

National Testing Agency

Question Paper Name :	Nanoscience Eng 12th June 2023 Shift 2
Subject Name :	Nanoscience Eng
Creation Date :	2023-06-12 18:25:26
Duration :	120
Total Marks :	400
Display Marks:	Yes

Nanoscience

Group Number :	1
Group Id :	920906142
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 :	920906283
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 :	920906461
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 92090614276 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 passage carefully and answer the question that follows.(Q01–Q05)

Lizard island is only 30km off the far North Queensland coast and 250km north of Cairns, the northern-most city in north-eastern Australia. The 1,012-hectare island is spectacularly rugged with vegetation ranging from grassland to rainforest and encompassing pandanus swamp, eucalypt woodland and mangroves. The most recent discoverers of this island were Sir Sydney Williams and another north Queensland businessmen, Mr. John Wilson, now a Brisbane share-broker. For several years from 1968, they camped on lizard island for annual fishing holidays and in 1974, after obtaining a Queensland government lease with other businessmen, built four cabins for guests. In the next step of development in 1978, they raised the number of bungalows to eight, then to fifteen in 1982, and in 1984, ultimately the complex was bought by the Queensland State Government Insurance office.

The island is consistently visited by those who seem to be quite carefull about their health. Each has all the facilities expected in such an elegant resort including well-stocked minibar. It is because of this that Australian Prime Ministers for a decade or so have taken heed, as they constantly retreat to this island to rest, relax and lick the wounds of office. Since this island attracts people from all over the world, most of the time it remains packed. One of the island resort's founders, Queensland aviation pioneer, Sir Sydney Williams, affirms that a sturdy Arab Sheikh once came ashore from a chartered luxury yacht and tried to book a suite for the night. When told the place was full he hastily produced a cheque book and offered to buy it.

Sub questions

Question Number : 1 Question Id : 92090614277 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 Lizard island is situated nearest from :

- (1) North Australia
- (2) South Australia
- (3) North Queensland coast
- (4) Cairns

Options :

92090656401. 1
92090656402. 2
92090656403. 3
92090656404. 4

Question Number : 2 Question Id : 92090614278 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 reasons prompted Arab Sheikh to buy the island?

- (1) He was impressed by the beauty of the island.
- (2) He wanted to stay there for a night.
- (3) He felt offended due to refusal of accommodation.
- (4) He wanted to bring in further developments in the island.

Options :

92090656405. 1
92090656406. 2
92090656407. 3
92090656408. 4

Question Number : 3 Question Id : 92090614279 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 true in the context of the passage?

- (1) Lizard island has come up as a big tourist resort.
- (2) In the first step of development eight cabins were developed in the island.
- (3) Lizard island has become a busy island.
- (4) Lizard island is full of greenery.

Options :

92090656409. 1
92090656410. 2
92090656411. 3
92090656412. 4

Question Number : 4 Question Id : 92090614280 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 was the first and the foremost thing that stuck the discoverers for the development of the island?

- (A) To build four cabins for guests.
- (B) To associate Government offices.
- (C) To give a decorative look by growing vegetation.
- (D) To seek lease permission from the government.

Options :

- 92090656413. 1
- 92090656414. 2
- 92090656415. 3
- 92090656416. 4

Question Number : 5 Question Id : 92090614281 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

Who amongst the following discovered the Lizard island?

- (1) John Wilson and a Brisbane share broker.
- (2) Brisbane share broker and a Queensland aviation pioneer
- (3) Sydney Williams and a Queensland aviation pioneer
- (4) South Queensland businessman and John Wilson.

Options :

- 92090656417. 1
- 92090656418. 2
- 92090656419. 3
- 92090656420. 4

Question Id : 92090614276 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 passage carefully and answer the question that follows.(Q01–Q05)

Lizard island is only 30km off the far North Queensland coast and 250km north of Cairns, the northern-most city in north-eastern Australia. The 1,012-hectare island is spectacularly rugged with vegetation ranging from grassland to rainforest and encompassing pandanus swamp, eucalypt woodland and mangroves. The most recent discoverers of this island were Sir Sydney Williams and another north Queensland businessmen, Mr. John Wilson, now a Brisbane share-broker. For several years from 1968, they camped on lizard island for annual fishing holidays and in 1974, after obtaining a Queensland government lease with other businessmen, built four cabins for guests. In the next step of development in 1978, they raised the number of bungalows to eight, then to fifteen in 1982, and in 1984, ultimately the complex was bought by the Queensland State Government Insurance office.

The island is consistently visited by those who seem to be quite carefull about their health. Each has all the facilities expected in such an elegant resort including well-stocked minibar. It is because of this that Australian Prime Ministers for a decade or so have taken heed, as they constantly retreat to this island to rest, relax and lick the wounds of office. Since this island attracts people from all over the world, most of the time it remains packed. One of the island resort's founders, Queensland aviation pioneer, Sir Sydney Williams, affirms that a sturdy Arab Sheikh once came ashore from a chartered luxury yacht and tried to book a suite for the night. When told the place was full he hastily produced a cheque book and offered to buy it.

Sub questions

Question Number : 1 Question Id : 92090614277 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 Lizard island is situated nearest from :

- (1) North Australia
- (2) South Australia
- (3) North Queensland coast
- (4) Cairns

Options :

- 92090656401. 1
- 92090656402. 2
- 92090656403. 3
- 92090656404. 4

Question Number : 2 Question Id : 92090614278 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

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- (1) He was impressed by the beauty of the island.
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- (3) He felt offended due to refusal of accommodation.
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Options :

- 92090656405. 1
- 92090656406. 2
- 92090656407. 3
- 92090656408. 4

Question Number : 3 Question Id : 92090614279 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 true in the context of the passage?

- (1) Lizard island has come up as a big tourist resort.
- (2) In the first step of development eight cabins were developed in the island.
- (3) Lizard island has become a busy island.
- (4) Lizard island is full of greenery.

Options :

- 92090656409. 1
- 92090656410. 2
- 92090656411. 3
- 92090656412. 4

Question Number : 4 Question Id : 92090614280 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 was the first and the foremost thing that stuck the discoverers for the development of the island?

- (A) To build four cabins for guests.
- (B) To associate Government offices.
- (C) To give a decorative look by growing vegetation.
- (D) To seek lease permission from the government.

Options :

- 92090656413. 1
- 92090656414. 2
- 92090656415. 3
- 92090656416. 4

Question Number : 5 Question Id : 92090614281 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

Who amongst the following discovered the Lizard island?

- (1) John Wilson and a Brisbane share broker.
- (2) Brisbane share broker and a Queensland aviation pioneer
- (3) Sydney Williams and a Queensland aviation pioneer
- (4) South Queensland businessman and John Wilson.

Options :

- 92090656417. 1
- 92090656418. 2
- 92090656419. 3
- 92090656420. 4

Sub-Section Number :

2

Sub-Section Id :

920906462

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 6 Question Id : 92090614282 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 given in order from the options given below: Furrow irrigation is conducted ___ creating small parallel channels ____ the field length _the direction ____ predominant slope.

- (1) by along, in of
- (2) by , in for, of
- (3) by, on, with, of
- (4) by, on, along, of

Options :

- 92090656421. 1
- 92090656422. 2
- 92090656423. 3
- 92090656424. 4

Question Number : 6 Question Id : 92090614282 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 given in order from the options given below: Furrow irrigation is conducted ___ creating small parallel channels ____ the field length _the direction ____ predominant slope.

- (1) by along, in of
- (2) by , in for, of
- (3) by, on, with, of
- (4) by, on, along, of

Options :

- 92090656421. 1
- 92090656422. 2
- 92090656423. 3
- 92090656424. 4

Question Number : 7 Question Id : 92090614283 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

Change voice. 'The boys have been rewarded by the principal'.

- (1) The principal has awarded the boys.
- (2) The principal has rewarded the boys
- (3) The boys are rewarded by the principal
- (4) The principal rewarded the boys.

Options :

- 92090656425. 1
- 92090656426. 2
- 92090656427. 3
- 92090656428. 4

Question Number : 7 Question Id : 92090614283 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

Change voice. 'The boys have been rewarded by the principal'.

- (1) The principal has awarded the boys.
- (2) The principal has rewarded the boys
- (3) The boys are rewarded by the principal
- (4) The principal rewarded the boys.

Options :

- 92090656425. 1
- 92090656426. 2
- 92090656427. 3
- 92090656428. 4

Question Number : 8 Question Id : 92090614284 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

Select the appropriate indirect speech for the direct speech given below.

She said "you see, you cannot meet the boss".

- (1) She said that I can't meet the boss.
- (2) She told me that I could not meet the boss.
- (3) She says "you cannot meet the boss".
- (4) "you cannot meet the boss" she says.

Options :

92090656429. 1

92090656430. 2

92090656431. 3

92090656432. 4

Question Number : 8 Question Id : 92090614284 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

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She said "you see, you cannot meet the boss".

- (1) She said that I can't meet the boss.
- (2) She told me that I could not meet the boss.
- (3) She says "you cannot meet the boss".
- (4) "you cannot meet the boss" she says.

Options :

92090656429. 1

92090656430. 2

92090656431. 3

92090656432. 4

Question Number : 9 Question Id : 92090614285 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

Fear of strange or foreign people, customs etc.

- (1) Agrophobia
- (2) Xenophobia
- (3) Arachnophobia
- (4) Aerophobia

Options :

- 92090656433. 1
- 92090656434. 2
- 92090656435. 3
- 92090656436. 4

Question Number : 9 Question Id : 92090614285 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

Fear of strange or foreign people, customs etc.

- (1) Agrophobia
- (2) Xenophobia
- (3) Arachnophobia
- (4) Aerophobia

Options :

- 92090656433. 1
- 92090656434. 2
- 92090656435. 3
- 92090656436. 4

Question Number : 10 Question Id : 92090614286 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

You are talking about the poorest and the most disadvantaged people in the country. To play ducks and drakes with their service is reprehensible.

The underlined idiom in the above sentence means: -

- (1) to treat someone badly by being dishonest with them
- (2) to show anger and criticism towards someone
- (3) to take decisions without considering their feelings
- (4) to increase the pressure on someone to make them do what you want them to

Options :

- 92090656437. 1
- 92090656438. 2
- 92090656439. 3
- 92090656440. 4

Question Number : 10 Question Id : 92090614286 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

You are talking about the poorest and the most disadvantaged people in the country. To play ducks and drakes with their service is reprehensible.

The underlined idiom in the above sentence means: -

- (1) to treat someone badly by being dishonest with them
- (2) to show anger and criticism towards someone
- (3) to take decisions without considering their feelings
- (4) to increase the pressure on someone to make them do what you want them to

Options :

- 92090656437. 1
- 92090656438. 2
- 92090656439. 3
- 92090656440. 4

Question Number : 11 Question Id : 92090614287 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 $m = 2$, $n = 3$, then the value of $12m^2n - 3mn^2$ is:

- (1) 92
- (2) 88
- (3) 94
- (4) 90

Options :

92090656441. 1

92090656442. 2

92090656443. 3

92090656444. 4

Question Number : 11 Question Id : 92090614287 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 $m = 2$, $n = 3$, then the value of $12m^2n - 3mn^2$ is:

- (1) 92
- (2) 88
- (3) 94
- (4) 90

Options :

92090656441. 1

92090656442. 2

92090656443. 3

92090656444. 4

Question Number : 12 Question Id : 92090614288 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

Richa purchased a pen at $\frac{4}{5}$ th of its marked price. She then enhanced the marked price by 20% and sold it at the new marked price. What is Richa's profit percentage?

- (1) 25%
- (2) 50%
- (3) 40%
- (4) 60%

Options :

- 92090656445. 1
- 92090656446. 2
- 92090656447. 3
- 92090656448. 4

Question Number : 12 Question Id : 92090614288 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

Richa purchased a pen at $\frac{4}{5}$ th of its marked price. She then enhanced the marked price by 20% and sold it at the new marked price. What is Richa's profit percentage?

- (1) 25%
- (2) 50%
- (3) 40%
- (4) 60%

Options :

- 92090656445. 1
- 92090656446. 2
- 92090656447. 3
- 92090656448. 4

Question Number : 13 Question Id : 92090614289 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

Two pipes A and B can fill a tank in 15 minutes and 20 minutes respectively. Both the pipes are opened together but after 4 minutes, pipe A is turned off. What is the total time taken to fill the tank?

