

# Telangana State Council Higher Education

## Notations :

- Options shown in green color and with ✓ icon are correct.
- Options shown in red color and with ✗ icon are incorrect.

<b>Question Paper Name :</b>	Agriculture and Medical English 31st Jul 2022 Shift 1
<b>Subject Name :</b>	Agriculture and Medical (English)
<b>Creation Date :</b>	2022-07-31 15:49:00
<b>Duration :</b>	180
<b>Total Marks :</b>	160
<b>Display Marks:</b>	No
<b>Calculator :</b>	None
<b>Magnifying Glass Required? :</b>	No
<b>Ruler Required? :</b>	No
<b>Eraser Required? :</b>	No
<b>Scratch Pad Required? :</b>	No
<b>Rough Sketch/Notepad Required? :</b>	No
<b>Protractor Required? :</b>	No
<b>Show Watermark on Console? :</b>	Yes
<b>Highlighter :</b>	No
<b>Auto Save on Console?</b>	Yes
<b>Change Font Color :</b>	No
<b>Change Background Color :</b>	No
<b>Change Theme :</b>	No
<b>Help Button :</b>	No
<b>Show Reports :</b>	No

Show Progress Bar :

No

## Agriculture and Medical (English)

**Group Number :** 1  
**Group Id :** 10561513  
**Group Maximum Duration :** 0  
**Group Minimum Duration :** 180  
**Show Attended Group? :** No  
**Edit Attended Group? :** No  
**Break time :** 0  
**Group Marks :** 160  
**Is this Group for Examiner? :** No  
**Examiner permission :** Cant View  
**Show Progress Bar? :** No

## Botany

**Section Id :** 10561540  
**Section Number :** 1  
**Section type :** Online  
**Mandatory or Optional :** Mandatory  
**Number of Questions :** 40  
**Number of Questions to be attempted :** 40  
**Section Marks :** 40  
**Enable Mark as Answered Mark for Review and Clear Response :** Yes  
**Maximum Instruction Time :** 0  
**Sub-Section Number :** 1  
**Sub-Section Id :** 10561540

Question Shuffling Allowed :

Yes

Question Number : 1 Question Id : 1056151921 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Which of the following organism is multicellular?

Options :

1. ✓ *Bacillus*
2. ✘ *Amoeba*
3. ✘ *Yeast*
4. ✘ *Spirogyra*

Question Number : 2 Question Id : 1056151922 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Which of the following structure is found in all prokaryotic cells?

Options :

1. ✘

Mitochondria

Golgi complex

2. ✖

Ribosomes

3. ✔

Lysosomes

4. ✖

**Question Number : 3 Question Id : 1056151923 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Match the following lists:

List I

List II

- |                                      |                                  |
|--------------------------------------|----------------------------------|
| A) Plato                             | I) Developed botany as science   |
| B) Agar                              | II) Medicinal plants             |
| C) <i>Arnica</i> and <i>Withania</i> | III) Phylogenetic classification |
| D) Bessey                            | IV) Inert polysaccharide         |

The correct match is:

**Options :**

1. ✘

A	B	C	D
III	II	I	IV

2. ✘

A	B	C	D
I	III	II	IV

3. ✘

A	B	C	D
I	IV	III	II

4. ✔

A	B	C	D
I	IV	II	III

Question Number : 4 Question Id : 1056151924 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : Algae are primary producers and form the basis of the food cycle for aquatic animals.

Reason (R) : Algae increase dissolved oxygen levels in their vicinity.

The correct option among the following is:

Options :

1. ✘

(A) is true. (R) is true and (R) is the correct explanation for (A)

(A) is true. (R) is true but (R) is not the correct explanation for (A)

2. ✓

(A) is true but (R) is false

3. ✗

(A) is false but (R) is true

4. ✗

**Question Number : 5 Question Id : 1056151925 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Choose the correct statements from the following.

- A) Ramental hairs and open dichotomous venation are found in *Pinus* leaves.
- B) The sorus in Pteridophyta is covered with a membranous sheath called indusium.
- C) In protostele, water conducting tissue is surrounded by phloem.
- D) *Salvinia* produces only one kind of spores.

**Options :**

A, B only

1. ✗

2. ✗

B, D only

B, C only

3. ✓

A, C only

4. ✗

Question Number : 6 Question Id : 1056151926 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Which of the following statements are correct with respect to the inflorescence in *Crotalaria*?

- A) The peduncle shows an indefinite growth.
- B) The peduncle shows a definite growth.
- C) The flowers are borne in an acropetal manner on peduncle.
- D) The flowers are borne in basipetal manner on peduncle.

Options :

A, D only

1. ✗

A, C only

2. ✓

3. ✗

B, C only

B, D only

4. ✖

**Question Number : 7 Question Id : 1056151927 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Identify the type of aestivation in which at least one petal completely overlaps others in a flower

- A) Valvate
- B) Twisted
- C) Imbricate
- D) Vexillary

The correct answer is:

**Options :**

A, B only

1. ✖

B, C only

2. ✖

A, D only

3. ✖

C, D only

4. ✓

**Question Number : 8 Question Id : 1056151928 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Assertion (A) : Sporopollenin is one of the most resistant organic material present in the exine of pollen grains.

Reason (R) : Sporopollenin can withstand high temperatures, strong acids and alkali, and cannot be degraded by any known enzyme.

The correct option among the following is:

**Options :**

1. ✓ (A) is true (R) is true and (R) is the correct explanation for (A)

2. ✗ (A) is true (R) is true but (R) is not the correct explanation for (A)

3. ✗ (A) is true but (R) is false

4. ✗ (A) is false but (R) is true

**Question Number : 9 Question Id : 1056151929 Question Type : MCQ Option Shuffling : Yes**

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Find the correct character related to double fertilization of Angiosperms.

- A) Male gametic nucleus fuses with egg cell.
- B) Male gametic nucleus fuses with antipodal cells.
- C) Male gamete fuses with synergids.
- D) Male gamete helps in the formation of primary endosperm cell.

Options :

1. ✘ A, B only

2. ✔ A, D only

3. ✘ A, C only

4. ✘ C, D only

Question Number : 10 Question Id : 1056151930 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Find the correct sequence of arrangement of the flower characters in the floral diagram from the posterior to the centre.

Options :

A dot or circle, corolla, calyx, gynoecium and androecium

1. ✘

Bract, calyx, corolla, androecium and gynoecium

2. ✔

Bract, corolla, calyx, number of anther lobes and number of locules in placenta

3. ✘

A dot, a circle, calyx, corolla, placentation and number of stamens

4. ✘

Question Number : 11 Question Id : 1056151931 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the plant showing following list of characters.

- A) Tepals
- B) Tendrillar climber
- C) Medicinal value
- D) Hypogynous
- E) Ornamental

Options :

*Gloriosa*

1. ✔

*Smilax*

2. ✖

*Asparagus*

3. ✖

*Colchicum*

4. ✖

Question Number : 12 Question Id : 1056151932 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following lists:

List I		List II	
A)	Leeuwenhoek	I)	Observed different kinds of cells forming the tissues in plants
B)	Robert Brown	II)	Cell wall is the unique character of the plant cell
C)	T. Schwann	III)	New cells are formed from pre-existing cells
D)	M. Schleiden	IV)	First to observe a living cell
E)	Rudolf Virchow	V)	Observed nucleus is a cell

The correct match is:

Options :

1. ✖

A	B	C	D	E
IV	III	V	I	II

A	B	C	D	E
IV	II	V	I	III

2. ✘

A	B	C	D	E
IV	V	II	I	III

3. ✔

A	B	C	D	E
IV	V	I	II	III

4. ✘

**Question Number : 13 Question Id : 1056151933 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Assertion (A) : Growth in the primary wall of a young plant cell gradually diminishes as the cell matures.

Reason (R) : Secondary wall is formed on the outer side of the cell.

The correct option among the following is:

**Options :**

1. ✘

(A) is true. (R) is true and (R) is the correct explanation for (A)

(A) is true. (R) is true but (R) is not the correct explanation for (A)

2. ✘

(A) is true but (R) is false

3. ✔

(A) is false but (R) is true

4. ✘

**Question Number : 14 Question Id : 1056151934 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Assertion (A) : Cytoskeleton in eukaryotic cells is made up of a network of filamentous lipids and polysaccharide structure.

Reason (R) : Cytoskeleton is composed of microfilaments, intermediate filaments and microtubules.

The correct option among the following is

**Options :**

(A) is true. (R) is true and (R) is the correct explanation for (A)

1. ✘

2. ✘

(A) is true. (R) is true but (R) is not the correct explanation for (A)

(A) is true but (R) is false

3. ✘

(A) is false but (R) is true

4. ✔

**Question Number : 15 Question Id : 1056151935 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Identify correct statements from the following:

- A) Cotton threads are made up of polymers of amino acids.
- B) Like Glucosamine, amino sugars are complex polysaccharides.
- C) Hormones are not always functional proteins.
- D) Acid soluble pellet from cytoplasm will have polysaccharides.

**Options :**

A, C only

1. ✘

B, D only

2. ✘

B, C only

3. ✔

C, D only

4. ✘

Question Number : 16 Question Id : 1056151936 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : In DNA double helix, one full turn of helical strand contains twelve base pairs.

Reason (R) : The pitch of DNA helix is  $34^\circ$  A.

The correct option among the following is:

Options :

(A) is true, (R) is true and (R) is the correct explanation for (A)

1. ✘

(A) is true, (R) is true but (R) is not the correct explanation for (A)

2. ✘

(A) is true but (R) is false

3. ✘

(A) is false but (R) is true

4. ✔

Question Number : 17 Question Id : 1056151937 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
 Correct Marks : 1 Wrong Marks : 0

Match the following lists:

List - I		List - II	
A)	Separation of homologous chromosomes	I)	Telophase
B)	Initiation of chromosomal pairing	II)	Kinetochores
C)	Chromosomal clustering at opposite spindle poles	III)	Anaphase - I
D)	Disc shaped part of centromere	IV)	Synapsis

The correct match is:

Options :

1. ✘  

A	B	C	D
I	III	II	IV

2. ✔  

A	B	C	D
III	IV	I	II

3. ✘  

A	B	C	D
III	I	IV	II

4. ✘  

A	B	C	D
II	I	IV	III

Question Number : 18 Question Id : 1056151938 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

In which of the following plant materials, polyarch condition of xylem can be observed in a transverse section?

