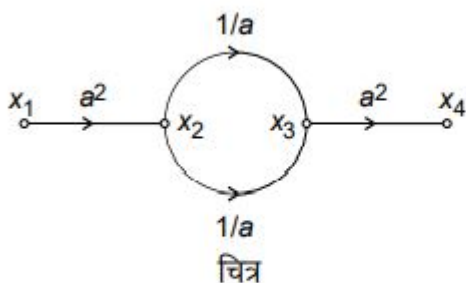
Options :

92090646605. 1
92090646606. 2
92090646607. 3
92090646608. 4

Question Number : 52 Question Id : 92090611803 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

चित्र में दर्शाए गए, संकेत प्रवाह ग्राफ के लिए कुल प्रेषण किस के बराबर है?



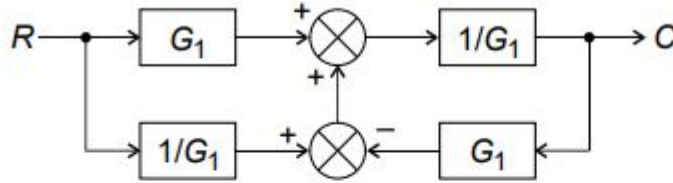
- | | |
|------------|------------|
| (1) a^3 | (2) a^2 |
| (3) $2a^2$ | (4) $2a^3$ |

Options :

- 92090646605. 1
- 92090646606. 2
- 92090646607. 3
- 92090646608. 4

Question Number : 53 Question Id : 92090611804 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1

The overall transfer function for the block diagram shown in figure is



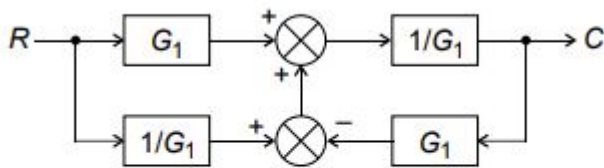
1. $\frac{1+G_1^2}{2}$
2. $\frac{1}{2}\left(1+\frac{1}{G_1^2}\right)$
3. $\frac{G_1^2}{2}$
4. 1

Options :

- 92090646609. 1
- 92090646610. 2
- 92090646611. 3
- 92090646612. 4

Question Number : 53 Question Id : 92090611804 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1

दिए गए चित्र के लिए कुल अंतरित फलन का मान क्या है?



- (1) $\frac{1+G_1^2}{2}$ (2) $\frac{1}{2}\left(1+\frac{1}{G_1^2}\right)$
 (3) $\frac{G_1^2}{2}$ (4) 1

Options :

92090646609. 1
 92090646610. 2
 92090646611. 3
 92090646612. 4

Question Number : 54 Question Id : 92090611805 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The transfer function of two compensators is given as

$$C_1 = \frac{s+30}{30(s+1)} \text{ and } C_2 = \frac{30(1+s)}{(30+s)}$$

The correct statement is

1. C_1 is a lead compensator and C_2 is a lag compensator
2. C_1 is a lag compensator and C_2 is a lead compensator
3. C_1 and C_2 both are lead compensator
4. C_1 and C_2 both are lag compensator

Options :

92090646613. 1
 92090646614. 2
 92090646615. 3
 92090646616. 4

Question Number : 54 Question Id : 92090611805 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

दो प्रतिकारित्र का अंतरित फलन दिया गया है?

$$C_1 = \frac{s+30}{30(s+1)} \text{ और } C_2 = \frac{30(1+s)}{(30+s)}$$

तो निम्नलिखित में से कौन सा कथन उचित है?

- (1) C_1 एक अग्र प्रतिकारित्र है और C_2 एक पश्च प्रतिकारित्र है।
- (2) C_1 एक पश्च प्रतिकारित्र है और C_2 एक अग्र प्रतिकारित्र है।
- (3) C_1 और C_2 दोनों अग्र प्रतिकारित्र हैं।
- (4) C_1 और C_2 दोनों पश्च प्रतिकारित्र हैं।

Options :

92090646613. 1
92090646614. 2
92090646615. 3
92090646616. 4

Question Number : 55 Question Id : 92090611806 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$H(s) = \frac{1}{s^3 + As^2 + Bs + 5}$, is the transfer function of a system. The system is stable for constraints

1. $A < 0$ and $AB < 5$
2. $A > 0$ and $AB < 5$
3. $A > 0$ and $AB > 5$
4. $A < 0$ and $AB > 5$

Options :

92090646617. 1
92090646618. 2
92090646619. 3
92090646620. 4

Question Number : 55 Question Id : 92090611806 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि $H(s) = \frac{1}{s^3 + As^2 + Bs + 5}$ किसी निकाय का अंतरित फलन है तो निकाय कौन से व्यवरोध के लिए स्थायी हो गा?

- (1) $A < 0$ और $AB < 5$ (2) $A > 0$ और $AB < 5$
 (3) $A > 0$ और $AB > 5$ (4) $A < 0$ और $AB > 5$

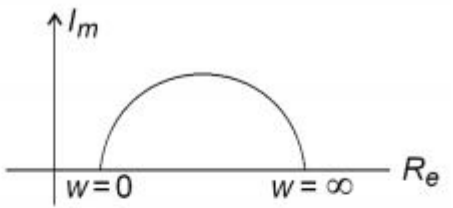
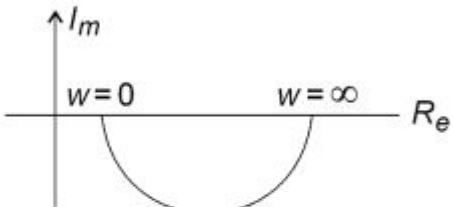
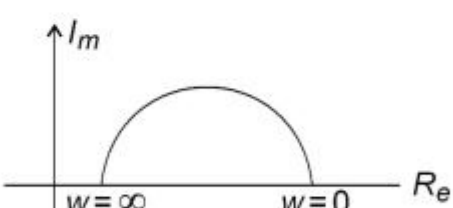
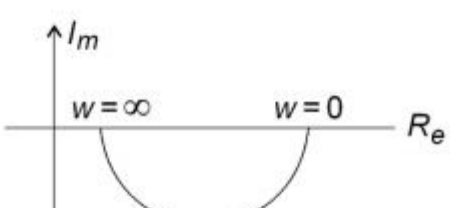
Options :

92090646617. 1
 92090646618. 2
 92090646619. 3
 92090646620. 4

Question Number : 56 Question Id : 92090611807 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A polar diagram, which represents a lag network, is

1. 
2. 
3. 
4. 

Options :

92090646621. 1

92090646622. 2

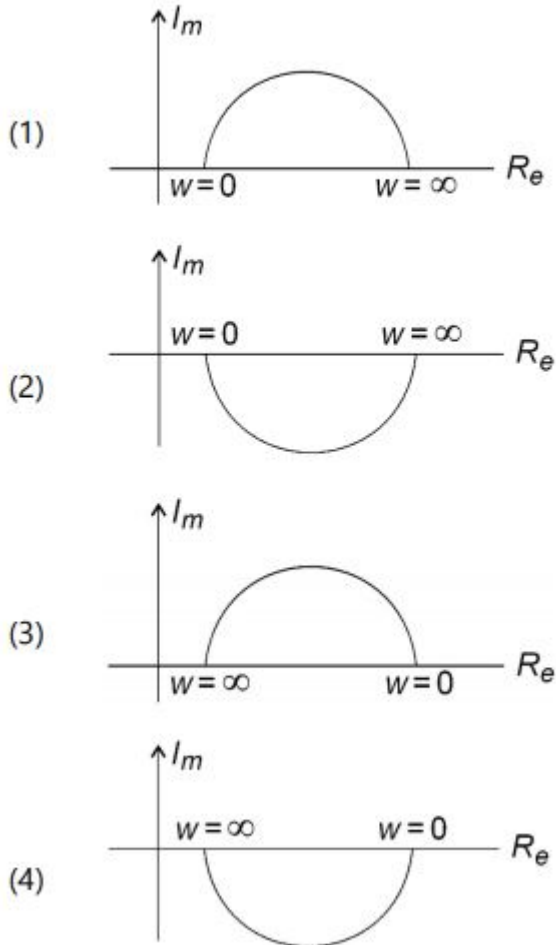
92090646623. 3

92090646624. 4

Question Number : 56 Question Id : 92090611807 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक ध्रुवीय चित्र, जो एक पश्च परिपक्ष को दर्शाता है -



