

# National Testing Agency

**Question Paper Name :** Nano Science Nano Technology Eng 15th June 2023  
Shift 1  
**Subject Name :** Nano Science Nano Technology Eng  
**Creation Date :** 2023-06-15 19:45:09  
**Duration :** 120  
**Total Marks :** 400  
**Display Marks:** Yes

## Nano Science Nano Technology

**Group Number :** 1  
**Group Id :** 686340203  
**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 :** 686340405  
**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 :** 686340671  
**Question Shuffling Allowed :** No  
**Is Section Default? :** null

**Question Id : 68634020453 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**

There was a high standard of learning for women also. In house, they might learn music and dancing. They had to undergo the Upanayana ceremony.

There were two types of educated women.

1. **Sadyodwahas** : They are people who pursued studies till their marriages.
2. **Brahmavadinis** : They are people who did not marry and pursued studies throughout their lives. Women used to learn vedas and vedangas. Their involvement was more in reciting hymns other ritualistic operations. Women sages were called Rishikas. The scholarly women could be named as Maitreyi and Gargi.

This phase marks another transition from the spirit of Brahmanas to the spirit of the Upanishads. While the Brahmanas are called Karma Kanda (Karma is another word for yajna) because of total known as Jnana kanda because here knowledge becomes primary. Since the shift involved total change in attitude, it needed a link. This phase is called Aranyaka because it became relevant when men retired to forests due to old age. Why should old people retire to forests? Surely, this is a provoking. If old people retired to forest, then it must be due to strong affinity to the place of origin, which prompted them to choose so.

Hence, proper study of philosophy begins only from the Upanishads. In this connection, one question remains to be answered. The Aranyakas Constitute a phase in the life an individual.

### **Subjects in Vedic Education :**

It might take twelve years for a student to develop expertise in one Veda and thereafter, it would be twelve years, thirty six years and so on. A graduate was called Snataka and the graduation ceremony was called Samavartana.

Let's have a look at some other subjects.

1. Itihas- History
2. Anviksiki ( logic)
3. Mimamsa (Interpretation)
4. Shilpashastra (architecture)
5. Arthashastra (polity)

### **Sub questions**

**Question Number : 1 Question Id : 68634020454 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

Samavartana means :

1. Process of not marring and retiring to jungle
2. Ceremony associated with the snataka.
3. Perusing study till marring
4. Process where knowledge is primary

### **Options :**

68634080801. 1  
68634080802. 2  
68634080803. 3  
68634080804. 4

**Question Number : 2 Question Id : 68634020455 Question Type : MCQ Option Shuffling : No 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 as/ are not the synonyms of affinity

- A. Harmony
- B. Rapport
- C. sympathy
- D. Aversion

- 1. B Only
- 2. B and D Only
- 3. C and D
- 4. D Only

**Options :**

68634080805. 1  
68634080806. 2  
68634080807. 3  
68634080808. 4

**Question Number : 3 Question Id : 68634020456 Question Type : MCQ Option Shuffling : No 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 months required to expertise in all vedas for a student is :

- 1. 576
- 2. 732
- 3. 144
- 4. 288

**Options :**

68634080809. 1  
68634080810. 2  
68634080811. 3  
68634080812. 4

**Question Number : 4 Question Id : 68634020457 Question Type : MCQ Option Shuffling : No 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 was not a part of Vedic education as per the list given?

1. Renunciation
2. Commerce and trade
3. Recreational archives
4. Yogasadhana

**Options :**

68634080813. 1  
68634080814. 2  
68634080815. 3  
68634080816. 4

**Question Number : 5 Question Id : 68634020458 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Arananyaka means :

1. Rishikas
2. Brahmanas
3. The phase Depicting transition from spirit of Brahmanas to the spirit of the Upanishads
4. An old man going to the forests

**Options :**

68634080817. 1  
68634080818. 2  
68634080819. 3  
68634080820. 4

**Question Id : 68634020453 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

There was a high standard of learning for women also. In house, they might learn music and dancing. They had to undergo the Upanayana ceremony.

There were two types of educated women.

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This phase marks another transition from the spirit of Brahmanas to the spirit of the Upanishads. While the Brahmanas are called Karma Kanda (Karma is another word for yajna) because of total known as Jnana kanda because here knowledge becomes primary. Since the shift involved total change in attitude, it needed a link. This phase is called Aranyaka because it became relevant when men retired to forests due to old age. Why should old people retire to forests? Surely, this is a provoking. If old people retired to forest, then it must be due to strong affinity to the place of origin, which prompted them to choose so.

Hence, proper study of philosophy begins only from the Upanishads. In this connection, one question remains to be answered. The Aranyakas Constitute a phase in the life an individual.

### **Subjects in Vedic Education :**

It might take twelve years for a student to develop expertise in one Veda and thereafter, it would be twelve years, thirty six years and so on. A graduate was called Snataka and the graduation ceremony was called Samavartana.

Let's have a look at some other subjects.

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2. Anviksiki ( logic)
3. Mimamsa (Interpretation)
4. Shilpashastra (architecture)
5. Arthashastra (polity)

### **Sub questions**

**Question Number : 1 Question Id : 68634020454 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

Samavartana means :

1. Process of not marring and retiring to jungle
2. Ceremony associated with the snataka.
3. Perusing study till marring
4. Process where knowledge is primary

### **Options :**

68634080801. 1  
68634080802. 2  
68634080803. 3  
68634080804. 4

**Question Number : 2 Question Id : 68634020455 Question Type : MCQ Option Shuffling : No 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 as/ are not the synonyms of affinity

- A. Harmony
- B. Rapport
- C. sympathy
- D. Aversion

- 1. B Only
- 2. B and D Only
- 3. C and D
- 4. D Only

**Options :**

68634080805. 1  
68634080806. 2  
68634080807. 3  
68634080808. 4

**Question Number : 3 Question Id : 68634020456 Question Type : MCQ Option Shuffling : No 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 months required to expertise in all vedas for a student is :

- 1. 576
- 2. 732
- 3. 144
- 4. 288

**Options :**

68634080809. 1  
68634080810. 2  
68634080811. 3  
68634080812. 4

**Question Number : 4 Question Id : 68634020457 Question Type : MCQ Option Shuffling : No 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 was not a part of Vedic education as per the list given?

1. Renunciation
2. Commerce and trade
3. Recreational archives
4. Yogasadhana

**Options :**

68634080813. 1  
68634080814. 2  
68634080815. 3  
68634080816. 4

**Question Number : 5 Question Id : 68634020458 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Arananyaka means :

1. Rishikas
2. Brahmanas
3. The phase Depicting transition from spirit of Brahmanas to the spirit of the Upanishads
4. An old man going to the forests

**Options :**

68634080817. 1  
68634080818. 2  
68634080819. 3  
68634080820. 4

**Sub-Section Number :**

2

**Sub-Section Id :**

686340672

**Question Shuffling Allowed :**

Yes

**Is Section Default? :**

null

**Question Number : 6 Question Id : 68634020459 Question Type : MCQ Option Shuffling : No 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 form the following options :

Lord Buddha realised the need ..... educating devotees..... a massive scale. Budhhist education started 2,600 years ago. It was collective ..... the sence that it was not based.....cast system

1. Of, on, from, with
2. with, on, in, of
3. of, on, in, on
4. of, in for, on

**Options :**

- 68634080821. 1
- 68634080822. 2
- 68634080823. 3
- 68634080824. 4

**Question Number : 6 Question Id : 68634020459 Question Type : MCQ Option Shuffling : No 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 form the following options :

Lord Buddha realised the need ..... educating devotees..... a massive scale. Budhhist education started 2,600 years ago. It was collective ..... the sence that it was not based.....cast system

1. Of, on, from, with
2. with, on, in, of
3. of, on, in, on
4. of, in for, on

**Options :**

- 68634080821. 1
- 68634080822. 2
- 68634080823. 3
- 68634080824. 4

**Question Number : 7 Question Id : 68634020460 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**



Replace the underlined expression with an idiom.

My uncle is very short tempered. So Whenever he visits us all of us at home are being extra careful.

1. At sea
2. Dribs and drabs
3. Walking on egg shells
4. Walking the plan

**Options :**

- 68634080825. 1
- 68634080826. 2
- 68634080827. 3
- 68634080828. 4

**Question Number : 7 Question Id : 68634020460 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Replace the underlined expression with an idiom.

My uncle is very short tempered. So Whenever he visits us all of us at home are being extra careful.

1. At sea
2. Dribs and drabs
3. Walking on egg shells
4. Walking the plan

**Options :**

- 68634080825. 1
- 68634080826. 2
- 68634080827. 3
- 68634080828. 4

**Question Number : 8 Question Id : 68634020461 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Choose the sentence with the correct subject verb Agreement

1. Annotated Readings is necessary for on insight ful Understanding for the text and helps students better internalize the material.
2. Annotated Readings are necessary for an insightful understanding of the text and help students better internalize the material.
3. Annotated Readings are necessary for an insightful understanding of the text and helps students better internalize the material.
4. Annotated Readings in necessary for an insightful understanding of the text and help students betters internalize the material

**Options :**

- 68634080829. 1
- 68634080830. 2
- 68634080831. 3
- 68634080832. 4

**Question Number : 8 Question Id : 68634020461 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Choose the sentence with the correct subject verb Agreement

1. Annotated Readings is necessary for on insight ful Understanding for the text and helps students better internalize the material.
2. Annotated Readings are necessary for an insightful understanding of the text and help students better internalize the material.
3. Annotated Readings are necessary for an insightful understanding of the text and helps students better internalize the material.
4. Annotated Readings in necessary for an insightful understanding of the text and help students betters internalize the material

**Options :**

- 68634080829. 1
- 68634080830. 2
- 68634080831. 3
- 68634080832. 4

**Question Number : 9 Question Id : 68634020462 Question Type : MCQ Option Shuffling : No 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 prominently visible parts on the front size of an object as : .....

1. Starling
2. simplex
3. salience
4. Rosaline

**Options :**

- 68634080833. 1
- 68634080834. 2
- 68634080835. 3
- 68634080836. 4

**Question Number : 9 Question Id : 68634020462 Question Type : MCQ Option Shuffling : No 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 prominently visible parts on the front size of an object as : .....

1. Starling
2. simplex
3. salience
4. Rosaline

**Options :**

- 68634080833. 1
- 68634080834. 2
- 68634080835. 3
- 68634080836. 4

**Question Number : 10 Question Id : 68634020463 Question Type : MCQ Option Shuffling : No 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 Coreect spelling of the word from the options given below:

1. Reverberation
2. Riverberation
3. Revirberation
4. Revarberation

**Options :**

- 68634080837. 1
- 68634080838. 2
- 68634080839. 3

68634080840. 4

**Question Number : 10 Question Id : 68634020463 Question Type : MCQ Option Shuffling : No 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 Coreect spelling of the word from the options given below:

1. Reverberation
2. Riverberation
3. Revirberation
4. Revarberation

**Options :**

- 68634080837. 1
- 68634080838. 2
- 68634080839. 3
- 68634080840. 4

**Question Number : 11 Question Id : 68634020464 Question Type : MCQ Option Shuffling : No 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 next member of the given series is :

8, 18, 23, 50, 72, .....

1. 120
2. 90
3. 92
4. 98

**Options :**

- 68634080841. 1
- 68634080842. 2
- 68634080843. 3
- 68634080844. 4

**Question Number : 11 Question Id : 68634020464 Question Type : MCQ Option Shuffling : No 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 next member of the given series is :

8, 18, 23, 50, 72, .....

1. 120
2. 90
3. 92
4. 98

**Options :**

- 68634080841. 1
- 68634080842. 2
- 68634080843. 3
- 68634080844. 4

**Question Number : 12 Question Id : 68634020465 Question Type : MCQ Option Shuffling : No 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 faulty minute hand covers only 90% of the circle per hour. If it starts from eight in how many minutes it will reach the seven mark at the given speed :

1. 53
2. 58
3. 61
4. 64

**Options :**

- 68634080845. 1
- 68634080846. 2
- 68634080847. 3
- 68634080848. 4

**Question Number : 12 Question Id : 68634020465 Question Type : MCQ Option Shuffling : No 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 faulty minute hand covers only 90% of the circle per hour. If it starts from eight in how many minutes it will reach the seven mark at the given speed :

1. 53
2. 58
3. 61
4. 64

**Options :**

- 68634080845. 1
- 68634080846. 2
- 68634080847. 3
- 68634080848. 4

**Question Number : 13 Question Id : 68634020466 Question Type : MCQ Option Shuffling : No 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 age of father in 1980 was twice that of his son's present age. If the present age of son is X year and age of father is 79 years than value of X is :

- 1. 15 Year
- 2. 17 Year
- 3. 23 Year
- 4. 18 Year

**Options :**

- 68634080849. 1
- 68634080850. 2
- 68634080851. 3
- 68634080852. 4

**Question Number : 13 Question Id : 68634020466 Question Type : MCQ Option Shuffling : No 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 age of father in 1980 was twice that of his son's present age. If the present age of son is X year and age of father is 79 years than value of X is :

- 1. 15 Year
- 2. 17 Year
- 3. 23 Year
- 4. 18 Year

**Options :**

- 68634080849. 1
- 68634080850. 2
- 68634080851. 3
- 68634080852. 4

**Question Number : 14 Question Id : 68634020467 Question Type : MCQ Option Shuffling : No 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 product of 25% of  $x$  and 120% of  $y = \dots\dots\dots$  % of  $(xy)$

- 1. 30
- 2. 25
- 3. 24
- 4. 60

**Options :**

- 68634080853. 1
- 68634080854. 2
- 68634080855. 3
- 68634080856. 4

**Question Number : 14 Question Id : 68634020467 Question Type : MCQ Option Shuffling : No 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 product of 25% of  $x$  and 120% of  $y = \dots\dots\dots$  % of  $(xy)$

- 1. 30
- 2. 25
- 3. 24
- 4. 60

**Options :**

- 68634080853. 1
- 68634080854. 2
- 68634080855. 3
- 68634080856. 4

**Question Number : 15 Question Id : 68634020468 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

The average speed of a train in four hours, running at 36 km/h in first hour, 72 km per hour in second hour and 108 km/h in the last two hours in (m/s) is :

- 1. 15
- 2. 45
- 3. 45/2
- 4. 30

**Options :**

- 68634080857. 1
- 68634080858. 2

68634080859. 3

68634080860. 4

**Question Number : 15 Question Id : 68634020468 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

The average speed of a train in four hours, running at 36 km/h in first hour, 72 km per hour in second hour and 108 km/h in the last two hours in (m/s) is :

1. 15

2. 45

3.  $45/2$

4. 30

**Options :**

68634080857. 1

68634080858. 2

68634080859. 3

68634080860. 4

**Question Number : 16 Question Id : 68634020469 Question Type : MCQ Option Shuffling : No 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 : 85, 43, 44, 67.5, 137, 345 observe the series given and by establishing the same relation in 125, (A), (B), (C), (D), (E), Find what will come is place of (C) ?

