

# Telangana State Council Higher Education

## Notations :

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

**Question Paper Name :**

Agriculture and Medical English 31st Jul  
2022 Shift 2

**Subject Name :**

Agriculture and Medical (English)

**Creation Date :**

2022-07-31 18:56:58

**Duration :**

180

**Total Marks :**

160

**Display Marks:**

No

**Calculator :**

None

**Magnifying Glass Required? :**

No

**Ruler Required? :**

No

**Eraser Required? :**

No

**Scratch Pad Required? :**

No

**Rough Sketch/Notepad Required? :**

No

**Protractor Required? :**

No

**Show Watermark on Console? :**

Yes

**Highlighter :**

No

**Auto Save on Console?**

Yes

**Change Font Color :**

No

**Change Background Color :**

No

**Change Theme :**

No

**Help Button :**

No

**Show Reports :**

No

|                                          |           |
|------------------------------------------|-----------|
| Show Progress Bar :                      | No        |
|                                          |           |
| <b>Agriculture and Medical (English)</b> |           |
| Group Number :                           | 1         |
| Group Id :                               | 10561515  |
| 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 :                                                 | 10561548  |
| 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 :                                             | 10561548  |

Question Shuffling Allowed :

Yes

Question Number : 1 Question Id : 1056152241 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 organism with correct sequence of taxa in hierarchy from the following.

Options :

*Homo – sapiens – Mammalia – Chordata – Hominidae*

1. ✖

*Triticum – vulgare – Poales – Monocotyledonae – Spermatophyta*

2. ✖

*domestic – Musca – Muscidae – Diptera – Insecta*

3. ✔

*Sapindales – Dicotyledonae – Mangifera– indica – Anacardiaceae*

4. ✖

Question Number : 2 Question Id : 1056152242 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 plants are called as petro-plants?

Options :

1. ✖ *Jatropha* and Banana

2. ✖ Banana and *Arnica*

3. ✔ *Jatropha* and *Pongamia*

4. ✖ *Pongamia* and Banana

Question Number : 3 Question Id : 1056152243 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) Buchner         | I) Urease                            |
| B) Summer          | II) Artificial synthesis of the gene |
| C) Knoll and Ruska | III) Palynology                      |
| D) Ramanujam       | IV) Zymase                           |
| E) Khorana         | V) Electron microscope               |

The correct match is :

Options :



1. ✖

|    |   |   |    |     |
|----|---|---|----|-----|
| A  | B | C | D  | E   |
| IV | V | I | II | III |

2. ✖

|    |   |   |    |     |
|----|---|---|----|-----|
| A  | B | C | D  | E   |
| IV | I | V | II | III |

3. ✖

|    |   |    |   |     |
|----|---|----|---|-----|
| A  | B | C  | D | E   |
| IV | V | II | I | III |

4. ✔

|    |   |   |     |    |
|----|---|---|-----|----|
| A  | B | C | D   | E  |
| IV | I | V | III | II |

Question Number : 4 Question Id : 1056152244 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) : All bryophytes are homosporous with haplo–diplontic life cycle.

Reason (R) : The sporophytes of all bryophytes produce two kinds of spores.

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 : 5 Question Id : 1056152245 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 features are common between *Salvinia*, *Ginkgo* and *Leucas*?

- A) Type of lifecycle
- B) Water conducting system
- C) Female sex organs
- D) Male Sex organs
- E) Process of fusion between gametes
- F) Dominant phase in life cycle
- G) Sporophytic main plant body
- H) Differentiation of main plant body into true roots, stem and leaves
- I) Secondary growth
- J) Production of spores

The correct answer is :

**Options :**

1. ✖

A, F, G, I, J only

2. ✓  
A, B, F, G, H only

3. ✗  
B, E, G, I, J only

4. ✗  
B, C, D, F, H only

Question Number : 6 Question Id : 1056152246 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 plants based on the given characters in a sequence.

- A) Peduncle is unbranched.
- B) Flowers appear to have arisen from the same point.
- C) The main axis continues to grow.

Options :

1. ✓  
*Datura – Carrot – Crotalaria*

2. ✗  
*Carrot – Crotalaria – Datura*

*Cocos – Tridax – Carrot*

3. ✖

*Cocos – Crotalaria – Carrot*

4. ✖

**Question Number : 7 Question Id : 1056152247 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 regarding the placentation in mustard?

- A) Ovules develop on the inner wall of ovary.
- B) One chambered ovary becomes two chambered due to the formation of a false septum.
- C) Two chambered ovary becomes one chambered due to the disintegration of a false septum.
- D) Ovules develop along the ventral suture of the ovary.

**Options :**

A, D only

1. ✖

A, C only

2. ✖

C, D only

3. ✖

A, B only

4. ✓

**Question Number : 8 Question Id : 1056152248 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 combinations from the following:

- A) Nucleus irregularly shaped – Cell size smaller - Generative cell
- B) Spindle shaped cell – Cell size bigger – Vegetative cell
- C) Outer wall of pollen grain – Cannot withstand high temperature – Variety of designs and patterns
- D) Micropyle close to funiculus – Ovule covered by an integument – Anatropous ovule of Asteraceae
- E) Prior to the pollen release, stigma becomes receptive – Endospermic seeds in potato – Dichogamy

The correct answer is :

**Options :**

C, D, E only

1. ✖

A, B, E only

2. ✖

D, E only

3. ✓

4. ✖

C, D only

**Question Number : 9 Question Id : 1056152249 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 condition leads to development of more than one embryo in a seed?

**Options :**

Growth of thick walled nucellar cells into the embryonic sac

1. ✖

Fruit developed with parthenocarpy

2. ✖

Thick walled collenchymatous cells surrounding embryonic sac

3. ✖

Growth of thin walled parenchymatous cells around the embryonic sac into the embryonic sac

4. ✔

**Question Number : 10 Question Id : 1056152250 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**

Taxonomy based on description of morphological characteristics only is called as:

**Options :**

Numerical taxonomy

1. ✖

Omega taxonomy

2. ✖

Alpha taxonomy

3. ✔

Cytotaxonomy

4. ✖

**Question Number : 11 Question Id : 1056152251 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**

Arrange the characters of Solanaceae in a sequence which are represented in the floral formula.

- A) Gamosepalous calyx
- B) Bisexual flowers
- C) Bilocular placenta
- D) Petals in valvate condition
- E) Basifixed anthers
- F) Zygomorphic flowers
- G) Pedicellate flowers
- H) Introrse Anthers

The correct answer is :

**Options :**

B, A, D, H, C only

1. ✖

F, B, D, H only

2. ✖

B, A, H, C only

3. ✔

G, F, A, H, E only

4. ✖

Question Number : 12 Question Id : 1056152252 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 happens if golgi apparatus of a cell is malfunctioning?

**Options :**

1. ✖ Cell wall synthesis takes place
2. ✔ No cell plate formation
3. ✖ Two cells are completely formed during mitosis from a single cell
4. ✖ There is no effect on the cytokinesis

**Question Number : 13 Question Id : 1056152253 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) : Endoplasmic reticulum divides the intercellular space into luminal and extraluminal compartments.

Reason(R) : The tiny tubular structures scattered in the cytoplasm is responsible for this partition.

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 : 1056152254 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 are not homopolymers?

- A) Collagen
- B) Starch
- C) Inulin
- D) Chitin

**Options :**

A, D only

1. ✔

A, C only

2. ✖

B, C only

3. ✖

C, D only

4. ✖

**Question Number : 15 Question Id : 1056152255 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**

Arrange the following compounds in ascending order with respect to the number of carbons present in their structure.

- A) Glycine
- B) Ribose
- C) Lecithin
- D) Glucose

**Options :**

A, B, C, D

1. ✖

B, A, C, D

2. ✖

A, B, D, C

3. ✔

4. ✖

D, C, B, A

**Question Number : 16 Question Id : 1056152256 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 DNA molecule has 4 heterocyclic compounds namely 'A', 'B', 'C', and 'D'. In that 'A' pairs with 'C' by means of 2 hydrogen bonds, while 'B' pairs with 'D' by means of 3 hydrogen bonds during formation of its double helical structure. Identify the names of 'A', 'B', 'C', and 'D', in the same sequence.

**Options :**

Adenine, Guanine, Thymine and Cytosine

1. ✓

Guanine, Adenine, Cytosine and Thymine

2. ✗

Thymine, Adenine, Guanine and Cytosine

3. ✗

Cytosine, Guanine, Adenine and Thymine

4. ✗

**Question Number : 17 Question Id : 1056152257 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : No**

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

Correct Marks : 1 Wrong Marks : 0

Formation of synaptonemal complex and the stage(s) at which it is best visible.

Options :

Leptotene

1. ✖

Zygotene only

2. ✖

Zygotene and pachytene

3. ✔

Pachytene and pachytene

4. ✖

Question Number : 18 Question Id : 1056152258 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 cell layer above the pericycle will have barrel shaped cells and will not allow water through them.

Reason (R) : As these cell walls have waxy material deposition, they become impermeable to water.