Options :

92090646621. 1

92090646622. 2

92090646623. 3

92090646624. 4

Question Number : 57 Question Id : 92090611808 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The open-loop DC gain of a unity negative feedback system with closed-loop transfer function $\frac{s+3}{2s^2+5s+8}$ is

1. $\frac{3}{5}$

2. $\frac{3}{8}$

3. $\frac{5}{3}$

4. $\frac{8}{3}$

Options :

92090646625. 1

92090646626. 2

92090646627. 3

92090646628. 4

Question Number : 57 Question Id : 92090611808 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक एकक, ऋणात्मक, पुनर्भरण निकाय की खुली पाशा DC लब्धि, बन्द पाश अंतरित फलन $\frac{s+3}{2s^2+5s+8}$, का मान है -

(1) $\frac{3}{5}$

(2) $\frac{3}{8}$

(3) $\frac{5}{3}$

(4) $\frac{8}{3}$

Options :

92090646625. 1

92090646626. 2

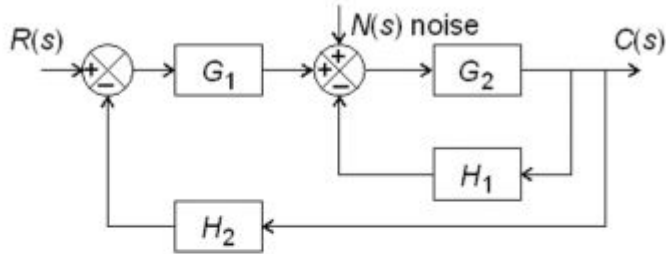
92090646627. 3

92090646628. 4

Question Number : 58 Question Id : 92090611809 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The noise transfer function $\frac{C(s)}{N(s)} \Big|_{R(s)=0}$ of the given system is



1. $\frac{G_2}{1 + G_2H_1 + G_1G_2H_2}$
2. $\frac{G_1}{1 + G_2H_1 + G_1G_2H_2}$
3. $\frac{G_2}{1 - G_1H_2 - G_1G_2H_2}$
4. $\frac{G_1G_2}{1 - G_2H_1 - G_1G_2H_2}$

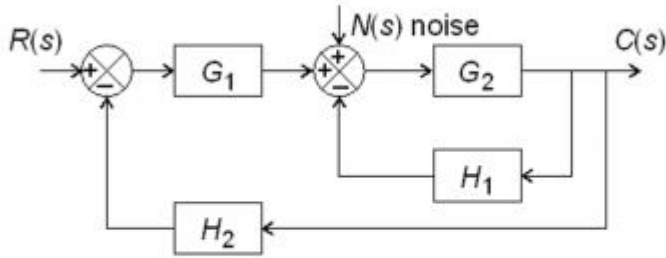
Options :

92090646629. 1
 92090646630. 2
 92090646631. 3
 92090646632. 4

Question Number : 58 Question Id : 92090611809 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

दिए गए निकाय का, ख अंतरित फलन $\frac{C(s)}{N(s)}\Big|_{R(s)=0}$ का मान है।



(1) $\frac{G_2}{1 + G_2H_1 + G_1G_2H_2}$

(2) $\frac{G_1}{1 + G_2H_1 + G_1G_2H_2}$

(3) $\frac{G_2}{1 - G_1H_2 - G_1G_2H_2}$

(4) $\frac{G_1G_2}{1 - G_2H_1 - G_1G_2H_2}$

Options :

- 92090646629. 1
- 92090646630. 2
- 92090646631. 3
- 92090646632. 4

Question Number : 59 Question Id : 92090611810 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The gate used in a DPSK modulator is

- 1. NOR
- 2. NAND
- 3. XNOR
- 4. OR

Options :

- 92090646633. 1
- 92090646634. 2
- 92090646635. 3
- 92090646636. 4

Question Number : 59 Question Id : 92090611810 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

DPSK मॉड्यूलक में कौन सा द्वार (गेट) उपयोग किया जाता है?

- | | |
|----------|----------|
| (1) NOR | (2) NAND |
| (3) XNOR | (4) OR |

Options :

- 92090646633. 1
- 92090646634. 2
- 92090646635. 3
- 92090646636. 4

Question Number : 60 Question Id : 92090611811 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A sinusoidal signal is sampled at 10 kHz and quantized by using 10 bits uniform quantizer. The values of bit rate and $(SNR)_Q$ in this case are

- 1. 100 kbps, 61.6 dB
- 2. 100 kbps, 10 dB
- 3. 50 kbps, 61.6 dB
- 4. 50 kbps, 10 dB

Options :

- 92090646637. 1
- 92090646638. 2
- 92090646639. 3
- 92090646640. 4

Question Number : 60 Question Id : 92090611811 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक ज्यावक्रीय संकेत को, 10 kHz पर, 10 अंश (बिट्स) के एक समान स्वान्टाइजर का उपयोग कर के प्रविदर्शित किया जाता है। इस अवस्था में अंश (बिट्स) दर और $(SNR)_Q$ का मान क्या होगा?

- | | |
|-----------------------|---------------------|
| (1) 100 kbps, 61.6 dB | (2) 100 kbps, 10 dB |
| (3) 50 kbps, 61.6 dB | (4) 50 kbps, 10 dB |

Options :

- 92090646637. 1
- 92090646638. 2
- 92090646639. 3

92090646640. 4

Question Number : 61 Question Id : 92090611812 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

To avoid slope overload distortion in delta modulation for $m(t) = 10\cos(2,000\pi t)$ to maintain minimum $(SNR)_Q$ (Signal to Quantization Noise Ratio), the minimum required sampling rate is

1. 10^4 samples/sec
2. 10^6 samples/sec
3. 10^8 samples/sec
4. 10^{10} samples/sec

Options :

92090646641. 1
92090646642. 2
92090646643. 3
92090646644. 4

Question Number : 61 Question Id : 92090611812 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

डैल्टा माडुलन मे, प्रवणता अतिभार विकृति, से, बचने के लिए $m(t) = 10\cos(2,000\pi t)$ के लिए, न्यूनतम $(SNR)_Q$ (संकेत से स्वान्तीकरण रव दर) को बनाए रखने के लिए, न्यूनतम आवश्यक प्रतिदर्शन दर क्या होगी?

- | | |
|------------------------------|---------------------------------|
| (1) 10^4 प्रतिदर्श/सेकेण्ड | (2) 10^6 प्रतिदर्श/सेकेण्ड |
| (3) 10^8 प्रतिदर्श/सेकेण्ड | (4) 10^{10} प्रतिदर्श/सेकेण्ड |

Options :

92090646641. 1
92090646642. 2
92090646643. 3
92090646644. 4

Question Number : 62 Question Id : 92090611813 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The biggest advantage of generating an FM signal from the PM signal is

1. design simplicity
2. very high centre frequency stability
3. response linearity
4. limiting the frequency deviation

Options :

- 92090646645. 1
- 92090646646. 2
- 92090646647. 3
- 92090646648. 4

Question Number : 62 Question Id : 92090611813 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक PM संकेत से FM संकेत को उत्पन्न करने का सबसे बड़ा लाभ है :-

- | | |
|---------------------------------|---------------------------------------|
| (1) डिजाइन सरलता | (2) बहुत ऊँची केन्द्रीय आकृति स्थिरता |
| (3) अनुक्रिया एकघातता (रैखिकता) | (4) आवृत्ति विचलन को सीमित करना |

Options :

- 92090646645. 1
- 92090646646. 2
- 92090646647. 3
- 92090646648. 4

Question Number : 63 Question Id : 92090611814 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A superheterodyne receiver to operate in the frequency range 550 kHz to 1500 kHz and the IF is 455 kHz. What is the possible tuning range of local oscillator frequency?