Options :

1. ✘ Monocotyledonous stem

2. ✔ Monocotyledonous root

3. ✘ Dicotyledonous stem

4. ✘ Dicotyledonous root

Question Number : 19 Question Id : 1056151939 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Assertion (A) : The growth of cultivated crops is good in mesophytic condition.

Reason (R) : An unbalanced condition of water and gases exists in soil where water is abundant or scarce.

The correct option among the following is:

**Options :**

(A) is true, (R) is true and (R) is the correct explanation for (A)

1. ✘

(A) is true, (R) is true but (R) is not the correct explanation for (A)

2. ✔

(A) is true but (R) is false

3. ✘

(A) is false but (R) is true

4. ✘

**Question Number : 20 Question Id : 1056151940 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Assertion (A) : Xerophytes possess modified plant organs to minimize water loss due to transpiration.

Reason (R) : Plants that grow under water deficit conditions develop fleshy plant parts and reduced leaves.

The correct option among the following is:

**Options :**

1. ✓ (A) is true. (R) is true and (R) is the correct explanation for (A)
2. ✘ (A) is true. (R) is true but (R) is not the correct explanation for (A)
3. ✘ (A) is true but (R) is false
4. ✘ (A) is false but (R) is true

**Question Number : 21 Question Id : 1056151941 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Match the following lists:

List –I	List –II	List –III
A) NADP	I) Prosthetic group	i) Enzyme's globular structure changes
B) Peroxidase	II) Coenzyme	ii) Bonds with enzyme and substrate
C) Cu	III) Cofactor	iii) Transient association with apoenzyme
D) Zn	IV) Noncompetitive inhibitor	iv) Tightly bound to apoenzyme

The correct match is:

Options :

1. ✓

A	B	C	D
II, iii	I, iv	IV, i	III, ii

2. ✗

A	B	C	D
III, iii	II, ii	IV, iv	I, i

3. ✗

A	B	C	D
II, iii	I, iv	III, ii	IV, i

4. ✗

A	B	C	D
III, ii	I, iv	IV, i	II, iii

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following events occur during release of  $O_2$  while synthesizing  $(CH_2O)_6$  in green plants?

- A) Disassociation of  $H_2O$  in the lumen of thylakoid.
- B)  $O_2$  is released in association with PSI.
- C) PSII is associated with water to release electrons.
- D) A coenzyme is reduced in association with photosystem I

The correct answer is :

Options :

1. ✘ A, B, C only

2. ✘ B, C only

3. ✔ C, D only

4. ✘ A, B, D only

Question Number : 23 Question Id : 1056151943 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How several molecules of ATP are generated during photosynthesis?

- A) Due to conformation changes that occur in  $F_0$  particle of ATPase through diffusion of protons.
- B) By the movement of protons to stroma through the transmembrane channel of  $F_1$  of ATPase.
- C) By breakdown of proton gradient.
- D) By the organization of ATPase when  $F_0$  of ATPase is embedded in the flattened membrane sacs of chloroplast.

The correct answer is :

**Options :**

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

**Question Number : 24 Question Id : 1056151944 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

How many ATP and NADPH molecules are required for fixation of 12 CO<sub>2</sub> molecules through Calvin cycle respectively?

Options :

1. ✓ 36, 24

2. ✗ 18, 12

3. ✗ 30, 24

4. ✗ 36, 20

Question Number : 25 Question Id : 1056151945 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : In C<sub>4</sub> plants, photorespiration does not occur.

Reason (R) : It is due to a mechanism that increases the CO<sub>2</sub> concentration at the RuBisCo site in the mesophyll cells, which ensures that the RuBisCo functions predominantly as an oxygenase.

The correct option among the following is

Options :

1. ✗

(A) is true. (R) is true and (R) is the correct explanation for (A)

(A) is true. (R) is true but (R) is not the correct explanation for (A)

2. ✖

(A) is true but (R) is false

3. ✔

(A) is false but (R) is true

4. ✖

**Question Number : 26 Question Id : 1056151946 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

What is the ratio of total ATP molecules formed to net ATP molecules in oxidation of a glucose molecule through glycolytic pathway?

**Options :**

2: 1

1. ✔

1: 2

2. ✖

3: 1

3. ✖

1: 3

4. ✘

Question Number : 27 Question Id : 1056151947 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : Complex V consists of two major components  $F_1$  and  $F_0$ , which are useful to the production of ATP.

Reason (R) : The  $F_0$  is a peripheral membrane protein and  $F_1$  is integral membrane protein complex forms a channel.

The correct option among the following is

Options :

(A) is true. (R) is true and (R) is the correct explanation for (A)

1. ✘

(A) is true. (R) is true but (R) is not the correct explanation for (A)

2. ✘

(A) is true but (R) is false

3. ✔

(A) is false but (R) is true

4. ✘

Question Number : 28 Question Id : 1056151948 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

In which form the proteins and fats are utilized into the respiratory pathway?

- A) Proteins after deamination, as amino acids
- B) Fats into fatty acids and glycerol
- C) Fatty acids as acetyl CoA
- D) Glycerol converted into phosphoglyceraldehyde
- E) Dihydroxyacetone as glyceraldehyde, 3 -phosphate

Options :

A, B, C only

1. ✘

A, C, D only

2. ✔

A, C, E only

3. ✘

B, D, E only

4. ✘

Question Number : 29 Question Id : 1056151949 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Match the following lists:

List I

List II

- |    |                                |      |                 |
|----|--------------------------------|------|-----------------|
| A) | Delay in nutrient mobilization | I)   | Abscisic acid   |
| B) | Promoting root hair formation  | II)  | GA <sub>3</sub> |
| C) | Antagonistic to GAs            | III) | Ethylene        |
| D) | Derivatives of terpenes        | IV)  | Cytokinins      |

The correct match is:

Options :

1. ✘

A	B	C	D
III	I	II	IV

2. ✔

A	B	C	D
IV	III	I	II

3. ✘

A	B	C	D
II	III	I	IV

4. ✘

A	B	C	D
IV	I	II	III

**Correct Marks : 1 Wrong Marks : 0**

Identify the correct statements regarding Mendelian genetics from the following.

- A)  $F_1$  always resembled either of the parents.
- B) Recessive character is expressed in heterozygous state.
- C) Genes coding for a pair of contrasting characters are called alleles.
- D) The alleles of the parental pair freely separate from each other during gametogenesis.

**Options :**

A, B, C only

1. ✘

B, C, D only

2. ✘

A, B, D only

3. ✘

A, C, D only

4. ✔

**Question Number : 31 Question Id : 1056151951 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Which type of mutation in DNA responsible for sickle cell anaemia?

**Options :**

frame shift mutation

1. ✘

point mutation

2. ✔

chromosomal aberrations

3. ✘

gene duplication

4. ✘

Question Number : 32 Question Id : 1056151952 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Why RNA viruses mutate at faster rate than DNA viruses?

Options :

Presence of complementary strand in RNA

1. ✘

Absence of complementary strand in DNA

2. ✘

Presence of 2' – OH group in each nucleotide of DNA

3. ✘

## Catalytic function of RNA

4. ✓

Question Number : 33 Question Id : 1056151953 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following lists:

List I		List II	
A)	<i>E. coli</i> has	I)	$6.6 \times 10^9$ bp
B)	Diploid human cell has	II)	3'–5' polarity
C)	DNA dependent RNA polymerase catalyse in	III)	$4.6 \times 10^6$ bp
D)	The continuous replication is with	IV)	5'–3' direction

The correct match is:

Options :

A	B	C	D
III	I	IV	II

1. ✓

A	B	C	D
III	IV	II	I

2. ✗

3. ✗

A	B	C	D
II	III	IV	I

A	B	C	D
I	III	II	IV

4. ✘

**Question Number : 34 Question Id : 1056151954 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

In a homopolymer of uracil chain of m RNA, after 14<sup>th</sup> nucleotide a cytosine nucleotide was added. What will be the change in amino acid sequence?

**Options :**

1. ✓ No change

2. ✘ Leucine will be coded

3. ✘ Serine will be coded

4. ✘ Methionine will be coded

Question Number : 35 Question Id : 1056151955 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
 Correct Marks : 1 Wrong Marks : 0

Match the following lists:

List –I

List –II

- |                             |   |
|-----------------------------|---|
| A) Retroviruses             | I) A type of cloning vector                         |
| B) Disarmed pathogen vector | II) Used to transfer genes to animals               |
| C) Cosmids                  | III) Used to transfer genes to plants               |
| D) Colony hybridisation     | IV) Small specific gene probe +radioactive molecule |
|                             | V) Used in gene- gun method                         |

The correct match is:

Options :

1. ✘

A	B	C	D
IV	V	I	III

2. ✘

A	B	C	D
III	V	I	IV

3. ✘

A	B	C	D
I	IV	II	V

A	B	C	D
II	V	I	IV

4. ✓

Question Number : 36 Question Id : 1056151956 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements are true regarding cloning vectors?

- A) PUC 19 is a natural plasmid.
- B) Doubling of an alien piece of DNA can be made by inserting it in a plasmid DNA.
- C) DNA of a bacteriophage can not be used as a cloning vector.
- D) Bacteriophages can replicate within the bacterial cells.

Options :

A, B only

1. ✘

A, D only

2. ✘

A, C only

3. ✘

B, D only

4. ✓

**Question Number : 37 Question Id : 1056151957 Question Type : MCQ Option Shuffling : Yes**  
**Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time**  
**: N.A Think Time : N.A Minimum Instruction Time : 0**  
**Correct Marks : 1 Wrong Marks : 0**

Assertion (A) : The ampicillin resistant gene is a selectable marker in selection of transformed host cells.

Reason (R) : Cells without ampicillin resistant gene will die on agar plates containing ampicillin.