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 : 19 Question Id : 1056152259 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) Submerged suspended hydrophytes
- B) Root caps are absent
- C) Rooted hydrophytes with floating leaves
- D) Plants live partly in water and partly in air

List - II

- I) *Pistia*
- II) *Sagittaria*
- III) *Utricularia*
- IV) *Nymphaea*

The correct match is:

**Options :**

1. ✖



|    |    |   |     |
|----|----|---|-----|
| A  | B  | C | D   |
| II | IV | I | III |

2. ✖

|    |   |    |     |
|----|---|----|-----|
| A  | B | C  | D   |
| II | I | IV | III |

3. ✔

|     |   |    |    |
|-----|---|----|----|
| A   | B | C  | D  |
| III | I | IV | II |

4. ✖

|     |    |   |    |
|-----|----|---|----|
| A   | B  | C | D  |
| III | IV | I | II |

Question Number : 20 Question Id : 1056152260 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 answer from the following:

A student identified three xerophytes A, B and C consisting of succulent leaf, succulent stem and tuberous root, respectively. Identify those plants in the same order.

Options :

*Aloe, Opuntia and Asparagus*

1. ✔



*Opuntia, Aloe, and Asparagus*

2. ✖

*Aloe, Asparagus and Opuntia*

3. ✖

*Asparagus, Aloe and Opuntia*

4. ✖

**Question Number : 21 Question Id : 1056152261 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) : Competitive inhibitors are used in the control of bacterial pathogens.

Reason(R) : A competitive inhibitor does not resemble the substrate of an enzyme in its molecular structure.

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 : 22 Question Id : 1056152262 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 respective absorption maxima of chlorophyll-a in reaction centres of photosystem-I and photosystem-II.

**Options :**

700 nm and 680 nm

1. ✓

680 nm and 700 nm

2. ✗

650 nm and 750 nm

3. ✗

750 nm and 650 nm

4. ✗

**Question Number : 23 Question Id : 1056152263 Question Type : MCQ Option Sh**

ZOLLEGE

**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 site of chemiosmosis for the formation of proton gradient and ATP synthesis in the given two metabolisms resulting in:

**Options :**

1. ✖

|                     |             |
|---------------------|-------------|
| Photosynthesis      | Respiration |
| Intermembrane space | In lumen    |

2. ✖

|                |             |
|----------------|-------------|
| Photosynthesis | Respiration |
| Cytoplasm      | Nucleoplasm |

3. ✔

|                     |                                     |
|---------------------|-------------------------------------|
| Photosynthesis      | Respiration                         |
| Lumen of thylakoids | Intermembrane space of mitochondria |

4. ✖

|                |              |
|----------------|--------------|
| Photosynthesis | Respiration  |
| In stroma      | In cytoplasm |

**Question Number : 24 Question Id : 1056152264 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**

Arrange the following reactions in a sequence that occur in Calvin cycle.

- A) Carboxylation
- B) Regeneration
- C) Reduction
- D) Oxidation

**Options :**

1. ✓ A, C, B

2. ✗ A, B, C

3. ✗ B, C, D

4. ✗ A, B, D

Question Number : 25 Question Id : 1056152265 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 reason for not releasing  $O_2$  by maize during anabolism of glucose.

- A) Carboxylase activity of RuBiSco in mesophyll cells.
- B) Increase of  $CO_2$  concentration in intercellular spaces of leaves.
- C) Activation of oxygenase of RuBiSco.
- D) Decarboxylation of  $C_4$  acids.

The correct answer is :

**Options :**

A, B only

1. ✖

B, C only

2. ✖

C, D only

3. ✖

B, D only

4. ✔

Question Number : 26 Question Id : 1056152266 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) : Present day living organisms include both facultative and obligate anaerobes.

Reason(R) : All the living organisms possess enzymatic machinery for partial oxidation of glucose with the help of  $O_2$ .

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 : 27 Question Id : 1056152267 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 a substrate level phosphorylation reaction in Krebs cycle?

**Options :**

1. ✔



succinyl CoA  $\longrightarrow$  succinic acid

succinic acid  $\longrightarrow$  fumaric acid

2. ✖

$\alpha$  - Ketoglutaric acid  $\longrightarrow$  succinyl CoA

3. ✖

fumaric acid  $\longrightarrow$  malic acid

4. ✖

Question Number : 28 Question Id : 1056152268 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) : Respiratory pathway is considered as an amphibolic pathway.

Reason(R) : Respiratory pathway is connected with the breakdown and the synthesis of both proteins and fatty acids.

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 : 29 Question Id : 1056152269 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 combinations from the following:

- |                                |    |                                   |    |         |
|--------------------------------|----|-----------------------------------|----|---------|
| A) Terpenes                    | —— | hastens malting process           | —— | 2,4 D   |
| B) Carotenoid derivatives      | —— | stimulates the closure of stomata | —— | ABA     |
| C) Indole compounds            | —— | Increases the inter nodal length  | —— | IBA     |
| D) A modified form of a purine | —— | helps nutrient mobilization       | —— | kinetin |

**Options :**

A, B only

1. ✖

2. ✔

B, D only

C, D only

3. ✖

B, C only

4. ✖

**Question Number : 30 Question Id : 1056152270 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 according to G.J. Mendel.

- A) In self-pollinated heterozygous tall  $F_1$  plants, some off springs of  $F_2$  were dwarf.
- B) The factors to express specific characters are present in the genes of an organism.
- C) The symbol for dominance tall will be 'T' and recessive is 'd' dwarf.
- D) Genes that code for a pair of contrasting traits are known as alleles.

**Options :**

A, B, D only

1. ✔

A, B, C only

2. ✖

3. ✖

B, C, D only

A, C, D only

4. ✖

**Question Number : 31 Question Id : 1056152271 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 pea plant with dominant phenotype and unknown genotype is used in the hybridization experiments. If the progeny is having 1: 1 ratio between dominant and recessive phenotype, which cross is used in this experiment?

**Options :**

Back cross

1. ✔

Test Cross

2. ✖

Selfing

3. ✖

Dihybrid cross

4. ✖

**Question Number : 32 Question Id : 1056152272 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 correctly matched statement pairs from the following:

- A) F. Griffith – Transformation in the bacteria.
- B) Avery, MacLeod and McCarty – DNA passed from virus to bacteria.
- C) Hershey and Chase – DNA is the genetic material.
- D) Wilkins and Franklin – RNA is a genetic material in viruses.

**Options :**

1. ✖ A, B

2. ✔ A, C

3. ✖ B, C

4. ✖ B, D

**Question Number : 33 Question Id : 1056152273 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 culture medium was used to prove “DNA replicates conservatively”?

Options :

$^{35}\text{S}$  containing medium

1. ✖

$^{32}\text{P}$  containing medium

2. ✖

Medium with  $^{15}\text{NH}_4\text{Cl}$

3. ✔

Chromogenic medium

4. ✖

Question Number : 34 Question Id : 1056152274 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 mutation and the amino acid involved in causing sickle cell anaemia disease.

Options :

Point mutation, Valine

1. ✔

Point mutation, Lysine

2. ✖

Frame shift mutation, Glutamate

3. ✖

Frame shift mutation, Valine

4. ✖

**Question Number : 35 Question Id : 1056152275 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) : Traditional breeding leads to multiplication of undesirable genes along with desirable genes.

Reason (R) : Sexual reproduction permits variation.

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. ✖

4. ✖

(A) is false but (R) is true

**Question Number : 36 Question Id : 1056152276 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 one of the following is a correct part of methodology used in plant DNA isolation?

**Options :**

Digestion of tissues with chitinase

1. ✖

Dissolution histones with detergents

2. ✖

Addition of ethyl alcohol to precipitate the genetic material having uracil

3. ✖

Removing polymer of amino acids with proteases

4. ✔

**Question Number : 37 Question Id : 1056152277 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None**



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

Correct Marks : 1 Wrong Marks : 0

Choose the incorrect statement from the following:

Options :

1. ✓  
DNA can be stained by ethidium bromide followed by halogen light exposure for observation.
2. ✗  
Agarose gel electrophoresis is employed to check the progression of restriction enzyme digestion of DNA fragments.
3. ✗  
Purified DNA can be separated and removed by spooling.
4. ✗  
In order to select the cells with the desired genes, colony hybridization is used.

Question Number : 38 Question Id : 1056152278 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

Assuming that the occurrence of nucleotide bases in adjacent position in DNA is random, what is the probability of the occurrence of a 8 -bp restriction site ( $5^1$  GGGG CCCC  $3^1$ ) in a 650 kb genome?

Options :

5

1. ✖

10

2. ✔

15

3. ✖

20

4. ✖

**Question Number : 39 Question Id : 1056152279 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 mismatched statements from the following:

- A) Streptokinase - *Streptococcus* - Immunosuppressive agent.
- B) Statins – *Monascus purpureus* – Blood cholesterol lowering agent.
- C) Penicillin – *Penicillium notatum* – kills bacteria.
- D) Cyclosporin – A – *Trichoderma polysporum* – removes clots from blood vessels.

**Options :**

A, B only

1. ✖

2. ✔

A, D only

3. ✖ A, C only

4. ✖ B, C only

**Question Number : 40 Question Id : 1056152280 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**

Biogas formed by the action of anaerobic bacteria during the secondary treatment of effluent consists of the following gases.