1. 95–1005 kHz
2. 1005–1955 kHz
3. 1555–3455 kHz
4. 1460–2410 kHz

Options :

- 92090646649. 1
- 92090646650. 2
- 92090646651. 3
- 92090646652. 4

Question Number : 63 Question Id : 92090611814 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक सुपरहेररोडाइन अभिग्राही को से की आवृत्ति परिसर 550 kHz से 1500 kHz और IF, 455 kHz पर कार्य करता है। स्थानीय दोलक आवृत्ति की संभव समस्वरण परिसर क्या हैं?

- (1) 95 – 1005 kHz
- (2) 1005 – 1955 kHz
- (3) 1555 – 3455 kHz
- (4) 1460 – 2410 kHz

Options :

- 92090646649. 1
- 92090646650. 2
- 92090646651. 3
- 92090646652. 4

Question Number : 64 Question Id : 92090611815 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If X is a Gaussian random variable with mean zero and variance 10, the differential entropy of X is

- 1. 1.52 bits
- 2. 3.8 bits
- 3. 2.2 bits
- 4. 5.6 bits

Options :

- 92090646653. 1
- 92090646654. 2
- 92090646655. 3
- 92090646656. 4

Question Number : 64 Question Id : 92090611815 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि x एक गाउसीय यादृच्छिक चर है जिसका माध्य शून्य और प्रसरण 10 है तो x की अवकल एन्ट्रॉपी क्या है?

- (1) 1.52 अंश (बिट्स) (2) 3.8 अंश (बिट्स)
(3) 2.2 अंश (बिट्स) (4) 5.6 अंश (बिट्स)

Options :

92090646653. 1
92090646654. 2
92090646655. 3
92090646656. 4

Question Number : 65 Question Id : 92090611816 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If V_1 and V_2 are the 3-dimensional subspaces of the 4-dimensional vector space, then the smallest possible dimension of $V_1 \cap V_2$ is

1. One
2. Two
3. Three
4. Four

Options :

92090646657. 1
92090646658. 2
92090646659. 3
92090646660. 4

Question Number : 65 Question Id : 92090611816 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि V_1 और V_2 , 4-विमीय सदिशसमष्टि के 3-विमीय उपसमष्टि हैं तो $V_1 \cap V_2$ की सबसे छोटी संभव विमा क्या होगी?

- (1) एक (2) दो
(3) तीन (4) चार

Options :

92090646657. 1

92090646658. 2

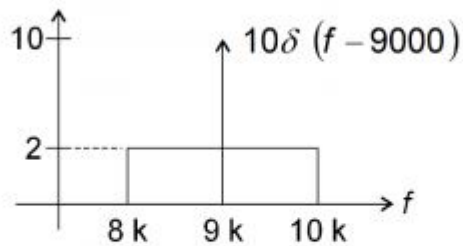
92090646659. 3

92090646660. 4

Question Number : 66 Question Id : 92090611817 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The power spectral density of a real process $X(t)$ for positive frequencies is shown in figure. Then what is the value of $R_X(0)$ where $R_X(T)$ is the auto-correlation of $X(t)$



1. 8000

2. 4000

3. 4010

4. 8020

Options :

92090646661. 1

92090646662. 2

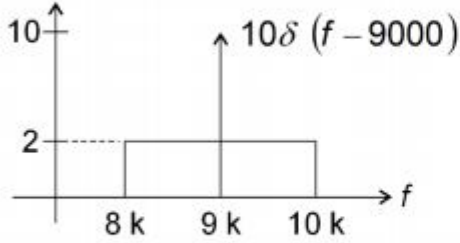
92090646663. 3

92090646664. 4

Question Number : 66 Question Id : 92090611817 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक वास्तविक प्रक्रम $X(t)$ की घनात्मक आवृत्तियों के लिए शक्ति स्पेक्ट्रमी (मानावली) धनत्व चित्र में दिखाया गया है। तो $R_X(0)$ का मान क्या होगा? यहाँ $R_X(T)$, $X(t)$ का स्वसहसंबंध है।



- (1) 8000 (2) 4000
 (3) 4010 (4) 8020

Options :

92090646661. 1
 92090646662. 2
 92090646663. 3
 92090646664. 4

Question Number : 67 Question Id : 92090611818 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The first stage of a two-stage amplifier has a voltage gain of 10, input resistance 600Ω , equivalent noise resistance 1600Ω and output resistance $27 \text{ k}\Omega$. For a second stage, these values are 25, $81 \text{ k}\Omega$ and $1 \text{ M}\Omega$, respectively. If it is driven by the generator with output impedance 50Ω , find the noise figure of the amplifier.

1. 38.4
 2. 39.4
 3. 1.002
 4. 2.04

Options :

92090646665. 1
 92090646666. 2
 92090646667. 3
 92090646668. 4

Question Number : 67 Question Id : 92090611818 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक दो अवस्था प्रवर्धक की पहली अवस्था की वोल्ट लब्धि 10 है, निवेश प्रतिरोध 600Ω , तुलीय रव प्रतिरोध 1600Ω और निर्गम प्रतिरोध $27 \text{ k}\Omega$ हैं। दूसरी अवस्था के लिए इनका मान क्रमशः $81 \text{ k}\Omega$ और $1 \text{ M}\Omega$ हैं। यदि यह एक जनित्र द्वारा चलाया जाता है जिसकी निर्गम प्रतिबाधा 50Ω है तो प्रर्धकका रव मान ज्ञान कीजिए।

- (1) 38.4 (2) 39.4
(3) 1.002 (4) 2.04

Options :

92090646665. 1
92090646666. 2
92090646667. 3
92090646668. 4

Question Number : 68 Question Id : 92090611819 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

An antenna has power gain of 10, directive gain of 20 and loss resistance of 30Ω ; the radiation resistance is

1. 10Ω
2. 20Ω
3. 30Ω
4. 40Ω

Options :

92090646669. 1
92090646670. 2
92090646671. 3
92090646672. 4

Question Number : 68 Question Id : 92090611819 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि एक श्रृंगिका (ऐन्टेना) की शक्ति लब्धि 10 है; दैशिक लब्धि 20 है और क्षय प्रतिरोध 30Ω है तो उसकी विकिरण प्रथिरोध क्या होगा?

- (1) 10Ω (2) 20Ω
(3) 30Ω (4) 40Ω

Options :

- 92090646669. 1
- 92090646670. 2
- 92090646671. 3
- 92090646672. 4

Question Number : 69 Question Id : 92090611820 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

An evanescent mode occurs when

1. a wave is attenuated rather than propagated
2. $m = n = 0$ so that all field components vanish
3. the propagation constant is purely imaginary
4. the wave frequency is same as the cut-off frequency

Options :

- 92090646673. 1
- 92090646674. 2
- 92090646675. 3
- 92090646676. 4

Question Number : 69 Question Id : 92090611820 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक आयामहासी विधा होती हैं जब

- (1) तरंग संचरित नहीं होती बल्कि क्षीणीकृत होती हैं।
- (2) $m = n = 0$ अर्थात सभी क्षेत्र धरक समाप्त हो जाते हैं।
- (3) संचरण स्थिरांक पूर्णतः काल्पनिक हैं।
- (4) तरंग आकृति और अंतक आवृत्ति समान होती हैं।

Options :

- 92090646673. 1
- 92090646674. 2
- 92090646675. 3
- 92090646676. 4

Question Number : 70 Question Id : 92090611821 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In cylindrical coordinates, equation

$$\frac{\partial^2 \psi}{\partial \rho^2} + \frac{1}{\rho} \frac{\partial \psi}{\partial \rho} + \frac{\partial^2 \psi}{\partial z^2} + 132 = 0$$

is a

1. Laplace's equation
2. Helmholtz's equation
3. Poisson's equation
4. Lorentz's equation

Options :

92090646677. 1

92090646678. 2

92090646679. 3

92090646680. 4

Question Number : 70 Question Id : 92090611821 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

बैलनी निर्देशांक समीकरण में

$$\frac{\partial^2 \psi}{\partial \rho^2} + \frac{1}{\rho} \frac{\partial \psi}{\partial \rho} + \frac{\partial^2 \psi}{\partial z^2} + 132 = 0$$

एक _____ हैं।

(1) लॉप्लास समीकरण

(2) हेल्महोल्त्ज समीकरण

(3) पॉयसन समीकरण

(4) लोरेन्टस समीकरण

Options :

92090646677. 1

92090646678. 2

92090646679. 3

92090646680. 4

Question Number : 71 Question Id : 92090611822 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In a certain medium $\vec{E} = 6 \cos(2 \times 10^8 t - 5y) \hat{a}_x$ V/m What type of medium is it?