1. 86

2. 107.5

3. 112.5

4. 97.5

**Options :**

68634080861. 1

68634080862. 2

68634080863. 3

68634080864. 4

**Question Number : 16 Question Id : 68634020469 Question Type : MCQ Option Shuffling : No 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 : 85, 43, 44, 67.5, 137, 345 observe the series given and by establishing the same relation in 125, (A), (B), (C), (D), (E), Find what will come in place of (C) ?

1. 86
2. 107.5
3. 112.5
4. 97.5

**Options :**

- 68634080861. 1
- 68634080862. 2
- 68634080863. 3
- 68634080864. 4

**Question Number : 17 Question Id : 68634020470 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Vartika went 90 meters in the east before turning to her right. She went 20 meters before turning to her right again. She walked 30 metres further and then turning to north she walked 100 metres. How far is Vartika from her starting point?

1. 80 metres
2. 100 metres
3. 140 metres
4. 260 metres

**Options :**

- 68634080865. 1
- 68634080866. 2
- 68634080867. 3
- 68634080868. 4

**Question Number : 17 Question Id : 68634020470 Question Type : MCQ Option Shuffling : No 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. 80 metres
2. 100 metres
3. 140 metres
4. 260 metres

**Options :**

- 68634080865. 1
- 68634080866. 2
- 68634080867. 3
- 68634080868. 4

**Question Number : 18 Question Id : 68634020471 Question Type : MCQ Option Shuffling : No 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 water-image of the word "bridge"

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

**Options :**

- 68634080869. 1
- 68634080870. 2
- 68634080871. 3
- 68634080872. 4

**Question Number : 18 Question Id : 68634020471 Question Type : MCQ Option Shuffling : No 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 water-image of the word "bridge"

1.  $\rho\tau!q\text{g}\epsilon$

2.  $\rho\tau!q\text{g}\epsilon$

3.  $\rho\tau!q\text{g}\epsilon$

4.  $\rho\tau!p\text{g}\epsilon$

**Options :**

68634080869. 1

68634080870. 2

68634080871. 3

68634080872. 4

**Question Number : 19 Question Id : 68634020472 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

There is a certain relation between two given words on one side of : : and one word is given on another side of : : while another word is to be found from the given alternatives. Choose the correct pair bear.

Roster : Duty : : Inventory : ?

1. Furnace

2. Export's

3. Goods

4. Produce

**Options :**

68634080873. 1

68634080874. 2

68634080875. 3

68634080876. 4

**Question Number : 19 Question Id : 68634020472 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

There is a certain relation between two given words on one side of : : and one word is given on another side of : : while another word is to be found from the given alternatives. Choose the correct pair bear.

Roster : Duty : : Inventory : ?

1. Furnace
2. Export's
3. Goods
4. Produce

**Options :**

- 68634080873. 1
- 68634080874. 2
- 68634080875. 3
- 68634080876. 4

**Question Number : 20 Question Id : 68634020473 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Introducing a boy, a girl said, " He is the son of the daughter of the father of my uncle". How is the boy related to the girl?

1. Cousin
2. Nephew
3. Uncle
4. Son-in-law

**Options :**

- 68634080877. 1
- 68634080878. 2
- 68634080879. 3
- 68634080880. 4

**Question Number : 20 Question Id : 68634020473 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Introducing a boy, a girl said, " He is the son of the daughter of the father of my uncle". How is the boy related to the girl?

1. Cousin
2. Nephew
3. Uncle
4. Son-in-law

**Options :**

- 68634080877. 1
- 68634080878. 2
- 68634080879. 3
- 68634080880. 4

**Question Number : 21 Question Id : 68634020474 Question Type : MCQ Option Shuffling : No 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 is world's first female amputee is climb Mount Everest?

1. Junko Tabei
2. Arunima Sinha
3. Malavati Puna
4. Erika Weihehmayes

**Options :**

- 68634080881. 1
- 68634080882. 2
- 68634080883. 3
- 68634080884. 4

**Question Number : 21 Question Id : 68634020474 Question Type : MCQ Option Shuffling : No 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 is world's first female amputee is climb Mount Everest?

1. Junko Tabei
2. Arunima Sinha
3. Malavati Puna
4. Erika Weihehmayes

**Options :**

- 68634080881. 1
- 68634080882. 2

68634080883. 3

68634080884. 4

**Question Number : 22 Question Id : 68634020475 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

**Statement I:** Sahitya Academi Award is the second highest Indian Litrary Award. It is given in 22 languages.

**Statement II:** R.K. Narayan was the first recipient of Sahitya Academi Award. He got it for his book Malgudi Days.

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. Bothe 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 :**

68634080885. 1

68634080886. 2

68634080887. 3

68634080888. 4

**Question Number : 22 Question Id : 68634020475 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

**Statement I:** Sahitya Academi Award is the second highest Indian Litrary Award. It is given in 22 languages.

**Statement II:** R.K. Narayan was the first recipient of Sahitya Academi Award. He got it for his book Malgudi Days.

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. Bothe 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 :**

68634080885. 1

68634080886. 2

68634080887. 3

68634080888. 4

**Question Number : 23 Question Id : 68634020476 Question Type : MCQ Option Shuffling : No 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 (Books)		LIST II (Writers)	
A.	Mudrarakshasa	I.	Panini
B.	Abhigyan Shakuntalam	II.	Visakadatta
C.	Pancha Tantra	III.	Kalidasa
D.	Ashtadhyayi	IV.	Vishnu Sharma

Choose the correct answer from the options given below:

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

**Options :**

68634080889. 1  
68634080890. 2  
68634080891. 3  
68634080892. 4

**Question Number : 23 Question Id : 68634020476 Question Type : MCQ Option Shuffling : No 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 (Books)		LIST II (Writers)	
A.	Mudrarakshasa	I.	Panini
B.	Abhigyan Shakuntalam	II.	Visakadatta
C.	Pancha Tantra	III.	Kalidasa
D.	Ashtadhyayi	IV.	Vishnu Sharma

Choose the correct answer from the options given below:

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

**Options :**

68634080889. 1  
68634080890. 2  
68634080891. 3  
68634080892. 4

**Question Number : 24 Question Id : 68634020477 Question Type : MCQ Option Shuffling : No 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 :** A black hole is remnant of a massive star which has collapsed. It is a Volume of space where gravity is so strong that nothing not even light can escape fun it.

**Statement II :** Its presence was first announced by galileo Galili in 1783

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

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

**Options :**

- 68634080893. 1
- 68634080894. 2
- 68634080895. 3
- 68634080896. 4

**Question Number : 24 Question Id : 68634020477 Question Type : MCQ Option Shuffling : No 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 :** A black hole is remnant of a massive star which has collapsed. It is a Volume of space where gravity is so strong that nothing not even light can escape fun it.

**Statement II :** Its presence was first announced by galileo Galili in 1783

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

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

**Options :**

- 68634080893. 1
- 68634080894. 2
- 68634080895. 3
- 68634080896. 4



**Question Number : 25 Question Id : 68634020478 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

Rowlatt Act (1919) was passed through the Imperial Legislative Council to :

1. Increase taxes and custom duties on civilians
2. Force villages to supply soldiers and there was forced recruitment of common people
3. Gave Government enormous power is to repress political activists and allowed detention of anybody suspected
4. Arrest workers who joined hands against racism

**Options :**

- 68634080897. 1
- 68634080898. 2
- 68634080899. 3
- 68634080900. 4

**Question Number : 25 Question Id : 68634020478 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

Rowlatt Act (1919) was passed through the Imperial Legislative Council to :

1. Increase taxes and custom duties on civilians
2. Force villages to supply soldiers and there was forced recruitment of common people
3. Gave Government enormous power is to repress political activists and allowed detention of anybody suspected
4. Arrest workers who joined hands against racism

**Options :**

- 68634080897. 1
- 68634080898. 2
- 68634080899. 3
- 68634080900. 4

## **Part B: Nano Science Nano Technology**

<b>Section Id :</b>	686340406
<b>Section Number :</b>	2
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	75
<b>Number of Questions to be attempted :</b>	75
<b>Section Marks :</b>	300
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes

Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	686340673
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 26 Question Id : 68634020479 Question Type : MCQ Option Shuffling : No 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 particle of mass  $m$  is placed in a cubic box of side  $a$ . The potential inside the box is zero and infinite outside.

If the energy value of the particle is  $E = \frac{9\pi^2\hbar^2}{2m a^2}$ , then its wave function is:

$$1. \Psi = \left(\frac{2}{a}\right)^{\frac{3}{2}} \sin\left(\frac{3\pi x}{a}\right) \sin\left(\frac{3\pi y}{a}\right) \sin\left(\frac{3\pi z}{a}\right)$$

$$2. \Psi = \left(\frac{2}{a}\right)^{\frac{3}{2}} \sin\left(\frac{\pi x}{a}\right) \sin\left(\frac{2\pi y}{a}\right) \sin\left(\frac{2\pi z}{a}\right)$$

$$3. \Psi = \left(\frac{2}{a}\right)^{\frac{3}{2}} \sin\left(\frac{\pi x}{a}\right) \sin\left(\frac{\pi y}{a}\right) \sin\left(\frac{\pi z}{a}\right)$$

$$4. \Psi = \left(\frac{2}{a}\right)^{\frac{3}{2}} \sin\left(\frac{2\pi x}{a}\right) \sin\left(\frac{2\pi y}{a}\right) \sin\left(\frac{2\pi z}{a}\right)$$

Options :

- 68634080901. 1
- 68634080902. 2
- 68634080903. 3
- 68634080904. 4

Question Number : 26 Question Id : 68634020479 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

द्रव्यमान ' $m$ ' का एक कण भुजा  $a$  वाले घनीय बॉक्स में रखा गया है। बॉक्स के अंदर का विभव शून्य तथा बाहर का अनन्त

है। यदि कण का उर्जा आइगेन मान (energy value) है:  $E = \frac{9\pi^2\hbar^2}{2m a^2}$ , तो इसका तरंग फलन है:

$$1. \Psi = \left(\frac{2}{a}\right)^{\frac{3}{2}} \sin\left(\frac{3\pi x}{a}\right) \sin\left(\frac{3\pi y}{a}\right) \sin\left(\frac{3\pi z}{a}\right)$$

$$2. \Psi = \left(\frac{2}{a}\right)^{\frac{3}{2}} \sin\left(\frac{\pi x}{a}\right) \sin\left(\frac{2\pi y}{a}\right) \sin\left(\frac{2\pi z}{a}\right)$$

$$3. \Psi = \left(\frac{2}{a}\right)^{\frac{3}{2}} \sin\left(\frac{\pi x}{a}\right) \sin\left(\frac{\pi y}{a}\right) \sin\left(\frac{\pi z}{a}\right)$$

$$4. \Psi = \left(\frac{2}{a}\right)^{\frac{3}{2}} \sin\left(\frac{2\pi x}{a}\right) \sin\left(\frac{2\pi y}{a}\right) \sin\left(\frac{2\pi z}{a}\right)$$

Options :

- 68634080901. 1

68634080902. 2

68634080903. 3

68634080904. 4

**Question Number : 27 Question Id : 68634020480 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

In a Carnot engine when heat is absorbed from the source then which of the following quantity remains constant:

1. Volume
2. Pressure
3. Entropy
4. Temperature

**Options :**

68634080905. 1

68634080906. 2

68634080907. 3

68634080908. 4

**Question Number : 27 Question Id : 68634020480 Question Type : MCQ Option Shuffling : No 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 कारनॉट इंजन में, जब स्रोत से उष्मा अवशोषित की जाती है तो निम्न में से कौन -सी राशि स्थिर रहती है?

1. आयतन
2. दाब
3. एन्ट्रॉपी
4. तापमान

**Options :**

68634080905. 1

68634080906. 2

68634080907. 3

68634080908. 4

**Question Number : 28 Question Id : 68634020481 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

In a cross AaBbCcDd X AaBbCcDd, the most possible combination in a punnett square is:

1. 16
2. 32
3. 64
4. 256

**Options :**

- 68634080909. 1
- 68634080910. 2
- 68634080911. 3
- 68634080912. 4

**Question Number : 28 Question Id : 68634020481 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

AaBbCcDd X AaBbCcDd, क्रॉस में पनेट वर्ग (punnett square) में अधिकतम सम्भव संयोजनों की संख्या है:

1. 16
2. 32
3. 64
4. 256

**Options :**

- 68634080909. 1
- 68634080910. 2
- 68634080911. 3
- 68634080912. 4

**Question Number : 29 Question Id : 68634020482 Question Type : MCQ Option Shuffling : No 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:** Electrons cannot exist inside the nucleus.

**Reason R:** Heisenberg's uncertainty relation gives the value of electron energy to reside inside the nucleus to be much higher than its rest mass energy.