- | | |
|-------------------|-------------------|
| (1) 14 min 40 sec | (2) 12 min 30 sec |
| (3) 11 min 45 sec | (4) 10 min 20 sec |

Options :

92090656449. 1
92090656450. 2
92090656451. 3
92090656452. 4

Question Number : 13 Question Id : 92090614289 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

Two pipes A and B can fill a tank in 15 minutes and 20 minutes respectively. Both the pipes are opened together but after 4 minutes, pipe A is turned off. What is the total time taken to fill the tank?

- | | |
|-------------------|-------------------|
| (1) 14 min 40 sec | (2) 12 min 30 sec |
| (3) 11 min 45 sec | (4) 10 min 20 sec |

Options :

92090656449. 1
92090656450. 2
92090656451. 3
92090656452. 4

Question Number : 14 Question Id : 92090614290 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 large cube is formed by melting three solid metallic cubes of sides 3cm, 4cm and 5cm respectively. What is the ratio of the sum of the surface areas of the given cubes and that of the new cube?

- | | |
|-----------|-----------|
| (1) 2:1 | (2) 3:2 |
| (3) 25:18 | (4) 27:20 |

Options :

92090656453. 1
92090656454. 2
92090656455. 3
92090656456. 4

Question Number : 14 Question Id : 92090614290 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 large cube is formed by melting three solid metallic cubes of sides 3cm, 4cm and 5cm respectively. What is the ratio of the sum of the surface areas of the given cubes and that of the new cube?

- | | |
|-----------|-----------|
| (1) 2:1 | (2) 3:2 |
| (3) 25:18 | (4) 27:20 |

Options :

92090656453. 1
92090656454. 2
92090656455. 3
92090656456. 4

Question Number : 15 Question Id : 92090614291 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

Jayant invested a sum of Rs. 65,000 in two schemes and received Rs.7275 as interest after 2 years. In scheme I simple interest is payable at 6% per annum and in scheme II compound interest is payable at 5% per annum Find the ratio of sums he invested in scheme I and scheme II.

- (1) 1:1
(2) 7:6
(3) 5:4
(4) 3:4

Options :

92090656457. 1
92090656458. 2
92090656459. 3
92090656460. 4

Question Number : 15 Question Id : 92090614291 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

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- (1) 1:1
- (2) 7:6
- (3) 5:4
- (4) 3:4

Options :

- 92090656457. 1
- 92090656458. 2
- 92090656459. 3
- 92090656460. 4

Question Number : 16 Question Id : 92090614292 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 figure will complete pattern of fig (x)?

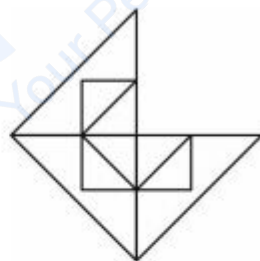
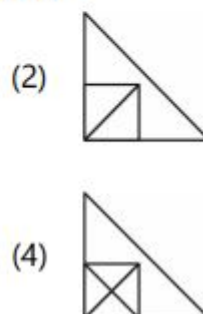
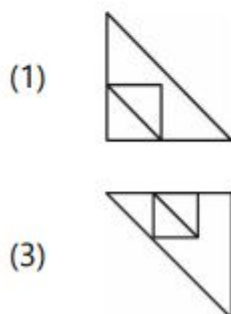


Fig (X)



Options :

- 92090656461. 1

92090656462. 2

92090656463. 3

92090656464. 4

Question Number : 16 Question Id : 92090614292 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 figure will complete pattern of fig (x)?

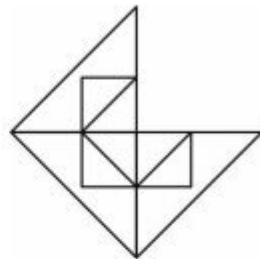
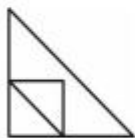


Fig (X)

(1)



(2)



(3)



(4)



Options :

92090656461. 1

92090656462. 2

92090656463. 3

92090656464. 4

Question Number : 17 Question Id : 92090614293 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

When a painted cube is cut into 125 small identical cubes, how many smaller cubes have no face painted?

(1) 27

(2) 64

(3) 8

(4) 16

Options :

92090656465. 1

92090656466. 2

92090656467. 3

92090656468. 4

Question Number : 17 Question Id : 92090614293 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

When a painted cube is cut into 125 small identical cubes, how many smaller cubes have no face painted?

(1) 27

(2) 64

(3) 8

(4) 16

Options :

92090656465. 1

92090656466. 2

92090656467. 3

92090656468. 4

Question Number : 18 Question Id : 92090614294 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 series: 12, 30, 120, 460, 1368, 2730

Observe the series given and by establishing the same relation in series 16, (A), (B), (C), (D), (E), find what will come in place of (D)?

(1) 1384

(2) 2642

(3) 2808

(4) 1988

Options :

92090656469. 1

92090656470. 2

92090656471. 3

92090656472. 4

Question Number : 18 Question Id : 92090614294 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 series: 12, 30, 120, 460, 1368, 2730

Observe the series given and by establishing the same relation in series 16, (A), (B), (C), (D), (E), find what will come in place of (D)?

- (1) 1384
- (2) 2642
- (3) 2808
- (4) 1988

Options :

- 92090656469. 1
- 92090656470. 2
- 92090656471. 3
- 92090656472. 4

Question Number : 19 Question Id : 92090614295 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

Select the pair that has the same relationship as the original pair of words given below.

Diva: opera

- (1) Thespian: Play
- (2) Conductor: Bus
- (3) Director: Drama
- (4) Producer: Theater

Options :

- 92090656473. 1
- 92090656474. 2
- 92090656475. 3
- 92090656476. 4

Question Number : 19 Question Id : 92090614295 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

Select the pair that has the same relationship as the original pair of words given below.

Diva: opera

- (1) Thespian: Play
- (2) Conductor: Bus
- (3) Director: Drama
- (4) Producer: Theater

Options :

- 92090656473. 1
- 92090656474. 2
- 92090656475. 3
- 92090656476. 4

Question Number : 20 Question Id : 92090614296 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 is facing east, he turns 100° in the clockwise direction and then 145° in the anti-clockwise direction. Which direction X is facing now?

- (1) East
- (2) North-East
- (3) North
- (4) South-West

Options :

- 92090656477. 1
- 92090656478. 2
- 92090656479. 3
- 92090656480. 4

Question Number : 20 Question Id : 92090614296 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 is facing east, he turns 100° in the clockwise direction and then 145° in the anti-clockwise direction. Which direction X is facing now?

- (1) East
- (2) North-East
- (3) North
- (4) South-West

Options :

- 92090656477. 1

92090656478. 2

92090656479. 3

92090656480. 4

Question Number : 21 Question Id : 92090614297 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

Indian Air Force Day is celebrated every year on _____?

(1) 8 Oct

(2) 8 Sept

(3) 8 Aug

(4) 8 Nov

Options :

92090656481. 1

92090656482. 2

92090656483. 3

92090656484. 4

Question Number : 21 Question Id : 92090614297 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

Indian Air Force Day is celebrated every year on _____?

(1) 8 Oct

(2) 8 Sept

(3) 8 Aug

(4) 8 Nov

Options :

92090656481. 1

92090656482. 2

92090656483. 3

92090656484. 4

Question Number : 22 Question Id : 92090614298 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 statements which are correct are:

- (A) Indian system of governance has federal structure. It is a three tiered system, each tier having executive functions.
- (B) According to the constitution of India, central government is the highest executive body of India and the first tier of system.
- (C) State Governments represent second tier and are managed by ruling governments in each state but they have no executive powers.
- (D) Third tier is local level governance, only of panchayat.

Choose the correct answer from the options given below :

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

Options :

92090656485. 1

92090656486. 2

92090656487. 3

92090656488. 4

Question Number : 22 Question Id : 92090614298 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 statements which are correct are:

- (A) Indian system of governance has federal structure. It is a three tiered system, each tier having executive functions.
- (B) According to the constitution of India, central government is the highest executive body of India and the first tier of system.
- (C) State Governments represent second tier and are managed by ruling governments in each state but they have no executive powers.
- (D) Third tier is local level governance, only of panchayat.

Choose the correct answer from the options given below :

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

Options :

- 92090656485. 1
- 92090656486. 2
- 92090656487. 3
- 92090656488. 4

Question Number : 23 Question Id : 92090614299 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

Nethanna Bima' is flagship scheme of which Indian State?

- | | |
|--------------------|---------------|
| (1) Karnataka | (2) Tamilnadu |
| (3) Andhra Pradesh | (4) Telangana |

Options :

- 92090656489. 1
- 92090656490. 2
- 92090656491. 3
- 92090656492. 4

Question Number : 23 Question Id : 92090614299 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

Nethanna Bima' is flagship scheme of which Indian State?

- | | |
|--------------------|---------------|
| (1) Karnataka | (2) Tamilnadu |
| (3) Andhra Pradesh | (4) Telangana |

Options :

92090656489. 1
92090656490. 2
92090656491. 3
92090656492. 4

Question Number : 24 Question Id : 92090614300 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 : Corporate tax is an indirect tax which is levied on company's profit. It is imposed on registered companies and corporation.
- Statement II : It is calculated on profits before interest and allowance (i.e. capital allowance) have been deducted.

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 :

92090656493. 1
92090656494. 2
92090656495. 3
92090656496. 4

Question Number : 24 Question Id : 92090614300 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 : Corporate tax is an indirect tax which is levied on company's profit. It is imposed on registered companies and corporation.

Statement II : It is calculated on profits before interest and allowance (i.e. capital allowance) have been deducted.

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 :

92090656493. 1

92090656494. 2

92090656495. 3

92090656496. 4

Question Number : 25 Question Id : 92090614301 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
<u>Fairs & festivals</u>	<u>States</u>
(A) Nada Habba	(I) Kerala
(B) Vishu	(II) Karnataka
(C) Rath Yatra	(III) Himachal Pradesh
(D) Chaitraul	(IV) Odessa

Choose the correct answer from the options given below:

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

Options :

- 92090656497. 1
- 92090656498. 2
- 92090656499. 3
- 92090656500. 4

Question Number : 25 Question Id : 92090614301 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
<u>Fairs & festivals</u>	<u>States</u>
(A) Nada Habba	(I) Kerala
(B) Vishu	(II) Karnataka
(C) Rath Yatra	(III) Himachal Pradesh
(D) Chaitraul	(IV) Odessa

Choose the correct answer from the options given below:

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

Options :

92090656497. 1
92090656498. 2
92090656499. 3
92090656500. 4

Part B: Nanoscience

Section Id :	920906284
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 :	920906463
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 26 Question Id : 92090614302 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

Ziegler – Natta catalyst involves the metal

- | | |
|--------|--------|
| (1) Cr | (2) Ti |
| (3) Fe | (4) Mn |

Options :

92090656501. 1

92090656502. 2

92090656503. 3

92090656504. 4

Question Number : 26 Question Id : 92090614302 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

जेगलर नाटा उत्प्रेरक निम्न में से किस धातु में होता है।

- | | |
|--------|--------|
| (1) Cr | (2) Ti |
| (3) Fe | (4) Mn |

Options :

92090656501. 1

92090656502. 2

92090656503. 3

92090656504. 4

Question Number : 27 Question Id : 92090614303 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

When 10 mol of N_2 and 20 mol of H_2 are passed through a catalytic converter, after some time 5mol of NH_3 are produced. The total number of unreacted mol of N_2 and H_2 is :

- | | |
|--------|----------|
| (1) 10 | (2) 12.5 |
| (3) 20 | (4) 7.5 |

Options :

92090656505. 1

92090656506. 2

92090656507. 3

92090656508. 4

Question Number : 27 Question Id : 92090614303 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

जब N_2 के 10 मोल और H_2 के 20 मोल एक उत्प्रेरकी परिवर्तक से गुजरते हैं, कुछ समय बाद 5 मोल NH_3 उत्पादित होते हैं। N_2 और H_2 के कुल कितने मोल निष्क्रिय रह जाते हैं।

- | | |
|--------|----------|
| (1) 10 | (2) 12.5 |
| (3) 20 | (4) 7.5 |

Options :

92090656505. 1
92090656506. 2
92090656507. 3
92090656508. 4

Question Number : 28 Question Id : 92090614304 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 reaction from the following that involves carbocation intermediate is

- (1) Aldol reaction
- (2) Chlorination of methane
- (3) Reimer Tiemann reaction
- (4) Hydrolysis of tert butylchloride

Options :

92090656509. 1
92090656510. 2
92090656511. 3
92090656512. 4

Question Number : 28 Question Id : 92090614304 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