- A) methane
- B) hydrogen sulphide
- C) carbon dioxide
- D) nitrogen

**Options :**

1. ✔ A, B, C only

2. ✖ A, C, D only

3. ✖

A, B, D only

B, C, D only

4. ✖

## Zoology

|                                                              |           |
|--------------------------------------------------------------|-----------|
| Section Id :                                                 | 10561549  |
| Section Number :                                             | 2         |
| 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 :                                             | 10561549  |
| Question Shuffling Allowed :                                 | Yes       |

Question Number : 41 Question Id : 1056152281 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 of animal behaviour is

**Options :**

1. ✖ Ecology
2. ✖ Evolution
3. ✔ Ethology
4. ✖ Eugenics

**Question Number : 42 Question Id : 1056152282 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 ) : It is the basic unit of classification.

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 : 43 Question Id : 1056152283 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**

Statement I : Tilman showed that increased diversity contributed to higher productivity.

Statement II: Constant environment promotes niche specialisation.

The correct option among the following is

**Options :**

Statement I is true, but Statement II is false

1. ✖

Statement II is true, but Statement I is false

2. ✖

Both Statement I and Statement II are true

3. ✔

Both Statement I and Statement II are false

4. ✖

Question Number : 44 Question Id : 1056152284 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 not a triploblastic phylum?

Options :

1. ✓ Ctenophora
2. ✗ Hemichordata
3. ✗ Platyhelminthes
4. ✗ Echinodermata

Question Number : 45 Question Id : 1056152285 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 retroperitoneal organ from the following.

Options :

1. ✗ Heart



2. ✓ Kidney

3. ✗ Gonad

4. ✗ Lung

**Question Number : 46 Question Id : 1056152286 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 junctions between epithelial cells that prevent the leakage of body fluids

**Options :**

1. ✗ Desmosomes

2. ✓ Tight junctions

3. ✗ Gap junctions

4. ✗ Synapses

**Question Number : 47 Question Id : 1056152287 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) : Cardiac muscle is described as a functional syncytium.

Reason (R) : The rate of heart beat is regulated by an autonomic innervation and adrenaline.

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 : 48 Question Id : 1056152288 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) Choanocytes    | I) Cnidaria    |
| B) Lasso cells    | II) Porifera   |
| C) Stinging cells | III) Nematoda  |
| D) Renette cells  | IV) Ctenophora |
|                   | V) Mollusca    |

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 |
| IV | III | II | I |

4. ✔

|    |    |   |     |
|----|----|---|-----|
| A  | B  | C | D   |
| II | IV | I | 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

The function of parapodia is

Options :

1. ✖ Burrowing

2. ✔ Swimming

3. ✖ Food collection

4. ✖ Visual sense

Question Number : 50 Question Id : 1056152290 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

Antennary glands are the excretory organs of

Options :

1. ✖ Chilopoda

Diplopoda

2. ✖

Arachnida

3. ✖

Crustacea

4. ✔

Question Number : 51 Question Id : 1056152291 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:

- A) Circulatory system is closed type.
- B) Excretion is performed by solenocytes.
- C) Exchange of respiratory gases occurs mostly across the external body surface.
- D) Notochord persists throughout life.

The above characteristics are applicable to

Options :

*Ascidia*

1. ✖

*Petromyzon*

2. ✖

3. ✔

## *Branchiostoma*

## *Balanoglossus*

4. ✖

Question Number : 52 Question Id : 1056152292 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 table and pick up the correct combination(s).

| S.No | Group          | Salient feature    | Example         |
|------|----------------|--------------------|-----------------|
| I)   | Cyclostomata   | Circular mouth     | <i>Lamprey</i>  |
| II)  | Pisces         | Poikilotherms      | <i>Hag fish</i> |
| III) | Chondrichthyes | Lamelliiform gills | <i>Pristis</i>  |
| IV)  | Osteichthyes   | Placoid scales     | <i>Labeo</i>    |

Options :

I, II

1. ✖

II, IV

2. ✖

I, III

3. ✔

III, IV

4. ✖

Question Number : 53 Question Id : 1056152293 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) Anurans
- B) Urodeles
- C) Caecilians
- D) Birds

List -II

- I) Opisthocoelous vertebrae
- II) Heterocoelous vertebrae
- III) Amphiplatyans
- IV) Procoelous vertebrae
- V) Amphicoelous vertebrae

The correct match is

Options :

|    |   |     |   |
|----|---|-----|---|
| A  | B | C   | D |
| IV | I | III | V |

1. ✖

|    |   |   |    |
|----|---|---|----|
| A  | B | C | D  |
| IV | I | V | II |

2. ✔

|     |   |    |   |
|-----|---|----|---|
| A   | B | C  | D |
| III | V | IV | I |

3. ✖



|    |   |   |    |
|----|---|---|----|
| A  | B | C | D  |
| II | V | I | IV |

4. ✖

**Question Number : 54 Question Id : 1056152294 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**

Statement I : Increase of size of the infected cell of the host due to parasite is known as hyperplasia.

Statement II : Some parasites cause degeneration of gonads of their hosts. This phenomenon is called parasitic castration.

The correct option among the following is

**Options :**

Statement I is true, but Statement II is false

1. ✖

Statement II is true, but Statement I is false

2. ✔

Both Statement I and Statement II are true

3. ✖

Both Statement I and Statement II are false

4. ✖

Question Number : 55 Question Id : 1056152295 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

Stages of *Plasmodium* in order in pre-erythrocytic cycle is

Options :

Sporozoite – Trophozoite – Schizont – Cryptozoite

1. ✓

Sporozoite – Trophozoite – Cryptozoite – Schizont

2. ✗

Sporozoite – Schizont – Trophozoite – Cryptozoite

3. ✗

Cryptozoite – Trophozoite – Schizont – Sporozoite

4. ✗

Question Number : 56 Question Id : 1056152296 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) : Sexual dimorphism is distinct in *Ascaris*.

Reason (R) : The post anal tail in male *Ascaris* is curved.

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 : 57 Question Id : 1056152297 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**

Statement I : Confirmatory test for pneumonia is widal test.

Statement II : In pneumonia, alveoli get filled with fluid.

The correct option among the following is

**Options :**

1. ✖

Statement I is true, but Statement II is false

Statement II is true, but Statement I is false

2. ✓

Both Statement I and Statement II are true

3. ✗

Both Statement I and Statement II are false

4. ✗

Question Number : 58 Question Id : 1056152298 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 are sleeping pills?

Options :

Amphetamines

1. ✗

Barbiturates

2. ✓

Tranquilizers

3. ✗

## Benzodiazepines

4. ✖

**Question Number : 59 Question Id : 1056152299 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**

Certain organisms show delay in development during periods of unfavourable environmental conditions, and spend some period in an inactive state is called

**Options :**

Hibernation

1. ✖

Aestivation

2. ✖

Diapause

3. ✔

Dormancy

4. ✖

**Question Number : 60 Question Id : 1056152300 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 denitrifying bacteria.

Options :

1. ✖ *Nitrosomonas*

2. ✖ *Nitrosococcus*

3. ✖ *Nitrobacter*

4. ✔ *Thiobacillus*

Question Number : 61 Question Id : 1056152301 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) Pharynx    | I) Prevents entry of food           |
| B) Larynx     | II) Tube up to mid thoracic cavity  |
| C) Trachea    | III) Help in sound production       |
| D) Epiglottis | IV) Common passage for food and air |
|               | V) Tube into the alveoli            |

The correct match is

Options :

|    |   |   |    |
|----|---|---|----|
| A  | B | C | D  |
| IV | V | I | II |

1. ✖

|     |    |   |    |
|-----|----|---|----|
| A   | B  | C | D  |
| III | IV | I | II |

2. ✖

|     |    |   |   |
|-----|----|---|---|
| A   | B  | C | D |
| III | II | V | I |

3. ✖

|    |     |    |   |
|----|-----|----|---|
| A  | B   | C  | D |
| IV | III | II | I |

4. ✔

Question Number : 62 Question Id : 1056152302 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

Left side shift of oxygen haemoglobin dissociation curve takes place during

Options :

Low pH, High CO<sub>2</sub>, High temperature

1. ✖

2. ✖



High pH, High CO<sub>2</sub>, High temperature

Low pH, Low CO<sub>2</sub>, Low temperature

3. ✖

High pH, Low CO<sub>2</sub>, Low temperature

4. ✔

**Question Number : 63 Question Id : 1056152303 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 extrinsic pathway during blood clotting tissue thromboplastin released from damaged vascular wall activates

**Options :**

Factor XII

1. ✖

Factor VII

2. ✔

Factor XI

3. ✖

Factor V

4. ✖

**Question Number : 64 Question Id : 1056152304 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 statements.

- I) Hepatic portal vein carries blood from liver to the heart.
- II) Normal activities of the heart are regulated, intrinsically by specialised muscles.
- III) Angina pectoris is a warning signal of deprivation of blood supply to the heart muscles.
- IV) Systemic circulation is also called lesser circulation.