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 and R is NOT the correct explanation of A
3. A is correct but R not correct
4. A is not correct but R not correct

**Options :**

- 68634080913. 1
- 68634080914. 2
- 68634080915. 3
- 68634080916. 4

**Question Number : 29 Question Id : 68634020482 Question Type : MCQ Option Shuffling : No 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 हैं तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A: इलेक्ट्रॉन केन्द्रक के अंदर नहीं रह सकते हैं।

कारण R: हाइजेनब्रग अनिश्चितता सम्बन्ध के अनुसार केन्द्रक के अंदर रहने पर इलेक्ट्रॉन की उर्जा का मान फसके विराम द्रव्यमान उर्जा से बहुत अधिक होता है।

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

1. A और R दोनों सत्य हैं और R, A की सही व्याख्या है
2. A और R दोनों सत्य हैं और R, A की सही व्याख्या नहीं है
3. A सत्य है लेकिन R असत्य है
4. A असत्य है लेकिन R सत्य है

**Options :**

- 68634080913. 1
- 68634080914. 2
- 68634080915. 3
- 68634080916. 4

**Question Number : 30 Question Id : 68634020483 Question Type : MCQ Option Shuffling : No 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:**  $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]$  does not give white precipitate with  $\text{AgNO}_3$  solution.

**Reason R:** Ionisable chlorides from the complex react with  $\text{AgNO}_3$  form a white precipitate

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

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

**Options :**

68634080917. 1
68634080918. 2
68634080919. 3
68634080920. 4

**Question Number : 30 Question Id : 68634020483 Question Type : MCQ Option Shuffling : No 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 हैं तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A:  $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]$   $\text{AgNO}_3$  विलयन के साथ सफेद अवक्षेप नहीं देता है।

कारण R: संकुल के आयनित क्लोराइड  $\text{AgNO}_3$  के साथ क्रिया करके सफेद अवक्षेप निर्मित करते हैं।

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

1. A और R दोनों सत्य हैं और R, A की सही व्याख्या है
2. A और R दोनों सत्य हैं और R, A की सही व्याख्या नहीं है
3. A सत्य है लेकिन R असत्य है
4. A असत्य है लेकिन R सत्य है

**Options :**

68634080917. 1
68634080918. 2
68634080919. 3
68634080920. 4

**Question Number : 31 Question Id : 68634020484 Question Type : MCQ Option Shuffling : No 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:** Unlike mucous, serous and cutaneous membranes synovial membrane lack epithelium

**Reason R:** Synovial membranes are composed of discontinuous layer of cells called synoviocytes secreting some components of synovial fluid

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

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

**Options :**

68634080921. 1
68634080922. 2
68634080923. 3
68634080924. 4

**Question Number : 31 Question Id : 68634020484 Question Type : MCQ Option Shuffling : No 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 हैं तो दूसरा उसके कारण (Reason R) के रूप में:

अभिकथन A: श्लेष्मा (mucous), रक्तोदकीय (serous) एवं त्वचा सम्बन्धी (cutaneous) झाल्लियों के विपरीत साइनो वियल (synovial) भित्ती में एपीथीलियम नहीं पाई जाती है।

कारण R: साइनोवियल झिल्लियों कोशिकाएँ जिन्हे साइनोविओसाइट्स कहते हैं, के असतत परतों से निर्मित होती है जो साइनोवियल द्रव के कुछ घटकों को स्त्रावित करती हैं।

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

1. A और R दोनों सत्य हैं और R, A की सही व्याख्या है
2. A और R दोनों सत्य हैं और R, A की सही व्याख्या नहीं है
3. A सत्य है लेकिन R असत्य है
4. A असत्य है लेकिन R सत्य है

**Options :**

68634080921. 1

68634080922. 2  
68634080923. 3  
68634080924. 4

**Question Number : 32 Question Id : 68634020485 Question Type : MCQ Option Shuffling : No 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 electrons per unit length of a crystal is 0.5 electrons per Å . The fermi energy of the crystal is:

1. 3.8 eV
2. 2.4 eV
3. 1.9 eV
4. 1.2 eV

**Options :**

68634080925. 1  
68634080926. 2  
68634080927. 3  
68634080928. 4

**Question Number : 32 Question Id : 68634020485 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

किसी क्रिस्टल में प्रति इकाई लम्बाई इलेक्ट्रॉनों की संख्या 0.5 इलेक्ट्रॉन / Å है। क्रिस्टल की फर्मी उर्जा है:

1. 3.8 eV
2. 2.4 eV
3. 1.9 eV
4. 1.2 eV

**Options :**

68634080925. 1  
68634080926. 2  
68634080927. 3  
68634080928. 4

**Question Number : 33 Question Id : 68634020486 Question Type : MCQ Option Shuffling : No 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 an intensive property?

1. Volume
2. Entropy
3. Chemical potential
4. Gibbs free energy



**Options :**

- 68634080929. 1
- 68634080930. 2
- 68634080931. 3
- 68634080932. 4

**Question Number : 33 Question Id : 68634020486 Question Type : MCQ Option Shuffling : No 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 कौन- एक गहन गुणधर्म है?

- 1. आयतन
- 2. एन्ट्रॉपी
- 3. रासायनिक विभव
- 4. गिब्स मुक्त उर्जा

**Options :**

- 68634080929. 1
- 68634080930. 2
- 68634080931. 3
- 68634080932. 4

**Question Number : 34 Question Id : 68634020487 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

In a cross AaBbCc X AaBbCc, the frequency of most common genotype is:

- 1.  $\frac{1}{2}$
- 2.  $\frac{1}{4}$
- 3.  $\frac{1}{6}$
- 4.  $\frac{1}{8}$

**Options :**

- 68634080933. 1
- 68634080934. 2
- 68634080935. 3
- 68634080936. 4

**Question Number : 34 Question Id : 68634020487 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

AaBbCc × AaBbCc क्रॉस में सर्वाधिक सामान्य जीनप्ररूप की बारम्बारत है:

1.  $\frac{1}{2}$

2.  $\frac{1}{4}$

3.  $\frac{1}{6}$

4.  $\frac{1}{8}$

**Options :**

68634080933. 1

68634080934. 2

68634080935. 3

68634080936. 4

**Question Number : 35 Question Id : 68634020488 Question Type : MCQ Option Shuffling : No 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:** Semiconductor behaves like an insulator at 0 K

**Reason R:** At 0 K the electrons in the valence band do not have sufficient energy to jump from valence band to the conduction band

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

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

**Options :**

68634080937. 1

68634080938. 2

68634080939. 3

68634080940. 4

**Question Number : 35 Question Id : 68634020488 Question Type : MCQ Option Shuffling : No 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 हैं तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A: 0 K पर एक अर्धचालक कुचालक के रूप में कार्य करता है।

कारण R: 0 K पर संयोजकता बैंड में उपस्थित इलेक्ट्रॉनों के पास संयोजकता बैंड से चालन बैंड में जाने के लिए पर्याप्त उर्जा नहीं होती 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 और R, A की सही व्याख्या नहीं है
3. A सही है लेकिन R सही नहीं है
4. A सही नहीं है लेकिन R सही है

**Options :**

68634080937. 1

68634080938. 2

68634080939. 3

68634080940. 4

**Question Number : 36 Question Id : 68634020489 Question Type : MCQ Option Shuffling : No 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:** Reduction potential of Li is more negative among alkali metal cations.

**Reason R:** High hydration energy for  $\text{Li}^+$  ion is seen amongst alkali metal cations.

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

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

**Options :**

68634080941. 1

68634080942. 2

68634080943. 3

**Question Number : 36 Question Id : 68634020489 Question Type : MCQ Option Shuffling : No 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 हैं तो दूसरा उसके कारण (Reason R) के रूप में;

**अभिकथन A :** क्षार धातु धनायनों की तुलना में Li का अपचयन विभव अधिक ऋणात्मक होता है।

**कारण R :** क्षार धातु धनायनों की तुलना में  $Li^+$  आयन की जल योजन उर्जा उच्च पाई गई है।

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

1. A और R दोनों सत्य हैं और R, A की सही व्याख्या है
2. A और R दोनों सत्य हैं और R, A की सही व्याख्या नहीं है
3. A सत्य है लेकिन R असत्य है
4. A असत्य है लेकिन R सत्य है

**Options :**

- 68634080941. 1
- 68634080942. 2
- 68634080943. 3
- 68634080944. 4

**Question Number : 37 Question Id : 68634020490 Question Type : MCQ Option Shuffling : No 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 events of somatic cell cycle in correct order:

- A. Nuclear Division; distribution of 2 sets of chromosomes into separate nuclei
- B. Metabolically active cell duplicates most of organelles and cytosolic components
- C. Cytoplasmic division into equal portions
- D. Replication of DNA and centrosomes
- E. Cell growth, enzyme and protein synthesis, replication of centrosome completes

Choose the correct answer from the options given below

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

**Options :**

- 68634080945. 1
- 68634080946. 2

68634080947. 3

68634080948. 4

**Question Number : 37 Question Id : 68634020490 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

दैनिक कोशिका चक्र की घटनाओं को सही क्रम में व्यवस्थित करे:

- A. केन्द्रक विभाजन. अलग-अलग केन्द्रकों में गुणसूत्रों के दो सेटों का वितरण।
- B. उपापचयी (मेटाबोलिक) रूप से सक्रिय कोशिका अपने अधिकांश अंगों और साइटोसोलिक घटकों का प्रतिरूप बनाती है।
- C. समान भागों में साइटोप्लाज्मिक विभाजन
- D. DNA एवं सेन्ट्रोसोम की प्रतिकृति बनाना।
- E. कोशिका वृद्धि, एन्जाइम और प्रोटीन संश्लेषण, सेन्ट्रोसोम की प्रतिकृति पूर्ण होती है।

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

68634080945. 1

68634080946. 2

68634080947. 3

68634080948. 4

**Question Number : 38 Question Id : 68634020491 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

$x$  and  $p$  are the position and momentum operators respectively. The value of the commutator  $[x, pe^{-p}]$  is

- 1.  $\hat{i} \hbar(1-p)e^{-p}$
- 2.  $\hat{i} \hbar(1-p^2)e^{-p}$
- 3.  $\hat{i} \hbar(1-e^{-p})$
- 4.  $\hat{i} \hbar pe^{-p}$

**Options :**

68634080949. 1

68634080950. 2

68634080951. 3

68634080952. 4

**Question Number : 38 Question Id : 68634020491 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 4 Wrong Marks : 1

$x$  एवं  $p$  क्रमशः स्थान एवं संवेग ऑपरेटर है। कम्प्यूटेटर  $[x, pe^{-p}]$  का मान है:

1.  $\hat{i} \hbar (1-p)e^{-p}$

2.  $\hat{i} \hbar (1-p^2)e^{-p}$

3.  $\hat{i} \hbar (1-e^{-p})$

4.  $\hat{i} \hbar pe^{-p}$

Options :

68634080949. 1

68634080950. 2

68634080951. 3

68634080952. 4

Question Number : 39 Question Id : 68634020492 Question Type : MCQ Option Shuffling : No 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 one of the following solutions have highest boiling point?

1. 1.5 m NaCl

2. 1.5 m AgCl

3. 2.0 m CaCl<sub>2</sub>

4. 1.0 m Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>

Options :

68634080953. 1

68634080954. 2

68634080955. 3

68634080956. 4

Question Number : 39 Question Id : 68634020492 Question Type : MCQ Option Shuffling : No 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 किस विलयन का क्वथनांक अधिकतम होगा?

1. 1.5 m NaCl

2. 1.5 m AgCl

3. 2.0 m CaCl<sub>2</sub>

4. 1.0 m Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>

Options :

68634080953. 1

68634080954. 2

68634080955. 3

68634080956. 4

**Question Number : 40 Question Id : 68634020493 Question Type : MCQ Option Shuffling : No 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 concentration of  $H^+$  ions in a solution of 0.01 M NaOH is:

1.  $1 \times 10^{-10}M$

2.  $1 \times 10^{-11}M$

3.  $1 \times 10^{-12}M$

4.  $1 \times 10^{-13}M$

**Options :**

68634080957. 1

68634080958. 2

68634080959. 3

68634080960. 4

**Question Number : 40 Question Id : 68634020493 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

0.01M NaOH विलयन में  $H^+$  आयनों की सांद्रता है:

1.  $1 \times 10^{-10}M$

2.  $1 \times 10^{-11}M$

3.  $1 \times 10^{-12}M$

4.  $1 \times 10^{-13}M$

**Options :**

68634080957. 1

68634080958. 2

68634080959. 3

68634080960. 4

**Question Number : 41 Question Id : 68634020494 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

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

Assertion A: A simple pendulum, an object floating in a liquid and a diatomic molecule are examples of a harmonic oscillator

Reason R: When a system vibrates about an equilibrium position such that the magnitude of the force is proportional to the displacement from the equilibrium position and directed opposite to the displacement, is called a harmonic oscillator

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

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

**Options :**

68634080961. 1
68634080962. 2
68634080963. 3
68634080964. 4

**Question Number : 41 Question Id : 68634020494 Question Type : MCQ Option Shuffling : No 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 हैं तो दूसरा उसके कारण (Reason R) के रूप में;

अभिकथन A: एक सरल पेंडुलम किसी द्रव में तैरता हुआ वस्तु और एक द्विपरमाणुक अणु किसी लयबद्ध (हारमोनिक) दोलक के उदाहरण हैं।

कारण R: जब एक प्रणाली एक साम्यावस्था से कम्पन करती है, इस प्रकार कि बल का परिमाण साम्यावस्था से इसके विस्थापन के समानुपाती होता है तथा विस्थापन के विपरीत दिशा में होता है तो इसे हारमोनिक दोलक कहा जाता है।

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

1. A और R दोनों सत्य हैं और R, A की सही व्याख्या है
2. A और R दोनों सत्य हैं और R, A की सही व्याख्या नहीं है
3. A सत्य है लेकिन R असत्य है
4. A असत्य है लेकिन R सत्य है

**Options :**



68634080961. 1  
68634080962. 2  
68634080963. 3  
68634080964. 4

**Question Number : 42 Question Id : 68634020495 Question Type : MCQ Option Shuffling : No 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 complexes in decreasing order of their spin only magnetic moment.