निम्न में से कौनसी अभि क्रिया मध्यवर्ती कार्बोकटाइन में होती है।

- | | |
|-----------------------|---------------------------------------|
| (1) एल्डोल क्रिया | (2) मीथेन का क्लोरोनीकरण |
| (3) राइमर टीमन क्रिया | (4) टर्ट-ब्यूटाईलक्लोराइड का जल अपघटन |

Options :

92090656509. 1
92090656510. 2
92090656511. 3
92090656512. 4

Question Number : 29 Question Id : 92090614305 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

Bond order in O_2 , O_2^+ and O_2^- are

- (1) 2, 2.5 and 1.5 respectively
- (2) 2.5, 2 and 1.5 respectively
- (3) 1.5, 2.5 and 2 respectively
- (4) 2.5, 1.5 and 2 respectively

Options :

92090656513. 1
92090656514. 2
92090656515. 3
92090656516. 4

Question Number : 29 Question Id : 92090614305 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

O_2 , O_2^+ और O_2^- में बंध क्रम होता है।

- | | |
|--------------------------|--------------------------|
| (1) क्रमशः 2, 2.5 और 1.5 | (2) क्रमशः 2.5, 2 और 1.5 |
| (3) क्रमशः 1.5, 2.5 और 2 | (4) क्रमशः 2.5, 1.5 और 2 |

Options :

92090656513. 1
92090656514. 2
92090656515. 3
92090656516. 4

Question Number : 30 Question Id : 92090614306 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

Total numbers of nucleophiles from the following is



- | | |
|-------|-------|
| (1) 6 | (2) 5 |
| (3) 4 | (4) 7 |

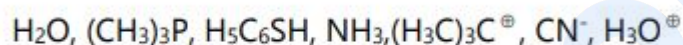
Options :

92090656517. 1
92090656518. 2
92090656519. 3
92090656520. 4

Question Number : 30 Question Id : 92090614306 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

निम्न में कुल कितने न्यूक्लिओफिल्स हैं,



- | | |
|-------|-------|
| (1) 6 | (2) 5 |
| (3) 4 | (4) 7 |

Options :

92090656517. 1
92090656518. 2
92090656519. 3
92090656520. 4

Question Number : 31 Question Id : 92090614307 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

Volume occupied by 20.0 g of H_2 at STP is

- | | |
|------------|------------|
| (1) 224 L | (2) 22.4 L |
| (3) 2.24 L | (4) 11.2 L |

Options :

92090656521. 1
92090656522. 2
92090656523. 3
92090656524. 4

Question Number : 31 Question Id : 92090614307 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

20 ग्राम H_2 का STP पर कितना आयतन होता है।

- | | |
|---------------|---------------|
| (1) 224 लीटर | (2) 22.4 लीटर |
| (3) 2.24 लीटर | (4) 11.2 लीटर |

Options :

- 92090656521. 1
- 92090656522. 2
- 92090656523. 3
- 92090656524. 4

Question Number : 32 Question Id : 92090614308 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

Type of bond present in $CuSO_4 \cdot 5H_2O$ is

- (1) Electrovalent bond
- (2) Covalent bond
- (3) Co-ordinate bond
- (4) Electrovalent, covalent and co-ordinate bond

Options :

- 92090656525. 1
- 92090656526. 2
- 92090656527. 3
- 92090656528. 4

Question Number : 32 Question Id : 92090614308 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

$CuSO_4 \cdot 5H_2O$ में किस प्रकार का आबंध होता है?

- (1) वैद्युत संयोजी आबंध
- (2) सहसंयोजी आबंध
- (3) उपसह संयोजकता आबंध
- (4) वैद्युत संयोजी, सहसंयोजी और उपसहसंयोजकता आबंध

Options :

- 92090656525. 1
- 92090656526. 2
- 92090656527. 3
- 92090656528. 4

Question Number : 33 Question Id : 92090614309 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 process is spontaneous at all temperatures if

- | | |
|---------------------------------------|---------------------------------------|
| (1) $\Delta H < 0$ and $\Delta S > 0$ | (2) $\Delta H > 0$ and $\Delta S > 0$ |
| (3) $\Delta H > 0$ and $\Delta S < 0$ | (4) $\Delta H = 0$ and $\Delta S < 0$ |

Options :

- 92090656529. 1
- 92090656530. 2
- 92090656531. 3
- 92090656532. 4

Question Number : 33 Question Id : 92090614309 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 प्रक्रम सभी तापमान पर स्वतः होता है यदि :

- | | |
|--------------------------------------|--------------------------------------|
| (1) $\Delta H < 0$ और $\Delta S > 0$ | (2) $\Delta H > 0$ और $\Delta S > 0$ |
| (3) $\Delta H > 0$ और $\Delta S < 0$ | (4) $\Delta H = 0$ और $\Delta S < 0$ |

Options :

- 92090656529. 1
- 92090656530. 2
- 92090656531. 3
- 92090656532. 4

Question Number : 34 Question Id : 92090614310 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

KMnO_4 acts as a

- (1) Strong reducing agent
- (2) Strong oxidizing agent
- (3) Weak reducing agent.
- (4) Weak oxidising agent.

Options :

- 92090656533. 1
- 92090656534. 2
- 92090656535. 3
- 92090656536. 4

Question Number : 34 Question Id : 92090614310 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

KMnO_4 कार्य करता है।

- (1) प्रबल अपचायी कारक की तरह
- (2) प्रबल ऑक्सीकारक की तरह
- (3) दुर्बल अपचायीकारक की तरह
- (4) दुर्बल ऑक्सीकारक की तरह

Options :

- 92090656533. 1
- 92090656534. 2
- 92090656535. 3
- 92090656536. 4

Question Number : 35 Question Id : 92090614311 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

Work done by the system when 6 mol of an ideal gas at 25°C is undergoing expansion reversibly from initial volume of 5 dm^3 to final volume of 50 dm^3 .
(given $R = 8.314\text{ J K}^{-1}\text{ mol}^{-1}$)

- (1) -28.5 kJ
- (2) 285 kJ
- (3) 2850 kJ
- (4) 28.5 kJ

Options :

- 92090656537. 1
- 92090656538. 2
- 92090656539. 3
- 92090656540. 4

Question Number : 35 Question Id : 92090614311 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

जब 25°C तापमान पर एक आदर्श गैस के 6 मोल का उत्क्रमणीय प्रसार होने पर प्रारम्भिक आयतन 5 dm^3 से अंतिम आयतन 5 dm^3 हो जाता है, निकाय द्वारा किया गया कार्य होता है।

(दिया है $R = 8.314\text{ J K}^{-1}\text{ mol}^{-1}$)

- | | |
|---------------------|--------------------|
| (1) -28.5 किलोजूल | (2) 285 किलोजूल |
| (3) 2850 किलोजूल | (4) 28.5 किलोजूल |

Options :

92090656537. 1
92090656538. 2
92090656539. 3
92090656540. 4

Question Number : 36 Question Id : 92090614312 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

Solubility product for a salt AB is 1.6×10^{-9} . Solubility of the salt in water is

- | | |
|---|---|
| (1) 16 mol dm^{-3} | (2) $4 \times 10^{-5}\text{ mol dm}^{-3}$ |
| (3) $4 \times 10^{-9}\text{ mol dm}^{-3}$ | (4) $1.6 \times 10^{-8}\text{ mol dm}^{-3}$ |

Options :

92090656541. 1
92090656542. 2
92090656543. 3
92090656544. 4

Question Number : 36 Question Id : 92090614312 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

AB लवण की विलेयता गुणफल 1.6×10^{-9} है, इस लवण की जल में विलेयता है।

- | | |
|---|---|
| (1) 16 mol dm^{-3} | (2) $4 \times 10^{-5}\text{ mol dm}^{-3}$ |
| (3) $4 \times 10^{-9}\text{ mol dm}^{-3}$ | (4) $1.6 \times 10^{-8}\text{ mol dm}^{-3}$ |

Options :

92090656541. 1
92090656542. 2
92090656543. 3
92090656544. 4

Question Number : 37 Question Id : 92090614313 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 number of disintegrations per second undergone by 1g of $^{226}_{88}\text{Ra}$ is :

(Given: Rate constant $k = 1.37 \times 10^{-11} \text{ s}^{-1}$)

- | | |
|--|---|
| (1) $2.666 \times 10^{21} \text{ g}^{-1} \text{ s}^{-1}$ | (2) $3.66 \times 10^{10} \text{ g}^{-1} \text{ s}^{-1}$ |
| (3) $5.049 \times 10^{10} \text{ g}^{-1} \text{ s}^{-1}$ | (4) $3.66 \times 10^8 \text{ g}^{-1} \text{ s}^{-1}$ |

Options :

92090656545. 1
92090656546. 2
92090656547. 3
92090656548. 4

Question Number : 37 Question Id : 92090614313 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

1 ग्राम $^{226}_{88}\text{Ra}$ की प्रति सेकिण्ड विघटन संख्या है। (दिया है नियतांक दर $k = 1.37 \times 10^{-11} \text{ s}^{-1}$)

- | | |
|--|---|
| (1) $2.666 \times 10^{21} \text{ g}^{-1} \text{ s}^{-1}$ | (2) $3.66 \times 10^{10} \text{ g}^{-1} \text{ s}^{-1}$ |
| (3) $5.049 \times 10^{10} \text{ g}^{-1} \text{ s}^{-1}$ | (4) $3.66 \times 10^8 \text{ g}^{-1} \text{ s}^{-1}$ |

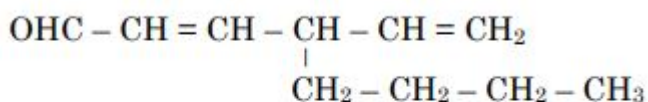
Options :

92090656545. 1
92090656546. 2
92090656547. 3
92090656548. 4

Question Number : 38 Question Id : 92090614314 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

Correct IUPAC Name of the following compound is



- (1) 4 - Butyl - 2, 5 - hexadien - 1 - al
- (2) 5 - Vinyloct - 3 - ene - 1 - al
- (3) 5 - Vinyl - 5 - ene - 8 - al
- (4) 3 - Butyl - 1,4 - hexadien - 8 - al

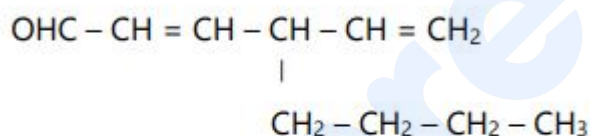
Options :

- 92090656549. 1
- 92090656550. 2
- 92090656551. 3
- 92090656552. 4

Question Number : 38 Question Id : 92090614314 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

निम्न यौगिक का सही IUPAC नाम है।



- (1) 4 - ब्यूटाइल - 2, 5 - हेक्साडाइन - 1 - अल
- (2) 5 - विनाइलऑक्ट - 3 - इन - अल - 1 - अल
- (3) 5 - विनाइल - 5 - इन - 8 - अल
- (4) 3 - ब्यूटाइल - 1,4 - हेक्साडाइन - 8 - अल

Options :

- 92090656549. 1
- 92090656550. 2
- 92090656551. 3
- 92090656552. 4

Question Number : 39 Question Id : 92090614315 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 the most stable radical?

- | | |
|--|---|
| (1) $\dot{\text{C}}\text{H}_3$ | (2) $\text{R}-\dot{\text{C}}\text{H}_2$ |
| (3) $\text{R}_2\dot{\text{C}}\text{H}$ | (4) $\text{R}_3\dot{\text{C}}$ |

Options :

92090656553. 1
92090656554. 2
92090656555. 3
92090656556. 4

Question Number : 39 Question Id : 92090614315 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

निम्न में से कौनसा सबसे स्थायी रेडीकल है।

- | | |
|--|---|
| (1) $\dot{\text{C}}\text{H}_3$ | (2) $\text{R}-\dot{\text{C}}\text{H}_2$ |
| (3) $\text{R}_2\dot{\text{C}}\text{H}$ | (4) $\text{R}_3\dot{\text{C}}$ |

Options :

92090656553. 1
92090656554. 2
92090656555. 3
92090656556. 4

Question Number : 40 Question Id : 92090614316 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 primary valency of Fe in $[\text{Fe}(\text{CN})_6]^{3-}$ is:

- | | |
|--------|---------|
| (1) +2 | (2) +1 |
| (3) +3 | (4) 2.5 |

Options :

92090656557. 1
92090656558. 2
92090656559. 3
92090656560. 4

Question Number : 40 Question Id : 92090614316 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

$[\text{Fe}(\text{CN})_6]^{3-}$ में Fe की प्रारम्भिक संयोजकता है।

- | | |
|--------|---------|
| (1) +2 | (2) +1 |
| (3) +3 | (4) 2.5 |

Options :

92090656557. 1

92090656558. 2

92090656559. 3

92090656560. 4

Question Number : 41 Question Id : 92090614317 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 order of reaction is

- (1) Never fractional.
- (2) Never zero.
- (3) Always equal to stoichiometric number of reactants in balanced chemical equation.
- (4) An experimentally determined quantity.