**Options :**

I, IV only

1. ✖

I, II only

2. ✖

II, III only

3. ✔

III, IV only

4. ✖

**Question Number : 65 Question Id : 1056152305 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) : Protonephridia are found in lancelets.

Reason (R) : Protonephridia are primary concerned with excretion.

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 : 66 Question Id : 1056152306 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) ADH             | I) Aldosterone       |
| B) Renin           | II) Vasodilator      |
| C) ANP             | III) Neurohypophysis |
| D) Angiotensin -II | IV) JG cells         |

The correct match is

Options :

|     |    |   |    |
|-----|----|---|----|
| A   | B  | C | D  |
| III | IV | I | II |

1. ✖

|    |     |    |   |
|----|-----|----|---|
| A  | B   | C  | D |
| IV | III | II | I |

2. ✖

|    |     |   |    |
|----|-----|---|----|
| A  | B   | C | D  |
| IV | III | I | II |

3. ✖

|     |    |    |   |
|-----|----|----|---|
| A   | B  | C  | D |
| III | IV | II | I |

4. ✔

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

Correct Marks : 1 Wrong Marks : 0

Motor protein in the myofibril that is able to convert chemical energy into mechanical energy is

Options :

Actin

1. ✖

Troponin

2. ✖

Tropomyosin

3. ✖

Myosin

4. ✔

Question Number : 68 Question Id : 1056152308 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

Pneumotaxic centre lies in

Options :

Cerebellum

1. ✖

2. ✖

Medulla oblongata

Limbic system

3. ✖

Pons varolii

4. ✔

**Question Number : 69 Question Id : 1056152309 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**

Statement I : In electrical synapse, the pre and post synaptic membranes have conductive links called gap junctions.

Statement II : In chemical synapses, the post synaptic membrane has ligand gated channels.

The correct option among the following is

**Options :**

Statement I is true, but Statement II is false

1. ✖

Statement II is true, but Statement I is false

2. ✖

Both Statement I and Statement II are true

3. ✔

Both Statement I and Statement II are false

4. ✖

Question Number : 70 Question Id : 1056152310 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) Thyroxine   | I) Reduces glucose level in blood     |
| B) Calcitonin  | II) Reabsorption of water in nephrons |
| C) Insulin     | III) Lowers calcium level in blood    |
| D) Oxytocin    | IV) Metamorphosis of tadpole larva    |
| E) Vasopressin | V) Contraction of uterine muscles     |

The correct match is

Options :

|    |     |   |    |   |
|----|-----|---|----|---|
| A  | B   | C | D  | E |
| IV | III | I | II | V |

1. ✖

|   |    |     |    |   |
|---|----|-----|----|---|
| A | B  | C   | D  | E |
| I | II | III | IV | V |

2. ✖

3. ✔



|    |     |   |   |    |
|----|-----|---|---|----|
| A  | B   | C | D | E  |
| IV | III | I | V | II |

|   |    |     |   |    |
|---|----|-----|---|----|
| A | B  | C   | D | E  |
| V | IV | III | I | II |

4. ✖

Question Number : 71 Question Id : 1056152311 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

Select the odd one with reference to disorders caused due to hormone deficiency.

Options :

Addison's disease

1. ✖

Cretinism

2. ✖

Gout disease

3. ✔

Diabetes insipidus

4. ✖

Question Number : 72 Question Id : 1056152312 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : No

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

Correct Marks : 1 Wrong Marks : 0

Vaccination is a type of

Options :

Innate immunity

1. ✖

Passive acquired immunity

2. ✖

Artificial active acquired immunity

3. ✔

Natural active acquired immunity

4. ✖

Question Number : 73 Question Id : 1056152313 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

Peyer's patches are

Options :

Primary lymphoid organs

1. ✖

Secondary lymphoid organs

2. ✓

Lymph nodes

3. ✗

Endocrine structures of small intestine

4. ✗

**Question Number : 74 Question Id : 1056152314 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) : Almost in the middle of the menstrual cycle, ovulation takes place in human beings.

Reason (R) : L.H. levels in blood reaches to maximum.

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 : 75 Question Id : 1056152315 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 not a barrier?

Options :

Vaginal ring

1. ✔

Cervical cap

2. ✖

Diaphragm

3. ✖

Vaults

4. ✖

Question Number : 76 Question Id : 1056152316 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 blood group(s) is /are not possible in the progeny, if the parents have AB and O blood groups?

- I) A                      II) B                      III) AB                      IV) O

**Options :**

I only

1. ✖

II only

2. ✖

IV only

3. ✖

III and IV

4. ✔

**Question Number : 77 Question Id : 1056152317 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 Genic balance theory, the *Drosophila* with the Karyotype AAXO is

**Options :**

Male

1. ✔

Female

2. ✖

Intersex

3. ✖

Metafemale

4. ✖

Question Number : 78 Question Id : 1056152318 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 a person has an additional copy of chromosome number 21, the disorder is described  
as

Options :

Down syndrome

1. ✔

Klinefelter syndrome

2. ✖

Turner syndrome

3. ✖

Edward syndrome

4. ✖

Question Number : 79 Question Id : 1056152319 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

Mule is a product of

Options :

Out crossing

1. ✖

Interspecific hybridisation

2. ✔

Cross breeding

3. ✖

Line breeding

4. ✖

Question Number : 80 Question Id : 1056152320 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

Liquid tumours are

Options :

Lymphomas

1. ✖



Carcinomas

2. ✖

Sarcomas

3. ✖

Leukemias

4. ✔

## Physics

|                                                              |           |
|--------------------------------------------------------------|-----------|
| Section Id :                                                 | 10561550  |
| Section Number :                                             | 3         |
| 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 :                                             | 10561550  |
| Question Shuffling Allowed :                                 | Yes       |

Question Number : 81 Question Id : 1056152321 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

Two particles having equal mass and charge are separated by a distance  $r$ . The force(s) they experience is (are)

**Options :**

Attractive electromagnetic force only

1. ✖

Repulsive electromagnetic force only

2. ✖

Attractive electromagnetic force and attractive gravitational force

3. ✖

Repulsive electromagnetic force and attractive gravitational force

4. ✔

**Question Number : 82 Question Id : 1056152322 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 Bernoulli equation can be presented as  $P + \frac{1}{2}\rho V^2 + \rho g z = C$  where  $P$  is pressure,  $\rho$  is fluid density,  $V$  is fluid velocity,  $g$  is gravitational acceleration,  $z$  is distance and  $C$  is the constant. The dimension of the constant  $C$  is

**Options :**

$$\left\{ \frac{\text{m}}{\text{TL}} \right\}$$

1. ✖

$$\left\{ \frac{m}{TL^2} \right\}$$

2. ✖

$$\left\{ \frac{m}{T^2L^2} \right\}$$

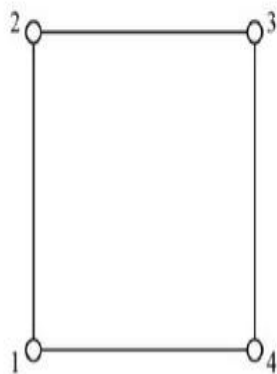
3. ✖

$$\left\{ \frac{m}{T^2L} \right\}$$

4. ✔

**Question Number : 83 Question Id : 1056152323 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 track is in square shape. The length of each side is 'a'. There exists a pole at each corner as shown below. The person who walks on the track starts at the 1<sup>st</sup> pole and reach the 4<sup>th</sup> pole. The ratio of distance travelled by the person to displacement is



**Options :**

1. ✖

$$\frac{1}{3}$$

$$3$$

2. ✓

$$\frac{2}{3}$$

3. ✗

$$\frac{3}{2}$$

4. ✗

**Question Number : 84 Question Id : 1056152324 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**

Acceleration  $a$  is given in terms of position  $x$  as  $a = 2x \text{ m/s}^2$ . At  $x = 0$ , the velocity  $v$  is zero. What is the relation between velocity  $v$  and position  $x$ ?