- A.  $[\text{Cr}(\text{CN})_6]^{3-}$
- B.  $[\text{Mn}(\text{CN})_6]^{3-}$
- C.  $[\text{Fe}(\text{CN})_6]^{3-}$
- D.  $[\text{Co}(\text{CN})_6]^{3-}$

Choose the correct answer from the options given below:

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

**Options :**

68634080965. 1  
68634080966. 2  
68634080967. 3  
68634080968. 4

**Question Number : 42 Question Id : 68634020495 Question Type : MCQ Option Shuffling : No 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 संकुलो को उनके प्रचकण मात्र चुम्बकीय आघूर्ण के घटते क्रम में व्यवस्थित करें।

- A.  $[\text{Cr}(\text{CN})_6]^{3-}$
- B.  $[\text{Mn}(\text{CN})_6]^{3-}$
- C.  $[\text{Fe}(\text{CN})_6]^{3-}$
- D.  $[\text{Co}(\text{CN})_6]^{3-}$

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

68634080965. 1  
68634080966. 2  
68634080967. 3  
68634080968. 4

**Question Number : 43 Question Id : 68634020496 Question Type : MCQ Option Shuffling : No 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 sequence of killing action of cytotoxic T cells on an infected cell.

- A. T-cells release perforins that forms pores in infected cell membrane and granzymes.
- B. Granzymes initiate apoptosis within infected cell leading to fragmentation of nucleus and cytoplasm.
- C. Granzymes enter infected cells by endocytosis.
- D. Activated cytotoxic T cells bind to class I MHC antigen fragment complex on infected cell.
- E. Released cytotoxic T cells can attack on other infected cells.

Choose the correct answer from the options given below:

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

**Options :**

68634080969. 1  
68634080970. 2  
68634080971. 3  
68634080972. 4

**Question Number : 43 Question Id : 68634020496 Question Type : MCQ Option Shuffling : No 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 संक्रमित कोशिका को साइटोटॉक्सिक T कोशिकाओं के नष्ट करने (मारने की क्रिया) के सही क्रम को पहचाने:

- A. T- कोशिकाएँ पेर्फोरिन नियुक्त करती हैं जो संक्रमित कोशिका झिल्ली और कणिकाओं में छिद्र बनाती हैं।
- B. ग्रैनजाइम संक्रमित कोशिकाओं के भीतर ऑपोपटोसिस की शुरुआत करते हैं जिससे केन्द्रक और साइटोप्लाज्म का विखण्डन होता है।
- C. एन्डो साइटोसिस द्वारा ग्रैनजाइम संक्रमित कोशिकाओं में प्रवेश करते हैं।
- D. सक्रिय साइटोटॉक्सिक T कोशिकाएँ संक्रमित कोशिका पर क्लास 1 MHC एंटीजेन प्रैगमेंट कॉम्प्लेक्स से जुड़ती हैं।
- E. निर्मुक्त साइटोटॉक्सिक T कोशिकाएँ अन्य संक्रमित कोशिकाओं पर आक्रमण कर सकती हैं।

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634080969. 1
- 68634080970. 2
- 68634080971. 3
- 68634080972. 4

**Question Number : 44 Question Id : 68634020497 Question Type : MCQ Option Shuffling : No 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 diatomic ideal gas at room temperature is expanded at constant pressure by supplying heat to it. The fraction of heat supplied that is available for external work is:

- 1.  $\frac{1}{7}$
- 2.  $\frac{5}{7}$
- 3.  $\frac{3}{4}$
- 4.  $\frac{2}{7}$

**Options :**

- 68634080973. 1
- 68634080974. 2
- 68634080975. 3
- 68634080976. 4

**Question Number : 44 Question Id : 68634020497 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

कमरे के ताप पर एक द्वपरमाणुक आदर्श गैस को स्थिर दाब पर, उष्मा देकर प्रसरित किया जाता है। दी गई उष्मा का वह अंश जो बाह्य कार्य के लिए उपलब्ध है, \_\_ हैं:

1.  $\frac{1}{7}$

2.  $\frac{5}{7}$

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

4.  $\frac{2}{7}$

**Options :**

68634080973. 1

68634080974. 2

68634080975. 3

68634080976. 4

**Question Number : 45 Question Id : 68634020498 Question Type : MCQ Option Shuffling : No 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 solution have highest pH value?

1. 0.1 M NaCl

2. 0.1 M  $\text{NH}_4\text{Cl}$

3. 0.1 M HCl

4. 0.1 M  $\text{CH}_3\text{COONa}$

**Options :**

68634080977. 1

68634080978. 2

68634080979. 3

68634080980. 4

**Question Number : 45 Question Id : 68634020498 Question Type : MCQ Option Shuffling : No 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 किस विलयन के pH का मान अधिकतम है?

1. 0.1 M NaCl

2. 0.1 M  $\text{NH}_4\text{Cl}$

3. 0.1 M HCl

4. 0.1 M  $\text{CH}_3\text{COONa}$

**Options :**

- 68634080977. 1
- 68634080978. 2
- 68634080979. 3
- 68634080980. 4

**Question Number : 46 Question Id : 68634020499 Question Type : MCQ Option Shuffling : No 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 cofactor is removed from an enzyme, then

1. Catalytic activity of an enzyme is lost
2. Catalytic activity of an enzyme is lowered
3.  $K_m$  value increases
4.  $V_{max}$  value increases

**Options :**

- 68634080981. 1
- 68634080982. 2
- 68634080983. 3
- 68634080984. 4

**Question Number : 46 Question Id : 68634020499 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

यदि किसी एन्जाइम में से सहकारक (को-फैक्टर) को हरा दिया जाए तो:

1. एन्जाइम की उत्प्रेरकी सक्रियता समाप्त हो जाती है
2. एन्जाइम की उत्प्रेरकी सक्रियता घट जाती है
3.  $K_m$  मान बढ़ जाता है
4.  $V_{max}$  मान बढ़ जाता है

**Options :**

- 68634080981. 1
- 68634080982. 2
- 68634080983. 3
- 68634080984. 4

**Question Number : 47 Question Id : 68634020500 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Choose the incorrect statements:

- A. Gauss law is valid only for symmetrical charge distribution
- B. Gauss law is valid only for charges placed in vacuum
- C. The electric field calculated by Gauss's Law is the field due to the charges inside the Gaussian surface
- D. The flux of the electric field through a closed surface due to all the charges is equal to the flux due to the charges enclosed by the surface.

Choose the correct answer from the options given below:

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

**Options :**

- 68634080985. 1
- 68634080986. 2
- 68634080987. 3
- 68634080988. 4

**Question Number : 47 Question Id : 68634020500 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

असत्य कथनों को चुने:

- A. गॉउस नियम केवल सममित आवेश वितरण के लिए मान्य है।
- B. गॉउस नियम निर्वात में रखे हुए आवेश के लिए मान्य है।
- C. गॉउस नियम द्वारा परिकलित विद्युत क्षेत्र गॉउस सतह के अन्दर आवेश के कारण क्षेत्र है।
- D. सभी आवेशों के कारण बंद सतह के माध्यम से विद्युत क्षेत्र फ्लक्स बराबर होता है सतह से घिरे आवेशों के कारण फ्लक्स के।

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634080985. 1
- 68634080986. 2
- 68634080987. 3
- 68634080988. 4

**Question Number : 48 Question Id : 68634020501 Question Type : MCQ Option Shuffling : No 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 ions in the increasing order of their ionic radii.

- A.  $\text{Ca}^{2+}$
- B.  $\text{K}^+$
- C.  $\text{Cl}^-$
- D.  $\text{S}^{2-}$
- E.  $\text{Mg}^{2+}$

Choose the correct answer from the options given below:

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

**Options :**

- 68634080989. 1
- 68634080990. 2
- 68634080991. 3
- 68634080992. 4

**Question Number : 48 Question Id : 68634020501 Question Type : MCQ Option Shuffling : No 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 आयनों को उनके आयनिक त्रिज्या के बढ़ते हे क्रम में व्यवस्थित करें।

- A.  $\text{Ca}^{2+}$
- B.  $\text{K}^+$
- C.  $\text{Cl}^-$
- D.  $\text{S}^{2-}$
- E.  $\text{Mg}^{2+}$

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634080989. 1
- 68634080990. 2
- 68634080991. 3
- 68634080992. 4

**Question Number : 49 Question Id : 68634020502 Question Type : MCQ Option Shuffling : No 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:

According to Erwin Chargaff

**Statement I:** A/T is equal to one

**Statement II:** A+T/G+C is equal to one

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

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

**Options :**

68634080993. 1

68634080994. 2

68634080995. 3

68634080996. 4

**Question Number : 49 Question Id : 68634020502 Question Type : MCQ Option Shuffling : No 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 हैं:

इर्विन चार्जफ के अनुसार

कथन I: A/T एक के बराबर होता है।

कथन II: A+T/G+C एक के बराबर होता है।

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

1. कथन I और II दोनों सत्य 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 :**

68634080993. 1



68634080994. 2

68634080995. 3

68634080996. 4

**Question Number : 50 Question Id : 68634020503 Question Type : MCQ Option Shuffling : No 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 different Bravais lattices possible in two dimensions is:

1. 2

2. 3

3. 5

4. 6

**Options :**

68634080997. 1

68634080998. 2

68634080999. 3

68634081000. 4

**Question Number : 50 Question Id : 68634020503 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

दो विभाओं में सम्भावित ब्रैवे जालकों की संख्या है:

1. 2

2. 3

3. 5

4. 6

**Options :**

68634080997. 1

68634080998. 2

68634080999. 3

68634081000. 4

**Question Number : 51 Question Id : 68634020504 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

At 510 °C the half life for the decomposition of a sample of gaseous acetaldehyde initially at 363 Torr was 410 s. When the pressure was 248 Torr, the half life was 600 s, the order of the reaction is:

1. 0
2. 1
3. 2
4. 3

**Options :**

- 68634081001. 1
- 68634081002. 2
- 68634081003. 3
- 68634081004. 4

**Question Number : 51 Question Id : 68634020504 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

510 °C पर गैसीय एसीटिल्डहाइड का एक नमूना जो प्रारंभ में 363 Torr पर था, उसकी अर्ध आयु 410 s जब दाब 248 Torr था तो उसकी अर्धआयु 600 s थी। अभिक्रिया की कोटी है:

1. 0
2. 1
3. 2
4. 3

**Options :**

- 68634081001. 1
- 68634081002. 2
- 68634081003. 3
- 68634081004. 4

**Question Number : 52 Question Id : 68634020505 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Ribozymes are:

1. enzymes catalysing DNA replication
2. Protein factory of cell
3. Nucleic acids behaving like enzymes
4. Thermostable enzymes found in bacteria living in hot vents and Sulphur springs

**Options :**

- 68634081005. 1
- 68634081006. 2
- 68634081007. 3
- 68634081008. 4

**Question Number : 52 Question Id : 68634020505 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

राइबोज़ाइम हैं:

1. DNA प्रतिकृति को उत्प्रेरित करने वाले एन्ज़ाइम
2. कोशिका की प्रोटीन फैक्टरी
3. एन्ज़ाइम की तरह व्यवहार करने वाले न्यूक्लिक अम्ल
4. गर्म द्वार एवं सल्फर स्प्रिंग में रहने वाले बैक्टीरिया में पाए जाने वाले तापस्थायी एन्ज़ाइम

**Options :**

68634081005. 1
68634081006. 2
68634081007. 3
68634081008. 4

**Question Number : 53 Question Id : 68634020506 Question Type : MCQ Option Shuffling : No 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 assumptions for Einstein's theory of lattice heat capacity are:

- A. The atoms are identical independent simple harmonic oscillators.
- B. All atoms have the same natural frequencies.
- C. The energy spectrum of atomic oscillators is continuous.
- D. The oscillators obey Maxwell-Boltzmann statistics .