Options :

92090656561. 1

92090656562. 2

92090656563. 3

92090656564. 4

Question Number : 41 Question Id : 92090614317 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

अभिक्रिया की कोटि होती है।

- (1) कभी आंशिक नहीं
- (2) कभी शून्य नहीं
- (3) संतुलित रासायनिक समीकरण में हमेशा स्टाइकियोमेट्रिक संख्या के बराबर
- (4) एक प्रायोगिक रूप से निर्धारित संख्या

Options :

- 92090656561. 1
- 92090656562. 2
- 92090656563. 3
- 92090656564. 4

Question Number : 42 Question Id : 92090614318 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 bond angles in NH_3 and H_2O are

- (1) $109^\circ 28'$ and $107^\circ 48'$ respectively
- (2) $107^\circ 48'$ and $109^\circ 28'$ respectively
- (3) $107^\circ 48'$ and $104^\circ 27'$ respectively
- (4) $107^\circ 48'$ and $107^\circ 48'$ respectively

Options :

- 92090656565. 1
- 92090656566. 2
- 92090656567. 3
- 92090656568. 4

Question Number : 42 Question Id : 92090614318 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

NH_3 और H_2O में आबंध कोण होते हैं।

- (1) क्रमशः $109^\circ 28'$ और $107^\circ 48'$
- (2) क्रमशः $107^\circ 48'$ और $109^\circ 28'$
- (3) क्रमशः $107^\circ 48'$ और $104^\circ 27'$
- (4) क्रमशः $107^\circ 48'$ और $107^\circ 48'$

Options :

- 92090656565. 1
- 92090656566. 2
- 92090656567. 3
- 92090656568. 4

Question Number : 43 Question Id : 92090614319 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 $\lambda^\circ(\text{Ca}^{2+}) = 119.0 \text{ S cm}^2 \text{ mol}^{-1}$ and $\lambda^\circ(\text{Cl}^{-1}) = 76.3 \text{ S cm}^2 \text{ mol}^{-1}$ then
 $\Lambda^\circ \text{m}(\text{CaCl}_2) = \text{_____ S cm}^2 \text{ mol}^{-1}$

- | | |
|-----------|-----------|
| (1) 271.6 | (2) 27.16 |
| (3) 152.6 | (4) 119.0 |

Options :

92090656569. 1

92090656570. 2

92090656571. 3

92090656572. 4

Question Number : 43 Question Id : 92090614319 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 $\lambda^\circ(\text{Ca}^{2+}) = 119.0 \text{ S cm}^2 \text{ mol}^{-1}$ और $\lambda^\circ(\text{Cl}^{-1}) = 76.3 \text{ S cm}^2 \text{ mol}^{-1}$ तब
 $\Lambda^\circ \text{m}(\text{CaCl}_2) = \text{_____ S cm}^2 \text{ mol}^{-1}$

- | | |
|-----------|-----------|
| (1) 271.6 | (2) 27.16 |
| (3) 152.6 | (4) 119.0 |

Options :

92090656569. 1

92090656570. 2

92090656571. 3

92090656572. 4

Question Number : 44 Question Id : 92090614320 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 rate constant for a certain first order reaction is $1.60 \times 10^{-5} \text{ s}^{-1}$ at 600 K. The energy of activation for the same is 209 kJ mol^{-1} . The rate constant for the same reaction at 700 K is (Given $R = 8.314 \text{ J K}^{-1} \text{ mol}^{-1}$).

- | | |
|---------------------------|---------------------------|
| (1) 6.36×10^{-2} | (2) 6.36×10^{-3} |
| (3) 6.36×10^{-5} | (4) 3.2×10^{-5} |

Options :

92090656573. 1

92090656574. 2

92090656575. 3

92090656576. 4

Question Number : 44 Question Id : 92090614320 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

600 K तापमान पर प्रथम कोटि अभिक्रिया के नियतांक दर $1.60 \times 10^{-5} \text{ s}^{-1}$ है। इसके लिए सक्रियण ऊर्जा 209 kJ mol^{-1} है। 700 K तापमान पर इस अभिक्रिया के लिए नियतांक दर होती है।

(1) 6.36×10^{-2}

(2) 6.36×10^{-3}

(3) 6.36×10^{-5}

(4) 3.2×10^{-5}

Options :

92090656573. 1

92090656574. 2

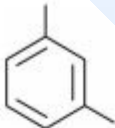
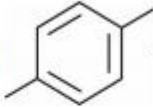
92090656575. 3

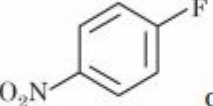
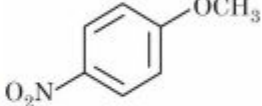
92090656576. 4

Question Number : 45 Question Id : 92090614321 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 :  is more reactive towards electrophilic aromatic substitution reaction than .

Statement II :  on reaction with NaOCH_3 gives .

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 :

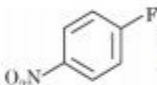
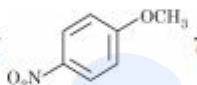
92090656577. 1
92090656578. 2
92090656579. 3
92090656580. 4

Question Number : 45 Question Id : 92090614321 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 :  की तुलना में इलेक्ट्रोफिलिक एरोमेटिक प्रतिस्थापन अभिक्रिया की ओर  ज्यादा अभिक्रियाशील है।

कथन II :  NaOCH_3 से अभिक्रिया करने पर  बनाता 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 :

92090656577. 1
92090656578. 2
92090656579. 3
92090656580. 4

Question Number : 46 Question Id : 92090614322 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 (Ligand)	List II (Type)
(A) CN^-	(I) Polydentate
(B) CO	(II) Didentate
(C) EDTA^{4-}	(III) Ambidentate
(D) $\text{C}_2\text{O}_4^{2-}$	(IV) Neutral

Choose the correct answer from the options given below:

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

Options :

92090656581. 1

92090656582. 2

92090656583. 3

92090656584. 4

Question Number : 46 Question Id : 92090614322 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 (लिगण्ड)	सूची-II (टाइप)
(A) CN^-	(I) पॉलीडेंटेट
(B) CO	(II) डेंटेट
(C) EDTA^{4-}	(III) एम्बीडेंटेट
(D) $\text{C}_2\text{O}_4^{2-}$	(IV) न्यूट्रल

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

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

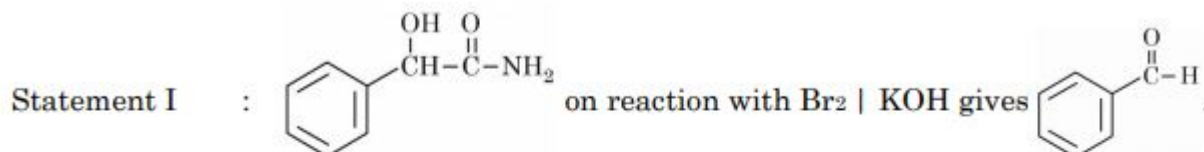
Options :

92090656581. 1
92090656582. 2
92090656583. 3
92090656584. 4

Question Number : 47 Question Id : 92090614323 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 II : Hoffmann bromamide reaction is used for converting primary amides to amines.

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

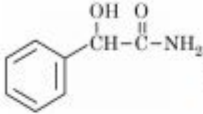
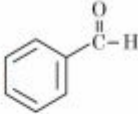
Options :

92090656585. 1
92090656586. 2
92090656587. 3
92090656588. 4

Question Number : 47 Question Id : 92090614323 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 :  जब Br_2 / KOH से अभिक्रिया करता है तब  बनाता है।

कथन II : हॉफमान ब्रोमामाइड अभिक्रिया प्राथमिक एमीडेस को एमीनोस में परिवर्तित करने में प्रयोग 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 :

- 92090656585. 1
- 92090656586. 2
- 92090656587. 3
- 92090656588. 4

Question Number : 48 Question Id : 92090614324 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) : Cl^- is the conjugate base of HCl .

Reasons (R) : Conjugate acid and base both have same number of protons.

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

- (1) Both (A) and (R) are correct and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are correct but (R) is NOT the correct explanation of (A)
- (3) (A) is correct but (R) is not correct
- (4) (A) is not correct but (R) is correct

Options :

- 92090656589. 1
- 92090656590. 2
- 92090656591. 3
- 92090656592. 4

Question Number : 48 Question Id : 92090614324 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 : Cl^- , HCl का संयुग्मी क्षार है।

कारण R : संयुग्मी अम्ल व क्षार दोनों में समान प्रोटॉन 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 हैं, लेकिन R सही नहीं है
- (4) A सही नहीं हैं, लेकिन R सही है

Options :

92090656589. 1

92090656590. 2

92090656591. 3

92090656592. 4

Question Number : 49 Question Id : 92090614325 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 isobaric reaction, the pressure throughout the reaction is constant.

Statement II : In adiabatic condition there is no exchange of heat and system is completely isolated.

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 :

92090656593. 1

92090656594. 2

92090656595. 3

92090656596. 4

Question Number : 49 Question Id : 92090614325 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 : समदाबीय अभिक्रिया में, अभिक्रिया द्वारा दाब स्थिर रहता है।

कथन II : स्थिरोष्म (आइडियाबेटिक) अवस्था में ऊष्मा का आदान-प्रदान नहीं होता है तथा निकाय पूर्णतः विलग रहता 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 :

92090656593. 1

92090656594. 2

92090656595. 3

92090656596. 4

Question Number : 50 Question Id : 92090614326 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 homoleptic complexes from the following

- (A) $[\text{Cr}(\text{en})_3]\text{Cl}_3$
- (B) $\text{K}_3[\text{Fe}(\text{CN})_5\text{NO}]$
- (C) $\text{Fe}(\text{C}_5\text{H}_5)_2$
- (D) $\text{Li}[\text{AlH}_4]$
- (E) $\text{Na}_2[\text{ZnCl}_4]$

Choose the correct answer from the options given below :

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

Options :

92090656597. 1

92090656598. 2

92090656599. 3

92090656600. 4

Question Number : 50 Question Id : 92090614326 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

निम्न में से होमोलेटिक संकुलों की पहचा करो -

- (A) $[\text{Cr}(\text{en})_3]\text{Cl}_3$
- (B) $\text{K}_3[\text{Fe}(\text{CN})_5\text{NO}]$
- (C) $\text{Fe}(\text{C}_5\text{H}_5)_2$
- (D) $\text{Li}[\text{AlH}_4]$
- (E) $\text{Na}_2[\text{ZnCl}_4]$

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

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

Options :

- 92090656597. 1
- 92090656598. 2
- 92090656599. 3
- 92090656600. 4

Question Number : 51 Question Id : 92090614327 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) H^+	(I) Soft acid
(B) Cu^+	(II) Soft base
(C) N_2H_4	(III) Hard acid.
(D) I^-	(IV) Hard base

Choose the correct answer from the options given below :

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

Options :

92090656601. 1
92090656602. 2
92090656603. 3
92090656604. 4

Question Number : 51 Question Id : 92090614327 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) H^+	(I) मृदुल अम्ल
(B) Cu^+	(II) मृदुल क्षार
(C) N_2H_4	(III) कठोर अम्ल
(D) I^-	(IV) कठोर क्षार

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

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

Options :

92090656601. 1
92090656602. 2
92090656603. 3
92090656604. 4

Question Number : 52 Question Id : 92090614328 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 : HClO_4 and HNO_3 are among the strongest acids known.

Statement II : The strength of Oxyacid is dependent upon inherent electronegativity of central atom.

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 :

- 92090656605. 1
- 92090656606. 2
- 92090656607. 3
- 92090656608. 4

Question Number : 52 Question Id : 92090614328 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 : HClO_4 तथा HNO_3 को सबसे प्रबल अम्लों में जाना जाता है।

कथन II : ऑक्साइड की प्रबलता केन्द्रीय परमाणु में निहित वैदुतंत्रणात्मकता पर निर्भर 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 :

- 92090656605. 1
- 92090656606. 2
- 92090656607. 3
- 92090656608. 4

Question Number : 53 Question Id : 92090614329 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 : NO^+ ion is stabilized and exists in several compounds like $\text{NO}^+ \text{BF}_4^-$

Statement II : Nitrosyl ion formation results from removing an antibonding electron.