The correct option among the following is:

**Options :**

(A) is true. (R) is true and (R) is the correct explanation for (A)

1. ✓

(A) is true. (R) is true but (R) is not the correct explanation for (A)

2. ✘

(A) is true but (R) is false

3. ✘

(A) is false but (R) is true

4. ✘

**Question Number : 38 Question Id : 1056151958 Question Type : MCQ Option Shuffling : Yes**  
**Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time**  
**: N.A Think Time : N.A Minimum Instruction Time : 0**  
**Correct Marks : 1 Wrong Marks : 0**

Match the following:

List I		List II	
A)	Taipei	I)	Bruise resistant
B)	Roundup ready	II)	Cotton boll worms
C)	Flavr Savr	III)	Rich in vitamin- A
D)	Bt -cotton	IV)	Herbicide tolerant

The correct match is:

Options :

1. ✓  

A	B	C	D
III	IV	I	II

2. ✗  

A	B	C	D
III	I	IV	II

3. ✗  

A	B	C	D
III	II	I	IV

4. ✗  

A	B	C	D
II	I	III	IV

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : LAB grows in milk and converts into curd.

Reason (R) : LAB produce antibiotics that coagulate and digest the milk proteins also.

The correct option among the following is:

**Options :**

(A) is true. (R) is true and (R) is the correct explanation for (A)

1. ✘

(A) is true. (R) is true but (R) is not the correct explanation for (A)

2. ✘

(A) is true but (R) is false

3. ✔

(A) is false but (R) is true

4. ✘

Question Number : 40 Question Id : 1056151960 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the correct combination from the following:

**Options :**

*Nostoc* ——— Autotrophic ——— Fixes atmospheric  $N_2$

1. ✓

*Glomus* ——— Free living ——— Increases plant growth

2. ✘

*Azotobacter* ——— Symbiont ——— Biofertilizer

3. ✘

*Oscillatoria* ——— Symbiont ——— Facilitates 'P' absorption by plants

4. ✘

## Zoology

<b>Section Id :</b>	10561541
<b>Section Number :</b>	2
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	40
<b>Number of Questions to be attempted :</b>	40
<b>Section Marks :</b>	40
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	10561541

Question Shuffling Allowed :

Yes

Question Number : 41 Question Id : 1056151961 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Rearing of honey bees is

Options :

1. ✘ Sericulture

2. ✘ Vermiculture

3. ✘ Aquaculture

4. ✔ Apiculture

Question Number : 42 Question Id : 1056151962 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : Species is dynamic.

Reason (R) : Species are in a continuous process of adapting to the conditions of their surrounding environments.

The correct option among the following is

**Options :**

1. ✓ (A) is true, (R) is true and (R) is the correct explanation for (A)
2. ✘ (A) is true, (R) is true but (R) is not the correct explanation for (A)
3. ✘ (A) is true but (R) is false
4. ✘ (A) is false but (R) is true

**Question Number : 43 Question Id : 1056151963 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Match the following :

List -I

List -II

- |                         |   |
|-------------------------|---|
| A) Species diversity    | I) Pollination                            |
| B) Genetic diversity    | II) Passenger pigeon                      |
| C) Broadly utilitarian  | III) Amphibian diversity in western ghats |
| D) Narrowly utilitarian | IV) Medicinal plants                      |
| E) Over- exploitation   | V) Advantage for survival                 |

The correct match is

Options :

1. ✘

A	B	C	D	E
V	III	I	IV	II

2. ✘

A	B	C	D	E
III	V	IV	I	II

3. ✘

A	B	C	D	E
V	III	IV	I	II

4. ✔

A	B	C	D	E
III	V	I	IV	II

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The symmetry of *Aurelia* is

Options :

1. ✘ Spherical

2. ✔ Radial

3. ✘ Biradial

4. ✘ Bilateral

Question Number : 45 Question Id : 1056151965 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Study the following statements and pick up the incorrect statements.

- I) The animals with radial symmetry are sessile, planktonic or sluggish.
- II) Platyhelminths are acoelomates.
- III) Persistent blastocoel becomes coelom in coelomates.
- IV) Molluscs are enterocoelomates.

Options :

1. ✘

I, III only

2. ✘ II, IV only

3. ✘ I, II only

4. ✔ III, IV only

**Question Number : 46 Question Id : 1056151966 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Match the following :

Leucocyte	Number
A) Eosinophils	I) 5.3 %
B) Monocytes	II) 30%
C) Basophils	III) 2.3%
D) Lymphocytes	IV) 62%
	V) 0.4%

The correct match is

**Options :**

1. ✘

A	B	C	D
III	I	IV	II

2. ✖

A	B	C	D
II	V	III	I

3. ✖

A	B	C	D
IV	I	II	III

4. ✔

A	B	C	D
III	I	V	II

**Question Number : 47 Question Id : 1056151967 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Study the following statements regarding nervous tissue. Identify the correct statements:

- I) Oligodendrocytes form neurilemma around axons in central nervous system.
- II) Microglial cells are phagocytic cells.
- III) Astrocytes bind neurons with muscles.
- IV) Ependymal cells line the cavities of brain.

Choose the correct option from the following:

**Options :**

1. ✘ I, III only

2. ✘ II, III only

3. ✘ III, IV only

4. ✔ II, IV only

Question Number : 48 Question Id : 1056151968 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Read the following statements and find out incorrect ones.

- I) Larvae of sponges morphologically different from adults.
- II) Comb plates help in locomotion and food collection.
- III) *Adamsia* is sessile and cylindrical form.
- IV) *Hydra* exhibits polymorphism.

Options :

1. ✘ I, II only

2. ✘ II, III only

3. ✘

I, III only

II, IV only

4. ✓

Question Number : 49 Question Id : 1056151969 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Study the following statements and pick up the incorrect one.

Options :

1. ✗ Primary function of flame cells of flat worms is osmoregulation

2. ✗ Amphids are the sense organs of round worms

3. ✗ Body cavity of hirudineans is filled with botryoidal tissue

4. ✓ In *Pheretima* blood glands are present in 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> segments

Question Number : 50 Question Id : 1056151970 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The stomach of the animals of this class contains a crystalline style

Options :

1. ✘ Scaphopoda

2. ✔ Pelecypoda

3. ✘ Cephalopoda

4. ✘ Gastropoda

Question Number : 51 Question Id : 1056151971 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : In adult ascidians notochord is absent.

Reason (R) : Retrogressive metamorphosis.

The correct option among the following is

Options :

1. ✔ (A) is true, (R) is true and (R) is the correct explanation for (A)

2. ✘

(A) is true, (R) is true but (R) is not the correct explanation for (A)

(A) is true but (R) is false

3. ✘

(A) is false but (R) is true

4. ✘

**Question Number : 52 Question Id : 1056151972 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Study the following and pick up the correct combinations.

S. No	Scientific name	Common Name	Character
I)	<i>Hippocampus</i>	Sea horse	Female has a brood pouch
II)	<i>Trigon</i>	Sting ray	Possesses poison sting
III)	<i>Torpedo</i>	Electric ray	Ventral muscles modified into electric organs
IV)	<i>Exocoetus</i>	Flying fish	Contains air bladder

**Options :**

I, II

1. ✘

II, IV

2. ✔

3. ✘

I, III

III, IV

4. ✘

Question Number : 53 Question Id : 1056151973 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Given below are the statements regarding frog. Choose the correct statements.

- A) Frog is a carnivore, so the length of alimentary canal is short.
- B) Frog never drinks water but absorbs through skin.
- C) The ureters of frog also act as genital ducts.
- D) Frog is uricotelic animal.

Options :

A, B, C only

1. ✘

A, B only

2. ✔

A, B, D only

3. ✘

A, B, C, D

4. ✘

Question Number : 54 Question Id : 1056151974 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Organism "A" lives as a parasite in the body of an organism "B". "C" is another organism lives as a parasite in the body of "A". Then C is

Options :

1. ✘ Ectoparasite
2. ✘ Digenetic parasite
3. ✔ Hyperparasite
4. ✘ Commensal

Question Number : 55 Question Id : 1056151975 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Transformation of merozoites of *Plasmodium* into gametocytes takes place when the erythrocytes are in

Options :

1. ✘ Liver

2. ✘ Kidney

3. ✔ Bone marrow

4. ✘ Lymph

Question Number : 56 Question Id : 1056151976 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Larvae of *Ascaris* undergo second moulting in

Options :

1. ✘ Inside the egg

2. ✔ Alveoli of lungs of man

3. ✘ Intestine of man

4. ✘ Inside the uterus of parent

Question Number : 57 Question Id : 1056151977 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

*Haemophilus influenzae* causes this disease in human beings

Options :

1.  Pneumonia

2.  Common cold

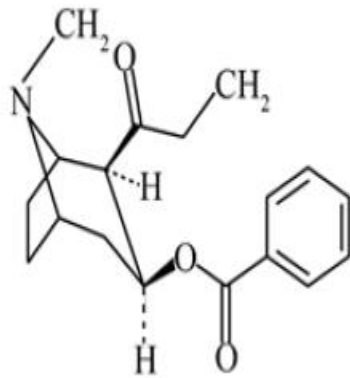
3.  Ring worm

4.  Typhoid

Question Number : 58 Question Id : 1056151978 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the incorrect statement with reference to the given chemical structure.



Options :

Its acetylated form is called smack

1. ✘

It is in white crystalline powder

2. ✘

Its receptors present in cardiovascular system

3. ✔

It is a very effective sedative and pain killer

4. ✘

Question Number : 59 Question Id : 1056151979 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Oriented locomotor movements of an organism towards or away from the direction of light is called

Options :

1. ✓ Phototaxis

2. ✘ Photo kinesis

3. ✘ Phototropism

4. ✘ Photoperiodism

**Question Number : 60 Question Id : 1056151980 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

If four individuals in a laboratory population of 40 fruit flies died during a specified time interval, say a week, the death rate in the population during that period (individuals/per fruit fly /week)

**Options :**

1. ✘ 0.4

2. ✓ 0.1

3. ✘ 10

2.5

4. ✖

Question Number : 61 Question Id : 1056151981 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Assertion (A) : Larynx is a bony box which helps in sound production.

Reason (R) : It contains vocal cords.

The correct option among the following is

Options :

1. ✖ (A) is true, (R) is true and (R) is the correct explanation for (A)

2. ✖ (A) is true, (R) is true but (R) is not the correct explanation for (A)

3. ✖ (A) is true but (R) is false

4. ✔ (A) is false but (R) is true

Question Number : 62 Question Id : 1056151982 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

**Correct Marks : 1 Wrong Marks : 0**

Study the following statements.