**Options :**

$$v = \sqrt{2} x$$

1. ✓

$$v = 2x$$

2. ✗

$$v^2 = 2x$$

3. ✖

$$v = \frac{x^2}{2}$$

4. ✖

**Question Number : 85 Question Id : 1056152325 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 co-ordinates (x, y) of a moving particle at any time 't' are given by  $x = \alpha t^3$  and  $y = \beta t^3$ . The speed of the particle at time 't' is given by

**Options :**

$$3t\sqrt{\alpha^2 + \beta^2}$$

1. ✖

$$3t^2\sqrt{\alpha^2 + \beta^2}$$

2. ✔

$$t^2\sqrt{\alpha^2 + \beta^2}$$

3. ✖

4. ✖

$$\sqrt{\alpha^2 + \beta^2}$$

Question Number : 86 Question Id : 1056152326 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 football is kicked off with a velocity of 147 m/s at an angle of  $30^\circ$  with the ground.  
The time the ball takes to touch the ground is  
( $g = 9.8 \text{ m/s}^2$ )

Options :

7.5 s

1. ✖

15 s

2. ✔

21 s

3. ✖

26 s

4. ✖

Question Number : 87 Question Id : 1056152327 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : Nor

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

Correct Marks : 1 Wrong Marks : 0

A 10 kg box is pulled on a rough horizontal surface. The force 40 N is applied at  $60^\circ$  angle from vertical. If co-efficient of kinetic friction is 0.25, what will the acceleration of the moving box? (Consider  $g = 10 \text{ m/s}^2$ )

Options :

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

1. ✖

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

2. ✖

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

3. ✔

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

4. ✖

Question Number : 88 Question Id : 1056152328 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 relation between the displacement and time of an object is given as  $x = t^2 + 7$ . The displacement happens under the action of a force in x- direction. The mass of the object is 2 kg. The displacement of object when the velocity is 2 m/s and work done by the force during initial 10 s are



**Options :**

7 m and 428 J

1. ✖

8 m and 428 J

2. ✖

7 m and 400 J

3. ✖

8 m and 400 J

4. ✔

**Question Number : 89 Question Id : 1056152329 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**

Two identical bodies of same mass move with speed  $V_0$  and  $2V_0$ , respectively in directions perpendicular to each other. After some time, the bodies collide and merge with each other. The speed after collision is

**Options :**

$$\frac{V_0}{2}$$

1. ✖

$$\frac{V_0\sqrt{5}}{2}$$

2. ✔

3. ✖

$$\frac{V_0}{2\sqrt{5}}$$

4. ✖

$$V_0$$

**Question Number : 90 Question Id : 1056152330 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 of mass 'M' collides against a wall with a speed 'v' and retraces its path with the same speed, the change in momentum is

**Options :**

Zero

1. ✖

2 Mv

2. ✔

Mv

3. ✖

-Mv

4. ✖

Question Number : 91 Question Id : 1056152331 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 time periods of a given simple pendulum on the surface of earth  $T_1$ , in international space station  $T_2$  and on the surface of the moon  $T_3$  are related as

Options :

$$T_2 < T_1 < T_3$$

1. ✖

$$T_2 > T_1 > T_3$$

2. ✖

$$T_1 > T_2 > T_3$$

3. ✖

$$T_1 < T_2 < T_3$$

4. ✔

Question Number : 92 Question Id : 1056152332 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 satellite is revolving around the earth at the speed  $V$ . The height of the satellite is  $6R_E$  from the earth surface ( $R_E$  is radius of earth = 6400 km). If another satellite is orbiting 600 km above the earth surface. The speed of this orbiting satellite is

**Options :**

6 V

1. ✖

$\frac{6}{\sqrt{5}} V$

2. ✖

$4\sqrt{2} V$

3. ✖

$\frac{8V}{\sqrt{10}}$

4. ✔

**Question Number : 93 Question Id : 1056152333 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**

Two wires A and B made of same material is subjected to same tension. The length and diameter of A, B are 10 cm, 1 mm and 70 cm, 2 mm respectively. Then identify the correct statement from the following:

**Options :**

Wire A would have larger extension than wire B

1. ✔

Wire A would have lesser extension than wire B

2. ✖

Wire A and Wire B would have same extension

3. ✖

No extension for Wire A and Wire B despite the application of tension

4. ✖

**Question Number : 94 Question Id : 1056152334 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 cylindrical container of cross sectional area  $10 \text{ cm}^2$  contains a liquid of density  $1.2 \text{ g/cm}^3$  upto a certain level. A piece of ice having mass  $9 \text{ g}$  (density =  $0.9 \text{ g/cm}^3$ ) is floating in this liquid. If the ice melts completely, the change in level is

**Options :**

0.15 cm

1. ✔

0.25 cm

2. ✖

0.35 cm

3. ✖

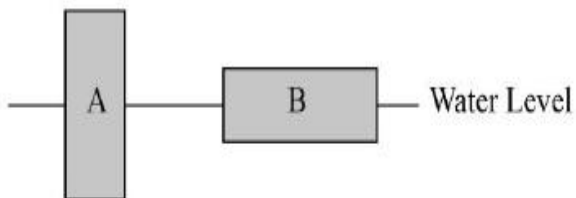
0.45 cm

4. ✖

**Question Number : 95 Question Id : 1056152335 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**

Two identical blocks of ice A and B float in water as shown in figure. Then



**Options :**

Block A displaced a greater volume of water since the pressure acts on a smaller bottom area

1. ✖

Block B displaced a greater volume of water since the pressure is less on its bottom

2. ✖

The two blocks displace equal volumes of water since they have the same weight

3. ✔

4. ✖

Block A displaces a greater volume of water since its submerged end is lower in the water

**Question Number : 96 Question Id : 1056152336 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 hole is drilled at the center of a metallic plate. If the metal plate is heated, then the size of the hole will be

**Options :**

1.  Expanding
2.  Contracting
3.  Remains same
4.  Not predicted

**Question Number : 97 Question Id : 1056152337 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 cools down from  $90^{\circ}\text{C}$  to  $70^{\circ}\text{C}$  in 10 minutes, when room temperature is  $30^{\circ}\text{C}$ . The time taken by the object to cool from  $70^{\circ}\text{C}$  to  $50^{\circ}\text{C}$  is

**Options :**

10 min

1. ✖

20.3 min

2. ✖

16.7 min

3. ✔

14.5 min

4. ✖

**Question Number : 98 Question Id : 1056152338 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  $n$  moles of an ideal gas. The gas expands adiabatically from initial temperature  $T_i$  to final lower temperature  $T_f$ . The work done by gas is proportional to

**Options :**

Specific heat at constant pressure and difference between initial and final temperature

1. ✖

2. ✔

Specific heat at constant volume and difference between initial and final temperature

Only specific heat

3. ✖

Only difference between initial and final temperature

4. ✖

**Question Number : 99 Question Id : 1056152339 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 ideal gas undergoes through an isochoric process whereby its internal energy is increased by  $\Delta U$ . If the heat expelled (thrown out) by the gas is  $\Delta Q$ , then the ratio  $\frac{\Delta U}{\Delta Q}$  is

**Options :**

1.0

1. ✖

0.5

2. ✖

-1.0

3. ✔

−2.0

4. ✖

Question Number : 100 Question Id : 1056152340 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 gaseous mixture consists of molecules of type A, B and C with masses  $M_A > M_B > M_C$ . The correct relation between their average kinetic energy is

Options :

$$K_A > K_B > K_C$$

1. ✖

$$K_A < K_B < K_C$$

2. ✖

$$K_A = K_B = K_C$$

3. ✔

$$K_A = K_B < K_C$$

4. ✖

Question Number : 101 Question Id : 1056152341 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 following statements.

- A) Longitudinal waves need bulk modulus of elasticity and therefore can propagate in all media.
- B) Progressive wave is a wave that moves from one point of medium to another.
- C) In a wave, energy and matter are transferred from one point to another.

Choose the correct option.

**Options :**

A, B, C are correct

1. ✖

only B and C are correct

2. ✖

only A and B are correct

3. ✔

only A and C are correct

4. ✖

**Question Number : 102 Question Id : 1056152342 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**

Light from a point source in air falls on a spherical glass surface of refractive index 1.5. The distance of the light source from the glass surface is 150 cm. If the image is formed at a distance of 150 cm from the glass surface, in the direction of incident light, then the radius of the curvature of the surface is

**Options :**

20 cm

1. ✖

40 cm

2. ✖

30 cm

3. ✔

15 cm

4. ✖

**Question Number : 103 Question Id : 1056152343 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 Young's double slit experiment the intensity ratio between bright and dark fringes is found to be 36. The ratio of amplitude of bright and dark fringes is

**Options :**

36 : 16

1. ✖

7 : 5

2. ✓

6 : 1

3. ✗

36 : 5

4. ✗

**Question Number : 104 Question Id : 1056152344 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**

Charges on two identical metal balls is Q and 3Q. They are kept at same distance after an initial contact. What is the ratio of initial to the final force?

**Options :**

4 : 3

1. ✗

3 : 4

2. ✓

2 : 3

3. ✗

4. ✗

3 : 2

**Question Number : 105 Question Id : 1056152345 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 capacitors each of  $4\ \mu\text{F}$  are to be connected in such a way that the effective capacitance is  $6\ \mu\text{F}$ . This can be done by connecting them

**Options :**

all in series

1. ✖

all in parallel

2. ✖

two in parallel and one in series

3. ✖

two in series and one in parallel

4. ✔

**Question Number : 106 Question Id : 1056152346 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 (its temperature coefficient =  $0.001 \text{ K}^{-1}$ ) is  $4\Omega$  at  $27^\circ\text{C}$ . If its temperature is increased twice the initial value, the final resistance of the wire is

**Options :**

4.1  $\Omega$

1. ✖

4.5  $\Omega$

2. ✖

4.9  $\Omega$

3. ✖

5.2  $\Omega$

4. ✔

**Question Number : 107 Question Id : 1056152347 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 battery of emf 10 V and some internal resistance is connected to a resistor of  $17 \Omega$ . If the current in the circuit is 0.5 A then the internal resistance of the battery is  
( $\mu_0 = 4\pi \times 10^{-7}$ , charge of electron  $e = 1.6 \times 10^{-19}$  coulombs)

**Options :**

0.6  $\Omega$

1. ✖

2.5  $\Omega$

2. ✖

3.5  $\Omega$

3. ✖

3.0  $\Omega$

4. ✔

Question Number : 108 Question Id : 1056152348 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 long straight wire carries a current of 20 A. The maximum force experienced by an electron moving at a speed of 100 km/s, at a distance of 6.4 cm from the wire is

Options :

$10^{-18} \text{ N}$

1. ✔

$10^{-19} \text{ N}$

2. ✖

$5 \times 10^{-17} \text{ N}$

3. ✖

$8 \times 10^{-18} \text{ N}$

4. ✖

Question Number : 109 Question Id : 1056152349 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 magnetic field at a centre of solenoid is  $B$ . The solenoid is cut into two equal parts.  
For the same current, what is  $B$  at the centre of new solenoid?