1. Perfect conductor
2. Perfect dielectric
3. Free space
4. Lossless dielectric

Options :

92090646681. 1
92090646682. 2
92090646683. 3
92090646684. 4

Question Number : 71 Question Id : 92090611822 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

किसी माध्यम में $\vec{E} = 6 \cos(2 \times 10^8 t - 5y) \hat{a}_x$ V/m , यह माध्यम कौन से प्रकार का है?

- | | |
|----------------|-----------------------|
| (1) पूर्ण चालक | (2) पूर्ण परावैद्युत |
| (3) मुक्त आकाश | (4) हासहीन परावैद्युत |

Options :

92090646681. 1
92090646682. 2
92090646683. 3
92090646684. 4

Question Number : 72 Question Id : 92090611823 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

What is the maximum number of subnetworks for the default mask 255.255.0.0 and subnet mask 255.255.224.0?

1. 8
2. 16
3. 32
4. 64

Options :

- 92090646685. 1
- 92090646686. 2
- 92090646687. 3
- 92090646688. 4

Question Number : 72 Question Id : 92090611823 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक वित्थ मास्क 255.255.0.0 और एक उपजाल मास्क 255.255.224.0 के लिए उपपरिपथ की अधिकतम संख्या क्या हैं?

- | | |
|--------|--------|
| (1) 8 | (2) 16 |
| (3) 32 | (4) 64 |

Options :

- 92090646685. 1
- 92090646686. 2
- 92090646687. 3
- 92090646688. 4

Question Number : 73 Question Id : 92090611824 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which of the following is not transition strategy from IPv4 to IPv6?

1. Dual stack
2. Tunneling
3. Header translation
4. Variable length prefix

Options :

- 92090646689. 1
- 92090646690. 2
- 92090646691. 3
- 92090646692. 4

Question Number : 73 Question Id : 92090611824 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से कौन सी, IPv4 से IPv6 की संक्रमण नीति नहीं है?

- | | |
|-------------------------------|---------------------------------------|
| (1) द्वैत ढेर (स्टेक) | (2) सुरंगन |
| (3) हेडर (शीर्षणी) स्थानांतरण | (4) चर लंबाई प्रिफिक्स (पूर्वप्रत्यय) |

Options :

- 92090646689. 1
- 92090646690. 2
- 92090646691. 3
- 92090646692. 4

Question Number : 74 Question Id : 92090611825 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The full form of MQTT is

1. Management Query Transfer Tool
2. Message Query Telemetry Transport
3. Message Queuing Telemetry Transport
4. Management Queuing Telemetry Tool

Options :

- 92090646693. 1
- 92090646694. 2
- 92090646695. 3
- 92090646696. 4

Question Number : 74 Question Id : 92090611825 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

MQTT का पूरा रूप है -

- | | |
|--|--|
| (1) मैनेजमेंट क्वारी ट्रांसफर टूल | (2) मैसेज क्वारी टेलिमेटरी ट्रांसपोर्ट |
| (3) मैनेजमेंट क्यूंग टेलिमेटरी ट्रांसपोर्ट | (4) मैनेजमेंट क्यूंग टेलिमेटरी टूल |

Options :

- 92090646693. 1
- 92090646694. 2
- 92090646695. 3
- 92090646696. 4

Question Number : 75 Question Id : 92090611826 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) : The sampling theorem is applicable to continuous time band limited signal.

Reason (R) : The sampling theorem is applicable to stochastic signal.

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

1. Both (A) and (R) are true and (R) is the correct explanation of (A)
2. Both (A) and (R) are true but (R) is not the correct explanation of (A)
3. (A) is true but (R) is false
4. (A) is false but (R) is true

Options :

- 92090646697. 1
- 92090646698. 2
- 92090646699. 3
- 92090646700. 4

Question Number : 75 Question Id : 92090611826 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं: एक अभिकथन (Assertion A) के रूप में लिखित है तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A : प्रतिचयन प्रमेय केवल संतत काल बैंड सीमित संकेतो पर लागू होता है।

कारण R : प्रतिचयन प्रमेय प्रसंभाव्य संकेतो पर लागू होता है।

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

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

Options :

- 92090646697. 1
- 92090646698. 2
- 92090646699. 3
- 92090646700. 4

Question Number : 76 Question Id : 92090611827 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) : A system is called causal if its output $y(t)$ at an arbitrary time $t = t_0$ depends on only the input $x(t)$ for $t \leq t_0$.

Reason (R) : In a causal system, it is not possible to obtain an output before an input is applied to the system.

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

1. Both (A) and (R) are true and (R) is the correct explanation of (A)
2. Both (A) and (R) are true but (R) is not the correct explanation of (A)
3. (A) is true but (R) is false
4. (A) is false but (R) is true

Options :

- 92090646701. 1
- 92090646702. 2
- 92090646703. 3
- 92090646704. 4

Question Number : 76 Question Id : 92090611827 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं: एक अभिकथन (Assertion A) के रूप में लिखित है तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A : एक निकाय (तंत्र) कारणात्मक कहलाता है यदि उसका निर्गम $y(t)$ किसी यादृच्छिकसमय $t = t_0$ पर केवल उसके निवेश $x(t)$ पर निर्भर करता है ($t \leq t_0$ के लिए)

कारण R : एक कारणात्मक निकाय में, यह संभव नहीं है कि निर्गम को, निवेश देने से पहले प्राप्त किया जा सके।

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

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

Options :

92090646701. 1
92090646702. 2
92090646703. 3
92090646704. 4

Question Number : 77 Question Id : 92090611828 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) : Emitter-follower configuration of BJT is used for impedance-matching applications.

Reason (R) : In a common-collector configuration of BJT, the output voltage at the emitter is in phase with input signal.

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

1. Both (A) and (R) are true and (R) is the correct explanation of (A)
2. Both (A) and (R) are true but (R) is not the correct explanation of (A)
3. (A) is true but (R) is false
4. (A) is false but (R) is true

Options :

92090646705. 1

92090646706. 2

92090646707. 3

92090646708. 4

Question Number : 77 Question Id : 92090611828 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं: एक अभिकथन (Assertion A) के रूप में लिखित है तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A : BJT के उत्सर्जक अनुगामी विन्यास का प्रयोग, प्रतिबाधा सुमेलन उपयोगों में किया जाता है।

कारण R : BJT को उभयनिष्ठ संग्राही विन्यास में उत्सर्जक पर निर्गम वोल्टता निवेश संकेत प्रावस्था में होते हैं।

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

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

Options :

92090646705. 1

92090646706. 2

92090646707. 3

92090646708. 4

Question Number : 78 Question Id : 92090611829 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) : In an operational amplifier circuit, negative feedback is used to avoid operational amplifier to go into saturation.

Reason (R) : The negative feedback degenerates the output voltage amplitude and in turn reduces the voltage gain.