- I) The role of oxygen in the regulation of respiratory rhythm is quite significant.
- II) Receptors associated with aortic arch can recognize changes in  $\text{CO}_2$  &  $\text{H}^+$  concentration.
- III) Decrease in concentration of  $\text{O}_2$  cannot activate chemo sensitive area.
- IV) Chemo sensitive area is located near hypothalamus.

Identify the correct statements from the above.

**Options :**

I, II only

1. ✘

II, III only

2. ✔

III, IV only

3. ✘

I, IV only

4. ✘

**Question Number : 63 Question Id : 1056151983 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

The step-2 during blood clotting is :

**Options :**

Conversion of inactive prothrombin into active thrombin

1. ✓

Conversion of inactive thrombin to active prothrombin

2. ✘

Conversion of soluble fibrin into soluble fibrinogen

3. ✘

Conversion of soluble fibrinogen into soluble fibrin

4. ✘

**Question Number : 64 Question Id : 1056151984 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Assertion (A) : The wall of left ventricle is thinner than that of right ventricle.

Reason (R) : Right ventricle pumps the blood to lungs.

The correct option among the following is

**Options :**

(A) is true, (R) is true and (R) is the correct explanation for (A)

1. ✘

(A) is true, (R) is true but (R) is not the correct explanation for (A)

2. ✘

(A) is true but (R) is false

3. ✖

(A) is false but (R) is true

4. ✔

**Question Number : 65 Question Id : 1056151985 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Inner wall of Bowman's capsule of nephron of human kidney is formed by

**Options :**

Cuboidal cells without brush borders

1. ✖

Cuboidal cells with brush borders

2. ✖

Podocytes

3. ✔

Endothelial cells

4. ✖

**Question Number : 66 Question Id : 1056151986 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Assertion (A) : Juxta glomerular cells release an enzyme called renin.

Reason (R) : Fall in glomerular blood pressure.

The correct option among the following is

**Options :**

1. ✓ (A) is true, (R) is true and (R) is the correct explanation for (A)
2. ✗ (A) is true, (R) is true but (R) is not the correct explanation for (A)
3. ✗ (A) is true but (R) is false
4. ✗ (A) is false but (R) is true

**Question Number : 67 Question Id : 1056151987 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Cori cycle occurs between

**Options :**

1. ✗ Liver and kidney

Kidney and muscle

2. ✘

Liver and muscle

3. ✔

Muscle and pancreas

4. ✘

Question Number : 68 Question Id : 1056151988 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The major regions that make up brain stem include all the following, except

Options :

Pons

1. ✘

Medulla

2. ✘

Midbrain

3. ✘

Cerebellum

4. ✔

Question Number : 69 Question Id : 1056151989 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Study the following statements and pick up the incorrect one:

Options :

1. ✘ Typical value of resting membrane potential in – 70 mV in a neuron
2. ✘ During resting phases, the activation gates of sodium channels are closed
3. ✘ If the voltage falls below the – 70 mV level of the resting state, it is called under shoot
4. ✔ Speed of conduction of nerve impulse inversely proportional to the diameter of the nerve fibre

Question Number : 70 Question Id : 1056151990 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Match the following :

List -I

- A) Prolactin
- B) Oxytocin
- C) Parathormone
- D) Thymosin

List -II

- I) Levels of  $Ca^{++}$  in circulating fluids
- II) Enlargement of mammary glands
- III) Stimulation of gluconeogenesis
- IV) Contraction of smooth muscles
- V) Differentiation of lymphocytes

The correct match is

Options :

1. ✘
- |   |   |    |    |
|---|---|----|----|
| A | B | C  | D  |
| V | I | IV | II |

2. ✔
- |    |    |   |   |
|----|----|---|---|
| A  | B  | C | D |
| II | IV | I | V |

3. ✘
- |    |    |     |   |
|----|----|-----|---|
| A  | B  | C   | D |
| II | IV | III | V |

4. ✘
- |     |   |    |   |
|-----|---|----|---|
| A   | B | C  | D |
| III | I | II | V |

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Cretinism is due to the improper functioning of

Options :

Parathyroid glands

1. ✘

Adrenal glands

2. ✘

Pituitary gland

3. ✘

Thyroid gland

4. ✔

Question Number : 72 Question Id : 1056151992 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : Adaptive immunity is more specific.

Reason (R) : It depends on prior infection of the microorganism.

The correct option among the following is

Options :

1. ✔

(A) is true, (R) is true and (R) is the correct explanation for (A)

2. ✘

(A) is true, (R) is true but (R) is not the correct explanation for (A)

3. ✘

(A) is true but (R) is false

4. ✘

(A) is false but (R) is true

**Question Number : 73 Question Id : 1056151993 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Number of interchain disulphide bonds between two heavy chains in the structure of an antibody is

**Options :**

1. ✔

2

2. ✘

4

3. ✘

8

4. ✘

**Question Number : 74 Question Id : 1056151994 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Assertion (A): Secondary spermatocytes are haploid.

Reason (R) : They are formed from primary spermatocytes after meiosis I.

The correct option among the following is

**Options :**

1. ✓ (A) is true, (R) is true and (R) is the correct explanation for (A)

2. ✘ (A) is true, (R) is true but (R) is not the correct explanation for (A)

3. ✘ (A) is true but (R) is false

4. ✘ (A) is false but (R) is true

**Question Number : 75 Question Id : 1056151995 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Match the following:

- | List -I          | List -II                   |
|------------------|----------------------------|
| A) Multiload 375 | I) Oral contraceptive pill |
| B) Saheli        | II) Oestrogen              |
| C) Vault         | III) Surgical method       |
| D) Skin patches  | IV) Barrier                |
|                  | V) Intra Uterine device    |

The correct match is

Options :

1. ✘
- |   |     |    |    |
|---|-----|----|----|
| A | B   | C  | D  |
| V | III | IV | II |

2. ✔
- |   |   |    |    |
|---|---|----|----|
| A | B | C  | D  |
| V | I | IV | II |

3. ✘
- |    |    |   |   |
|----|----|---|---|
| A  | B  | C | D |
| II | IV | I | V |

4. ✘
- |     |   |    |    |
|-----|---|----|----|
| A   | B | C  | D  |
| III | V | II | IV |

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If a child has blood group O, the genotypes of the parents

Options :

1. ✘  $I^A I^A, I^O I^O$

2. ✘  $I^A I^B, I^O I^O$

3. ✔  $I^A I^O, I^B I^O$

4. ✘  $I^A I^O, I^A I^B$

Question Number : 77 Question Id : 1056151997 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : Barr body is present in Turner female.

Reason (R) : Karyotype of Turner's syndrome is 45, X.

The correct option among the following is

Options :

1. ✘

(A) is true, (R) is true and (R) is the correct explanation for (A)

2. ✘ (A) is true, (R) is true but (R) is not the correct explanation for (A)

3. ✘ (A) is true but (R) is false

4. ✔ (A) is false but (R) is true

**Question Number : 78 Question Id : 1056151998 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Karyotype of a person affected from phenylketonuria (PKU) is

**Options :**

1. ✘ 44 + XO

2. ✘ 44 + XXX

3. ✘ 44 + XXY

4. ✔

44 + XY / 44 +XX

**Question Number : 79 Question Id : 1056151999 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Selective breeding of animals for a desired feature by mating them within a close relation is

**Options :**

1. ✘ Out breeding
2. ✘ Close breeding
3. ✔ Line breeding
4. ✘ Cross breeding

**Question Number : 80 Question Id : 1056152000 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Vaccines for diphtheria are

**Options :**

Attenuated whole agent vaccines

1. ✘

Inactivated whole agent vaccines

2. ✘

Toxoids

3. ✔

Recombinant vector vaccines

4. ✘

## Physics

<b>Section Id :</b>	10561542
<b>Section Number :</b>	3
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	40
<b>Number of Questions to be attempted :</b>	40
<b>Section Marks :</b>	40
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1

Sub-Section Id : 10561542

Question Shuffling Allowed : Yes

Question Number : 81 Question Id : 1056152001 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Which of the following forces have the infinite range?

Options :

Gravitational Force, Nuclear Force and Electromagnetic Force

1. ✘

Gravitational Force and Nuclear Force only

2. ✘

Nuclear Force and Electromagnetic Force only

3. ✘

Electromagnetic Force and Gravitational Force only

4. ✔

Question Number : 82 Question Id : 1056152002 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The dimension of Planck's constant is equivalent to the dimension of

Options :

Coefficient of viscosity

1. ✘

Internal energy

2. ✘

Angular momentum

3. ✔

Moment of force

4. ✘

Question Number : 83 Question Id : 1056152003 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A particle moves in a straight line with uniform acceleration and with initial velocity of 2 m/s. Its average velocity after moving for 4 s is 6 m/s. The acceleration of the particle is

Options :

3 m/s<sup>2</sup>

1. ✘

$2 \text{ m/s}^2$

2. ✓

$4 \text{ m/s}^2$

3. ✗

$1 \text{ m/s}^2$

4. ✗

Question Number : 84 Question Id : 1056152004 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The relationship between the final velocity  $v$  and the distance  $x$  travelled by a bus moving with uniform acceleration is  $v = \sqrt{256 - 10x}$ . The acceleration of the bus is (All quantities are given in SI units)

Options :

$- 5 \text{ m/s}^2$

1. ✓

$- 10 \text{ m/s}^2$

2. ✗

$- 20 \text{ m/s}^2$

3. ✗

$- 15 \text{ m/s}^2$

4. ✖

**Question Number : 85 Question Id : 1056152005 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

The velocity-time( $v-t$ ) relation of a particle moving in a plane is  $v = 3t^2 \text{ m/s}$ . At  $t = 0$ ; displacement  $x = 8 \text{ m}$ . The velocity of the particle at  $x = 16 \text{ m}$  is

**Options :**

1. ✓  $12 \text{ m/s}$

2. ✖  $14 \text{ m/s}$

3. ✖  $18 \text{ m/s}$

4. ✖  $10 \text{ m/s}$

**Question Number : 86 Question Id : 1056152006 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Identical guns fire identical bullets horizontally at the same speed from the same height above level planes, one on the Earth and another one on the Moon. Which of the following statements are “ TRUE”?