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 :

92090656609. 1

92090656610. 2

92090656611. 3

92090656612. 4

Question Number : 53 Question Id : 92090614329 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 : NO^+ आयन स्थिर एवं $\text{NO}^+ \text{BF}_4^-$ जैसे अनेक यौगिकों में विद्यमान रहता है।

कथन II : नाइट्रोसिल आयन बनने से प्रतिबंधन इलेक्ट्रॉन पृथक हो जाता 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 :

92090656609. 1

92090656610. 2

92090656611. 3

92090656612. 4

Question Number : 54 Question Id : 92090614330 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) : Graphite, an allotrope of carbon acts as an lubricant.

Reasons (R) : Graphite layers are held together by weak van der Waals forces

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

- (1) Both (A) and (R) are correct and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are correct but (R) is NOT the correct explanation of (A)
- (3) (A) is correct but (R) is not correct
- (4) (A) is not correct but (R) is correct

Options :

92090656613. 1
92090656614. 2
92090656615. 3
92090656616. 4

Question Number : 54 Question Id : 92090614330 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 : ग्रेफाइट, कार्बन का एक अपररूप है जो स्नेहक की तरह कार्य करता है।

कारण R : दुर्बल वान्डरवाल बलों द्वारा ग्रेफाइट की परतें साथ-साथ रहती 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 हैं, लेकिन R सही नहीं है
- (4) A सही नहीं हैं, लेकिन R सही है

Options :

92090656613. 1

92090656614. 2

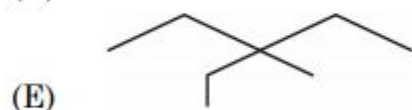
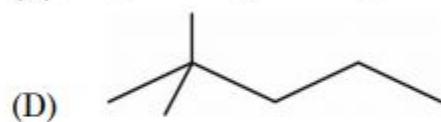
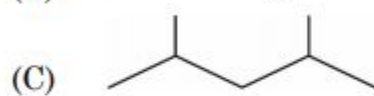
92090656615. 3

92090656616. 4

Question Number : 55 Question Id : 92090614331 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

Arrange the following compounds with increasing number of 2° carbon atoms



Choose the correct answer from the options given below :

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

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

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

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

Options :

92090656617. 1

92090656618. 2

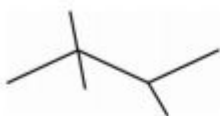
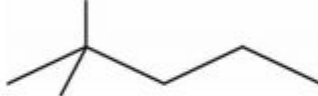
92090656619. 3

92090656620. 4

Question Number : 55 Question Id : 92090614331 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

निम्न यौगिकों को 2° कार्बन परमाणुओं के बढ़ते क्रम में व्यवस्थित करो।

- (A) 
- (B) 
- (C) 
- (D) 
- (E) 

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

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

Options :

92090656617. 1

92090656618. 2

92090656619. 3

92090656620. 4

Question Number : 56 Question Id : 92090614332 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 polar aprotic solvents from following

- (A) DMSO
 (B) $\text{CH}_3\text{CH}_2\text{OH}$
 (C) 18-Crown-6-ether
 (D) Hexane
 (E) Acetic acid

Choose the correct answer from the options given below :

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

Options :

92090656621. 1
92090656622. 2
92090656623. 3
92090656624. 4

Question Number : 56 Question Id : 92090614332 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

निम्न में से ध्रुवीय एप्रोटिक विलोयकों की पहचान करो।

- A. DMSO
- B. $\text{CH}_3\text{CH}_2\text{OH}$
- C. 18-क्राउन-6-इबर
- D. हैक्सेन
- E. ऐसीटिक अम्ल

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

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

Options :

92090656621. 1
92090656622. 2
92090656623. 3
92090656624. 4

Question Number : 57 Question Id : 92090614333 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
Reagent used	Reaction
(A) Zn(Hg), HCl	(I) Aldol reaction
(B) $\text{CHCl}_3, \text{KOH}$	(II) Reimer-Tiemann reaction
(C) $\text{NaOH} + \text{excess I}_2$	(III) Wolff – Kishner reduction
(D) Dilute NaOH	(IV) Haloform reaction

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

Options :

92090656625. 1

92090656626. 2

92090656627. 3

92090656628. 4

Question Number : 57 Question Id : 92090614333 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 (प्रयुक्त अभिकर्मक)	सूची-II (अभिक्रिया)
(A) Zn(Hg), HCl	(I) एडोल अभिक्रिया
(B) $\text{CHCl}_3, \text{KOH}$	(II) रोमर टीमान अभिक्रिया
(C) $\text{NaOH} + \text{अतिरिक्त I}_2$	(III) वोल्फ किशनर अपचयन
(D) तनु NaOH	(IV) हैलोफोरम अभिक्रिया

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

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

Options :

92090656625. 1
92090656626. 2
92090656627. 3
92090656628. 4

Question Number : 58 Question Id : 92090614334 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 1 M aqueous solutions each. Arrange them in increasing order of boiling points.

- (A) Glucose
- (B) Sodium chloride
- (C) Calcium nitrate
- (D) Potassium ferricyanide

Choose the correct answer from the options given below :

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

Options :

92090656629. 1
92090656630. 2
92090656631. 3
92090656632. 4

Question Number : 58 Question Id : 92090614334 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 1M के जलीय विलयन दिये गए हैं, उन्हें क्वथनांक के बढ़ते क्रम में व्यवस्थित करें।

- A. ग्लूकोज
- B. सोडियम क्लोराइड
- C. कैल्शियम नाइट्रेट
- D. पोटेशियम फेरीरानाइट

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

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

Options :

- 92090656629. 1
- 92090656630. 2
- 92090656631. 3
- 92090656632. 4

Question Number : 59 Question Id : 92090614335 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 : Frenkel defect is also known as dislocation defect which does not change the density of the solid
- Statement II : Schottky defect is a Vacancy defect which maintains electrical neutrality

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 :

- 92090656633. 1
- 92090656634. 2
- 92090656635. 3

Question Number : 59 Question Id : 92090614335 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 : फ्रेकेल दोष को विस्थापन दोष के रूप में भी जाना जाता है यह ठोस के धनत्व को नहीं बदलता है।

कथन II : शोरकी दोष एक रिक्तता दोष है यह वैद्युत उदासीनता बरकरार रखता है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तरका 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 :

92090656633. 1

92090656634. 2

92090656635. 3

92090656636. 4

Question Number : 60 Question Id : 92090614336 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 statements about inner transition elements

- (A) These are known as d-block elements
- (B) Lanthanoids and actinoids are two series included in inner transition elements
- (C) There are fourteen elements in each of Lanthanoid and actinoid series
- (D) In the series with increase in atomic number the atomic radii increase
- (E) Lanthanoids are silvery white soft metals

Choose the correct answer from the options given below :

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

Options :

92090656637. 1

92090656638. 2

92090656639. 3

92090656640. 4

Question Number : 60 Question Id : 92090614336 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

आंतरिक संक्रमण तत्वों के बारे में सही कथनों को पहचानें।

- (A) ये d-ब्लॉक तत्वों के रूप में जाने जाते हैं।
- (B) लेथेनाइड्स एवं एक्टिनाइड्स को आंतरिक संक्रमण तत्वों में दो श्रेणियों में रखा गया है।
- (C) प्रत्येक लेथेनाइड एवं ओक्टीनाइड श्रेणी में चौदह तत्व रखे गये हैं।
- (D) इन श्रेणियों में परमाणु क्रमांक बढ़ने के साथ परमाणु त्रिज्याएँ बढ़ती हैं।
- (E) लेथेनाइड्स चाँदी सदृश्य सफेद मुलायम धातुएँ हैं।

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

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

Options :

92090656637. 1

92090656638. 2

92090656639. 3

92090656640. 4

Question Number : 61 Question Id : 92090614337 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 nearest neighbour distance in a face centred cubic (FCC) structure in term of lattice constant 'a' is

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

Options :

92090656641. 1

92090656642. 2

92090656643. 3

92090656644. 4

Question Number : 61 Question Id : 92090614337 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

फलक केंद्रित धनीय संरचना में जालक नियतांक 'a' के पद में निकटतम प्रतिवेशी दूरी होती है।

(1) a

(2) $\sqrt{2} a$

(3) $a / \sqrt{2}$

(4) $\frac{\sqrt{3}}{2} a$

Options :

92090656641. 1

92090656642. 2

92090656643. 3

92090656644. 4

Question Number : 62 Question Id : 92090614338 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 α is volume expansion coefficient at constant pressure, then the value of $\left(\frac{\partial Q}{\partial P}\right)_T$ is:

(1) $T\left(\frac{\partial V}{\partial T}\right)_P$

(2) $-T\left(\frac{\partial V}{\partial P}\right)_T$

(3) $-TV\alpha$

(4) $\frac{1}{V}\left(\frac{\partial V}{\partial T}\right)_P$

Options :

92090656645. 1

92090656646. 2

92090656647. 3

92090656648. 4

Question Number : 62 Question Id : 92090614338 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 नियत दाब पर α औयतन प्रसार गुणांक है, तब $\left(\frac{\partial Q}{\partial P}\right)_T$ का मान है :

- | | |
|---|---|
| (1) $T\left(\frac{\partial V}{\partial T}\right)_P$ | (2) $-T\left(\frac{\partial V}{\partial P}\right)_T$ |
| (3) $-TV\alpha$ | (4) $\frac{1}{V}\left(\frac{\partial V}{\partial T}\right)_P$ |

Options :

92090656645. 1
92090656646. 2
92090656647. 3
92090656648. 4

Question Number : 63 Question Id : 92090614339 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

Bragg's law (of X-ray diffraction) is used for the determination of :

- (1) Surface Area of materials
(2) Crystal structure
(3) Recombination rate of charge carries
(4) Elemental composition of a material

Options :

92090656649. 1
92090656650. 2
92090656651. 3
92090656652. 4

Question Number : 63 Question Id : 92090614339 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

ब्रैग नियम (X-किरण विवर्तन के) किसके निर्धारण में प्रयोग होता है?

- | | |
|-----------------------------------|------------------------------|
| (1) पदार्थों के पृष्ठीय क्षेत्रफल | (2) क्रिस्टल संरचना |
| (3) आवेश संवादकों की पुनर्योजन दर | (4) पदार्थ के तात्विक संयोजन |

Options :

92090656649. 1
92090656650. 2

92090656651. 3

92090656652. 4

Question Number : 64 Question Id : 92090614340 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

Let n_e and n_p be the concentration of electrons and respective holes in a Semiconductor. Which of the following statement is true for extrinsic semiconductors?

- | | |
|--------------------|-----------------|
| (1) $n_e > n_p$ | (2) $n_e = n_p$ |
| (3) $n_e \neq n_p$ | (4) $n_e < n_p$ |

Options :

92090656653. 1

92090656654. 2

92090656655. 3

92090656656. 4

Question Number : 64 Question Id : 92090614340 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

माना कि किसी एक अर्द्धचालक में क्रमशः n_e एवं n_p इलेक्ट्रॉन व होल का सांद्रण है। बाह्य अर्द्धचालकों के लिए कौनसा कथन सत्य है।

- | | |
|--------------------|-----------------|
| (1) $n_e > n_p$ | (2) $n_e = n_p$ |
| (3) $n_e \neq n_p$ | (4) $n_e < n_p$ |

Options :

92090656653. 1

92090656654. 2

92090656655. 3

92090656656. 4

Question Number : 65 Question Id : 92090614341 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 Miller indices of a plane whose intercepts are a , $-\frac{3}{2}b$ and $3c$ on X, Y and Z Crystallographic axes respectively are

- | | |
|-------------------------------|-------------------------------|
| (1) $(\bar{2} \ 3 \ \bar{6})$ | (2) $(2 \ \bar{3} \ 6)$ |
| (3) $(6 \ \bar{4} \ 2)$ | (4) $(\bar{6} \ 4 \ \bar{2})$ |

Options :

92090656657. 1
92090656658. 2
92090656659. 3
92090656660. 4

Question Number : 65 Question Id : 92090614341 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 तल के X, Y एवं Z क्रिस्टलो ग्राफिक अक्षों पर प्रतिछेदन क्रमशः a , $-\frac{3}{2}b$ एवं $3c$ हैं, उस तल के मिलर सूचकांक होंगे।

- | | |
|-------------------------------|-------------------------------|
| (1) $(\bar{2} \ 3 \ \bar{6})$ | (2) $(2 \ \bar{3} \ 6)$ |
| (3) $(6 \ \bar{4} \ 2)$ | (4) $(\bar{6} \ 4 \ \bar{2})$ |

Options :

92090656657. 1
92090656658. 2
92090656659. 3
92090656660. 4

Question Number : 66 Question Id : 92090614342 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 machine gun has a mass of 20 kg. It fires bullets each of mass 35 g at the rate of 400 bullets per minute moving with a speed of 400 m/s. The force that should be applied to the gun to keep it in position is :

- | | |
|------------|------------|
| (1) 35.2 N | (2) 70.0 N |
| (3) 82.3 N | (4) 93.3 N |

Options :

92090656661. 1
92090656662. 2

92090656663. 3

92090656664. 4

Question Number : 66 Question Id : 92090614342 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 20 किलोग्राम की मशीनगन से 35 ग्राम की 400 गोली प्रति मिनिट की दर से दागी जाती हैं जो 400 मी/सेकिण्ड की चाल से गतिमान हैं। मशीनगन पर कितना बल लगाना चाहिए जिससे वह अपनी अवस्था में स्थित रहे?