Choose the correct answer from the options given below:

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

**Options :**

68634081009. 1
68634081010. 2
68634081011. 3
68634081012. 4

**Question Number : 53 Question Id : 68634020506 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

आइंस्टीन के जालक उष्मा धारिता सिद्धांत की मान्यताएँ हैं:

- A. परमाणु एक समान स्वतंत्र सरल आवर्ती दोलक होते हैं।
- B. सभी परमाणुओं की समान प्राकृतिक आवृत्ति होती है।
- C. परमाणु दोलकों का उर्जा स्पेक्ट्रम सतत होता है।
- D. दोलक मैक्सवेल- बोल्ट्समान सांख्यिकी का पालन करता हैं।

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634081009. 1
- 68634081010. 2
- 68634081011. 3
- 68634081012. 4

**Question Number : 54 Question Id : 68634020507 Question Type : MCQ Option Shuffling : No 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:** For best reducing agent  $E_{\text{oxi}}^{\circ}$  is maximum

**Statement II:** For best oxidising agent  $E_{\text{oxi}}^{\circ}$  is minimum

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

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

**Options :**

- 68634081013. 1
- 68634081014. 2
- 68634081015. 3
- 68634081016. 4

**Question Number : 54 Question Id : 68634020507 Question Type : MCQ Option Shuffling : No 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 हैं:

कथन I: किसी सर्वोत्तम अपचायक के लिए  $E_{\text{oxi}}^{\circ}$  अधिकतम होना चाहिए।

कथन II: किसी सर्वोत्तम ऑक्सीकारक के लिए  $E_{\text{oxi}}^{\circ}$  न्यूनतम होना चाहिए।

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

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

**Options :**

68634081013. 1  
68634081014. 2  
68634081015. 3  
68634081016. 4

**Question Number : 55 Question Id : 68634020508 Question Type : MCQ Option Shuffling : No 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 motility generally require interaction of cytoskeleton with motor proteins

**Statement II:** Cytoskeletal elements and motor proteins work together with plasma membrane molecules to allow whole cell to move along fibers outside the cell

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

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

**Options :**

68634081017. 1  
68634081018. 2  
68634081019. 3  
68634081020. 4

**Question Number : 55 Question Id : 68634020508 Question Type : MCQ Option Shuffling : No 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 हैं:

कथन I: कोशिका गतिशीलता के लिए प्रायः साइटो स्केल्टन की मोटर प्रोटीन्स के साथ परस्पर क्रिया आवश्यक होती है।

कथन II: साइटो स्केल्टल तत्व एवं मोटर प्रोटीन्स, प्लाज्मा झिल्ली अणुओं के साथ कार्य सम्पूर्ण कोशिका के बाहर तंतुओं के साथ स्थानान्तरित होने की अनुमति देता 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 :**

68634081017. 1

68634081018. 2

68634081019. 3

68634081020. 4

**Question Number : 56 Question Id : 68634020509 Question Type : MCQ Option Shuffling : No 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 total number of sodium and chloride ions per unit cell is:

1. 2
2. 4
3. 6
4. 8

**Options :**

68634081021. 1

68634081022. 2

68634081023. 3

68634081024. 4

**Question Number : 56 Question Id : 68634020509 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

प्रति एकक सेल सोडियमो वं क्लोराइड आयनो की कुल संख्या हैं:

1. 2

2. 4

3. 6

4. 8

**Options :**

68634081021. 1

68634081022. 2

68634081023. 3

68634081024. 4

**Question Number : 57 Question Id : 68634020510 Question Type : MCQ Option Shuffling : No 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 of the reaction for  $2A+2B\rightarrow 3C+D$  is reported as  $3.0 \text{ mol dm}^{-3} \text{ s}^{-1}$ . The rate of formation of C in  $\text{mol dm}^{-3} \text{ s}^{-1}$  is:

1. 3.0

2. 1.0

3. 9.0

4. 6.0

**Options :**

68634081025. 1

68634081026. 2

68634081027. 3

68634081028. 4

**Question Number : 57 Question Id : 68634020510 Question Type : MCQ Option Shuffling : No 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  $2A+2B\rightarrow 3C+D$  का अभिक्रिया दर  $3.0 \text{ mol dm}^{-3} \text{ s}^{-1}$  पाया गया है। C के निर्माण की  $\text{mol dm}^{-3} \text{ s}^{-1}$  में दर है:

1. 3.0

2. 1.0

3. 9.0

4. 6.0

**Options :**

68634081025. 1

68634081026. 2

68634081027. 3

68634081028. 4

**Question Number : 58 Question Id : 68634020511 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

During mitosis and meiosis which of the following phase shows breakdown of proteins holding the sister chromatids together at the centromere and separate the chromatids respectively:

1. Telophase, Telophase II
2. Anaphase, Anaphase II
3. Metaphase, Metaphase II
4. Anaphase, Anaphase I

**Options :**

- 68634081029. 1
- 68634081030. 2
- 68634081031. 3
- 68634081032. 4

**Question Number : 58 Question Id : 68634020511 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

माइटोसिस (समसूत्रण) एवं मिओसिस (अर्धसूत्रण) के दौरान निम्न में से कौन सी प्रावस्था, सेन्ट्रोमीयर पर सिस्टर क्रोमेटिड्स (अर्धगुणसूत्रों) को बाँधे रखने वाली प्रोटीन को तोड़ने एवं अर्धगुणसूत्रों के पृथक्करण को प्रदर्शित करती है, क्रमशः है:

1. टेलोफेज़, टेलोफेज़ II
2. ऐनाफेज, ऐनाफेज II
3. मेटाफेज, मेटाफेज II
4. ऐनाफेज, ऐनाफेज I

**Options :**

- 68634081029. 1
- 68634081030. 2
- 68634081031. 3
- 68634081032. 4

**Question Number : 59 Question Id : 68634020512 Question Type : MCQ Option Shuffling : No 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:** For intrinsic semiconductor, the concentration of electrons in the conduction band is equal to the concentration of holes in the valence band hence Fermi level lies at the middle of the band gap

**Statement II:** For n-type material, the Fermi level lies closer to the valence band

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

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

**Options :**

68634081033. 1  
68634081034. 2  
68634081035. 3  
68634081036. 4

**Question Number : 59 Question Id : 68634020512 Question Type : MCQ Option Shuffling : No 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 हैं:

कथन I: नैज (इंट्रिजिक) अर्धचालकों के लिए, चालन बैंड में इलेक्ट्रॉनों की सान्द्रता संयोजकता बैंड में रिक्तियों की सान्द्रता के बराबर होती है। अतः फर्मी स्तर बैंड गैप मध्य स्थित होता है।

कथन II: n- टाइप पदार्थों के लिए, फर्मी स्तर संयोजकता बैंड के अधिक निकट पाया 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

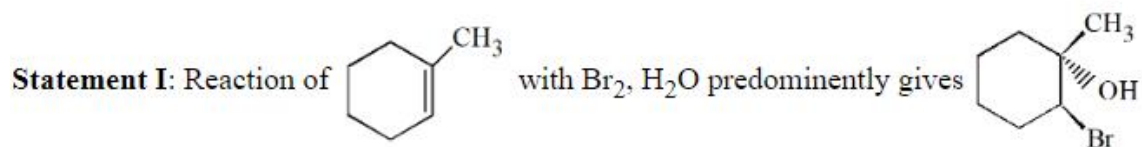
**Options :**

68634081033. 1  
68634081034. 2  
68634081035. 3

**Question Number : 60 Question Id : 68634020513 Question Type : MCQ Option Shuffling : No 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:** Addition of  $\text{HBr}$  to propene in presence of  $(\text{C}_6\text{H}_5\text{CO})_2 \text{O}_2$  gives 2-bromopropane

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

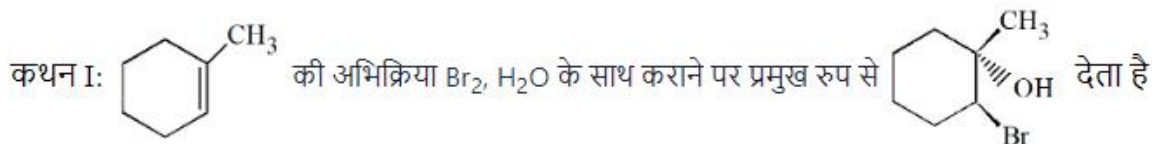
**Options :**

68634081037. 1  
68634081038. 2  
68634081039. 3  
68634081040. 4

**Question Number : 60 Question Id : 68634020513 Question Type : MCQ Option Shuffling : No 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 हैं:



कथन II:  $(\text{C}_6\text{H}_5\text{CO})_2 \text{O}_2$  की उपस्थिति में प्रोपीन पर  $\text{HBr}$  का योग 2- ब्रोमोप्रोपेन देता 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 :**

68634081037. 1  
68634081038. 2  
68634081039. 3  
68634081040. 4

**Question Number : 61 Question Id : 68634020514 Question Type : MCQ Option Shuffling : No 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:** A mechanism that can cause a gene to move from one linkage group to another is called translocation.

**Statement II:** A mutagen is the portion of a chromosome altered by a mutation.

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

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

**Options :**

68634081041. 1  
68634081042. 2

68634081043. 3

68634081044. 4

**Question Number : 61 Question Id : 68634020514 Question Type : MCQ Option Shuffling : No 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 हैं:

कथन I: ऐसी क्रियाविधि जिसके कारण कोई जीन एक सहलग्न समूह से अन्य में विस्थापित होता है उसे स्थानांतरण कहते हैं।

कथन II: उत्परिवर्तजन (म्यूटाजेन) किसी गुणसूत्र का वह भाग है जो म्यूटेशन द्वारा परिवर्तित कर दिया गया हो।

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 :**

68634081041. 1

68634081042. 2

68634081043. 3

68634081044. 4

**Question Number : 62 Question Id : 68634020515 Question Type : MCQ Option Shuffling : No 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 magnetic field sensor based on Hall effect is fabricated by implanting As into Si film of 1  $\mu\text{m}$  thickness. A magnetic field sensitivity of 500 mV/ tesla with excitation current of 1 mA is used. After activation the average carrier density is:

1.  $1.25 \times 10^{26} \text{ m}^{-3}$
2.  $1.25 \times 10^{22} \text{ m}^{-3}$
3.  $4.1 \times 10^{21} \text{ m}^{-3}$
4.  $4.1 \times 10^{20} \text{ m}^{-3}$

**Options :**

68634081045. 1

68634081046. 2

68634081047. 3

68634081048. 4

**Question Number : 62 Question Id : 68634020515 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

हॉल प्रभाव पर आधारित एक चुम्बकीय क्षेत्र सेंसर का निर्माण  $1\mu\text{m}$  मोटाई की Si फिल्म में As मिला कर किया जाता है।  $500\text{ mV/tesla}$  संवेदनशीलता वाले एक चुम्बकीय क्षेत्र सहित  $1\text{mA}$  की उत्तेजन धारा (excitation current) का उपयोग किया जाता है। सक्रियण के उपरन्त औसत वाहक (average carrier density) है:

1.  $1.25 \times 10^{26}\text{ m}^{-3}$

2.  $1.25 \times 10^{22}\text{ m}^{-3}$

3.  $4.1 \times 10^{21}\text{ m}^{-3}$

4.  $4.1 \times 10^{20}\text{ m}^{-3}$

**Options :**

68634081045. 1

68634081046. 2

68634081047. 3

68634081048. 4

**Question Number : 63 Question Id : 68634020516 Question Type : MCQ Option Shuffling : No 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 incorrect statement about  $\text{SO}_2$  from the following:

1.  $\text{SO}_2$  is a bent molecule with net dipole moment

2. It is a colourless gas with suffocating smell

3. It is a good oxidising agent

4. It bleaches coloring matter in presence of water

**Options :**

68634081049. 1

68634081050. 2

68634081051. 3

68634081052. 4

**Question Number : 63 Question Id : 68634020516 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

$\text{SO}_2$  से सम्बन्धित निम्न में से असत्य कथन को पहचाने

1.  $\text{SO}_2$  एक कोणीय अणु है जिसमें परिणामी द्विध्रुव आघूर्ण पाया जाता है।

2. यह एक दमघोटू गंध वाली रंगहीन गैस है।

3. यह एक अच्छा ऑक्सीकारक है।

4. यह जल की उपस्थिति में रंगीन पदार्थों को विरंजित कर देता है।

**Options :**

- 68634081049. 1
- 68634081050. 2
- 68634081051. 3
- 68634081052. 4

**Question Number : 64 Question Id : 68634020517 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Splicosome is made up of:

- 1. SiRNA
- 2. SnRNA
- 3. hnRNA
- 4. gRNA

**Options :**

- 68634081053. 1
- 68634081054. 2
- 68634081055. 3
- 68634081056. 4

**Question Number : 64 Question Id : 68634020517 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

स्पलाइसियोसोम निर्मित होता है:

- 1. SiRNA
- 2. SnRNA
- 3. hnRNA
- 4. gRNA

**Options :**

- 68634081053. 1
- 68634081054. 2
- 68634081055. 3
- 68634081056. 4

**Question Number : 65 Question Id : 68634020518 Question Type : MCQ Option Shuffling : No 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 two dimensional Bravais lattice type there is no restriction regarding the lengths of the primitive  $\vec{a}$  and  $\vec{b}$  and the angle  $\Phi$  between them

**Statement II:** In three dimensional space there can be in all 14 types of Bravais lattices

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

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

**Options :**

68634081057. 1  
68634081058. 2  
68634081059. 3  
68634081060. 4

**Question Number : 65 Question Id : 68634020518 Question Type : MCQ Option Shuffling : No 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 हैं:

कथन I: दो विमीय ब्रेवे जालक में आदय (प्रिमिटिव)  $\vec{a}$  एवं  $\vec{b}$  की लम्बाई तथा उनके मध्य कोण  $\phi$  सम्बन्धित कोई प्रतिबन्ध नहीं है।

कथन II: त्रिविमीय आकाश में सभी 14 प्रकार के ब्रेवे जालक पाए जा सकते 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 :**

68634081057. 1  
68634081058. 2  
68634081059. 3  
68634081060. 4

**Question Number : 66 Question Id : 68634020519 Question Type : MCQ Option Shuffling : No 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:** Addition of gypsum to cement increases setting time and hence strength of cement

**Statement II:** Sodium and potassium are soft silvery white metals

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 :**

68634081061. 1
68634081062. 2
68634081063. 3
68634081064. 4

**Question Number : 66 Question Id : 68634020519 Question Type : MCQ Option Shuffling : No 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 हैं:

कथन I: सीमेंट में जिप्सम मिलाने से आढ़न (सेटिंग) समय में वृद्धि होती है तथा सीमेंट की शक्ति में भी वृद्धि होती है।

कथन II: सोडियम एवं पोटैशियम रजत सदृश सफेद मुलायम धातुएँ 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 :**

68634081061. 1
68634081062. 2
68634081063. 3
68634081064. 4



**Question Number : 67 Question Id : 68634020520 Question Type : MCQ Option Shuffling : No 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 set of correct statements regarding cell organelles and their functions:

- A. Ribosomes are involved in protein synthesis
- B. Golgi complex synthesizes glycoproteins and phospholipids
- C. Peroxisome oxidizes amino acids and fatty acids
- D. Lysosomes digest worn out organelles, entire cells and associated free radicals
- E. Centrosomes degrade damaged or faulty proteins by cutting them into small proteins

Choose the correct answer from the options given below:

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

**Options :**

- 68634081065. 1
- 68634081066. 2
- 68634081067. 3
- 68634081068. 4

**Question Number : 67 Question Id : 68634020520 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

कोशिकांगो एवं उनके कार्यों से सम्बन्धित सही कथनों के सेट को पहचाने

- A. राइबोसोम प्रोटीन संश्लेषण में सम्मिलित होते हैं।
- B. गॉल्जी कॉम्प्लेक्स ग्लाइकोप्रोटीन एवं फॉस्फोलिपिड का संश्लेषण करते हैं।
- C. परॉक्सीसोम एमीनों अम्लो एवं वसीय अम्लो को ऑक्सीकृत करते हैं।
- D. लाइसोसोम विक्षत कोशिकांगो, पूर्ण कोशिकाओं एवं सम्बन्धित मूल मूलकों को पचाता है।
- E. सेन्ट्रोसोम क्षतिग्रस्त या दोषपूर्ण प्रोटीन को छोटे प्रोटीनों में परिवर्तित करता है।

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634081065. 1
- 68634081066. 2
- 68634081067. 3
- 68634081068. 4

Question Number : 68 Question Id : 68634020521 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Based on the frequency-dependent Drude model, the effective kinetic inductance of a metallic wire to be used as a transmission line is:

(consider  $m$  as the electron mass,  $n$  the density of states,  $L$  and  $A$  are the length and cross-sectional area of the wire)

1.  $\frac{mA}{ne^2l}$

2.  $\frac{nel^2}{mA}$

3.  $\frac{ml}{ne^2A}$

4.  $\frac{m\sqrt{A}}{ne^2l^2}$

Options :

68634081069. 1

68634081070. 2

68634081071. 3

68634081072. 4

Question Number : 68 Question Id : 68634020521 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

आवृत्ति आधारित ड्रुड(Drude) मॉडल के अनुसार किसी धात्विक तार को एक संरचण लाइन के रूप में उपयोग करने हेतु उसका प्रभावी गतिज प्रेरकत्व है:

( $m$  को इलेक्ट्रॉन का द्रव्यमान,  $n$  को अवस्थाओं का घनत्व,  $L$  एवं  $A$  को तार की क्रमशः लम्बाई एवं अनुप्रस्थ काट क्षेत्रफल मानिए)

1.  $\frac{mA}{ne^2l}$

2.  $\frac{nel^2}{mA}$

3.  $\frac{ml}{ne^2A}$

4.  $\frac{m\sqrt{A}}{ne^2l^2}$

Options :

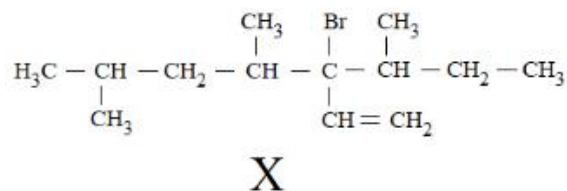
68634081069. 1

68634081070. 2

68634081071. 3  
68634081072. 4

**Question Number : 69 Question Id : 68634020522 Question Type : MCQ Option Shuffling : No 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 number of stereo isomers possible for the given molecule 'x' is-



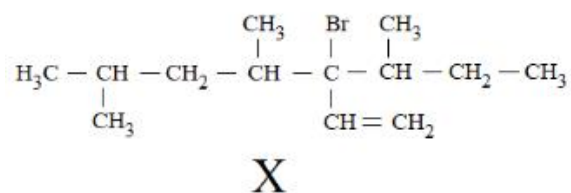
1. Four
2. Two
3. Eight
4. Six

**Options :**

68634081073. 1  
68634081074. 2  
68634081075. 3  
68634081076. 4

**Question Number : 69 Question Id : 68634020522 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**  
**Correct Marks : 4 Wrong Marks : 1**

दिए गे अणु 'x' के लिए त्रिविम समावयवों की कुल संख्या है:



1. चार
2. दो
3. आठ
4. छः

**Options :**

68634081073. 1  
68634081074. 2  
68634081075. 3  
68634081076. 4

**Question Number : 70 Question Id : 68634020523 Question Type : MCQ Option Shuffling : No 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 gamete shows 3 chromosomes, how many possible random arrangements of homologous chromosomes could occur during Metaphase I:

1. 2

2. 4

3. 8

4. 16

**Options :**

68634081077. 1

68634081078. 2

68634081079. 3

68634081080. 4

**Question Number : 70 Question Id : 68634020523 Question Type : MCQ Option Shuffling : No 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 युग्मक 3 गुणसूत्र प्रदर्शित करता है। मेटाफेस I के दौरान समजात गुणसूत्रों की कितनी सम्भावित यादृच्छिक (रैंडम) व्यवस्थाएँ हो सकती हैं?

1. 2

2. 4

3. 8

4. 16

**Options :**

68634081077. 1

68634081078. 2

68634081079. 3

68634081080. 4

**Question Number : 71 Question Id : 68634020524 Question Type : MCQ Option Shuffling : No 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:** Ferrites are ferrimagnetic having negligible electrical conductivity

**Statement II:** Ferrites are ferromagnetic having negligible electrical conductivity

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 :**

68634081081. 1
68634081082. 2
68634081083. 3
68634081084. 4

**Question Number : 71 Question Id : 68634020524 Question Type : MCQ Option Shuffling : No 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 हैं:

कथन I: फेराइट नगण्य वैद्युत चालकता वाले लप्पु लोह चुम्बक हैं।

कथन II: फेराइट नगण्य वैद्युत चालकता वाले लोह चुम्बक 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

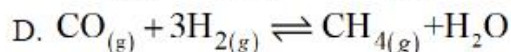
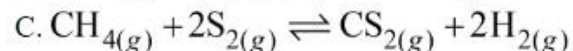
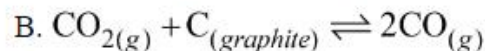
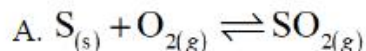
**Options :**

68634081081. 1
68634081082. 2
68634081083. 3
68634081084. 4

**Question Number : 72 Question Id : 68634020525 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Following reactions are given at equilibrium which will not be affected by an increase in pressure (by reducing volume, temperature is kept constant)



Choose the correct answer from the options given below:

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

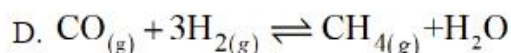
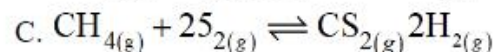
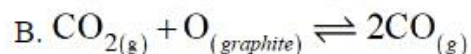
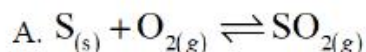
**Options :**

68634081085. 1  
68634081086. 2  
68634081087. 3  
68634081088. 4

**Question Number : 72 Question Id : 68634020525 Question Type : MCQ Option Shuffling : No 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 अभिक्रियाएँ साम्यावस्था पर दी गई हैं। निम्न में से कौन दाब में वृद्धि से प्रभावित नहीं होगा/ होगी? (आयतन घटा कर तापमान को स्थिर रखा गया है)



नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

1. केवल A only
2. केवल A और D
3. केवल B और C
4. केवल A और C

**Options :**

68634081085. 1  
68634081086. 2  
68634081087. 3

**Question Number : 73 Question Id : 68634020526 Question Type : MCQ Option Shuffling : No 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 is the following statements are correct about  $\alpha$ -amanitin produced by Amanita Phalloides

- A. Bacterial Polymerase is sensitive to  $\alpha$ -amanitin
- B. Animal cell Pol II is disrupted by  $\alpha$ -amanitin
- C. RNA polymerase II of Amanita phalloides is sensitive to  $\alpha$ -amanitin
- D.  $\alpha$ -amanitin at high concentration blocks POI III in animals
- E. It is produced as defence mechanism against animals

Choose the most appropriate answer from the options given below:

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

**Options :**

- 68634081089. 1
- 68634081090. 2
- 68634081091. 3
- 68634081092. 4

**Question Number : 73 Question Id : 68634020526 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Amanita Phalloides द्वारा उत्पादित  $\alpha$ -amanitin के संदर्भ में निम्नलिखित में से कौन से कथन सत्य हैं।

- A. बैक्टीरियम पॉलीमरेज  $\alpha$ -amanitin के प्रति संवेदनशील है।
- B.  $\alpha$ -amanitin द्वारा जन्तु कोशिका Pol II का विघटन होता है।
- C. Amanita phalloides का RNA पॉलीमरेज II  $\alpha$ -amanitin के प्रति संवेदनशील होता है।
- D. उच्च सांद्रता पर  $\alpha$ -amanitin जन्तु कोशिकाओं में POI III को ब्लॉक करता है।
- E. यह जन्तुओं के विरुद्ध प्रतिरक्षाप्रणाली के रूप में उत्पादित किया जाता है।

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634081089. 1
- 68634081090. 2

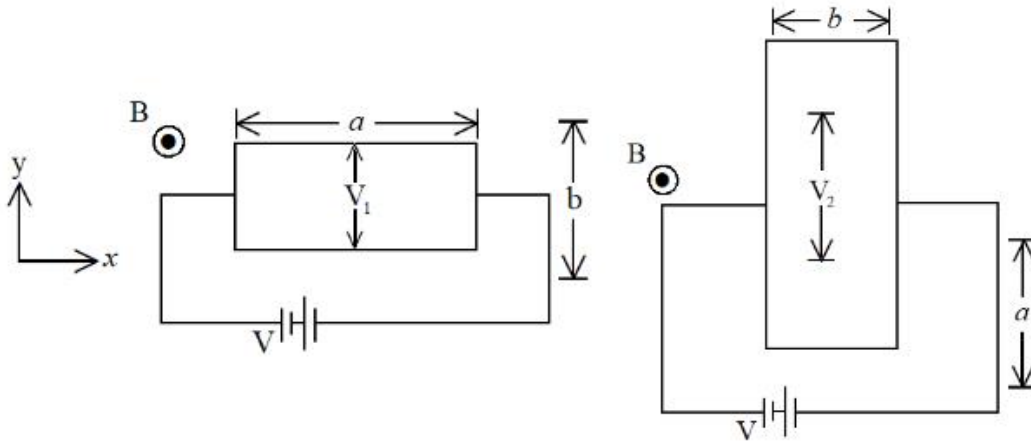
68634081091. 3

68634081092. 4

**Question Number : 74 Question Id : 68634020527 Question Type : MCQ Option Shuffling : No 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 thin rectangular conducting plate of length 'a' and width 'b' is placed in the x-y plane in two different orientations as shown. A magnetic field is applied in the z-direction and a current flows in the x- direction due to the applied voltage V. If the Hall voltage across the y-direction satisfies  $V_2 = 2V_1$ , the ratio a:b is:



1. 1:2

2.  $1:\sqrt{2}$

3. 2:1

4.  $\sqrt{2}:1$

**Options :**

68634081093. 1

68634081094. 2

68634081095. 3

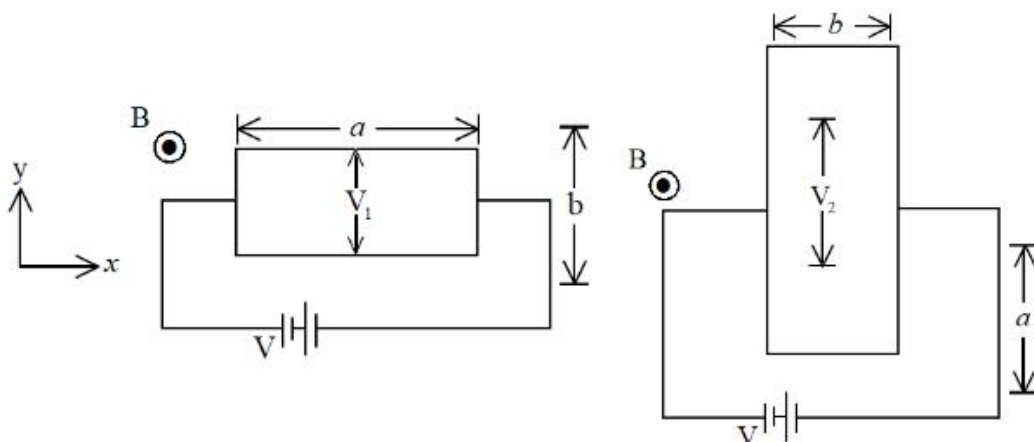
68634081096. 4

**Question Number : 74 Question Id : 68634020527 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**



लम्बाई 'a' एवं चौड़ाई 'b' वाली एक पतली आयताकार चालक प्लेट को x-y तल में दो भिन्न अभिविन्यासों में चित्रानुसार रखा गया। z-दिशा में एक चुम्बकीय क्षेत्र को लागू किया गया तथा प्रयुक्त वोल्टेज V के कारण x दिशा के पार, हॉल वोल्टेज  $V_2=2V_1$ , को संतुष्ट करता है तो a:b का अनुपात है।



1. 1:2

2.  $1:\sqrt{2}$

3. 2:1

4.  $\sqrt{2}:1$

**Options :**

68634081093. 1

68634081094. 2

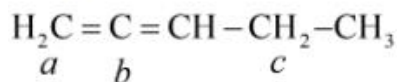
68634081095. 3

68634081096. 4

**Question Number : 75 Question Id : 68634020528 Question Type : MCQ Option Shuffling : No 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 hybridisation of each of the labeled carbon atoms in the followings molecules a , b and c respectively is:



1.  $sp^2, sp^2, sp^3$

2.  $sp^3, sp^2, sp^3$

3.  $sp^2, sp, sp^2$

4.  $sp^2, sp, sp^3$

**Options :**

68634081097. 1

68634081098. 2

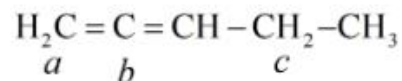
68634081099. 3

68634081100. 4

Question Number : 75 Question Id : 68634020528 Question Type : MCQ Option Shuffling : No 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 अणु में लेबल किए हुए प्रत्येक कार्बन परमाणु a, b और c का संकरण है, क्रमशः



1.  $sp^2$ ,  $sp^2$ ,  $sp^3$

2.  $sp^3$ ,  $sp^2$ ,  $sp^3$

3.  $sp^2$ ,  $sp$ ,  $sp^2$

4.  $sp^2$ ,  $sp$ ,  $sp^3$

Options :

68634081097. 1

68634081098. 2

68634081099. 3

68634081100. 4

Question Number : 76 Question Id : 68634020529 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In a **ABO** blood group system, if **A** and **B** were codominant and **O** was dominant over **A** and **B**. How many possible Blood groups would have been observed.?