- I) The horizontal distance travelled by the bullet is greater for the moon
- II) The flight time is less for the bullet on the Earth
- III) The velocities of the bullets at impact are the same.

**Options :**

III only

1. ✘

I and III only

2. ✘

I and II only

3. ✔

II and III only

4. ✘

**Question Number : 87 Question Id : 1056152007 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

An iron ball of 4 kg moving with a speed of 6 m/s makes head-on collision with another iron ball of 6 kg moving with the speed of 2 m/s along the same line. After collisions, if both the balls move together with the same speed, the common speed of both balls is

**Options :**

3.6 m/s

1. ✘

2 m/s

2. ✘

1.2 m/s

3. ✔

3 m/s

4. ✘

Question Number : 88 Question Id : 1056152008 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When the brakes are applied to two cars moving with initial velocities  $V$  and  $2V$  and the cars stop at distances  $d_1$  and  $d_2$  respectively. Assuming the work done on the cars is

the same, then the value of ratio  $\frac{d_2}{d_1}$  is

Options :

1

1. ✘

2

2. ✘

0.5

3. ✘

4

4. ✔

Question Number : 89 Question Id : 1056152009 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An object of mass 7 kg initially at rest explodes into two pieces A and B. The mass of A is 3 kg, and the mass of B is 4 kg. After explosion, B moves with the velocity of 2 m/s. The ratio of kinetic energy of A to kinetic energy of B is

Options :

 $\frac{2}{3}$ 

1. ✘

 $\frac{4}{3}$ 

2. ✔

 $\frac{3}{2}$ 

3. ✘

 $\frac{27}{64}$ 

4. ✘

**Question Number : 90 Question Id : 1056152010 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

A circular sheet of radius 2m and moment of inertia  $4 \text{ kg m}^2$  has initial angular speed 10 rad /s. A constant tangential force is applied and the sheet is stopped in 5 sec. The magnitude of the force is

**Options :**

1. ✓ 4 N

2. ✘ 8 N

3. ✘ 2 N

4. ✘ 16 N

**Question Number : 91 Question Id : 1056152011 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

A body executes simple harmonic motion with a period of 0.2 s and amplitude 5.0 cm. The displacement of the body from the mean position when it has the velocity of  $0.4\pi$  m/s is

**Options :**

2 cm

1. ✘

3 cm

2. ✔

2.5 cm

3. ✘

4 cm

4. ✘

**Question Number : 92 Question Id : 1056152012 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

An object is launched from surface of earth with speed  $\sqrt{4gR_E}$ , where  $R_E$  is radius of earth and  $g$  is the acceleration due to gravity at earth's surface. The speed of the object at infinity is

**Options :**

1. ✘

$$\sqrt{gR_E}$$

2. ✓  $\sqrt{2gR_E}$

3. ✗  $\sqrt{3gR_E}$

4. ✗  $\sqrt{\frac{gR_E}{2}}$

Question Number : 93 Question Id : 1056152013 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

A steel wire of length 1.5 m can withstand a maximum 1500 N tension before it breaks.  
The tensile strength of steel is  $5 \times 10^8 \text{ N/m}^2$ . If the same wire is stretched by 0.20 cm  
in the elastic limit, the tension in the wire is (Young's modulus of steel  $2 \times 10^{11} \text{ N/m}^2$ )

Options :

1. ✗ 750 N

2. ✓

800 N

225 N

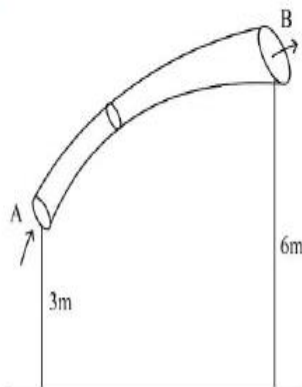
3. ✘

1250 N

4. ✘

Question Number : 94 Question Id : 1056152014 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
 Correct Marks : 1 Wrong Marks : 0

Consider water flowing steadily in a pipe of varying cross sectional area and height as shown in figure. The area of cross section at A & B are  $20 \text{ cm}^2$  and  $40 \text{ cm}^2$  respectively. The velocity of water at point A is  $2 \text{ m/s}$ . The work done per unit volume as water moves from A to B in  $\text{J/m}^3$  is  
 (Density of fluid =  $10^3 \text{ kg/m}^3$ ,  $g = 10 \text{ m/s}^2$ )



Options :

28500

1. ✔

47000

2. ✘

56500

3. ✘

14000

4. ✘

Question Number : 95 Question Id : 1056152015 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Water rises to a height  $H$  in a capillary tube of area of cross section  $A$ . To what height will water rise in a capillary tube of area of cross section  $4A$

Options :

$$\frac{H}{4}$$

1. ✘

$$\frac{H}{2}$$

2. ✔

2H

3. ✘

4H

4. ✘

Question Number : 96 Question Id : 1056152016 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A black body is at  $727^{\circ}\text{C}$ . It emits energy at a rate proportional to fourth power of an absolute temperature (T). Which of the following is the value of T?

Options :

1. ✘ 1454 K

2. ✘ 727 K

3. ✔ 1000 K

4. ✘ 100 K

Question Number : 97 Question Id : 1056152017 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the thermal energy of  $2 \times 10^5 \text{ J}$  is used to boil the water of  $0.5 \text{ kg}$  at  $0^\circ \text{C}$ , then the specific heat capacity of water is nearly equal to

Options :

4 J/kg  $^\circ\text{C}$

1. ✘

40 J/kg  $^\circ\text{C}$

2. ✘

4 kJ/kg  $^\circ\text{C}$

3. ✔

40 kJ/kg  $^\circ\text{C}$

4. ✘

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Question Number : 98 Question Id : 1056152018 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Match the columns for the first law of thermodynamics

Column - I

Column - II

- |                                  |   |
|----------------------------------|---|
| A) Adiabatic processes           | I) $W \neq 0, \Delta E_{\text{int}} \neq Q$ |
| B) Constant – volume processes   | II) $Q = W; \Delta E_{\text{int}} = 0$      |
| C) Isothermal processes          | III) $Q = 0; \Delta E_{\text{int}} = -W$    |
| D) Constant – pressure processes | IV) $W = 0; \Delta E_{\text{int}} = Q$      |

(W – work done, Q -heat absorbed,  $\Delta E_{\text{int}}$  - change of internal energy)

The correct match is

Options :

A	B	C	D
III	II	IV	I

1. ✘

A	B	C	D
III	IV	II	I

2. ✔

A	B	C	D
IV	I	II	III

3. ✘

A	B	C	D
I	III	IV	II

4. ✘

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose the correct statement.

Options :

The second law of thermodynamics disallows some processes consistent with the first law of thermodynamics

1. ✓

Spontaneous processes are reversible

2. ✗

In isothermal quasi static processes, the heat cannot be absorbed or given out by the system

3. ✗

In quasi-static processes, the pressure and temperature of the environment can differ from those of the system significantly

4. ✗

Question Number : 100 Question Id : 1056152020 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At constant pressure, the temperature and volume of a gas are increased by  $2^{\circ}\text{C}$  and 0.5% respectively. Find the initial temperature.

Options :

1. ✓ 400 K
2. ✗ 200 K
3. ✗ 100 K
4. ✗ 150 K

Question Number : 101 Question Id : 1056152021 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A wave travels from a denser medium to rarer medium, then match the following columns.

Column I	Column-II
A) Speed of wave	I) will increase
B) Wavelength of wave	II) will decrease
C) Amplitude of wave	III) will remain unchanged
D) Frequency of wave	IV) may increase or decrease

The correct match is

Options :

1. ✘

A	B	C	D
II	I	I	II

2. ✘

A	B	C	D
I	II	I	II

3. ✔

A	B	C	D
I	I	I	III

4. ✘

A	B	C	D
II	II	II	III

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A light ray refracts through a long glass like cylindrical rod at an angle of  $60^\circ$  to the axis of rod and falls at a critical angle at the rod-air interface. The refractive index of rod is

Options :

1. ✘ 1.15

2. ✘ 1.35

3. ✘ 1.75

4. ✔ 2

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Question Number : 103 Question Id : 1056152023 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A parallel beam of light falls on a narrow slit of width 0.1 mm and the resulting diffraction pattern is observed on a screen at a distance of 1.0 m. If the first minimum is observed at a distance of 4.0 mm from the centre of the screen, then the wavelength of the light is

Options :

600 nm

1. ✘

500 nm

2. ✘

550 nm

3. ✘

400 nm

4. ✔

**Question Number : 104 Question Id : 1056152024 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Three charges  $2Q$ ,  $q$  and  $4Q$  are placed on the  $x$  – axis at position  $0$ ,  $r$  and  $2r$  respectively. If the force on charge  $2Q$  at  $x = 0$  is zero, then the magnitude of  $q$  is

**Options :**

$-4Q$

1. ✘

$-Q$

2. ✔

3. ✘

-2 Q

$$-\frac{Q}{2}$$

4. ✘

Question Number : 105 Question Id : 1056152025 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A capacitor of capacitance  $C$  is charged to a potential  $V$  and stores some energy  $E$ . A second capacitor of capacitance  $2C$  is to store energy  $\frac{E}{3}$ . The second capacitor must be charged to potential

Options :

$$\sqrt{3} V$$

1. ✘

$$\frac{V}{3}$$

2. ✔

$$\frac{V}{\sqrt{6}}$$

3. ✘

4. ✘

$$\frac{V}{\sqrt{3}}$$

**Question Number : 106 Question Id : 1056152026 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

Drift velocity of electrons is due to

**Options :**

Motion of conduction electron due to random collisions

1. ✘

Motion of conduction electron due to electric field

2. ✔

Repulsion to the conduction electron due to inner electrons of ions

3. ✘

Collision of conduction electrons with one another

4. ✘

**Question Number : 107 Question Id : 1056152027 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

The resistance of a wire at  $0^\circ\text{C}$  and  $40^\circ\text{C}$  is  $4\ \Omega$  and  $4.06\ \Omega$  respectively. When the wire is inserted in a hot bath, its resistance is  $4.15\ \Omega$ . The temperature of the bath is

**Options :**

1. ✓  $100^\circ\text{C}$

2. ✗  $120^\circ\text{C}$

3. ✗  $240^\circ\text{C}$

4. ✗  $200^\circ\text{C}$

**Question Number : 108 Question Id : 1056152028 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time**

**: N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

An electron is moving with velocity  $10^7\ \text{m/s}$  near to a wire carrying current of  $2.0\ \text{A}$ . If the electron is moving parallel to the wire from a distance apart  $1\ \text{cm}$ , the force on the electron will be  $x \times 10^{-17}\ \text{N}$ . The value of  $x$  will be

( $\mu_0 = 4\pi \times 10^{-7}\ \text{SI unit}$ ; charge of electron  $= 1.6 \times 10^{-19}\ \text{C}$ )

**Options :**

1. ✗

1.6

3.2

2. ✘

4.8

3. ✘

6.4

4. ✔

Question Number : 109 Question Id : 1056152029 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Which of the following statements is correct about moving coil galvanometer (MCG)?