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

1. Both (A) and (R) are true and (R) is the correct explanation of (A)
2. Both (A) and (R) are true but (R) is not the correct explanation of (A)
3. (A) is true but (R) is false
4. (A) is false but (R) is true

Options :

- 92090646709. 1
- 92090646710. 2
- 92090646711. 3
- 92090646712. 4

Question Number : 78 Question Id : 92090611829 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं: एक अभिकथन (Assertion A) के रूप में लिखित है तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A : एक संक्रियात्मक प्रवर्धक परिपथ में, ऋणात्मक पुनर्भरण का उपयोग, संक्रियात्मक प्रवर्धक को संतृप्ति में न जाने के लिए किया जाता है।

कारण R : ऋणात्मक पुनर्भरण, निर्गम वोल्टता आयाम का उपहास करता है और इस तरह वाल्टता लब्धि को कम कर देता है।

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

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

Options :

92090646709. 1
92090646710. 2
92090646711. 3
92090646712. 4

Question Number : 79 Question Id : 92090611830 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) : The ENABLE input of an $m:2^m$ decoder can be used to increase its size.

Reason (R) : The ENABLE input in an $m:2^m$ decoder can be used as the $(m+1)^{\text{th}}$ input to result in a $(m+1):2^{m+1}$ decoder.

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

1. Both (A) and (R) are true and (R) is the correct explanation of (A)
2. Both (A) and (R) are true but (R) is not the correct explanation of (A)
3. (A) is true but (R) is false
4. (A) is false but (R) is true

Options :

92090646713. 1
92090646714. 2
92090646715. 3
92090646716. 4

Question Number : 79 Question Id : 92090611830 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं: एक अभिकथन (Assertion A) के रूप में लिखित है तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A : एक $m:2^m$ विकोडक के ENABLE निवेश का उपयोग उसका आकार बढ़ाते के लिए किया जा सकता है।

कारण R : एक $m:2^m$ विकोडक के ENABLE निवेश का उपयोग $(m+1)$ वें निवेश के रूप में कर के $a(m+1):2^{m+1}$ विकोडक प्राप्त किया जा सकता है।

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

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

Options :

92090646713. 1
92090646714. 2
92090646715. 3
92090646716. 4

Question Number : 80 Question Id : 92090611831 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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

Assertion (A) : In an impedance, Smith chart point $r = 0, x = 0$ represents open-circuit point.

Reason (R) : In an impedance, Smith chart, $\bar{r} = -1$ and $\bar{i} = 0$ represents $r = 0$ and $x = 0$.

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

1. Both (A) and (R) are true and (R) is the correct explanation of (A)
2. Both (A) and (R) are true but (R) is not the correct explanation of (A)
3. (A) is true but (R) is false
4. (A) is false but (R) is true

Options :

92090646717. 1
92090646718. 2
92090646719. 3
92090646720. 4

Question Number : 80 Question Id : 92090611831 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं: एक अभिकथन (Assertion A) के रूप में लिखित है तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A : एक प्रतिबाधा स्मिथ चार्ट में बिन्दु $r = 0, x = 0$ एक खुला परिपथ बिन्दु दर्शाता है।

कारण R : एक प्रतिबाधा स्मिथ चार्ट में, $|r| = -1$ और $|i| = 0, r = 0$ और $x = 0$ दर्शाता है।

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

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

Options :

92090646717. 1
92090646718. 2
92090646719. 3
92090646720. 4

Question Number : 81 Question Id : 92090611832 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

$$\text{Statement-I : } f(x) = \begin{cases} \frac{3x-2}{x} & \text{for } 0 \leq x \leq 1 \\ \frac{\sin(x-1)}{(x-1)} & \text{for } x > 1 \end{cases}$$

Function is continuous at $x = 1$

$$\text{Statement-II : } f(x) = \begin{cases} \frac{xe^{\frac{1}{x}}}{1+e^{\frac{1}{x}}}; & x \neq 0 \\ 0 & ; x = 0 \end{cases}$$

Function is continuous at origin.

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

Options :

92090646721. 1

92090646722. 2

92090646723. 3

92090646724. 4

Question Number : 81 Question Id : 92090611832 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं:

कथन I :

$$f(x) = \begin{cases} \frac{3x-2}{x} & 0 \leq x \leq 1 & \text{के लिए} \\ \frac{\sin(x-1)}{(x-1)} & x > 1 & \text{के लिए} \end{cases}$$

$x = 1$ पर फलन संतत हैं।

$$\text{कथन II : } f(x) = \begin{cases} \frac{xe^{\frac{1}{x}}}{1+e^{\frac{1}{x}}} & ; x \neq 0 \\ 0 & ; x = 0 \end{cases}$$

मूल बिंदु पर फलन संतत हैं।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए

- (1) कथन I और II दोनों सत्य हैं
- (2) कथन I और II दोनों असत्य हैं
- (3) कथन I सत्य है, लेकिन कथन II असत्य है
- (4) कथन I असत्य है, लेकिन कथन II सत्य है

Options :

92090646721. 1
92090646722. 2
92090646723. 3
92090646724. 4

Question Number : 82 Question Id : 92090611833 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement–I : Fourier series of any periodic signal $x(t)$ can only be obtained if $x(t)$ is absolutely integrable over any period.

Statement–II : Fourier series of any periodic signal $x(t)$ can only be obtained if $x(t)$ has a finite number of discontinuities within finite time interval of t .

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

Options :

92090646725. 1
92090646726. 2
92090646727. 3
92090646728. 4

Question Number : 82 Question Id : 92090611833 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं:

कथन I : किसी आवर्ती संकेत $x(t)$ की फोरियर श्रेणी तभी प्राप्त की जा सकती है यदि $x(t)$ किसी अवधिकाल पर निरपेक्षतः समाकलनीय होता है।

कथन II : किसी आवर्ती संकेत $x(t)$ की फोरियर श्रेणी तभी प्राप्त की जा सकती है यदि $x(t)$ किसी, परिमित अवधि काल t में परिमित संख्या के असांतत्य होते हैं।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए

- (1) कथन I और II दोनों सत्य हैं
- (2) कथन I और II दोनों असत्य हैं
- (3) कथन I सत्य है, लेकिन कथन II असत्य है
- (4) कथन I असत्य है, लेकिन कथन II सत्य है

Options :

92090646725. 1

92090646726. 2

92090646727. 3

92090646728. 4

Question Number : 83 Question Id : 92090611834 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement-I : Velocity saturation in silicon occurs at high electric fields.

Statement-II : Mobilities due to two scattering mechanisms (μ_1 and μ_2) add up inversely as $\frac{1}{\mu} = \frac{1}{\mu_1} + \frac{1}{\mu_2}$.

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

Options :

92090646729. 1

92090646730. 2

92090646731. 3

92090646732. 4

Question Number : 83 Question Id : 92090611834 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं:

कथन I : सिलिकॉन में, उच्च विद्युत क्षेत्र पर वेग संतृप्ति होती है।

कथन II : दो प्रकीर्णन यंत्रविन्यास (μ_1 और μ_2) के कारण गतिशीलता का योग विलोम अनुपाती होता है जैसे:

$$\frac{1}{\mu} = \frac{1}{\mu_1} + \frac{1}{\mu_2}$$

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए

- (1) कथन I और II दोनों सत्य हैं
- (2) कथन I और II दोनों असत्य हैं
- (3) कथन I सत्य है, लेकिन कथन II असत्य है
- (4) कथन I असत्य है, लेकिन कथन II सत्य है

Options :

92090646729. 1
92090646730. 2
92090646731. 3
92090646732. 4

Question Number : 84 Question Id : 92090611835 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement-I : The r_e model has advantage that the parameters are defined by the actual operating conditions.

Statement-II : The parameters of the hybrid equivalent circuit are defined in general terms for any operating conditions.