(1) 35.2 न्यूटन

(2) 70.0 न्यूटन

(3) 82.3 न्यूटन

(4) 93.3 न्यूटन

Options :

92090656661. 1

92090656662. 2

92090656663. 3

92090656664. 4

Question Number : 67 Question Id : 92090614343 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

Calculate the de-Broglie Wavelength of neutron moving with the kinetic of 1.0 eV

(1) 0.14 Å

(2) 0.29 Å

(3) 0.39 Å

(4) 1.29 Å

Options :

92090656665. 1

92090656666. 2

92090656667. 3

92090656668. 4

Question Number : 67 Question Id : 92090614343 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

1.0 इलेक्ट्रॉन वोल्ट (eV) की गतिज ऊर्जा से गतिमान न्यूट्रॉन की डी-ब्रोगली तरंगदैर्घ्य की गणना करो।

(1) 0.14 Å

(2) 0.29 Å

(3) 0.39 Å

(4) 1.29 Å

Options :

92090656665. 1
92090656666. 2
92090656667. 3
92090656668. 4

Question Number : 68 Question Id : 92090614344 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 electrons in a Quantum dot have

- (1) Three degrees of Freedom
- (2) Zero degree of Freedom
- (3) Two degrees of freedom and one degree of confinement
- (4) One degree of freedom and two degree of confinement

Options :

92090656669. 1
92090656670. 2
92090656671. 3
92090656672. 4

Question Number : 68 Question Id : 92090614344 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 क्वांटम डॉट में इलेक्ट्रॉनों में होती है।

- (1) तीन डिग्री की स्वतंत्रता
- (2) शून्य डिग्री की स्वतंत्रता
- (3) दो डिग्री की स्वतंत्रता व एक डिग्री का रोध
- (4) एक डिग्री की स्वतंत्रता व दो डिग्री का रोध

Options :

92090656669. 1
92090656670. 2
92090656671. 3
92090656672. 4

Question Number : 69 Question Id : 92090614345 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 stress corresponding to fracture point (with reference to relationship between stress and strain) is called :

- | | |
|----------------------|-----------------------|
| (1) Saturated Stress | (2) Breaking Stress |
| (3) Elongated Stress | (4) Compressed Stress |

Options :

92090656673. 1
92090656674. 2
92090656675. 3
92090656676. 4

Question Number : 69 Question Id : 92090614345 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

विभंजन बिन्दु से सम्बन्धित (प्रतिबल का विकृति से सम्बन्ध के संदर्भ में) प्रतिबल कहलाता है।

- | | |
|---------------------|---------------------|
| (1) संतृप्त प्रतिबल | (2) विभंजन प्रतिबल |
| (3) दीर्घित प्रतिबल | (4) संपीडित प्रतिबल |

Options :

92090656673. 1
92090656674. 2
92090656675. 3
92090656676. 4

Question Number : 70 Question Id : 92090614346 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

Meissner's effect refers to :

- | | |
|----------------------------|--------------------------|
| (1) Zero Conductivity | (2) Perfect Diamagnetism |
| (3) Infinite Specific heat | (4) No Defects |

Options :

92090656677. 1
92090656678. 2
92090656679. 3
92090656680. 4

Question Number : 70 Question Id : 92090614346 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

माइसर प्रभाव के संदर्भ में है -

- | | |
|-------------------------|--------------------------|
| (1) शून्य चालकता | (2) पूर्ण प्रतिचुम्बकत्व |
| (3) अनन्त विशिष्ट ऊष्मा | (4) दोष रहित |

Options :

92090656677. 1
92090656678. 2
92090656679. 3
92090656680. 4

Question Number : 71 Question Id : 92090614347 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 descending order of de-Broglie Wavelengths associated with the following particles moving with same velocities

- (A) Electron
(B) Proton
(C) Hydrogen Atom
(D) Helium Atom
(E) Carbon Atom

Choose the correct answer from the options given below :

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

Options :

92090656681. 1
92090656682. 2
92090656683. 3
92090656684. 4

Question Number : 71 Question Id : 92090614347 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

समान वेग से गतिमान निम्न कणों से सम्बंधित डी.ब्रोगली तरंगदैर्घ्यों का सही घटता हुआ क्रम है।

- (A) इलेक्ट्रॉन
- (B) प्रोटॉन
- (C) हाइड्रोजन परमाणु
- (D) हीलियम परमाणु
- (E) कार्बन परमाणु

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

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

Options :

- 92090656681. 1
- 92090656682. 2
- 92090656683. 3
- 92090656684. 4

Question Number : 72 Question Id : 92090614348 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) : Direct band gap semiconductors are used in the fabrication of light emitting diodes.

Reasons (R) : In direct band gap semiconductors, the transition of electron from the bottom of conduction band to the top of valence band occurs without releasing its energy to the crystal lattice, resulting in the emission of photon

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

- (1) Both (A) and (R) are correct and (R) is the correct explanation of (A)
- (2) Both (A) and (R) are correct but (R) is NOT the correct explanation of (A)
- (3) (A) is correct but (R) is not correct
- (4) (A) is not correct but (R) is correct

Options :

- 92090656685. 1
- 92090656686. 2
- 92090656687. 3
- 92090656688. 4

Question Number : 72 Question Id : 92090614348 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 : डाइरेक्ट बैंड गैप अर्द्धचालकों को प्रकाश उत्सर्जक डायोड बनाने में प्रयोग किया जाता है।

कारण R : इनडाइरेक्ट बैंड गैप अर्द्धचालकों में, क्रिस्टल जालकों को बिना ऊर्जा उत्सर्जन के संवाहक बंधों के अधस्तल से संयोजी बंध के शीर्ष तल पर इलेक्ट्रॉन विचरण के फलस्वरूप फोरॉन का उत्सर्जन 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 हैं, लेकिन R सही नहीं है
- (4) A सही नहीं हैं, लेकिन R सही है

Options :

- 92090656685. 1
- 92090656686. 2
- 92090656687. 3
- 92090656688. 4

Question Number : 73 Question Id : 92090614349 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 : Fluorescence is radiative decay between states of same multiplicity. It persists even after the exciting radiation is removed
- Statement II : Phosphorescence is radiative decay between states of different multiplicity; it ceases as soon as the exciting source is removed.

In the light of the above statements, choose the correct 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 :

- 92090656689. 1
- 92090656690. 2
- 92090656691. 3
- 92090656692. 4

Question Number : 73 Question Id : 92090614349 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 : प्रतिदीप्ति समान बहुलता के स्तरों के बीच विकिरण क्षय है। यह उत्सर्जक विकिरण के हटाने के बाद सत्तरूप से जारी रहता है।

कथन II : स्फुरदीप्ति विभिन्न बहुलता के स्तरों के बीच विकिरण क्षय है; यह उत्सर्जकस्रोत को हटाने पर तुरंत बंद हो जाता 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 :

- 92090656689. 1
- 92090656690. 2
- 92090656691. 3

Question Number : 74 Question Id : 92090614350 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 I-V characteristics of a solar cell lie in third quadrant of the I-V coordinate plane.

Reasons (R) : Solar cell does not draw current from the circuit, it actually provides current to the circuit.

In the light of the above statements, choose the most appropriate 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 not false
- (4) (A) is false but (R) is true

Options :

- 92090656693. 1
- 92090656694. 2
- 92090656695. 3
- 92090656696. 4

Question Number : 74 Question Id : 92090614350 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 सौर सेल का I-V अभिलक्षणिक, I-V निर्देशांक तल के तृतीय क्वाडरेंट में होता है।

कारण R : सौर सेल परिपथ से विद्युतधारा नहीं लोता है, यह वास्तव में परिपथ को विद्युत धारा उपलब्ध करता 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 हैं, लेकिन R सही नहीं है
- (4) A सही नहीं हैं, लेकिन R सही है

Options :

- 92090656693. 1
- 92090656694. 2
- 92090656695. 3
- 92090656696. 4

Question Number : 75 Question Id : 92090614351 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 : When size of a metal nanoparticle is changed, its colour changes.

Statement II : In metal nanoparticles, the oscillations of electron gas take place on the surface. The quantum of these oscillations are called surface plasmons. Surface plasmons absorb light according to the size of the particles.

In the light of the above statements, choose the correct 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 :

- 92090656697. 1
- 92090656698. 2

92090656699. 3

92090656700. 4

Question Number : 75 Question Id : 92090614351 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 : जब एक धातु के नेनोपार्टिकल साइज बदलाता है, इसका रंग बदल जाता है।

कथन II : धातु नेनोपार्टिकलों में, इलेक्ट्रॉन दोलनों से गैस सतह पर आ जाती है। इन दोलनों का चतुर्थांश सरफेस प्लाज्मॉस कहलाता है। कणों के साइज के अनुसार सरफेस प्लाज्मॉस प्रकाश का अवशोषण करते 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 :

92090656697. 1

92090656698. 2

92090656699. 3

92090656700. 4

Question Number : 76 Question Id : 92090614352 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 :

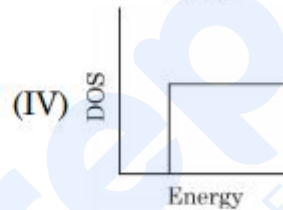
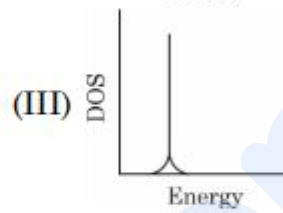
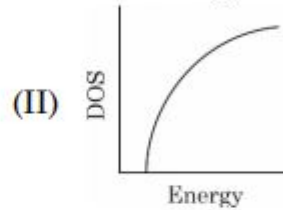
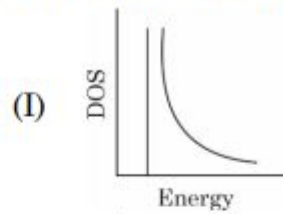
List I
(Semiconducting structure)
(A) Quantum Dots

(B) Nanowires

(C) Quantum wells

(D) Bulk materials

List II
Density of states (DOS)



Choose the correct answer from the options given below:

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

Options :

92090656701. 1
92090656702. 2
92090656703. 3
92090656704. 4

Question Number : 76 Question Id : 92090614352 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

अर्धचालक संरचनाएं

(A) क्वांटम डॉट्स

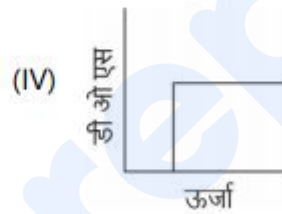
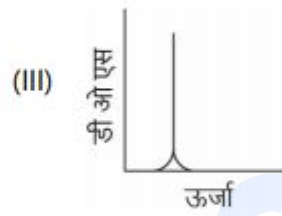
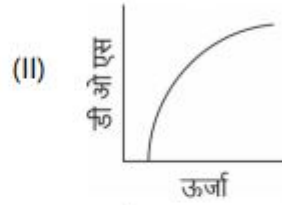
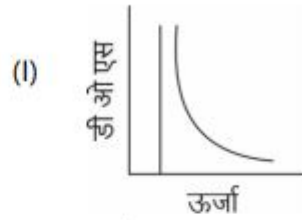
(B) नेनो तारों

(C) क्वांटम वेल्स

(D) बल्क मैटेरियलस

सूची-II

अवस्थाओं का घनत्व (DOS)



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

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

Options :

92090656701. 1
92090656702. 2
92090656703. 3
92090656704. 4

Question Number : 77 Question Id : 92090614353 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

Arrange the following planes of simple cubic unit cell according to increasing order of their lattice spacing:

- (A) (2 1 1) plane
- (B) (0 0 1) plane
- (C) (1 1 0) plane
- (D) (1 1 1) plane
- (E) (2 0 1) plane

Choose the correct answer from the options given below :

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

Options :

- 92090656705. 1
- 92090656706. 2
- 92090656707. 3
- 92090656708. 4

Question Number : 77 Question Id : 92090614353 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

निम्न तलों की सामान्य धनीय इकाई कक्ष के अनुसार उनकी बढ़ती चालक दूरी के क्रमानुसार व्यवस्थित करें।

- (A) (2 1 1) तल
- (B) (0 0 1) तल
- (C) (1 1 0) तल
- (D) (1 1 1) तल
- (E) (2 0 1) तल

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

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

Options :

- 92090656705. 1
- 92090656706. 2

92090656707. 3

92090656708. 4

Question Number : 78 Question Id : 92090614354 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 statements are not correct in the case of an acceptable wave function (ψ) applicable to the real world?