Options :

In MCG, the coil rotates in a magnetic field when no current is passed through the coil

1. ✘

The plane of the coil must be aligned in magnetic meridian

2. ✘

A MCG can be converted into an ammeter by introducing a shunt resistance of small value in parallel

3. ✓

Galvanometer constant depends an earth's magnetic field

4. ✘

**Question Number : 110 Question Id : 1056152030 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

A short bar magnet is placed with its axis at  $30^\circ$  with an external field 0.05 T. If the magnetic moment of the magnet is  $0.8 \text{ Am}^2$ , then the torque experienced by the magnet is

**Options :**

0.10 N.m

1. ✘

0.08 N.m

2. ✘

0.01 N.m

3. ✘

0.02 N.m

4. ✓

**Question Number : 111 Question Id : 1056152031 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

A conducting circular loop is placed in a uniform magnetic field  $B = 0.025 \text{ T}$ , with its plane perpendicular to the field. The radius of the loop is made to shrink at a constant rate of  $1 \text{ mm/s}$ . The induced emf, when the radius is  $2 \text{ cm}$ , would be

**Options :**

1. ✘  $\left(\frac{\pi}{2}\right) \mu\text{V}$

2. ✔  $(\pi) \mu\text{V}$

3. ✘  $(2\pi) \mu\text{V}$

4. ✘  $(2.5 \pi) \mu\text{V}$

**Question Number : 112 Question Id : 1056152032 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

An LCR series circuit with  $C = 100 \mu F$ ,  $L = 970 \text{ mH}$  and  $R = 4 \Omega$  is connected to an AC source of emf  $\varepsilon = (100)\sin(100t)$  volts. Find the peak current.

Options :

25 A

1. ✘

20 A

2. ✔

15 A

3. ✘

30 A

4. ✘

Question Number : 113 Question Id : 1056152033 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following

Type of EM wave	Wavelength Range
A) Microwave	I) 1 mm to 700 nm
B) IR	II) 400 nm to 1nm
C) X-ray	III) $< 10^{-3}$ nm
D) Ultraviolet	IV) 0.1 m to 1 mm
E) Gamma rays	V) 1 nm to $10^{-3}$ nm

The correct match is

Options :

A	B	C	D	E
IV	I	II	V	III

1. ✘

A	B	C	D	E
I	III	II	V	IV

2. ✘

A	B	C	D	E
V	III	V	III	II

3. ✘

A	B	C	D	E
IV	I	V	II	III

4. ✔

Question Number : 114 Question Id : 1056152034 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

In a photoelectric emission experiment, the photocurrent is brought to zero by a stopping potential of 0.50 eV. If the work function of the metal is 2.0 eV, then the wavelength of the incident light is  
(Take  $hc=1240$  eV.nm)

Options :

476 nm

1. ✘

486 nm

2. ✘

496 nm

3. ✔

506 nm

4. ✘

Question Number : 115 Question Id : 1056152035 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Proton and alpha particle are released in same uniform electric field. Let  $\lambda_p$  and  $\lambda_\alpha$  are the de-Broglie wavelength of the proton and the alpha particle, respectively, after they move the same distance in the field. The ratio  $\frac{\lambda_p}{\lambda_\alpha}$  is

Options :

2 : 1

1. ✘

$4\sqrt{2} : 1$

2. ✘

$2\sqrt{2} : 1$

3. ✔

1 : 2

4. ✘

Question Number : 116 Question Id : 1056152036 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0

An electron in a hydrogen atom makes a transition from  $n = n_1$  to  $n = n_2$  (where  $n$  is a principal quantum number of a state). The time period of electron in the initial state is eight times than that of the final state, then which of the following statements is TRUE?

Options :

1. ✘

$$n_1 = 3n_2$$

$$n_1 = 4n_2$$

2. ✘

$$n_1 = 2n_2$$

3. ✔

$$n_1 = 5n_2$$

4. ✘

Question Number : 117 Question Id : 1056152037 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The ratio of the radii of the nuclei  ${}_{13}\text{Al}^{27}$  and  ${}_{52}\text{Te}^{125}$  is

Options :

$$3 : 5$$

1. ✔

$$27 : 125$$

2. ✘

13 : 52

3. ✖

14 : 73

4. ✖

Question Number : 118 Question Id : 1056152038 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a p-n junction, potential barrier of 200 meV exists across the junction. A hole with a kinetic energy of 300 meV approaches the junction. Let  $E_1$  and  $E_2$  be kinetic energies of the hole when it crosses the junction, while it approaches the junction from the p-side and n- side respectively: The value of  $\frac{E_2}{E_1}$  is

Options :

0.2

1. ✖

5.0

2. ✔

1

3. ✖

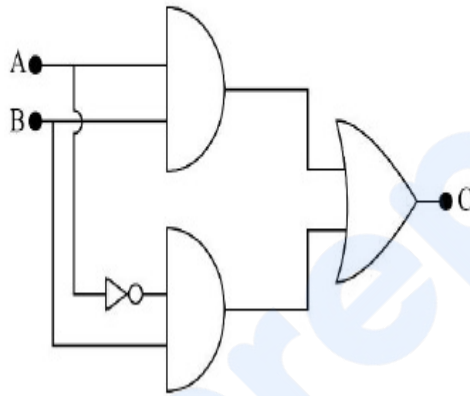
4. ✖

1.5

Question Number : 119 Question Id : 1056152039 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the correct option, if A and B are inputs and C is the output in the following logic circuit.



Options :

$A = 0, B = 0, C = 1$

1. ✘

$A = 1, B = 1, C = 0$

2. ✘

$A = 0, B = 1, C = 1$

3. ✔

4. ✘

$A = 1, B = 0, C = 1$

Question Number : 120 Question Id : 1056152040 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Which of the following band of frequency is used in satellite communication?

Options :

1. ✓ 3 – 7 GHz

2. ✘ 3 – 7 MHz

3. ✘ 3 – 7 KHz

4. ✘ 3 – 7 THz

Section Id :	10561543
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	40
Number of Questions to be attempted :	40
Section Marks :	40
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	10561543
Question Shuffling Allowed :	Yes

Question Number : 121 Question Id : 1056152041 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The ratio of the radii of the 2<sup>nd</sup> orbits of hydrogen atom and the 3<sup>rd</sup> orbit of  $\text{Li}^{2+}$  ion is

Options :

1. ✘ 3 : 4

2. ✔ 4 : 3

3. ✘ 4 : 1

4. ✘

**Question Number : 122 Question Id : 1056152042 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

The valance shell electronic configuration of Nb and Mo atoms are, respectively

**Options :**

1. ✘  $4d^5 5s^0$  and  $4d^4 5s^2$

2. ✘  $4d^4 5s^1$  and  $4d^4 5s^2$

3. ✘  $4d^5 5s^0$  and  $4d^5 5s^1$

4. ✔  $4d^4 5s^1$  and  $4d^5 5s^1$

**Question Number : 123 Question Id : 1056152043 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 1 Wrong Marks : 0**

The successive IP values of Mg are 750 and 1500 kJ mol<sup>-1</sup> respectively. Identify the percentage of Mg<sup>+</sup> and Mg<sup>2+</sup>, respectively, when 1 g of Mg absorbs 50 kJ of energy.

**Options :**

1. ✘ 50, 50

2. ✘ 100, 0

3. ✘ 30, 70

4. ✔ 70, 30

Question Number : 124 Question Id : 1056152044 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following.

Atomic number		IUPAC Symbol	
A)	103	I)	Mt
B)	107	II)	Bh
C)	109	III)	Lr
D)	111	IV)	Ds
		V)	Rg

The correct match is

Options :

1. ✘

A	B	C	D
II	III	V	IV

2. ✘

A	B	C	D
III	I	II	IV

3. ✘

A	B	C	D
II	V	IV	I

4. ✔

A	B	C	D
III	II	I	V

Question Number : 125 Question Id : 1056152045 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The shape, numbers of bond pairs and lone pairs of electrons in  $X_eF_4$ , respectively, are

Options :

1. ✘

Octahedral, 1 and 2

2. ✘

Square planar, 2 and 4

3. ✘ Tetrahedral, 2 and 4

4. ✔ Square planar, 4 and 2

Question Number : 126 Question Id : 1056152046 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

According to Fajan's rule, covalent bond is favoured by

Options :

1. ✘ large cation and small anion

2. ✘ large cation and large anion

3. ✔ small cation and large anion

4. ✘ small cation and small anion

Question Number : 127 Question Id : 1056152047 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The van der Waal's equation for 0.5 mole of a gas is

Options :

1. ✘ 
$$\left(P + \frac{a}{4V^2}\right) = \frac{RT}{(V-b)}$$

2. ✔ 
$$\left(P + \frac{a}{4V^2}\right)(2V-b) = RT$$

3. ✘ 
$$\left(P + \frac{a}{4V^2}\right)(2V-4b) = RT$$

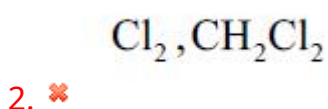
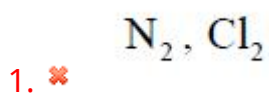
4. ✘ 
$$PV = nRT$$

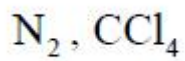
Question Number : 128 Question Id : 1056152048 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

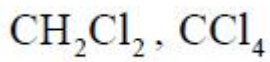
Among the gases  $N_2$ ,  $CH_2Cl_2$ ,  $Cl_2$  and  $CCl_4$  the smallest 'a' and the largest 'b' respectively will be shown by gases [a and b are van der Waal's constants]

Options :





3. ✓



4. ✗

Question Number : 129 Question Id : 1056152049 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

100 ml of  $\text{PH}_3$  on decomposition produces  $\text{P(s)}$  and  $\text{H}_2(\text{g})$  under isobaric condition. The final volume of the container is

Options :

50 ml

1. ✗

100 ml

2. ✗

150 ml

3. ✓

250 ml

4. ✗

Question Number : 130 Question Id : 1056152050 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time :

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is /are disproportionation reactions?