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

Options :

92090646733. 1

92090646734. 2

92090646735. 3

92090646736. 4

Question Number : 84 Question Id : 92090611835 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं:

कथन I : r_e मॉडल का यह लाभ है कि इसमें प्राचाल वास्तविक प्रचालन स्थितियों द्वारा परिभाषित होते हैं।

कथन II : सकर तुल्य परिपथ के प्रायाल, सामान्य शब्दों में, किसी भी प्रचालन स्थितियों के लिए परिभाषित होते हैं।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए

- (1) कथन I और II दोनों सत्य हैं
- (2) कथन I और II दोनों असत्य हैं
- (3) कथन I सत्य है, लेकिन कथन II असत्य है
- (4) कथन I असत्य है, लेकिन कथन II सत्य है

Options :

92090646733. 1

92090646734. 2

92090646735. 3

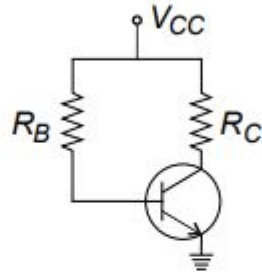
92090646736. 4

Question Number : 85 Question Id : 92090611836 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement-I : In the fixed-bias configuration of an $n-p-n$, BJT operating in the active regime, the magnitude of collector current does not depend on R_C . (See the figure)



Statement-II : In the fixed-bus configuration shown in figure, base current is controlled by R_B .

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

Options :

- 92090646737. 1
- 92090646738. 2
- 92090646739. 3
- 92090646740. 4

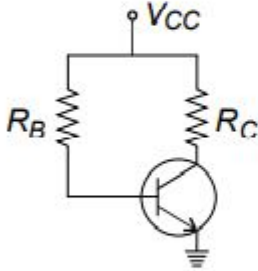
Question Number : 85 Question Id : 92090611836 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं:

कथन I : किसी $n-p-n$ BJT एक जो सक्रिय व्यवस्था में, स्थिर-बायस विन्यास में प्रचालित हैं, के संग्राही विद्युत धारा का परिमाण पर निर्भर नहीं करता (चित्र देखें)

कथन II : स्थिर-बायस विन्यास में, (जैसा चित्र में दिखाया गया है) आधार विद्युत धारा R_B द्वारा नियंत्रित होती है।



उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए

- (1) कथन I और II दोनों सत्य हैं
- (2) कथन I और II दोनों असत्य हैं
- (3) कथन I सत्य है, लेकिन कथन II असत्य है
- (4) कथन I असत्य है, लेकिन कथन II सत्य है

Options :

92090646737. 1

92090646738. 2

92090646739. 3

92090646740. 4

Question Number : 86 Question Id : 92090611837 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement-I : In a linear block code, NAND operation of any two valid codewords creates another valid codeword.

Statement-II : To guarantee correction up to t errors in all cases, the minimum Hamming distance in a block code must be $d_{\min} = 2t + 1$.

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

Options :

92090646741. 1

92090646742. 2

92090646743. 3

92090646744. 4

Question Number : 86 Question Id : 92090611837 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं:

कथन I : एक रैखिक खंड कूट (कोड) में, किन्हीं दो मान्य कूट शब्दों का NAND प्रचालन प्रचालन दूसरे मान्य कूट शब्द उत्पन्न करता है।

कथन II : सभी मामलों में, t त्रुटि सुधार आश्वासन (गारंटी) के लिए, किसी खंड कूट (कोड) में न्यूनतम हैमिंग दूरी का मान $d_{\min} = 2t + 1$ होना चाहिए।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए

- (1) कथन I और II दोनों सत्य हैं
- (2) कथन I और II दोनों असत्य हैं
- (3) कथन I सत्य है, लेकिन कथन II असत्य है
- (4) कथन I असत्य है, लेकिन कथन II सत्य है

Options :

92090646741. 1

92090646742. 2

92090646743. 3

92090646744. 4

Question Number : 87 Question Id : 92090611838 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement–I : The magnetic field is solenoidal; the divergence of the magnetic flux density is zero.

Statement–II : The magnetic flux is conserved; the total net flux through any closed surface is not zero.

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

Options :

92090646745. 1

92090646746. 2

92090646747. 3

92090646748. 4

Question Number : 87 Question Id : 92090611838 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए है:

कथन I : यदि चुम्बकीय क्षेत्र परिनालिकीय है, तो चुम्बकीय फ्लक्स घनत्व का अपसरण शून्य होता है।

कथन II : यदि चुम्बकीय फ्लक्स संरक्षित हैं, तो किसी संवृत सतह से कुल फ्लक्स शून्य नहीं होगा।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए

- (1) कथन I और II दोनों सत्य है
- (2) कथन I और II दोनों असत्य है
- (3) कथन I सत्य है, लेकिन कथन II असत्य है
- (4) कथन I असत्य है, लेकिन कथन II सत्य है

Options :

- 92090646745. 1
- 92090646746. 2
- 92090646747. 3
- 92090646748. 4

Question Number : 88 Question Id : 92090611839 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements :

Statement–I : The tangential component of the electric field intensity is continuous across an interface between two general materials, regardless of charge densities on the surface.

Statement–II : The tangential component of the electric flux density is discontinuous across the interface. The discontinuity is equal to the ratio between the permittivities of the materials.

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

Options :

- 92090646749. 1
- 92090646750. 2
- 92090646751. 3
- 92090646752. 4

Question Number : 88 Question Id : 92090611839 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिए गए हैं:

कथन I : विद्युत क्षेत्र तीव्रता का स्पर्शरिखीयघटक, किन्ही दो सामान्य पदार्थों के अंतरापृष्ठ के आर-पार संतत होता है चाहे सतह पर आवेश घनत्व कुछ भी हो।

कथन II : विद्युत क्षेत्र तीव्रता का स्पर्शरिखीय घटक, अंतरापृष्ठ के आर पार असंतत होता है और असंतत पदार्थों के परावैद्युताकों के अनुयात के बराबर होता है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए

- (1) कथन I और II दोनों सत्य है
- (2) कथन I और II दोनों असत्य है
- (3) कथन I सत्य है, लेकिन कथन II असत्य है
- (4) कथन I असत्य है, लेकिन कथन II सत्य है

Options :

92090646749. 1
92090646750. 2
92090646751. 3
92090646752. 4

Question Number : 89 Question Id : 92090611840 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which of the following are correct for X, Y as random variable

- A. $H(X) \geq H(X/Y)$
- B. $H(X+Y) \leq H(X)+H(Y)$
- C. If X and Y are independent $H(X/Y) = H(Y/X)$
- D. Mutual information $I(X; Y) = H(X/Y) - H(Y/X)$
- E. If X and Y are independent $I(X; Y) = 0$

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

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

Options :

92090646753. 1

92090646754. 2

92090646755. 3

92090646756. 4

Question Number : 89 Question Id : 92090611840 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से कौन यच्छादिक X और Y चरों के लिए उचित है?

- A. $H(X) \geq H(X/Y)$
- B. $H(X+Y) \leq H(X)+H(Y)$
- C. यदि X और Y स्वतंत्र है तो $H(X/Y) = H(Y/X)$
- D. पारस्परिक सूचना $I(X; Y) = H(X/Y) - H(Y/X)$
- E. यदि X और Y स्वतंत्र

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

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

Options :

92090646753. 1

92090646754. 2

92090646755. 3

92090646756. 4

Question Number : 90 Question Id : 92090611841 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Consider the following three equations :

$$2x + 3y + 5z = 9, \quad 7x + 3y - 2z = 8, \quad 2x + 3y + \lambda z = \mu$$

- A. For $\lambda \neq 5$, system will have a unique solution.
- B. For $\lambda = 5$, $\mu \neq 9$, system will have infinite solution.
- C. If $\lambda = 5$ and $\mu = 9$, system will have infinite solution.
- D. For $\mu = 9$, system will have no solution.
- E. For $\lambda = 5$, system will have no solution.