- (A) Ψ must always be a real function.
- (B) $\int_{-\infty}^{\infty} |\psi|^2 dV = 1$
- (C) Ψ must be continuous and single valued everywhere.
- (D) $\frac{\partial \psi}{\partial x}, \frac{\partial \psi}{\partial y}, \frac{\partial \psi}{\partial z}$ must be continuous and single valued everywhere.
- (E) $\frac{\partial \psi}{\partial x}, \frac{\partial \psi}{\partial y}, \frac{\partial \psi}{\partial z}$ must always be positive.

Choose the correct answer from the options given below :

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

Options :

92090656709. 1

92090656710. 2

92090656711. 3

92090656712. 4

Question Number : 78 Question Id : 92090614354 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 कौनसा कथन, एक स्वीकार्य तरंग फलन जो वास्तविक जागत पर अनुप्रायोगिक हो के संदर्भ में सही नहीं है।

A. हमेशा एक यथार्थ, वास्तविक फलन होना चाहिए।

B. $\int_{-\infty}^{\infty} |\psi|^2 dV = 1$

C. सातन होना चाहिए तथा हर जगह एक मान होना चाहिए।

D. $\frac{\partial \psi}{\partial x}, \frac{\partial \psi}{\partial y}, \frac{\partial \psi}{\partial z}$ सतत तथा सभी जगह एकमान होना चाहिए।

E. $\frac{\partial \psi}{\partial x}, \frac{\partial \psi}{\partial y}, \frac{\partial \psi}{\partial z}$ हमेशा धनात्मक होना चाहिए।

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

(1) केवल B और C

(2) केवल A और D

(3) केवल B और E

(4) केवल A और E

Options :

92090656709. 1

92090656710. 2

92090656711. 3

92090656712. 4

Question Number : 79 Question Id : 92090614355 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 statements is not correct in the case of paramagnetic materials?

- (A) In an external magnetic field, these materials get weakly magnetized in the same direction of applied field.
- (B) Magnetic susceptibility of these materials is always negative.
- (C) Relative permeability of these materials is always greater than 1.
- (D) They show no spontaneous magnetisation.
- (E) It occurs generally for atoms or ions having partially filled electronic shells or odd number of electrons.

Choose the most appropriate answer from the options given below :

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

Options :

92090656713. 1

92090656714. 2

92090656715. 3

92090656716. 4

Question Number : 79 Question Id : 92090614355 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 कथनों में से अनुचुंबकीय पदार्थों के संदर्भ में कौनसे कथन सत्य नहीं है।

- A. एक बाह्य चुंबकीय क्षेत्र में, ये पदार्थ अनुप्रयोगित क्षेत्र के समान दिशा में कमजोर रूप से चुंबकित होते हैं।
- B. इन पदार्थों का चुंबकीय हमेशा ऋणात्मक होता है।
- C. इन पदार्थों की सापेक्षित पारगम्यता सदैव 1 से अधिक होती है।
- D. वे सतत चुंबकत्व का प्रदर्शन नहीं करते हैं।
- E. यह सामान्य परमाणु या आयनों के आंशिक रूप से भरे हुए शैल या इलेक्ट्रॉन की विषम संख्या के लिए घटित होता है।

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

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

Options :

- 92090656713. 1
- 92090656714. 2
- 92090656715. 3
- 92090656716. 4

Question Number : 80 Question Id : 92090614356 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) Continuity equation	(I) $\nabla^2 V = -\frac{\rho}{\epsilon_0}$
(B) Poisson's equation	(II) $\vec{\nabla} \cdot \vec{J} = -\frac{\partial \rho}{\partial t}$
(C) Laplace equation	(III) $\nabla^2 V = 0$
(D) Gauss Law	(IV) $\vec{\nabla} \cdot \vec{E} = \frac{\rho}{\epsilon_0}$

Choose the correct answer from the options given below:

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

Options :

92090656717. 1
92090656718. 2
92090656719. 3
92090656720. 4

Question Number : 80 Question Id : 92090614356 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) सततता समीकरण	(I) $\nabla^2 V = -\frac{\rho}{\epsilon_0}$
(B) पॉयसन समीकरण	(II) $\vec{\nabla} \cdot \vec{J} = -\frac{\partial \rho}{\partial t}$
(C) लाप्लेस समीकरण	(III) $\nabla^2 V = 0$
(D) गॉस नियम	(IV) $\vec{\nabla} \cdot \vec{E} = \frac{\rho}{\epsilon_0}$

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

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

Options :

92090656717. 1
92090656718. 2
92090656719. 3
92090656720. 4

Question Number : 81 Question Id : 92090614357 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 element which is not present in an expression vector:

- (1) Selection marker to select host cells, which contain the vector
- (2) Two different origin of replication
- (3) Promoter sequence upstream of the cloned gene
- (4) Unique restriction enzyme sites for insertional cloning

Options :

92090656721. 1
92090656722. 2
92090656723. 3
92090656724. 4

Question Number : 81 Question Id : 92090614357 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

वे अवयव जो एक (एक्प्रेशन वेक्टर) प्रदर्शन संवाहक में उपस्थित नहीं होते हैं -

- (1) पोषी कोशिकाओं के चयन के लिए सलेक्टेबल मार्कर, जिसमें संवाहन (वेक्टर) निहित हो।
- (2) दो भिन्न "ऑरिजिन ऑफ रेप्लिकेशन" (प्रतिकृति की उत्पत्ति)
- (3) क्लोन किए जीन के की प्रमोटर श्रृंखला, ऊपरी दिशा की ओर
- (4) निवेशन (इनसरशनल) क्लोनिंग के लिए विशिष्ट (रस्ट्रिक्शन) प्रतिबंधन एंजाइम

Options :

92090656721. 1
92090656722. 2
92090656723. 3
92090656724. 4

Question Number : 82 Question Id : 92090614358 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 amino acid which does not possess any aromatic side chain is:

- | | |
|-------------------|---------------|
| (1) Phenylalanine | (2) Tyrosine |
| (3) Tryptophan | (4) Threonine |

Options :

92090656725. 1
92090656726. 2
92090656727. 3
92090656728. 4

Question Number : 82 Question Id : 92090614358 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

वह अमीनो अम्ल जिसमें कोई ऐरोमैटिक पार्श्व (साइड) श्रृंखला नहीं होती है -

- | | |
|-------------------|---------------|
| (1) फिनाइल एलेनीन | (2) टायरोसीन |
| (3) ट्रिपटोफेन | (4) थ्रियोनीन |

Options :

92090656725. 1

92090656726. 2

92090656727. 3

92090656728. 4

Question Number : 83 Question Id : 92090614359 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

Termites can easily digest cellulose due to a symbiotic microorganism, Trichonympha. Trichonympha secretes enzymes

(1) Cellulase

(2) Pectinase

(3) Cutinase

(4) Chitinase

Options :

92090656729. 1

92090656730. 2

92090656731. 3

92090656732. 4

Question Number : 83 Question Id : 92090614359 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

दीमक आसानी से एक सहजीवी सूक्ष्मजीवाणु ट्रायकोनिम्फा के इस संजाइम के कारण आसानी से सेल्यूलोज को पचा लेता है।

(1) सेल्यूलोज

(2) पेक्टिनेज़

(3) क्यूटीनेज़

(4) काइटिनेज़

Options :

92090656729. 1

92090656730. 2

92090656731. 3

92090656732. 4

Question Number : 84 Question Id : 92090614360 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 organelle which is known as, 'Power-house of the cell' is:

- | | |
|------------------|---------------|
| (1) Mitochondria | (2) Nucleus |
| (3) Golgi-bodies | (4) Lysosomes |

Options :

92090656733. 1
92090656734. 2
92090656735. 3
92090656736. 4

Question Number : 84 Question Id : 92090614360 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

निम्न में से कौनसा कोशिकांग, कोशिकाके "पावर हाऊस" के नाम से जाना जाता है।

- | | |
|--------------------------------|--------------|
| (1) माइटोकॉन्ड्रिया | (2) केन्द्रक |
| (3) (गाल्जी-बाडीज़) गॉल्जी काय | (4) लाइसोसोम |

Options :

92090656733. 1
92090656734. 2
92090656735. 3
92090656736. 4

Question Number : 85 Question Id : 92090614361 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

Each turn of DNA structure has a pitch in nm of

- | | |
|---------|---------|
| (1) 1.4 | (2) 2.4 |
| (3) 3.4 | (4) 4.4 |

Options :

92090656737. 1
92090656738. 2
92090656739. 3
92090656740. 4

Question Number : 85 Question Id : 92090614361 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

(DNA) डी.एन.ए. संरचना प्रत्येक मोड़ की अक्षनति nm में _____ की होती है।

- | | |
|---------|---------|
| (1) 1.4 | (2) 2.4 |
| (3) 3.4 | (4) 4.4 |

Options :

92090656737. 1
92090656738. 2
92090656739. 3
92090656740. 4

Question Number : 86 Question Id : 92090614362 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

Barr body found in female cell forms due to

- | | |
|----------------------------------|----------------------------------|
| (1) Duplication of X chromosomes | (2) Trisomy of X chromosome |
| (3) Deletion of X chromosome | (4) Inactivation of X chromosome |

Options :

92090656741. 1
92090656742. 2
92090656743. 3
92090656744. 4

Question Number : 86 Question Id : 92090614362 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

बार काय मादा कोशिका में इस कारण पायी जाती हैं।

- | | |
|-----------------------------|---------------------------------|
| (1) X क्रोमोसोम का द्विगुणन | (2) X क्रोमोसोम का त्रिसूत्रता |
| (3) X क्रोमोसोम का मिटना | (4) X क्रोमोसोम का निष्क्रियकरण |

Options :

92090656741. 1
92090656742. 2
92090656743. 3
92090656744. 4

Question Number : 87 Question Id : 92090614363 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 body temperature and hunger is controlled by

- | | |
|------------------|--------------|
| (1) Cerebellum | (2) Pons |
| (3) Hypothalamus | (4) Thalamus |

Options :

92090656745. 1
92090656746. 2
92090656747. 3
92090656748. 4

Question Number : 87 Question Id : 92090614363 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

शरीर का तापमान तथा भूख, के द्वारा नियंत्रित की जाती है -

- | | |
|----------------------------|-------------------|
| (1) अनुमस्तिष्क (सेरीबेलम) | (2) पोन्स |
| (3) अधश्चेतक (हाइपोथैलेमस) | (4) चेतक (थैलेमस) |

Options :

92090656745. 1
92090656746. 2
92090656747. 3
92090656748. 4

Question Number : 88 Question Id : 92090614364 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 plants having "naked seed" are known as

- | | |
|---------------------|-----------------|
| (1) Bryophytes | (2) Gymnosperms |
| (3) Vascular plants | (4) Angiosperms |

Options :

92090656749. 1
92090656750. 2
92090656751. 3
92090656752. 4

Question Number : 88 Question Id : 92090614364 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

पादप जिनमें "नैग्र बीज" होते हैं, कहलाते हैं।

- | | |
|----------------|------------------|
| (1) ब्रायोफाइट | (2) जिम्नोस्पर्म |
| (3) संवहन पादप | (4) एंजियोस्पर्म |

Options :

92090656749. 1
92090656750. 2
92090656751. 3
92090656752. 4

Question Number : 89 Question Id : 92090614365 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

Longest bone in human is

- | | |
|------------|-------------------|
| (1) Radius | (2) Pelvic girdle |
| (3) Femur | (4) Fibula |

Options :

92090656753. 1
92090656754. 2
92090656755. 3
92090656756. 4

Question Number : 89 Question Id : 92090614365 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

मानव की सबसे बड़ी अस्थि है।

- | | |
|------------|----------------------------------|
| (1) रेडियस | (2) पेल्विक गर्डल (श्रेणि मेखला) |
| (3) फीमर | (4) फिबुला |

Options :

92090656753. 1
92090656754. 2
92090656755. 3
92090656756. 4

Question Number : 90 Question Id : 92090614366 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 female mammals other than humans, shows cyclic, changes in the uterus known as

- | | |
|---------------------|-------------------|
| (1) Menstrual cycle | (2) Endometriosis |
| (3) Menopause | (4) Estrous cycle |

Options :

92090656757. 1
92090656758. 2
92090656759. 3
92090656760. 4

Question Number : 90 Question Id : 92090614366 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

मादा (स्तनधारी मानवों को छोड़कर, गर्भाशय में चक्रिक परिवर्तन प्रदर्शित करते हैं जो कहलाता है।

- | | |
|-----------------|---------------------|
| (1) मासिक चक्र | (2) एन्डोमेट्रीओसिस |
| (3) रजोनिवृत्ति | (4) इस्ट्रस चक्र |

Options :

92090656757. 1
92090656758. 2
92090656759. 3
92090656760. 4

Question Number : 91 Question Id : 92090614367 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 Gram staining, Gram positive bacteria turn purple while Gram negative bacteria appears pink in color.