1. 2

2. 3

3. 4

4. 6

Options :

68634081101. 1

68634081102. 2

68634081103. 3

68634081104. 4

Question Number : 76 Question Id : 68634020529 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

**ABO** रुधिर वर्ग प्रणाली में यदि **A** एवं **B** सहप्रभाव हो तथा **O, A** एवं **B** पर प्रभावी था तो कुल कितने संभावित रुधिर वर्ग प्रदर्शित होंगे?

1. 2

2. 3

3. 4

4. 6

**Options :**

68634081101. 1

68634081102. 2

68634081103. 3

68634081104. 4

**Question Number : 77 Question Id : 68634020530 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Consider the following statements:

- A. Phonons obey Fermi-Dirac statistics.
- B. Phonons travel with the velocity of sound in the solid.
- C. Phonons exhibit wave particle duality.
- D. Phonons are emitted or absorbed during inelastic scattering of photons.

Choose the correct answer from the options given below:

1. A, B and C only

2. B, C and D only

3. C, D and A only

4. A, B and D only

**Options :**

68634081105. 1

68634081106. 2

68634081107. 3

68634081108. 4

**Question Number : 77 Question Id : 68634020530 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

फोनन के सन्दर्भ में सही कथन चुनिए।

- A. फोनान फर्मी- डिराक सांख्यिकी का पालन करते हैं।
- B. फोनान ठोस में ध्वनि के वेग से यात्रा करते हैं।
- C. फोनान तरंग-कण द्वैतवाद प्रदर्शित करते हैं।
- D. फोटानों के अप्रत्यास्थ प्रकीर्णन के दौरान फोनान का उत्सर्जन या अवशोषण होता है।

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634081105. 1
- 68634081106. 2
- 68634081107. 3
- 68634081108. 4

**Question Number : 78 Question Id : 68634020531 Question Type : MCQ Option Shuffling : No 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 compounds have same molecular geometry?

- A.  $\text{NH}_3$
- B.  $\text{SCl}_2$
- C.  $\text{H}_2\text{O}$
- D.  $\text{CO}_2$

Choose the correct answer from the options given below:

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

**Options :**

- 68634081109. 1
- 68634081110. 2
- 68634081111. 3
- 68634081112. 4

**Question Number : 78 Question Id : 68634020531 Question Type : MCQ Option Shuffling : No 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 में से किनकी आण्विक संरचनाएँ समान है?

- A.  $\text{NH}_3$
- B.  $\text{SCL}_2$
- C.  $\text{H}_2\text{O}$
- D.  $\text{CO}_2$

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634081109. 1
- 68634081110. 2
- 68634081111. 3
- 68634081112. 4

**Question Number : 79 Question Id : 68634020532 Question Type : MCQ Option Shuffling : No 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	
Transcription proteins		Functions	
A.	Pol II	I.	Recruits pol II-TF IIF complex
B.	TBP	II.	Prevents non-specific binding at pol II
C.	TFIIB	III.	Catalyzes RNA synthesis
D.	TFIIF	IV.	Recognition of TATA box

Choose the correct answer from the options given below:

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

**Options :**

- 68634081113. 1
- 68634081114. 2
- 68634081115. 3
- 68634081116. 4

**Question Number : 79 Question Id : 68634020532 Question Type : MCQ Option Shuffling : No 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 का सूची II से मिलान कीजिए

सूची I अनुलेखन प्रोटीन	सूची II कार्य
A. Pol II	I. pol II-TF IIF कॉम्प्लेक्स भरती करवाना
B. TBP	II. pol II के गैर-विशिष्ट बंधन
C. TFIIB	III. RNA संश्लेषण को उत्प्रेरित करता है
D. TFIIF	IV. TATA बॉक्स की पहचान

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

**Options :**

68634081113. 1  
68634081114. 2  
68634081115. 3  
68634081116. 4

**Question Number : 80 Question Id : 68634020533 Question Type : MCQ Option Shuffling : No 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 electrical conductivity of Cu with respect to Ag is 95%, whereas the electron density of Ag with respect to Cu is 70%. Use Drude's model, the mean collision time of Cu with respect to Ag is:

1. 44%
2. 22%
3. 33%
4. 66%

**Options :**

68634081117. 1  
68634081118. 2  
68634081119. 3  
68634081120. 4

**Question Number : 80 Question Id : 68634020533 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

Ag की तुलना में Cu की वैद्युत चालकता 95%, है जबकि Cu की तुलना में Ag की इलेक्ट्रॉन घनत्व 70% है। डुड मॉडल का उपयोग करते हुए Ag की तुलना में Cu का औसत सघट्ट-काल (mean collision time) है:

1. 44%

2. 22%

3. 33%

4. 66%

**Options :**

68634081117. 1

68634081118. 2

68634081119. 3

68634081120. 4

**Question Number : 81 Question Id : 68634020534 Question Type : MCQ Option Shuffling : No 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 polymers from the following which are not biopolymers, is \_\_\_\_\_.  
Cellulose, amylose, neoprene, orlon, nylon, Buna-S, teflon and insulin.

1. 7

2. 5

3. 4

4. 6

**Options :**

68634081121. 1

68634081122. 2

68634081123. 3

68634081124. 4

**Question Number : 81 Question Id : 68634020534 Question Type : MCQ Option Shuffling : No 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 बहुलकों की संख्या, जो जैवबहुलक न हो, है: सेलुलोज, ऐमिलोस, निओप्रीन, ऑरलान, नाईलान, ब्यूना-S, टेफ्लॉन और इन्सुलिन

1. 7

2. 5

3. 4

4. 6

**Options :**

68634081121. 1

68634081122. 2

68634081123. 3

**Question Number : 82 Question Id : 68634020535 Question Type : MCQ Option Shuffling : No 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 order of events occurring in blood clotting is:

- I. conversion of fibrinogen to fibrin
- II. Formation of clot
- III. Thromboplastin formation
- IV. Conversion of prothrombin to thrombin

Choose the correct option:

1. III, II, I and IV
2. III, IV, I and II
3. III, IV, II and I
4. IV, I, III and II

**Options :**

68634081125. 1  
68634081126. 2  
68634081127. 3  
68634081128. 4

**Question Number : 82 Question Id : 68634020535 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

रुधिर के स्कंदन में घटनाओं का सही क्रम है:

- I. फाइब्रिनोजन का फाइब्रिन में परिवर्तन
- II. थक्का निर्माण
- III. थ्रोम्बोप्लास्टिन का निर्माण
- IV. प्रोथ्रोम्बिन का थ्रोम्बिन में परिवर्तन

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

1. III, II, I और IV
2. III, IV, I और II
3. III, IV, II और I
4. IV, I, III और II

**Options :**

68634081125. 1  
68634081126. 2  
68634081127. 3  
68634081128. 4



**Question Number : 83 Question Id : 68634020536 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**  
**Correct Marks : 4 Wrong Marks : 1**  
Free electron theory could not explain:

- A. Magnetic susceptibility of metals
- B. Properties of semi-conductors
- C. Thermal properties of metals
- D. The shape of Fermi surface

Choose the correct answer from the options given below:

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

**Options :**

- 68634081129. 1
- 68634081130. 2
- 68634081131. 3
- 68634081132. 4

**Question Number : 83 Question Id : 68634020536 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**  
**Correct Marks : 4 Wrong Marks : 1**

मुक्त इलेक्ट्रॉन सिद्धांत व्याख्या नहीं कर पाती है:

- A. धातुओं के चुम्बकीय प्रवृत्ति की
- B. अर्ध चालकों के गुणधर्म की
- C. धातुओं के उष्मीय गुणधर्म की
- D. फर्मी सतह के आकार की

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634081129. 1
- 68634081130. 2
- 68634081131. 3
- 68634081132. 4

Question Number : 84 Question Id : 68634020537 Question Type : MCQ Option Shuffling : No 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 incorrect statements from the following.

- A. In diborane  $B_2H_6$  maximum six atoms lie in a plane
- B. Borazine satisfies  $(4n+2)$  Huckel's rule
- C. In diborane each boron atom is in  $sp^2$  hybridized state
- D. Graphite is thermally more stable than diamond
- E.  $N_2O_5$  is anhydride of  $HNO_2$

Choose the most appropriate answer from the options given below:

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

Options :

- 68634081133. 1
- 68634081134. 2
- 68634081135. 3
- 68634081136. 4

Question Number : 84 Question Id : 68634020537 Question Type : MCQ Option Shuffling : No 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 असत्य कथन को चुने:

- A. डाइबोरेन  $B_2H_6$  में अधिकतम छः परमाणु एक तल में पाए जाते हैं।
- B. बोराजीन  $(4n+2)$  हकल के नियम को संतुष्ट करता है।
- C. डाइबोरेन में प्रत्येक बोरॉन परमाणु  $sp^2$  संकरित अवस्था में पाया जाता है।
- D. हीरे की तुलना में, ग्रेफाइट उष्मीय रूप से अधिक स्थायी है।
- E.  $HNO_2$  का अनहाइड्राइड  $N_2O_5$  है।

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

Options :

- 68634081133. 1
- 68634081134. 2
- 68634081135. 3
- 68634081136. 4

Question Number : 85 Question Id : 68634020538 Question Type : MCQ Option Shuffling : No 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 (subunit of DNA pol III)		LIST II (functions of subunit)	
A.	$\alpha$ -subunit	I.	3'-5' proof reading exonuclease
B.	$\epsilon$ -Subunit	II.	Clamp opener
C.	$\gamma$ -Subunit	III.	Polymerization activity
D.	$\delta$ -Subunit	IV.	clamp loader

Choose the correct answer from the options given below:

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

Options :

68634081137. 1  
 68634081138. 2  
 68634081139. 3  
 68634081140. 4

Question Number : 85 Question Id : 68634020538 Question Type : MCQ Option Shuffling : No 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 का सूची II से मिलान कीजिए

DNA Pol III का उपघटक सूची I		उपघटकों के कार्य सूची II	
A.	$\alpha$ - उप इकाई	I.	3'→5' प्रूफरीडिंग एक्सो न्यूक्लिएज
B.	$\epsilon$ - उप इकाई	II.	क्लैप ओपनर
C.	$\gamma$ - उप इकाई	III.	बहुलकीकरण गतिविधि
D.	$\delta$ - उप इकाई	IV.	क्लैप लोडर

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

Options :

68634081137. 1  
 68634081138. 2  
 68634081139. 3  
 68634081140. 4

Question Number : 86 Question Id : 68634020539 Question Type : MCQ Option Shuffling : No 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 two dimensional material of length  $l$  and width  $w$  is subjected to a constant magnetic field  $\vec{B}$  applied perpendicular to it. The number of charge carriers/ area may be expressed as  $n = \frac{k|q|\vec{B}}{2\pi\hbar}$ , where  $q$  is the charge density and  $K$  is a positive real number. The Hall resistivity is:

1.  $\frac{2\pi\hbar k}{q^2} \sqrt{l/w}$

2.  $\frac{2\pi\hbar}{k q^2} \sqrt{w/l}$

3.  $\frac{2\pi\hbar}{k q^2}$

4.  $\frac{2\pi\hbar k}{q^2}$

Options :

- 68634081141. 1
- 68634081142. 2
- 68634081143. 3
- 68634081144. 4

Question Number : 86 Question Id : 68634020539 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 4 Wrong Marks : 1

लम्बाई  $l$  एवं चौड़ाई  $w$  का एक द्विदिमय पदार्थ लम्बवत एक स्थिर चुम्बकीय क्षेत्र  $\vec{B}$  के अधीन है। आवेश वाहक/ क्षेत्रफल की संख्या को निरूपित कर सकते हैं,  $n = \frac{k|q|\vec{B}}{2\pi\hbar}$ , जहाँ  $q$  आवेश घनत्व और  $K$  एक घनात्मक वास्तविक संख्या है। हॉल प्रतिरोधकता ये हैं :

1.  $\frac{2\pi\hbar k}{q^2} \sqrt{l/w}$

2.  $\frac{2\pi\hbar}{k q^2} \sqrt{w/l}$

3.  $\frac{2\pi\hbar}{k q^2}$

4.  $\frac{2\pi\hbar k}{q^2}$

Options :

- 68634081141. 1

68634081142. 2  
68634081143. 3  
68634081144. 4

**Question Number : 87 Question Id : 68634020540 Question Type : MCQ Option Shuffling : No 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 number of paramagnetic species from the following is  $\text{CO}$ ,  $\text{O}_2^+$ ,  $\text{O}_2^-$ ,  $\text{NO}^+$ ,  $\text{O}_2^{2+}$ ,  $\text{C}_2^+$

1. Six
2. Three
3. Four
4. Seven

**Options :**

68634081145. 1  
68634081146. 2  
68634081147. 3  
68634081148. 4

**Question Number : 87 Question Id : 68634020540 Question Type : MCQ Option Shuffling : No 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 अनुचुम्बकीय स्पीशीज़ की कुल संख्या है:  $\text{CO}$ ,  $\text{O}_2^+$ ,  $\text{O}_2^-$ ,  $\text{NO}^+$ ,  $\text{O}_2^{2+}$ ,  $\text{C}_2^+$

1. छः
2. तीन
3. चार
4. सात

**Options :**

68634081145. 1  
68634081146. 2  
68634081147. 3  
68634081148. 4

**Question Number : 88 Question Id : 68634020541 Question Type : MCQ Option Shuffling : No 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 one of the following hormone is not produced in the ovaries:

1. Progesterone
2. Estrogen
3. Testosterone
4. Inhibin

**Options :**

68634081149. 1  
68634081150. 2  
68634081151. 3  
68634081152. 4

**Question Number : 88 Question Id : 68634020541 Question Type : MCQ Option Shuffling : No 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 कौन-सा हार्मोन अंडाशय में उत्पन्न नहीं होता है?