Options :

1. ✓  $B$

2. ✗  $2B$

3. ✗  $4B$

4. ✗  $\frac{B}{2}$

Question Number : 110 Question Id : 1056152350 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 has a magnitude of magnetic field  $10^{-10} \text{ T}$ , at a point on its axis at a  
distance 10 m from it. The magnetic moment of the magnet is ( $\mu_0 = 4\pi \times 10^{-7}$ )

**Options :**

2.0 Am<sup>2</sup>

1. ✖

1.0 Am<sup>2</sup>

2. ✖

0.5 Am<sup>2</sup>

3. ✔

1.5 Am<sup>2</sup>

4. ✖

**Question Number : 111 Question Id : 1056152351 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 rod of length 2 m has a translational velocity of 1 m/s in a direction making an angle 30° with its length. The plane along which the rod is moving is normal to the magnetic field of induction of 2 T. The e.m.f induce between the two ends of the rod is

**Options :**

0.5 V

1. ✖

1 V

2. ✖

1.5 V

3. ✖

2 V

4. ✔

Question Number : 112 Question Id : 1056152352 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 cell phone charger consists of a stepdown transformer to convert AC voltage of 120 V to AC voltage of 5.0 V. If the secondary coil contains 30 turns and charger supplies 720 mA, calculate the current in the primary coil.

Options :

12 mA

1. ✖

30 mA

2. ✔

85 mA

3. ✖

160 mA

4. ✖

Question Number : 113 Question Id : 1056152353 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

Let  $\vec{E}$  and  $\vec{B}$  are electric and magnetic field in an electromagnetic wave. Identify the correct option.

Options :

$$\vec{E} = E_0 \sin \omega \left( t - \frac{x}{c} \right) \hat{j}, \vec{B} = B_0 \sin \omega \left( t - \frac{x}{c} \right) \hat{k}$$

1. ✓

$$\vec{E} = E_0 \sin \omega \left( t - \frac{y}{c} \right) \hat{j}, \vec{B} = B_0 \sin \omega \left( t - \frac{z}{c} \right) \hat{k}$$

2. ✗

$$\vec{E} = E_0 \sin \omega \left( t - \frac{x}{c} \right) \hat{i}, \vec{B} = B_0 \sin \omega \left( t - \frac{x}{c} \right) \hat{i}$$

3. ✗

$$\vec{E} = E_0 \sin^2 \omega \left( t - \frac{x}{c} \right) \hat{j}, \vec{B} = B_0 \sin^2 \omega \left( t - \frac{x}{c} \right) \hat{k}$$

4. ✗

Question Number : 114 Question Id : 1056152354 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 velocity of a particle is reduced to half what is the percentage increase in its deBroglie wavelength?

**Options :**

100

1. ✓

200

2. ✗

400

3. ✗

50

4. ✗

**Question Number : 115 Question Id : 1056152355 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 a source of power 100 kW produces  $1.5 \times 10^{20}$  photons/sec. The radiation belongs to spectrum called as ( $h = 6.63 \times 10^{-34}$  J/s)

**Options :**

Gamma rays

1. ✗



X – rays

2. ✓

Ultraviolet rays

3. ✗

Microwave rays

4. ✗

**Question Number : 116 Question Id : 1056152356 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 frequency of the line in the Balmer series of hydrogen spectrum corresponding to the transitions from  $n = 5$  is  
( $R$  Rydberg constant)

**Options :**

$2.1 \times 10^7 R$

1. ✗

$6.3 \times 10^7 R$

2. ✓

$4.5 \times 10^7 R$

3. ✗

$$1.5 \times 10^7 \text{ R}$$

4. ✖

Question Number : 117 Question Id : 1056152357 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 and proton are produced by breaking of a neutron. If the mass of neutron, electron and proton are  $1.675 \times 10^{-27} \text{ kg}$ ,  $9 \times 10^{-31} \text{ kg}$  and  $1.6730 \times 10^{-27} \text{ kg}$  respectively, find the amount of energy released in this process.  
(consider velocity of light as  $3 \times 10^8 \text{ m/s}$ )

Options :

0.66 MeV

1. ✖

0.59 MeV

2. ✖

0.62 MeV

3. ✔

0.68 MeV

4. ✖

Question Number : 118 Question Id : 1056152358 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : Nor

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

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is correct

Options :

p- type junction can be obtained by doping with pentavalent atoms

1. ✖

The junction barrier in a p-n junction diode is decreased under reverse bias

2. ✖

The minority carriers in n – type semiconductor are electrons

3. ✖

The product of number of electrons and number of holes in a semiconductor is constant

4. ✔

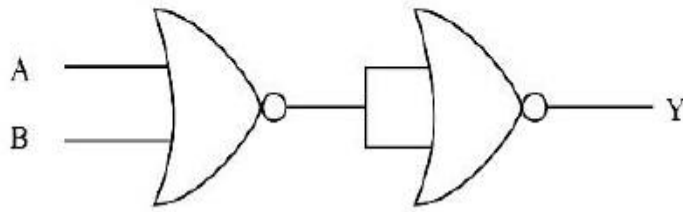
Question Number : 119 Question Id : 1056152359 Question Type : MCQ Option Shuffling : Yes

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 logic operation which the following circuit is performing



Options :

OR

1. ✓

AND

2. ✗

NOT

3. ✗

NAND

4. ✗

Question Number : 120 Question Id : 1056152360 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 atmospheric region which acts as 'radio mirror' is

Options :

1. ✗

Troposphere only

Stratosphere only

2. ✖

Ionosphere only

3. ✔

Troposphere and stratosphere

4. ✖

## Chemistry

|                                                              |           |
|--------------------------------------------------------------|-----------|
| Section Id :                                                 | 10561551  |
| 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 :                                             | 10561551  |
| Question Shuffling Allowed :                                 | Yes       |

Question Number : 121 Question Id : 1056152361 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 complete set of correct statements from the following is

- a) The value of Rydberg constant calculated for hydrogen atom by Bohr model is in agreement with that of experimentally determined value.
- b) Bohr theory successfully explained the fine spectrum of hydrogen atom.
- c) The value of Rydberg constant for hydrogen is 13.6 eV.
- d) Bohr's theory can explain chemical bond formation.

Options :

a, b and c only

1. ✖

b and c only

2. ✖

a and c only

3. ✔

c and d only

4. ✖

Question Number : 122 Question Id : 1056152362 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 number of revolutions made by an electron in the 1<sup>st</sup> orbit of hydrogen atom per minute is approximately

**Options :**

$3.9 \times 10^{15}$

1. ✖

$3.9 \times 10^{16}$

2. ✖

$3.9 \times 10^{17}$

3. ✔

$3.9 \times 10^{14}$

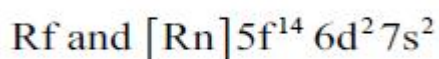
4. ✖

**Question Number : 123 Question Id : 1056152363 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 IUPAC symbol and the electronic configuration of the element 'Unq' are respectively, \_\_\_\_\_ and \_\_\_\_\_.

**Options :**



1. ✔



No and  $[Rn] 5f^{14} 6d^4 7s^2$

2. ✖

Db and  $[Rn] 5f^{14} 6d^2 7s^2$

3. ✖

Lr and  $[Rn] 5f^{14} 6d^2 7s^2$

4. ✖

Question Number : 124 Question Id : 1056152364 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 anomalous pair in Mendeleev's periodic table is

Options :

Co and Zn

1. ✖

Co and Ni

2. ✔

K and Ca

3. ✖

4. ✖

Question Number : 125 Question Id : 1056152365 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 formal charges on oxygen atoms of ozone are

Options :

+1, -2, +1

1. ✖

-2, 0, +2

2. ✖

+1, 0, -1

3. ✔

-1, +2, -1

4. ✖

Question Number : 126 Question Id : 1056152366 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 hybridization of 'N' atomic orbitals in  $\text{NO}_2$ ,  $\text{NO}_2^+$ ,  $\text{NO}_2^-$  respectively, are

Options :

$\text{sp}^2$ ,  $\text{sp}^2$ ,  $\text{sp}^2$

1. ✖

$\text{sp}^2$ ,  $\text{sp}$ ,  $\text{sp}^3$

2. ✖

$\text{sp}^2$ ,  $\text{sp}$ ,  $\text{sp}^2$

3. ✔

$\text{sp}^3$ ,  $\text{sp}$ ,  $\text{sp}^3$

4. ✖

Question Number : 127 Question Id : 1056152367 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 the periodic table, the number of elements that exist as gases under normal conditions is

Options :

8

1. ✖

10

2. ✖

11

3. ✔

13

4. ✖

**Question Number : 128 Question Id : 1056152368 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 unknown gas is kept at 1 atm at 300 K and allowed to diffuse through a membrane. The rate of diffusion is 'r' L/min. At the same temperature, O<sub>2</sub> kept at 2 atm has the rate of diffusion ' $\frac{r}{2}$ ' L/min. The unknown gas is

**Options :**

H<sub>2</sub>O

1. ✖

He

2. ✖

Ar

3. ✖

4. ✔



**Question Number : 129 Question Id : 1056152369 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 percentage composition of a solution (X) obtained by mixing 200 g of a 20 % and 300 g of a 30 % solution by weight?