- a)  $\text{NH}_4\text{NO}_3 \xrightarrow{\Delta} \text{N}_2\text{O} + 2\text{H}_2\text{O}$   
 b)  $4\text{H}_3\text{PO}_3 \longrightarrow \text{PH}_3 + 3\text{H}_3\text{PO}_4$   
 c)  $2\text{KMnO}_4 \longrightarrow \text{K}_2\text{MnO}_4 + \text{MnO}_2 + \text{O}_2$   
 d)  $\text{PCl}_5 \longrightarrow \text{PCl}_3 + \text{Cl}_2$

Options :

1. ✘ a, c, d only

2. ✘ a, b, c, d

3. ✔ b only

4. ✘ a, d only

Question Number : 131 Question Id : 1056152051 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time :

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Out of the given options below, which one is an intensive property

Options :

$$\frac{q_{\text{rev}}}{T}$$

1. ✘

$$U + PV$$

2. ✘

$$\frac{\Delta H}{\Delta T}$$

3. ✘

$$\frac{RT}{P}$$

4. ✔

Question Number : 132 Question Id : 1056152052 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

A vessel at 1050 K contains carbon dioxide with a pressure of 0.6 atm. Some of the carbon dioxide is converted to carbon monoxide on addition of graphite. What will be the value of  $K_p$  if total pressure at equilibrium is 1 atm.

Options :

1.6 atm

1. ✘

3.2 atm

2. ✔

0.6 atm

3. ✘

1.0 atm

4. ✘

Question Number : 133 Question Id : 1056152053 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If  $[\text{H}_3\text{O}^+] = 7.5 \times 10^{-8} \text{ M}$ , the  $[\text{OH}^-]$  is

Options :

1.  $1 \times 10^{-14} \text{ M}$

1. ✘

2.  $1.3 \times 10^{-7} \text{ M}$

2. ✔

3.  $2 \times 10^{-11} \text{ M}$

3. ✘

4.  $6.5 \times 10^{-6} \text{ M}$

4. ✘

Question Number : 134 Question Id : 1056152054 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The correct statement among the following is

**Options :**

1. ✘ Relative abundance of deuterium is more than protium
2. ✘ Relative atomic mass of deuterium is greater than protium
3. ✔ Deuterium has more neutrons than protium
4. ✘ Deuterium is radioactive

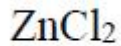
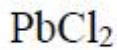
**Question Number : 135 Question Id : 1056152055 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

At room temperature, which of the following compounds has a chloro bridged structure?

**Options :**

1. ✔  $\text{BeCl}_2$
2. ✘  $\text{MgCl}_2$
3. ✘



4. ✘

**Question Number : 136 Question Id : 1056152056 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Assertion (A) : The trivalent molecules of boron trihalides behaves as Lewis acid.

Reason (R) : Boron trihalides cannot accept a pair of electrons.

The correct option among the following is

**Options :**

1. ✘ (A) is true, (R) is true and (R) is the correct explanation for (A)

2. ✘ (A) is true, (R) is true but (R) is not the correct explanation for (A)

3. ✔ (A) is true but (R) is false

4. ✘ (A) is false but (R) is true

Question Number : 137 Question Id : 1056152057 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is/ are true?

- A) Diamond is the thermodynamically stable allotrope of carbon.
- B) Diamond has 2D-network & Graphite has 3D-network.
- C) C – C bond length within a layer of Graphite is 141.5 pm.
- D)  $C_{60}$  contains 12 five – member rings and 20 six member rings.

Options :

1. ✘ A and B

2. ✘ A and C

3. ✔ C and D

4. ✘ B and D

Question Number : 138 Question Id : 1056152058 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The displacement of shared pair of  $\pi$ - electrons in a multiple bond in the presence of an attacking reagent is called

Options :

1. ✘ Inductive effect
2. ✔ Electromeric effect
3. ✘ Resonance
4. ✘ Hyperconjugation

Question Number : 139 Question Id : 1056152059 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Assertion (A) : n-Alkanes on heating in the presence of anhyd.  $\text{AlCl}_3/\text{HCl}$  gas undergo isomerization.

Reason (R) : Branched isomers are formed as minor isomers.

The correct option among the following is

Options :

1. ✘ (A) is true, (R) is true and (R) is the correct explanation for (A)
2. ✘ (A) is true, (R) is true but (R) is not the correct explanation for (A)

3. ✓ (A) is true but (R) is false

4. ✘ (A) is false but (R) is true

**Question Number : 140 Question Id : 1056152060 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0**

Assertion (A) : In the mechanism of aromatic electrophilic substitution reaction, attack of electrophile gives a  $\sigma$  – complex.

Reason (R) : The sigma complex loses proton to generate non-aromatic compound.

The correct option among the following is

**Options :**

1. ✘ (A) is true, (R) is true and (R) is the correct explanation for (A)

2. ✘ (A) is true, (R) is true but (R) is not the correct explanation for (A)

3. ✓ (A) is true but (R) is false

4. ✘ (A) is false but (R) is true

Question Number : 141 Question Id : 1056152061 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When KCl is heated in the presence of potassium vapors, the violet colour of KCl is due to

Options :

1. ✘ Schottky defects

2. ✘ Frenkel defects

3. ✔ F-Centers

4. ✘ Metal deficiency defects

Question Number : 142 Question Id : 1056152062 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Calculate the mass percentage of 25 g of NaCl dissolved in 225 ml of H<sub>2</sub>O.

Options :

1. ✔ 10 %

9 %

2. ✘

5 %

3. ✘

25 %

4. ✘

Question Number : 143 Question Id : 1056152063 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The solubility of a gas in liquid increases with

Options :

Increasing temperature and decreasing pressure

1. ✘

Decreasing pressure

2. ✘

Increasing pressure and decreasing temperature

3. ✔

By stirring

4. ✘

Question Number : 144 Question Id : 1056152064 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Match the following.

Metal	Specific conductance ( $\times 10^3$ S/m)
A) Cu	I) 1.0
B) Ag	II) 4.5
C) Au	III) 6.2
D) Fe	IV) 5.9

The correct match is

Options :

1. ✘

A	B	C	D
III	IV	I	II

2. ✘

A	B	C	D
II	III	IV	I

3. ✘

A	B	C	D
I	II	III	IV

4. ✔

A	B	C	D
IV	III	II	I

Question Number : 145 Question Id : 1056152065 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

The rate constant for a reaction increases by 2 times on increasing the temperature from 27 °C to 47 °C. The activation energy of the reaction in (kJ/mol) is

Options :

1. ✘ 55

2. ✔ 27.6

3. ✘ 110

4. ✘ 250

Question Number : 146 Question Id : 1056152066 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

Match the following.

Reaction	Chemical process
A) $\text{As}_2\text{O}_3 + \text{H}_2\text{S} \rightarrow \text{As}_2\text{S}_3 + 3\text{H}_2\text{O}$	I) Reduction
B) $\text{FeCl}_3 + 3\text{H}_2\text{O} \rightarrow \text{Fe}(\text{OH})_3 + 3\text{HCl}$	II) Double decomposition
C) $2\text{HNO}_3 + \text{H}_2\text{S} \rightarrow \text{S}(\text{colloidal}) + 2\text{H}_2\text{O} + 2\text{NO}_2$	III) Hydrolysis
D) $2\text{AuCl}_3 + 3\text{SnCl}_2 \rightarrow \text{SnCl}_4 + 2\text{Au}(\text{colloid})$	IV) Oxidation

The correct match is

Options :

1. ✘

A	B	C	D
I	III	IV	II

2. ✔

A	B	C	D
II	III	IV	I

3. ✘

A	B	C	D
II	IV	III	I

4. ✘

A	B	C	D
II	III	I	IV

Question Number : 147 Question Id : 1056152067 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : The single N-N bond is stronger than the single P-P bond.

Reason (R) : Interelectronic repulsion between non-bonding electrons of N-N single bonded molecules is possible.

The correct option among the following is

**Options :**

1. ✘ (A) is true, (R) is true and (R) is the correct explanation for (A)

2. ✘ (A) is true, (R) is true but (R) is not the correct explanation for (A)

3. ✘ (A) is true but (R) is false

4. ✔ (A) is false but (R) is true

**Question Number : 148 Question Id : 1056152068 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

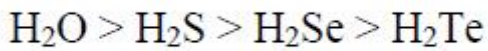
**Correct Marks : 1 Wrong Marks : 0**

The order of bond angle (H–E–H) for H<sub>2</sub>O, H<sub>2</sub>S, H<sub>2</sub>Se, and H<sub>2</sub>Te is

**Options :**

1. ✘ H<sub>2</sub>O > H<sub>2</sub>Se > H<sub>2</sub>Te > H<sub>2</sub>S

2. ✔



3. ✖



4. ✖

Question Number : 149 Question Id : 1056152069 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0

What is the structure and colour of  $\text{ClF}_5$  molecule?