Reasons (R) : Due to the presence of thick peptidoglycan layer, gram positive bacteria are not able to retain crystal violet-Iodine complex and thus appear purple in color.

In the light of the above statements, choose the most appropriate 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 :

92090656761. 1
92090656762. 2
92090656763. 3
92090656764. 4

Question Number : 91 Question Id : 92090614367 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 : ग्राम अभिरंजन में, ग्राम धनात्मक बैक्टीरिया (पर्पल) बैंगनी हो जाता है जब कि ग्राम ऋणात्मक बैक्टीरिया गुलाबी रंग का दिखता है।

कारण R : मोटी पेप्टिडोग्लायकन परत के कारण, ग्राम धनात्मक बैक्टीरिया क्रिस्टल-वायलेट-आयोडीन संकुल को बनाए रखने में सक्षम नहीं होता और इसीलिए बैंगनी रंग का दिखता 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 हैं, लेकिन R सही नहीं है
- (4) A सही नहीं हैं, लेकिन R सही है

Options :

92090656761. 1
92090656762. 2

92090656763. 3

92090656764. 4

Question Number : 92 Question Id : 92090614368 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 meiosis, recombination of genes takes place.

Reasons (R) : Crossing over takes place in pachytene stage of prophase I (Meiosis I)

In the light of the above statements, choose the most appropriate 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 :

92090656765. 1

92090656766. 2

92090656767. 3

92090656768. 4

Question Number : 92 Question Id : 92090614368 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 : अर्ध-सूत्री विभाजन में, जीनों का पुनर्संयोग घटित होता है।

कारण R : (पूर्वावस्था) प्रोफेज़ I (अर्धसूत्री विभाजन I) की पैकीटीन अवस्था में जीन विनिमय घटित 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 हैं, लेकिन R सही नहीं है
- (4) A सही नहीं हैं, लेकिन R सही है

Options :

- 92090656765. 1
- 92090656766. 2
- 92090656767. 3
- 92090656768. 4

Question Number : 93 Question Id : 92090614369 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

Arrange the following

- (A) AV node distributes signals conducted to heart apex, through ventricles to the purkinje fibres.
- (B) Atria empties after delay of 0.1second, and ventricle contraction takes place when atrioventricular (AV) node produces impulse
- (C) Sino Atrial node produces impulses, causing both atrial contraction simultaneously
- (D) The ventricles then relax and pointed wave 'QRS' occurs
- (E) Heart again get ready for next round of atrial and ventricular contractions.

Choose the correct answer from the options given below :

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

Options :

- 92090656769. 1
- 92090656770. 2
- 92090656771. 3
- 92090656772. 4

Question Number : 93 Question Id : 92090614369 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 घटनाओं को उनके घटित होने के क्रम में सुव्यवस्थित कीजिए -

- (A) AV नोड संकेतो को जो कि हृदय अग्रक (एपेक्स) की ओर संचरित किये गये हैं को निलय के द्वारा परकिंजे तंतुओं को भेजे जाते हैं।
- (B) 0.1 सेकण्ड की देरी के पश्चात आलिन्द खाली होते है तथा निलयक संकुचन घटित होता है जब आलिन्द निलय पर्व (नोड) आवेश उत्पन्न करता है।
- (C) कोटरआलिंद पर्व आवेश उत्पन्न होता है, दोनों आलिन्द संकुचन साथ-2 घटित होता है।
- (D) निलय शिथिल होते है तथा तीव्र तरंग 'QRS' घटित होती है।
- (E) हृदय पुनः अगले चरण के आलिन्द व निलय संकुचन के लिए तैयार होता है।

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

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

Options :

- 92090656769. 1
- 92090656770. 2
- 92090656771. 3
- 92090656772. 4

Question Number : 94 Question Id : 92090614370 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

PCR consists of a series of cycles and multiple steps. Arrange the steps in order

- (A) Denaturation of DNA at 95°C.
- (B) Primer annealing
- (C) Strand separation
- (D) DNA synthesis
- (E) Store at 4°C for further use.

Choose the correct answer from the options given below :

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

Options :

- 92090656773. 1
- 92090656774. 2
- 92090656775. 3
- 92090656776. 4

Question Number : 94 Question Id : 92090614370 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

PCR (पी.सी.आर.) चक्रों की श्रृंखलाओं तथा बहु चरणों से मिलकर बनी होती है। इन चरणों को क्रमबद्ध व्यवस्थित कीजिए।

- A. 95°C पर डी.एन.ए. (DNA) का विकृति करण
- B. प्रारंभक अनीलन
- C. (स्ट्रेड) रज्जु पृथक्करण
- D. DNA संश्लेषण
- E. भविष्य प्रयोग के लिए 4°C पर भंडारण

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

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

Options :

- 92090656773. 1
- 92090656774. 2
- 92090656775. 3
- 92090656776. 4

Question Number : 95 Question Id : 92090614371 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 : Cell cycle is the sequence of events by which a cell divides into two daughter cells and duplicate its genomic content.
- Statement II : It is controlled by cyclin synthesis and degradation, phosphorylation of cyclin-dependent kinases and binding of CDK inhibitor proteins.

In the light of the above statements, choose the correct 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 :

- 92090656777. 1
- 92090656778. 2
- 92090656779. 3
- 92090656780. 4

Question Number : 95 Question Id : 92090614371 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 : कोशिक चक्र घटनाओं का वह क्रम है जिसके द्वारा एक कोशिका दो पुत्री कोशिकाओं में विभाजित होती है तथा इसका आनुवांशिक पदार्थ द्विगुणित हो जाता है।

कथन II : यह साइक्लिन संश्लेषण के द्वारा तथा निम्नीकरण, साइक्लिन निर्भर काइनेज़ के फॉस्फोराइलेशन और CDK संदमक प्रोटीन के बंधन से नियंत्रित 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 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 :

- 92090656777. 1
- 92090656778. 2
- 92090656779. 3
- 92090656780. 4

Question Number : 96 Question Id : 92090614372 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 : Type I Diabetes is known as Insulin-dependent diabetes which is an autoimmune disorder.

Statement II : Type II Diabetes is also an Insulin-dependent diabetes which arises due to failure of cells to respond to Insulin

In the light of the above statements, choose the correct 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 :

- 92090656781. 1
- 92090656782. 2
- 92090656783. 3

Question Number : 96 Question Id : 92090614372 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 : प्रकार I मधुमेह को इन्सुलिन-निर्भर मधुमेह के नाम से जाना जाता है जो कि एक प्रकार का स्वप्रतिरक्षी विकार है।

कथन II : प्रकार II मधुमेह भी एक इन्सुलिन-निर्भर मधुमेह जो कि कोशिकाओं के इन्सुलिन के प्रति अनुक्रिया देने में अस्फल होने के कारण होती है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तरका 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 :

92090656781. 1

92090656782. 2

92090656783. 3

92090656784. 4

Question Number : 97 Question Id : 92090614373 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

Breakdown steps/procedures for Glucose formation in Liver

- (A) In Liver, reserve food material Glycogen is converted into Glucose.
- (B) Glucose is released into blood.
- (C) Pancreas convert proteins and fats into glucose
- (D) Due to hepatectomy, blood sugar increase rapidly
- (E) Glycogen is the main source of blood sugar

Choose the correct answer from the options given below :

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

Options :

- 92090656785. 1
- 92090656786. 2
- 92090656787. 3
- 92090656788. 4

Question Number : 97 Question Id : 92090614373 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

यकृत में ग्लूकोस निर्माण के लिए घटन के चरण:

- A. यकृत में, अवरोष, खाद्य पदार्थ ग्लायकोजन ग्लूकोस बदल जाता है।
- B. ग्लूकोज़ का रूधिर में मोचन किया जाता है।
- C. अग्राशय प्रोटीन और वसा को ग्लूकोज़ में बदल देता है।
- D. हिपेटेक्टोमी के कारण, रक्त शर्करा तेजी से बढ़ती है।
- E. रूधिर शर्करा का मुख्य स्रोत ग्लायकोजन है।

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

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

Options :

- 92090656785. 1
- 92090656786. 2

92090656787. 3

92090656788. 4

Question Number : 98 Question Id : 92090614374 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 statement about allosteric enzymes are correct?

- (A) They are a class of regulatory enzymes.
- (B) They function through reversible, non-covalent binding of modulators
- (C) Most allosteric enzymes are oligomeric
- (D) They don't obey Michaelis-Menten Kinetics

Choose the correct answer from the options given below :

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

Options :

92090656789. 1

92090656790. 2

92090656791. 3

92090656792. 4

Question Number : 98 Question Id : 92090614374 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 एलोस्टेरिक एंजाइम के बारे में कौनसा कथन सत्य है?

- A. वह नियंत्रक एंजाइमों का एक वर्ग है।
- B. वह उत्क्रमणीय, भाड्यूलेतर के असहसंयोजक बन्ध के द्वारा कार्य करते हैं।
- C. अधिकतर एलोस्टेरिक (अपरस्थली) एंजाइम आलिगोमेरिक होते हैं।
- D. माइकेलिस-मेन्टेन गतिज (काइनेटिक्स) का अनुपालन नहीं करते हैं।

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

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

Options :

- 92090656789. 1
- 92090656790. 2
- 92090656791. 3
- 92090656792. 4

Question Number : 99 Question Id : 92090614375 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) Sucrose	(I) Glucose + Glucose (B1→4)
(B) Maltose	(II) Glucose + Fructose
(C) Cellobiose	(III) Glucose + Glucose (α 1→4)
(D) Lactose	(IV) Glucose + Galactose

Choose the correct answer from the options given below :

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

Options :

- 92090656793. 1
- 92090656794. 2
- 92090656795. 3

Question Number : 99 Question Id : 92090614375 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) सूक्रोज	(I) ग्लूकोज + ग्लूकोज ($\beta 1 \rightarrow 4$)
(B) माल्टोज	(II) ग्लूकोज + फ्रक्टोज
(C) सैलोबायोस	(III) ग्लूकोज + ग्लूकोज ($\alpha 1 \rightarrow 4$)
(D) लेक्टोज	(IV) ग्लूकोज + गैलेक्टोज

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

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

Options :

92090656793. 1
92090656794. 2
92090656795. 3
92090656796. 4

Question Number : 100 Question Id : 92090614376 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) Xylem	(I) Vascular tissue of root/stem
(B) Trichomes	(II) Epidermal cells in stem as outgrowth
(C) Phloem	(III) Transports water and minerals upwards from roots to the shoots
(D) Stele	(IV) Transports sugars, byproducts from leaves to roots.

Choose the correct answer from the options given below :

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

Options :

- 92090656797. 1
- 92090656798. 2
- 92090656799. 3
- 92090656800. 4

Question Number : 100 Question Id : 92090614376 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) जाइलम	(I) जड़ना का संवहन ऊत्तक
(B) ट्राइकोम (त्वचा रोम)	(II) तने की उपकला कोशिकाओं में बाह्यवृद्धि के रूप में
(C) फ्लोम (पोषवाह)	(III) जड़ से जल और खनिजों को तने की ओर ऊपरी दिशा में संवहित करता है।
(D) (स्टील) रंभ	(IV) शर्करा और उपउत्पादों को पत्रियों जड़ की ओर स्थानान्तरित करता है।

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

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

Options :

92090656797. 1
92090656798. 2
92090656799. 3
92090656800. 4

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