1. प्रोजेस्टेरोन
2. एस्ट्रोजन
3. टेस्टोस्टेरोन
4. इनहिबिन

**Options :**

68634081149. 1  
68634081150. 2  
68634081151. 3  
68634081152. 4

**Question Number : 89 Question Id : 68634020542 Question Type : MCQ Option Shuffling : No 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 Material		LIST II Band gap energy	
A.	Copper	I.	1.1 eV
B.	Silicon	II.	0.7eV
C.	Diamond	III.	0
D.	Germanium	IV.	6 eV

Choose the correct answer from the options given below:

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

**Options :**

68634081153. 1  
68634081154. 2  
68634081155. 3  
68634081156. 4

**Question Number : 89 Question Id : 68634020542 Question Type : MCQ Option Shuffling : No 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 का सूची II से मिलान कीजिए

सूची I पदार्थ		LIST II बैंड गैप उर्जा	
A.	ताँबा	I.	1.1 eV
B.	सिलिकॉन	II.	0.7eV
C.	हीरा	III.	0
D.	जर्मेनियम	IV.	6 eV

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

**Options :**

68634081153. 1  
68634081154. 2  
68634081155. 3  
68634081156. 4

**Question Number : 90 Question Id : 68634020543 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Incorrect order/s from the following is/are;

- A.  $\text{HF} < \text{HCl} < \text{HI}$ : Acidic strength
- B.  $\text{HF} > \text{HCl} > \text{HI}$ : Thermal stability
- C.  $\text{HF} > \text{HCl} > \text{HBr} > \text{HI}$ : Boiling point
- D.  $\text{HF} > \text{HCl} > \text{HBr} > \text{HI}$ : Bond dissociation energy

Choose the most appropriate answer from the options given below:

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

**Options :**

- 68634081157. 1
- 68634081158. 2
- 68634081159. 3
- 68634081160. 4

**Question Number : 90 Question Id : 68634020543 Question Type : MCQ Option Shuffling : No 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 गलत क्रम है/ हैं:

- A.  $\text{HF} < \text{HCl} < \text{HI}$ : अम्लीय सामर्थ्य
- B.  $\text{HF} > \text{HCl} > \text{HI}$ : उष्मीय स्थायित्व
- C.  $\text{HF} > \text{HCl} > \text{HBr} > \text{HI}$ : क्वथनांक
- D.  $\text{HF} > \text{HCl} > \text{HBr} > \text{HI}$ : आबन्ध नियोजन उर्जा

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

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

**Options :**

- 68634081157. 1
- 68634081158. 2
- 68634081159. 3
- 68634081160. 4

**Question Number : 91 Question Id : 68634020544 Question Type : MCQ Option Shuffling : No 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 Immunoglobulins		LIST II Character	
A.	I <sub>g</sub> G	I.	first antibody to be formed in new born animal or human
B.	I <sub>g</sub> A	II.	Interact with antigen and release inflammatory mast cell products serotonin and histamine
C.	I <sub>g</sub> M	III.	Capable of crossing placenta
D.	I <sub>g</sub> E	IV.	Present in high concentrations in blood, saliva, tears and GIT secretions

Choose the correct answer from the options given below:

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

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

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

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

**Options :**

68634081161. 1

68634081162. 2

68634081163. 3

68634081164. 4

**Question Number : 91 Question Id : 68634020544 Question Type : MCQ Option Shuffling : No 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 का सूची II से मिलान कीजिए

सूची I इम्यूनो ग्लोब्युलिन प्रतिरक्षाग्लोब्युलिन		सूची II लक्षण	
A.	I <sub>g</sub> G	I.	नवजात जानवरों एवं इंसानों में बनने वाला प्रथम एंटीबॉडी
B.	I <sub>g</sub> A	II.	एंटीजन से क्रिया करता है एवं इनफ्लैमेटरी मास्ट कोशिका उत्पाद सेरोटोनिन एवं हिस्टामाइन निर्मुक करता है
C.	I <sub>g</sub> M	III.	प्लेसेंटा को पार करने में सक्षम
D.	I <sub>g</sub> E	IV.	रुधिर, लार, आँसू एवं GIT स्ताव में उच्च सान्द्रता में पाया जाता है

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

**Options :**

68634081161. 1
68634081162. 2
68634081163. 3
68634081164. 4

**Question Number : 92 Question Id : 68634020545 Question Type : MCQ Option Shuffling : No 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 for the plane that intercepts the  $\vec{a}$ ,  $\vec{b}$  &  $\vec{c}$  axis at (3a, 3b, 2c) are:

1. (2 1 0)
2. (1 2 1)
3. (2 2 3)
4. (2 3 3)

**Options :**

68634081165. 1
68634081166. 2
68634081167. 3
68634081168. 4

**Question Number : 92 Question Id : 68634020545 Question Type : MCQ Option Shuffling : No 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 तल जो  $\vec{a}$ ,  $\vec{b}$  &  $\vec{c}$  अक्ष को (3a, 3b, 2c) पर अंतः खंडित करता है उसका सूचकांक है:

1. (2 1 0)
2. (1 2 1)
3. (2 2 3)
4. (2 3 3)

**Options :**

68634081165. 1  
68634081166. 2  
68634081167. 3  
68634081168. 4

**Question Number : 93 Question Id : 68634020546 Question Type : MCQ Option Shuffling : No 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 least basic compound from the following is:

1.  $\text{NCl}_3$
2.  $\text{NBr}_3$
3.  $\text{NF}_3$
4.  $\text{NI}_3$

**Options :**

68634081169. 1  
68634081170. 2  
68634081171. 3  
68634081172. 4

**Question Number : 93 Question Id : 68634020546 Question Type : MCQ Option Shuffling : No 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 न्यूनतम क्षरीय यौगिक है:

1.  $\text{NCl}_3$
2.  $\text{NBr}_3$
3.  $\text{NF}_3$
4.  $\text{NI}_3$

**Options :**

68634081169. 1  
68634081170. 2  
68634081171. 3  
68634081172. 4

**Question Number : 94 Question Id : 68634020547 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 4 Wrong Marks : 1**

Cardiac output is:

1. Volume of the blood pumped out by each ventricle per minute
2. Volume of the blood contained in the entire heart
3. Volume of the blood pumped out by each ventricle during one beat
4. Volume of the deoxygenated blood pumped by heart

**Options :**

- 68634081173. 1
- 68634081174. 2
- 68634081175. 3
- 68634081176. 4

**Question Number : 94 Question Id : 68634020547 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

हृदयी निर्गम (Cardiac output) है:

1. प्रत्येक निलय द्वारा प्रति मिनट बाहर निकाले गए रक्त का आयतन
2. संपूर्ण हृदय में मौजूद रक्त का आयतन
3. एक स्पंद मे प्रत्येक निलय द्वारा बाहर निकाला गया रक्त का आयतन
4. हृदय द्वारा पंप किए गए विऑक्सीजनित रक्त का आयतन

**Options :**

- 68634081173. 1
- 68634081174. 2
- 68634081175. 3
- 68634081176. 4

**Question Number : 95 Question Id : 68634020548 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

Relative to the original photon, the photon that emerges from a collision with an electron has:

1. More frequency
2. More wavelength
3. More energy
4. More velocity

**Options :**

- 68634081177. 1
- 68634081178. 2

68634081179. 3

68634081180. 4

**Question Number : 95 Question Id : 68634020548 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4 Wrong Marks : 1**

मूल फोटॉन के सापेक्ष में, वह फोटॉन जो एक इलेक्ट्रॉन के संघट्ट से उदभूत हो रहा है, उसके पास है:

1. अधिक आवृत्ति
2. अधिक तरंगदैर्घ्य
3. अधिक उर्जा
4. अधिक वेग

**Options :**

68634081177. 1

68634081178. 2

68634081179. 3

68634081180. 4

**Question Number : 96 Question Id : 68634020549 Question Type : MCQ Option Shuffling : No 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 Quantity		LIST II Dimensions	
A.	Specific heat capacity	I.	$[L^2A]$
B.	Magnetic dipole moment	II.	$[ML^2T^{-1}]$
C.	Stefan constant	III.	$[L^2T^{-2}K^{-1}]$
D.	Planck constant	IV.	$[MT^{-3}K^{-4}]$

Choose the correct answer from the options given below:

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

**Options :**

68634081181. 1

68634081182. 2

68634081183. 3

68634081184. 4

**Question Number : 96 Question Id : 68634020549 Question Type : MCQ Option Shuffling : No 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 का सूची II से मिलान कीजिए

सूची I मात्रा		सूची II विमाएँ	
A.	विशिष्ट उष्माधारिता	I.	$[L^2A]$
B.	चुम्बकीय द्विग्रुव आघूर्ण	II.	$[ML^2T^{-1}]$
C.	स्टीफन स्थिरांक	III.	$[L^2T^{-2}K^{-1}]$
D.	प्लांक स्थिरांक	IV.	$[MT^{-3}K^{-4}]$

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

**Options :**

68634081181. 1  
68634081182. 2  
68634081183. 3  
68634081184. 4

**Question Number : 97 Question Id : 68634020550 Question Type : MCQ Option Shuffling : No 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 Compounds		LIST II Hybridization	
A.	$BrF_3$	I.	sp
B.	$BeCl_2$	II.	$sp^2$
C.	$NCl_3$	III.	$sp^3d$
D.	$BF_3$	IV.	$sp^3$

Choose the correct answer from the options given below:

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

**Options :**

68634081185. 1  
68634081186. 2  
68634081187. 3  
68634081188. 4

Question Number : 97 Question Id : 68634020550 Question Type : MCQ Option Shuffling : No 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 का सूची II से मिलान कीजिए

सूची I यौगिक		सूची II संकरण	
A.	$\text{BrF}_3$	I.	$sp$
B.	$\text{BeCl}_2$	II.	$sp^2$
C.	$\text{NCl}_3$	III.	$sp^3d$
D.	$\text{BF}_3$	IV.	$sp^3$

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

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

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

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

Options :

68634081185. 1

68634081186. 2

68634081187. 3

68634081188. 4

Question Number : 98 Question Id : 68634020551 Question Type : MCQ Option Shuffling : No 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 Atomic number		LIST II Position in periodic table	
A.	37	I.	f-block
B.	42	II.	p-block
C.	53	III.	s-block
D.	59	IV.	d-block

Choose the correct answer from the options given below:

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

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

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

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

Options :

68634081189. 1

68634081190. 2

68634081191. 3

Question Number : 98 Question Id : 68634020551 Question Type : MCQ Option Shuffling : No 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 का सूची II से मिलान कीजिए

सूची I परमाणु क्रमांक		सूची II आवर्त सारणी में स्थान	
A.	37	I.	f-ब्लॉक
B.	42	II.	p-ब्लॉक
C.	53	III.	s-ब्लॉक
D.	59	IV.	d-ब्लॉक

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

Options :

68634081189. 1  
68634081190. 2  
68634081191. 3  
68634081192. 4

Question Number : 99 Question Id : 68634020552 Question Type : MCQ Option Shuffling : No 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 Clotting factor		LIST II Source	
A.	Factor I Fibrinogen	I.	Damaged tissues and activated platelets
B.	Factor III tissue factor thromboplastin	II.	Liver
C.	Factor IV calcium ions ( $Ca^{2+}$ )	III.	Liver and platelets
D.	Factor XIII fibrin stabilizing factor	IV.	Diet, bones and platelets

Choose the correct answer from the options given below:

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

Options :

68634081193. 1  
68634081194. 2



68634081195. 3  
68634081196. 4

**Question Number : 99 Question Id : 68634020552 Question Type : MCQ Option Shuffling : No 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 का सूची II से मिलान कीजिए

सूची I		सूची II	
स्कंदन कारक		स्तोत	
A.	कारक I फाइब्रिनोजन	I.	क्षतिग्रस्त उत्तक एवं सक्रिय प्लेटलेट्स (लघु पट्टिका)
B.	कारक III उत्तक कारक थ्रम्बोप्लास्टिन	II.	लिवर (यकृत)
C.	कारक IV कैल्शियम आयन ( $Ca^{2+}$ )	III.	लिवर एवं प्लेटलेट्स
D.	कारक XIII फाइब्रिन स्थायीकरी कारक	IV.	आहार, अस्थि एवं प्लेटलेट्स

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

**Options :**

68634081193. 1  
68634081194. 2  
68634081195. 3  
68634081196. 4

**Question Number : 100 Question Id : 68634020553 Question Type : MCQ Option Shuffling : No 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.	Starch	I.	Extra cellular adhesive in bacteria
B.	Glycogen	II.	Gives strength to exoskeleton
C.	Chitin	III.	Energy storage in plants
D.	Dextran	IV.	Energy storage in animals and bacteria

Choose the correct answer from the options given below:

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

**Options :**

68634081197. 1

68634081198. 2

68634081199. 3

68634081200. 4

**Question Number : 100 Question Id : 68634020553 Question Type : MCQ Option Shuffling : No 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 का सूची II से मिलान कीजिए

सूची I		सूची II	
A.	स्टार्च	I.	बैक्टीरिया में बाह्य कोशिकीय चिपकने वाला पदार्थ
B.	ग्लाइकोजन	II.	बाह्य कंकाल को मजबूती प्रदान करता है
C.	काइटिन	III.	पौधों में उर्जा संचयन
D.	डेक्सट्रान	IV.	जन्तुओं एवं बैक्टीरिया में उर्जा संचयन

निम्नलिखित विकल्पों में से सही उत्तर का चयन कीजिए :

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

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

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

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

**Options :**

68634081197. 1

68634081198. 2

68634081199. 3

68634081200. 4