Options :

Pentagonal bipyramidal and colourless

1. ✖

Pentagonal bipyramidal and orange

2. ✖

Square pyramidal and yellow

3. ✖

Square pyramidal and colourless

4. ✔

Question Number : 150 Question Id : 1056152070 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Hydrolysis of  $\text{XeF}_4$  gives, one of the following molecules as a product

Options :

1. ✓  $\text{XeO}_3$

2. ✗  $\text{XeOF}_3$

3. ✗  $\text{XeO}_2$

4. ✗  $\text{XeOF}_2$

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Question Number : 151 Question Id : 1056152071 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Copper (I) compounds in aqueous solution are not stable, they undergo

Options :

1. ✗ oxidation to give  $\text{Cu}^{+2}$

2. ✘ reduction to give Cu
3. ✘ substitution to give  $\text{Cu}^{+2}$  complex
4. ✔ disproportionation to give  $\text{Cu}^{+2}$  and Cu

Question Number : 152 Question Id : 1056152072 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
 Correct Marks : 1 Wrong Marks : 0

The outer sphere complex in the following is

Options :

1. ✘  $[\text{Fe}(\text{CN})_6]^{3-}$
2. ✔  $[\text{FeF}_6]^{3-}$
3. ✘  $[\text{Co}(\text{NH}_3)_6]^{3+}$
4. ✘  $[\text{Co}(\text{C}_2\text{O}_4)_3]^{3-}$

Question Number : 153 Question Id : 1056152073 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
 Correct Marks : 1 Wrong Marks : 0

Which among the following amino acids contain heterocyclic ring in them are?

Phenylalanine	Tryptophan	Asparagine
I	II	III
Histidine	Proline	Glutamic acid
IV	V	VI

Options :

1. ✘ I, II and III
2. ✘ II, III and IV
3. ✘ IV, V and VI
4. ✔ II, IV and V

Question Number : 154 Question Id : 1056152074 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
 Correct Marks : 1 Wrong Marks : 0

The metallic fluoride that can be used for the preparation of alkyl fluorides from alkyl chlorides is

Options :

1. ✘ NaF

2. ✘ LiF

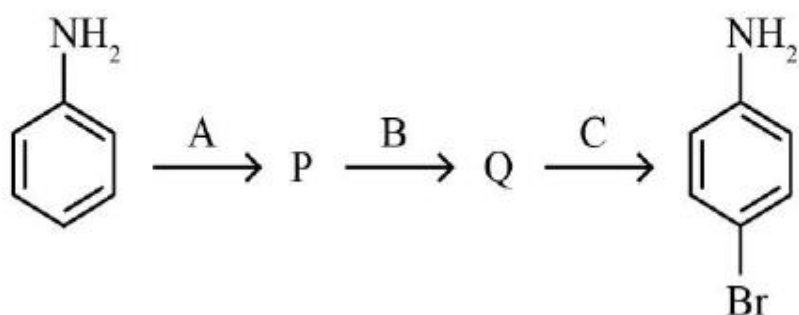
3. ✘ BF<sub>3</sub>

4. ✔ Hg<sub>2</sub>F<sub>2</sub>

Question Number : 155 Question Id : 1056152075 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

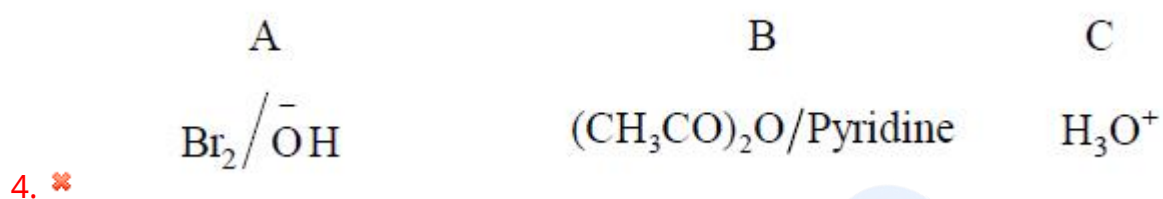
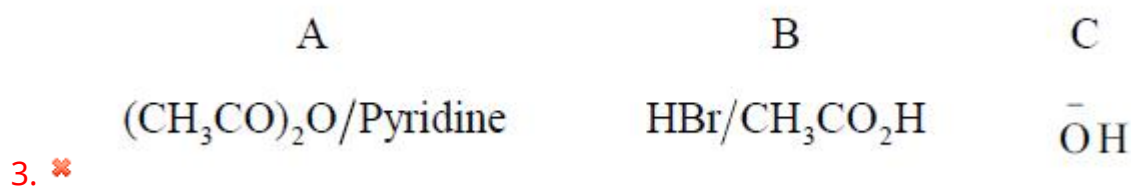
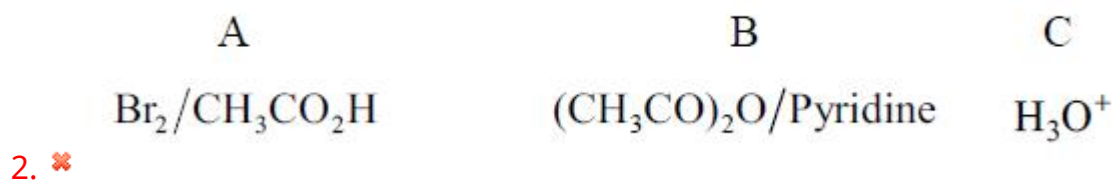
The suitable reagents A, B and C in the following conversions are



Options :

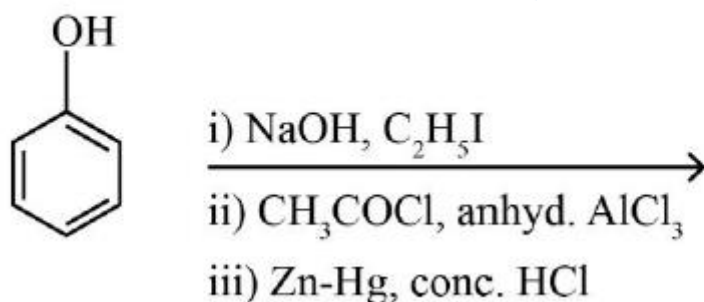
A	B	C
(CH <sub>3</sub> CO) <sub>2</sub> O/Pyridine	Br <sub>2</sub> /CH <sub>3</sub> CO <sub>2</sub> H	H <sub>3</sub> O <sup>+</sup>

1. ✔

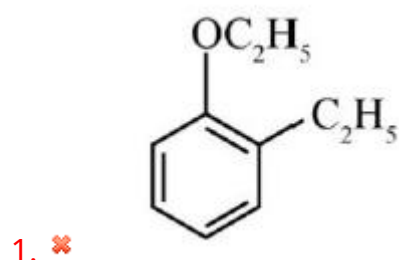


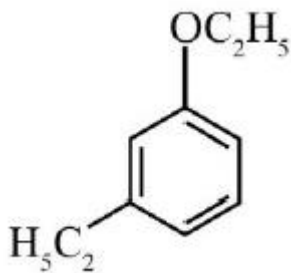
Question Number : 156 Question Id : 1056152076 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
 Correct Marks : 1 Wrong Marks : 0

The major product formed in the following reactions is

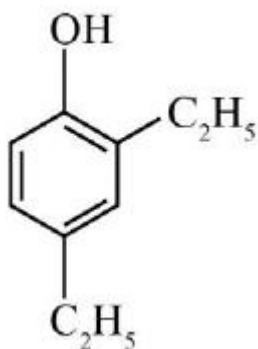


Options :

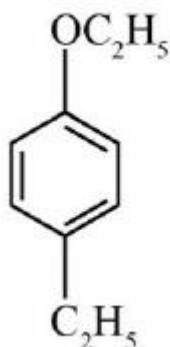




2. ✘



3. ✘



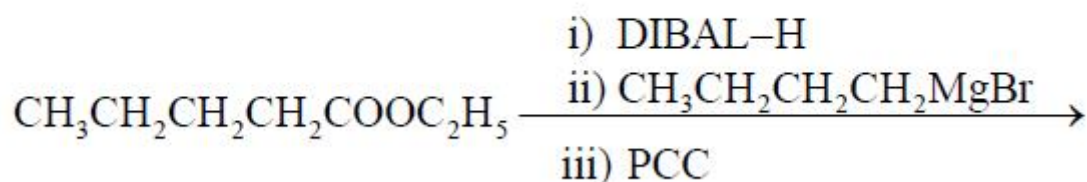
4. ✔

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Question Number : 157 Question Id : 1056152077 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The major product in the following reactions is



Options :

1. ✓ Nonan-5-one

2. ✗ Nonan-5-ol

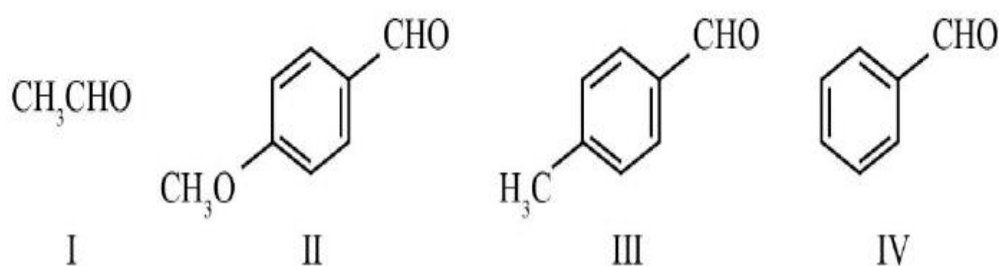
3. ✗ 4-Nonene

4. ✗ Nonan-4-one

Question Number : 158 Question Id : 1056152078 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
 : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The correct order of reactivity towards nucleophilic addition reactions of the following compounds is



Options :

1. ✗ I &gt; II &gt; IV &gt; III

2. ✓ I &gt; IV &gt; III &gt; II

II > III > IV > I

3. ✘

IV > III > II > I

4. ✘

Question Number : 159 Question Id : 1056152079 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Aliphatic carboxylic acids on heating with sodalime produces

Options :

alkane with same number of carbon atoms present in the alkyl group of the acid

1. ✔

alkane with twice the number of carbon atoms present in the alkyl group of the acid

2. ✘

alcohol with the same number of carbon atoms present in the alkyl group of the acid

3. ✘

alkene with the same number of carbon atoms present in the alkyl group of the acid

4. ✘

Question Number : 160 Question Id : 1056152080 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time :

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The appropriate conditions for the ammonolysis of alkyl halides are

Options :

1. ✘  $\text{Et}_2\text{O}$ , 100 °C, sealed tube

2. ✘  $\text{C}_6\text{H}_6$ , 80 °C, sealed tube

3. ✔  $\text{EtOH}$ , 100 °C, sealed tube

4. ✘  $\text{CH}_3\text{COCH}_3$ , 0 °C