**Options :**

20 %

1. ✖

30 %

2. ✖

26 %

3. ✔

50 %

4. ✖

**Question Number : 130 Question Id : 1056152370 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 equivalent weights of  $\text{KMnO}_4$  in acidic, neutral and basic media are, respectively

**Options :**

31.6, 52.6, 158

1. ✓

52.6, 31.6, 158

2. ✗

158, 31.6, 52.6

3. ✗

158, 52.6, 31.6

4. ✗

**Question Number : 131 Question Id : 1056152371 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 the standard enthalpy change of formation [ $\Delta H_f^\circ$  in  $\text{kJ mol}^{-1}$ ] for  $\text{C}_3\text{H}_8(\text{g})$ ,  $\text{CO}_2(\text{g})$  and  $\text{H}_2\text{O}(\text{l})$  are  $-105$ ,  $-394$  and  $-286$ , respectively. The  $\Delta_r H^\circ$  of complete combustion of propane in oxygen is approximately (in  $\text{kJ. mol}^{-1}$ )

**Options :**

574

1. ✗

2221

2. ✖

-2221

3. ✔

2431

4. ✖

**Question Number : 132 Question Id : 1056152372 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) : For the ammonia formation from its constituent elements, the reaction at equilibrium will shift in the forward direction with increasing pressure.

Reason (R) : Increasing pressure shifts the equilibrium towards the side of the reaction with fewer number of gaseous molecules.

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 : 133 Question Id : 1056152373 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 are Lewis acids?

$\text{BF}_3$ ,  $\text{H}_2\text{O}$ ,  $\text{H}^+$ ,  $\text{SO}_3$

Options :

$\text{H}^+$ ,  $\text{SO}_3$  only

1. ✖

$\text{BF}_3$ ,  $\text{H}^+$ ,  $\text{H}_2\text{O}$  only

2. ✖

$\text{BF}_3$ ,  $\text{H}^+$ ,  $\text{SO}_3$  only

3. ✔

$\text{BF}_3$ ,  $\text{H}_2\text{O}$ ,  $\text{SO}_3$  only

4. ✖

Question Number : 134 Question Id : 1056152374 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 water molecules are directly bonded with the metal in  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  ?

Options :

1

1. ✖

4

2. ✔

5

3. ✖

3

4. ✖

Question Number : 135 Question Id : 1056152375 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 melting points of alkaline earth metals is

Options :

Ca > Sr > Mg

1. ✓

Ca > Mg > Sr

2. ✗

Mg > Ca > Sr

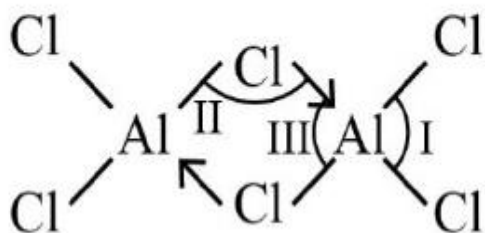
3. ✗

Sr > Ca > Mg

4. ✗

Question Number : 136 Question Id : 1056152376 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 bond angles of dimeric  $\text{AlCl}_3$  structure is



Options :

II > I > III

1. ✗

I > II > III

2. ✓

3. ✖  $I > III > II$

4. ✖  $II > III > I$

Question Number : 137 Question Id : 1056152377 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 compound that cannot undergo hydrolysis is

Options :

1. ✔  $CCl_4$

2. ✖  $SiCl_4$

3. ✖  $GeCl_4$

4. ✖  $PbCl_4$

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

The total number of aromatic (benzenoid compounds) isomers for the molecular formula of  $C_7H_8O$  is

Options :

1. ✖ 2

2. ✖ 4

3. ✔ 5

4. ✖ 6

Question Number : 139 Question Id : 1056152379 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

Two independent reactions of 3-hexyne with " $H_2$  / Ni-catalyst" and  $H_2$  / Lindlar's catalyst, respectively, gives

Options :

1. ✖

Hexane and trans-3-Hexene

cis-3-Hexene and Hexane

2. ✖

Hexane and cis-3-Hexene

3. ✔

cis-3-Hexene and trans-3-Hexene

4. ✖

Question Number : 140 Question Id : 1056152380 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 sets only contains meta directing groups?

Options :

-NO<sub>2</sub>, -CN, -CHO

1. ✔

-CHO, -Cl, -CH<sub>3</sub>

2. ✖

3. ✖

$-\text{NH}_2$ ,  $-\text{NHCOCH}_3$ ,  $-\text{OCH}_3$

$-\text{SO}_3\text{H}$ ,  $-\text{CH}_3$ ,  $-\text{CN}$

4. ✖

**Question Number : 141 Question Id : 1056152381 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 NaCl structure, the correct statements among the following are

- A) All octahedral and tetrahedral sites are occupied.
- B) Only octahedral sites are occupied.
- C) Only tetrahedral sites are occupied.
- D) All octahedral and tetrahedral sites are not occupied.
- E) There are six 'Cl' atoms around every 'Na' and there are six 'Na' atoms around every 'Cl'.

**Options :**

A, B, C, E

1. ✖

B, E only

2. ✔

B only

3. ✖

A, E only

4. ✖



Question Number : 142 Question Id : 1056152382 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 mixture shows positive deviation from Raoult's law?

Options :

Benzene + toluene

1. ✖

Ethanol + Acetone

2. ✔

n-Hexane + n-Heptane

3. ✖

Chloroform + acetone

4. ✖

Question Number : 143 Question Id : 1056152383 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

For a dilute solution, Raoult's law states that

Options :

The lowering of vapour pressure is equal to the mole fraction of solute

1. ✖

The relative lowering of vapour pressure is equal to the mole fraction of solute

2. ✔

The relative lowering of vapour pressure is proportional to the amount of solvent in solution

3. ✖

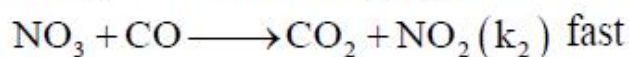
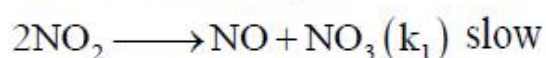
The vapour pressure of the solution is equal to the mole fraction of the solvent

4. ✖

Question Number : 144 Question Id : 1056152384 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 reaction  $\text{NO}_2 + \text{CO} \longrightarrow \text{NO} + \text{CO}_2$  takes place in two steps.



What is the rate law of this reaction?

Options :

$$R = K_1 [\text{NO}_2]^3$$

1. ✖

$$R = K_2 [\text{NO}_3][\text{CO}]$$

2. ✖

$$R = K_1 [\text{NO}_2]$$

3. ✖

$$R = K_1 [\text{NO}_2]^2$$

4. ✔

Question Number : 145 Question Id : 1056152385 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 /are correct?

- A) Catalyst can change  $\Delta_r G$  of a reaction.
- B) Catalyst can change the rate of a reaction.
- C) Catalyst can change the activation energy of a reaction.

Options :

A and B only

1. ✖

2. ✖

A, B and C

B and C only

3. ✓

A and C only

4. ✖

**Question Number : 146 Question Id : 1056152386 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 true for physisorption?

**Options :**

It involves chemical bond formation

1. ✖

It is irreversible in nature

2. ✖

Enthalpy of adsorption is low ( $20 - 40 \text{ kJ mol}^{-1}$ )

3. ✓

4. ✖

It is highly specific in nature

Question Number : 147 Question Id : 1056152387 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 molecules has the lowest N–N bond length?