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

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

Options :

92090646757. 1

92090646758. 2

92090646759. 3

92090646760. 4

Question Number : 90 Question Id : 92090611841 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित तीन समीकरणों पर विचार करे।

$$2x + 3y + 5z = 9, \quad 7x + 3y - 2z = 8, \quad 2x + 3y + \lambda z = \mu$$

- A. $\lambda \neq 5$ के लिए, निकाय का एकक हल हो गा।
- B. $\lambda = 5$ के लिए $\mu \neq 9$ निकाय के असीमित हल होंगे।
- C. यदि $\lambda = 5$ और $\mu = 9$ हैं तो निकाय के असीमित हल होंगे।
- D. $\mu = 9$ के लिए निकाय का कोई हल नहीं होगा।
- E. $\lambda = 5$ के लिए निकाय का कोई हल नहीं होगा।

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

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

Options :

- 92090646757. 1
- 92090646758. 2
- 92090646759. 3
- 92090646760. 4

Question Number : 91 Question Id : 92090611842 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The aliasing effect can be minimized by

- A. selecting sampling frequency $w_s > 2w_m$
- B. selecting sampling frequency $w_s < 2w_m$
- C. selecting sampling frequency $w_s < w_m$
- D. using anti-aliasing filter

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

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

Options :

- 92090646761. 1
- 92090646762. 2
- 92090646763. 3
- 92090646764. 4

Question Number : 91 Question Id : 92090611842 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

उपघटन प्रभाव को किस के द्वारा न्यूनतम किया जा सकता है?

- A. प्रतिचयन आकृति $w_s > 2w_m$ चुनने पर
- B. प्रतिचयन आकृति $w_s < 2w_m$ चुनने पर
- C. प्रतिचयन आकृति $w_s < w_m$ चुनने पर
- D. प्रति-उपघटन फिल्टर के प्रयोग से

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

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

Options :

- 92090646761. 1

92090646762. 2

92090646763. 3

92090646764. 4

Question Number : 92 Question Id : 92090611843 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which property is true for convolution integral?

- A. $h_1(t) * h_2(t) = h_2(t) * h_1(t)$
- B. $[h_1(t) + h_2(t)] * h_3(t) = h_1(t) * h_3(t) + h_2(t) * h_3(t)$
- C. $[h_1(t) + h_2(t)] * h_3(t) = h_1(t)h_3(t) + h_2(t)h_3(t)$
- D. $h_1(t) * h_2(t) = h_2(t)h_1(t)$

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

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

Options :

92090646765. 1

92090646766. 2

92090646767. 3

92090646768. 4

Question Number : 92 Question Id : 92090611843 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

संकलन समाकल के लिए कौन सीविशेषता सत्य है?

- A. $h_1(t) * h_2(t) = h_2(t) * h_1(t)$
- B. $[h_1(t) + h_2(t)] * h_3(t) = h_1(t) * h_3(t) + h_2(t) * h_3(t)$
- C. $[h_1(t) + h_2(t)] * h_3(t) = h_1(t)h_3(t) + h_2(t)h_3(t)$
- D. $h_1(t) * h_2(t) = h_2(t)h_1(t)$

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

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

Options :

92090646765. 1
92090646766. 2
92090646767. 3
92090646768. 4

Question Number : 93 Question Id : 92090611844 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1

Which statements are true?

- A. Electric field, $\xi(x)$, in a semiconductor is directly proportional to the slope of the intrinsic Fermi level.
- B. Continuity equation is a mathematical representation of Fermi-Dirac distribution function.
- C. Depletion width in a $P-N$ junction is equal to its Debye length.
- D. Diffusion current density for holes is equal to $\left\{ -qD_p \frac{dp(x)}{dx} \right\}$

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

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

Options :

92090646769. 1

92090646770. 2

92090646771. 3

92090646772. 4

Question Number : 93 Question Id : 92090611844 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

कौन से कथन सतह हैं?

- A. एक अर्ध चालक में, विद्युत क्षेत्र $E(x)$ आंतर फर्मी स्तर की प्रवणता के समानुपाती है।
- B. संतत समीकरण, फर्मी डिराक बंटन फलन, की गणितीय प्रस्तुति है।
- C. P-N जंक्शन में अवक्षय चौड़ाई उसकी डेबाई लम्बाई के बराबर होती है।
- D. होल के लिए विस्तर विद्युत धार धनत्व $\left\{-qD_p \frac{dp(x)}{dx}\right\}$ के बराबर होता है।

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

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

Options :

- 92090646769. 1
- 92090646770. 2
- 92090646771. 3
- 92090646772. 4

Question Number : 94 Question Id : 92090611845 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which statement(s) is/are true?

- A. The drain current in an enhancement-type MOSFET is inversely proportional to the relative permittivity of the gate oxide.
- B. The threshold voltage in an MOS capacitor does not depend on the gate oxide thickness.
- C. The drain current in an enhancement-type MOSFET is directly proportional to the relative permittivity of the gate oxide.
- D. The threshold voltage in an MOS capacitor depends on the gate oxide thickness.

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

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

Options :

92090646773. 1

92090646774. 2

92090646775. 3

92090646776. 4

Question Number : 94 Question Id : 92090611845 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

कौन से कथन सत्य हैं?

- A. एक संवृद्धि-प्रकार के MOSFET में अपवाह विद्युत धारा (द्वार) गेट आक्साइड के आपेक्षित परावैद्युतांक के विलोम अनपाती हैं।
- B. एक MOS संधारित्र की देहली वोल्टता, गेट आक्साइड की मोटाई पर निर्भर नहीं करती।
- C. एक संवृद्धि-प्रकार के MOSFET में अपवाह विद्युत धारा, गेट आक्साइड के आपेक्षिक परावैद्युतांक के समानुपाती हैं।
- D. एक MOS संधारित्र की, देहली वोल्टता, गेट आक्साइड की मोटाई पर निर्भर करती हैं।

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

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

Options :

- 92090646773. 1
- 92090646774. 2
- 92090646775. 3
- 92090646776. 4

Question Number : 95 Question Id : 92090611846 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List-I with List-II :

List-I (Signal)	List-II (Fourier Transform)
(A) $x(t - t_0)$	(I) $\frac{dX(\omega)}{d\omega}$
(B) $e^{j\omega_0 t} x(t)$	(II) $e^{-j\omega t_0} X(\omega)$
(C) $\frac{dx(t)}{dt}$	(III) $X(\omega - \omega_0)$
(D) $(-jt)x(t)$	(IV) $j\omega X(\omega)$

Choose the correct answer from the options given below :

1. (A)–(III); (B)–(IV); (C)–(I); (D)–(II)
2. (A)–(II); (B)–(I); (C)–(IV); (D)–(III)
3. (A)–(II); (B)–(III); (C)–(IV); (D)–(I)
4. (A)–(IV); (B)–(I); (C)–(II); (D)–(III)

Options :

92090646777. 1

92090646778. 2

92090646779. 3

92090646780. 4

Question Number : 95 Question Id : 92090611846 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

सूची I के साथ सूची II का मिलान कीजिए

सूची-I (संकेत)	सूची-II (फोरियर रूपांतर)
(A) $x(t - t_0)$	(I) $\frac{dX(\omega)}{d\omega}$
(B) $e^{j\omega_0 t} x(t)$	(II) $e^{-j\omega t_0} X(\omega)$
(C) $\frac{dx(t)}{dt}$	(III) $X(\omega - \omega_0)$
(D) $(-jt)x(t)$	(IV) $j\omega X(\omega)$

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

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

Options :

92090646777. 1
92090646778. 2
92090646779. 3
92090646780. 4

Question Number : 96 Question Id : 92090611847 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List-I with List-II :

List-I (Circuits)	List-II (Components)
(A) In an ideal op-amp integrator	(I) A parallel RLC network in the feedback path
(B) In an ideal op-amp differentiator	(II) An E-MOSFET is used that work as switch
(C) In an op-amp sample and hold circuit	(III) A capacitor is in feedback path
(D) In an op-amp peaking amplifier	(IV) A resistor is in feedback path

Choose the correct answer from the options given below :

1. (A)–(IV); (B)–(III); (C)–(II); (D)–(I)
2. (A)–(II); (B)–(III); (C)–(IV); (D)–(I)
3. (A)–(III); (B)–(IV); (C)–(II); (D)–(I)
4. (A)–(III); (B)–(I); (C)–(II); (D)–(IV)

Options :

- 92090646781. 1
- 92090646782. 2
- 92090646783. 3
- 92090646784. 4

Question Number : 96 Question Id : 92090611847 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

सूची I के साथ सूची II का मिलान कीजिए

सूची-I (परिपथ)	सूची -II (घटक)
(A) एक आदर्श समाकलक op-amp में	(I) एक समांतर विद्युत RLC परिपथ पुनर्भरण परिपथ पुनर्भरण पथ में।
(B) एक आदर्श op-amp अवकलक में	(II) एक E-MOSFET को स्विच के रूप में उपयोग
(C) एक op-amp प्रतिदर्श और होल्ड परिपथ में	(III) एक संधारित्र पुनर्भरण पथ में
(D) एक op-amp शिखरक प्रवर्धक में	(IV) एक प्रतिरोध पुनर्भरण पथ में

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

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

Options :

92090646781. 1
92090646782. 2
92090646783. 3
92090646784. 4

Question Number : 97 Question Id : 92090611848 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List-I with List-II :

List-I (Functional Blocks/Units)	List-II (Related Units/Parameters)
(A) Arithmetic logic unit (ALU)	(I) Memory read/write
(B) Instruction register	(II) Memory address
(C) Control unit	(III) Opcode
(D) Program counter	(IV) Accumulator

Choose the correct answer from the options given below :

1. (A)-(IV); (B)-(III); (C)-(II); (D)-(I)
2. (A)-(III); (B)-(IV); (C)-(I); (D)-(II)
3. (A)-(III); (B)-(IV); (C)-(II); (D)-(I)
4. (A)-(IV); (B)-(III); (C)-(I); (D)-(II)

Options :

92090646785. 1
92090646786. 2
92090646787. 3
92090646788. 4

Question Number : 97 Question Id : 92090611848 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

सूची I के साथ सूची II का मिलान कीजिए

सूची-I (क्रियात्मक ब्लॉक/ ईकाई)	सूची -II (संबंधित ईकाई/पेरामीटर)
(A) अंकगणितीय लोजिक इकाई (ALU)	(I) मैमरी रेड/राइट
(B) इंस्ट्रक्शन रजिस्टर	(II) मैमरी एडरेस्स
(C) कंट्रोल यूनिट	(III) ओपकोड
(D) प्रोग्राम काउन्टर	(IV) एकमुलेटर

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

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

Options :

- 92090646785. 1
- 92090646786. 2
- 92090646787. 3
- 92090646788. 4

Question Number : 98 Question Id : 92090611849 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List-I with List-II :

List-I (Message Signal)	List-II (Nyquist Sampling frequency)
(A) $m(t) = 4 \sin 2\pi \times 5 \times 10^3 t - 3 \cos 2\pi \times 8 \times 10^3 t$	(I) 40 kHz
(B) $m(t) = 2 \cos^2 2\pi \times 10^4 t$	(II) 16 kHz
(C) $m(t) = 2 \operatorname{sinc}(2 \times 10^4 t)$	(III) 6 kHz
(D) $m(t) = 5 \operatorname{sinc}^2(3 \times 10^3 t)$	(IV) 20 kHz

Choose the correct answer from the options given below :

1. (A)–(IV); (B)–(III); (C)–(II); (D)–(I)
2. (A)–(I); (B)–(II); (C)–(III); (D)–(IV)
3. (A)–(III); (B)–(IV); (C)–(I); (D)–(II)
4. (A)–(II); (B)–(I); (C)–(IV); (D)–(III)

Options :

- 92090646789. 1
- 92090646790. 2
- 92090646791. 3
- 92090646792. 4

Question Number : 98 Question Id : 92090611849 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

सूची I के साथ सूची II का मिलान कीजिए

सूची-I (संकेत)

- (A) $m(t) = 4 \sin 2\pi \times 5 \times 10^3 t - 3 \cos 2\pi \times 8 \times 10^3 t$
(B) $m(t) = 2 \cos^2 2\pi \times 10^4 t$
(C) $m(t) = 2 \operatorname{sinc}(2 \times 10^4 t)$
(D) $m(t) = 5 \operatorname{sinc}^2(3 \times 10^3 t)$

सूची-II (परिचयन आवृत्ति)

- (I) 40 kHz
(II) 16 kHz
(III) 6 kHz
(IV) 20 kHz

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

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

Options :

92090646789. 1
92090646790. 2
92090646791. 3
92090646792. 4

Question Number : 99 Question Id : 92090611850 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match List-I with List-II :

List-I	List-II
(A) Faraday's law	(I) $\nabla \cdot \vec{B} = 0$
(B) Ampere's law	(II) $\nabla \cdot \vec{D} = \rho_V$
(C) No monopole	(III) $\nabla \times \vec{H} = \vec{J} + \frac{\partial \vec{D}}{\partial t}$
(D) Gauss's law	(IV) $\nabla \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$

Choose the correct answer from the options given below :

1. (A)–(IV); (B)–(III); (C)–(II); (D)–(I)
2. (A)–(III); (B)–(IV); (C)–(I); (D)–(II)
3. (A)–(IV); (B)–(III); (C)–(I); (D)–(II)
4. (A)–(III); (B)–(II); (C)–(I); (D)–(IV)

Options :

92090646793. 1

92090646794. 2

92090646795. 3

92090646796. 4

Question Number : 99 Question Id : 92090611850 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

सूची I के साथ सूची II का मिलान कीजिए

सूची-I	सूची-II
(A) फैराडे का नियम	(I) $\nabla \cdot \vec{B} = 0$
(B) एम्पियर का नियम	(II) $\nabla \cdot \vec{D} = \rho_v$
(C) एकध्रुव नहीं	(III) $\nabla \times \vec{H} = \vec{J} + \frac{\partial \vec{D}}{\partial t}$
(D) गॉउस का नियम	(IV) $\nabla \times \vec{E} = -\frac{\partial \vec{B}}{\partial t}$

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

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

Options :

92090646793. 1
92090646794. 2
92090646795. 3
92090646796. 4

**Question Number : 100 Question Id : 92090611851 Question Type : MCQ Option Shuffling : No Is
Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum
Instruction Time : 0**

Correct Marks : 4 Wrong Marks : 1

Match List-I with List-II :

List-I (Technology)	List-II (Range)
(A) Bluetooth	(I) 10 cm to 200 m
(B) LoRa	(II) 10 m to 20 m
(C) RFID	(III) 1 m to 100 m
(D) ZigBee	(IV) 2 km to 15 km

Choose the correct answer from the options given below :

1. (A)–(I); (B)–(II); (C)–(III); (D)–(IV)
2. (A)–(II); (B)–(III); (C)–(I); (D)–(IV)
3. (A)–(III); (B)–(IV); (C)–(I); (D)–(II)
4. (A)–(IV); (B)–(III); (C)–(II); (D)–(I)

Options :

- 92090646797. 1
- 92090646798. 2
- 92090646799. 3
- 92090646800. 4

Question Number : 100 Question Id : 92090611851 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

सूची I के साथ सूची II का मिलान कीजिए

सूची-I (तकनीकी)	सूची-II (परास)
(A) ब्लूटूथ	(I) 10 cm – 200 m
(B) LoRa	(II) 10 m – 20 m
(C) RFID	(III) 1 m – 200 m
(D) ZigBee	(IV) 2 m – 15 m

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

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

Options :

92090646797. 1
92090646798. 2
92090646799. 3
92090646800. 4