Options :

1. ✓  $\text{N}_2\text{O}$

2. ✗  $\text{N}_2\text{O}_3$

3. ✗  $\text{N}_2\text{O}_4$

4. ✗  $\text{N}_2\text{O}_5$

Question Number : 148 Question Id : 1056152388 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 general, the molecular oxygen has least reactivity with

Options :

1. ✓ Pt

2. ✗ Fe

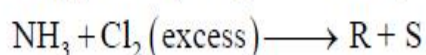
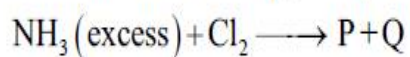
3. ✗ Mg

4. ✗ Li

Question Number : 149 Question Id : 1056152389 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

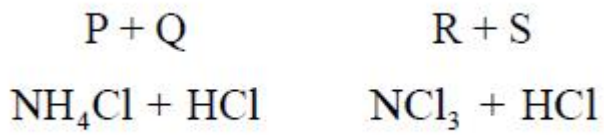
Correct Marks : 1 Wrong Marks : 0

The major products  $[(P+Q) \text{ and } (R+S)]$  in the following unbalanced reactions are

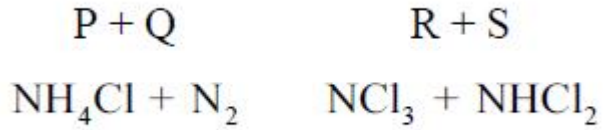


Options :

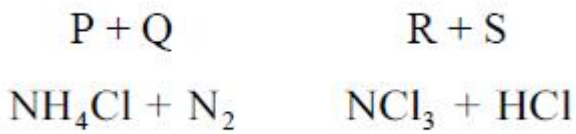
1. ✗  $\text{P} + \text{Q}$   $\text{R} + \text{S}$   
 $\text{NH}_4\text{Cl} + \text{N}_2$   $\text{NHCl}_2 + \text{HCl}$



2. ✖



3. ✖



4. ✔

Question Number : 150 Question Id : 1056152390 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 element is radio active in natural form?

Options :

Ar

1. ✖

Xe

2. ✖

Kr

3. ✖

Rn

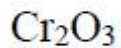
4. ✓

Question Number : 151 Question Id : 1056152391 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

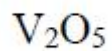
Correct Marks : 1 Wrong Marks : 0

The transition metal catalyst used in the Haber process is

Options :



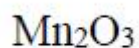
1. ✗



2. ✗

Finely divided iron

3. ✓



4. ✗

Question Number : 152 Question Id : 1056152392 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 complex  $[ML_6]^{2+}$  with  $3d^2$  electronic configuration requires  $\lambda$  nm of radiation to push an electron to the closest excited electronic state. The average energy of the d-orbital in spherical crystal field is  $\frac{hC}{\lambda_1}$ . The energy of  $T_{2g}$  state in  $[ML_6]^{2+}$  is

Options :

$$\frac{hC}{\lambda\lambda_1}(5\lambda - 2\lambda_1)$$

1. ✖

$$\frac{hC}{\lambda\lambda_1}(5\lambda + 3\lambda_1)$$

2. ✖

$$\frac{hC}{5\lambda\lambda_1}(5\lambda + 3\lambda_1)$$

3. ✖

$$\frac{hC}{5\lambda\lambda_1}(5\lambda - 2\lambda_1)$$

4. ✔

Question Number : 153 Question Id : 1056152393 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

D-glucose and D-fructose can be differentiated by

Options :

Fehling solution

1. ✖

Tollens reagent

2. ✖

Benedict test

3. ✖

$\text{Br}_2/\text{H}_2\text{O}$

4. ✔

Question Number : 154 Question Id : 1056152394 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 one of the following is more reactive towards  $\text{S}_{\text{N}}1$  reaction?

Options :

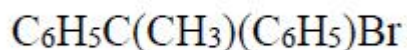
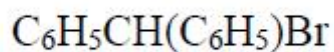
$\text{C}_6\text{H}_5\text{CH}_2\text{Br}$

1. ✖

$\text{C}_6\text{H}_5\text{CH}(\text{CH}_3)\text{Br}$

2. ✖

3. ✖



4. ✓

Question Number : 155 Question Id : 1056152395 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 the boiling points of the following compounds is

|            |         |                    |               |
|------------|---------|--------------------|---------------|
| n- Pentane | Ethanol | tert. Butylalcohol | Diethyl ether |
| I          | II      | III                | IV            |

Options :



1. ✖



2. ✓



3. ✖



4. ✖

Question Number : 156 Question Id : 1056152396 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 the pKa of the following compounds is

|              |        |                    |                  |
|--------------|--------|--------------------|------------------|
| ortho-Cresol | Phenol | para - Nitrophenol | meta-Nitrophenol |
| I            | II     | III                | IV               |

Options :

I > II > III > IV

1. ✖

I > III > IV > II

2. ✖

I > II > IV > III

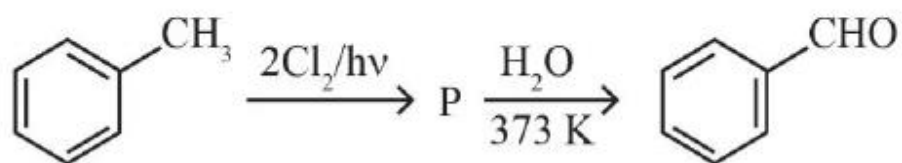
3. ✔

II > I > III > IV

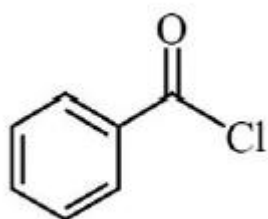
4. ✖

Question Number : 157 Question Id : 1056152397 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

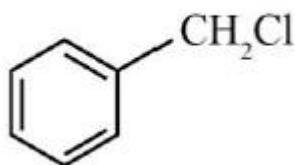
The intermediate P formed in the following conversion is



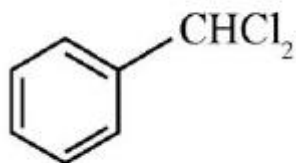
Options :



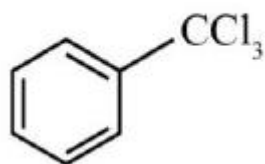
1. ✖



2. ✖



3. ✔

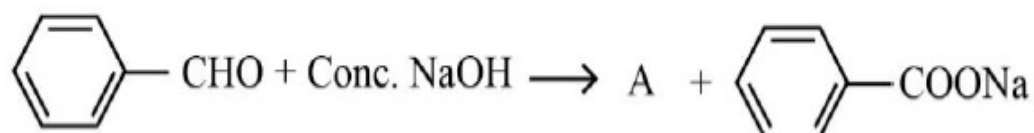


4. ✖

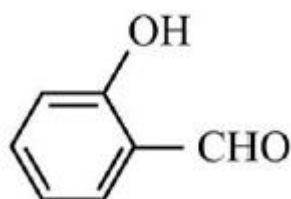
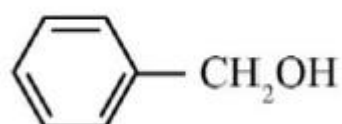
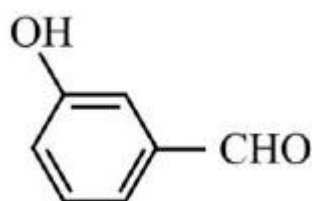
Question Number : 158 Question Id : 1056152398 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

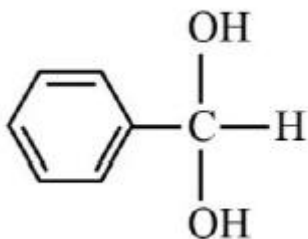
Identify the product, 'A' in the reaction given below



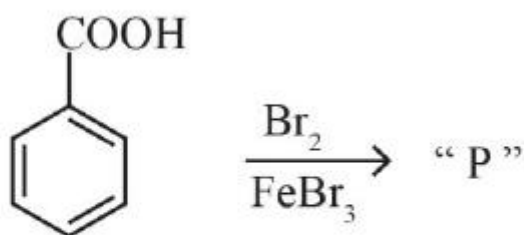
Options :



4. 

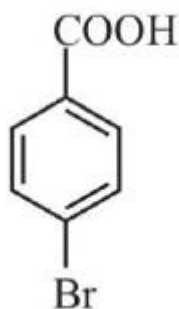


Question Number : 159 Question Id : 1056152399 Question Type : MCQ Option Shuffling : Yes  
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
 Correct Marks : 1 Wrong Marks : 0



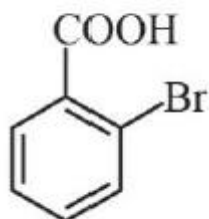
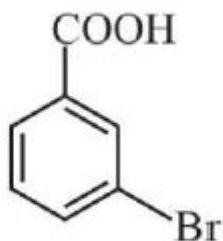
Major product “P” formed in the above reaction is

Options :

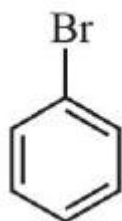


1. ✖

2. ✔



3. ✖

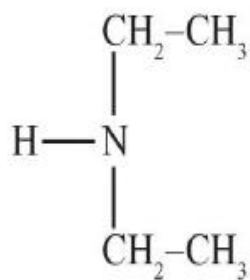


4. ✖

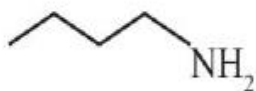
Question Number : 160 Question Id : 1056152400 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time  
: N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0



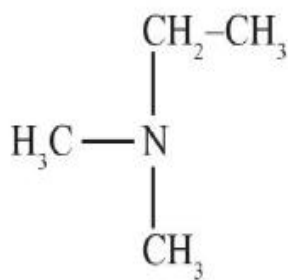
The correct order of boiling points of the following amines is



I



II



III

Options :

I > II > III

1. ✖

II > I > III

2. ✔

III > I > II

3. ✖

II > III > I

4. ✖