



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 09th August 2021 Shift 1
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Agriculture and Medical (English)

Group Number :

1

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34260410

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Botany

Section Id :	34260428
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
Sub-Section Number :	1
Sub-Section Id :	34260428
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 3426041441 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Identify the wrong statement among the following.

Options :

1. ✖

All living organisms of present past and future are linked to one another

2. ✓ Cellular organelles properties are similar due to the interaction of molecular components

3. ✓ Organisational complexity will be lower in hierarchy of the organisms

4. ✗ All organisms have consciousness

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 2 Question Id : 3426041442 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which among the following do not form asexual spores usually?

Options :

1. ✗ Deuteromycetes

2. ✓ Basidiomycetes

3. ✗ Ascomycetes

4. ✖

Phycomycetes

Question Number : 3 Question Id : 3426041443 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : Socrates, Plato and Aristotle were responsible for the development of Botany into a science.

Reason (R) : They are regarded as Father of Botany.

The correct option among the following is:

Options :

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

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

3. ✔ (A) is true but (R) is false

4. ✘ (A) is false but (R) is true

Question Number : 4 Question Id : 3426041444 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Based on the following characteristics of life cycles identify and arrange the plants respectively.

- A) Haplontic B) Diplo-haplontic C) Haplo-diplontic
D) Diplobiontic E) Diplontic

- i) *Laminaria* ii) *Volvox* iii) *Polysiphonia*
iv) *Salvinia* v) *Fucus*

Options :

1. ✘
- | | | | | |
|---|-----|----|---|----|
| A | B | C | D | E |
| i | iii | iv | v | ii |

2. ✔
- | | | | | |
|----|----|---|-----|---|
| A | B | C | D | E |
| ii | iv | i | iii | v |

3. ✘
- | | | | | |
|----|---|----|-----|---|
| A | B | C | D | E |
| ii | i | iv | iii | v |

4. ✘
- | | | | | |
|---|---|-----|----|----|
| A | B | C | D | E |
| v | i | iii | ii | iv |

Question Number : 5 Question Id : 3426041445 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Arrange the following plants with their respective classes in the same order.
Sphenopsida, Psilopsida, Pteropsida, Lycopsida, Gnetopsida

- A) *Selaginella* B) *Equisitum* C) *Sphagnum*
D) *Adiantum* E) *Psilotum* F) *Gnetum*

Options :

B, C, D, A, E

1. ✘

B, E, D, A, F

2. ✔

A, C, B, F, D

3. ✘

F, D, B, C, A

4. ✘

Question Number : 6 Question Id : 3426041446 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Find the correct statements among the following.

- A) For classification of higher organisms we need to know technical terms and variation of the parts
B) Roots arise from radicle are called fibrous roots
C) The modified bract is called "Spathe"
D) In Apiaceae family, each flower is surrounded by involucre of bracts



Options :

1. ✘ A, B

2. ✔ A, C

3. ✘ B, C

4. ✘ B, D

Question Number : 7 Question Id : 3426041447 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A) :- Some plants growing in N_2 rich soils can obtain their nitrogen from insects.

Reason (R) :- Bacteria inhabiting the root system of Fabaceae plants can fix atmosphere nitrogen.

The correct option among the following is:

Options :

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

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

3. ✖

(A) is true but (R) is false

4. ✓ (A) is false but (R) is true

Question Number : 8 Question Id : 3426041448 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the plants by their characters respectively.

- i) Axillary buds as tendril, inferior ovary, mesocarp edible
- ii) A lateral branch of one internodal length, swollen petiole
- iii) Funnel shaped corolla, dehiscent fruit
- iv) Basal placentation, condensed peduncle

- A) *Helianthus*
- B) *Eichhornia*
- C) Cucumber
- D) *Datura*

Options :

A	B	C	D
i	iii	ii	iv

1. ✘

2. ✖

A

B

C

D

iii

ii

i

iv

3. ✘

A	B	C	D
i	ii	iii	iv

4. ✔

A	B	C	D
iv	ii	i	iii

Question Number : 9 Question Id : 3426041449 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Identify the formation of the prop roots, stilt roots and pneumatophores respectively.

- A) Vertically growing upwards
- B) Roots coming out of the lower nodes of the stem
- C) Roots developing into vascular tissue of the host
- D) Hanging roots from the branches
- E) Roots that help in absorption of moisture

Options :

1. ✘ A, B, C

2. ✘ B, C, D

3. ✔ D, B, A

4. ✖

D, B, E

Question Number : 10 Question Id : 3426041450 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct statements from the following:

- A) Meiosis has to occur if a diploid body has to produce gametes
- B) In *Cladophora* it is not possible to categorize the male and female gametes
- C) Organisms exhibiting external fertilization show greater synchrony between sexes
- D) In *Wolfia* isogametes can be seen

Options :

1. ✘ B, C, D

2. ✔ A, B, C

3. ✘ A, B, D

4. ✘ A, C, D

Question Number : 11 Question Id : 3426041451 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A): In some plants the generative cell divides and forms the two male gametes during pollen tube growth in stigma.

Reason (R): In plants which shed pollen in three cell stage, the pollen tube will have two male gametes from the beginning.

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 : 12 Question Id : 3426041452 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the following lists.

List-I

List-II

- | | |
|------------------------------------|---------------------------------------|
| A) Animals attracted to flowers by | I) Ophiophily |
| B) Beetles flies are attracted by | II) Safe space to lay eggs by insects |
| C) Pollination by squirrels | III) Colour |
| D) Pollination by snakes | IV) Foul odours |
| E) <i>Amorphophallus</i> | V) Therophily |

The correct match is:

Options :

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

2. ✘
- | | | | | |
|---|----|-----|----|---|
| A | B | C | D | E |
| V | II | III | IV | I |

3. ✔
- | | | | | |
|-----|----|---|---|----|
| A | B | C | D | E |
| III | IV | V | I | II |

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

Question Number : 13 Question Id : 3426041453 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct statements regarding characters of *Arachis*.

Options :

Gamosepalous, geocarpic, indehiscent fruit, diadelphous stamens

1. ✘

Geocarpic, indehiscent fruit, monodelphous stamens

2. ✔

Sepals valvate aestivation, protandrous, indehiscent fruit

3. ✘

Seeds store protein and oil, endospermic

4. ✘

Question Number : 14 Question Id : 3426041454 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the number of modifications in *Allium cepa*.

Tunicated bulb; Reduced stem; adventitious roots; umbel inflorescence; solid leaves;
fleshy leaf bases; involucre of bracts

Options :

1. ✘ 4

2. ✓

5

3. ✘ 6

4. ✘ 7

Question Number : 15 Question Id : 3426041455 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : In vacuole the concentration of ions and other material will be less than the cytoplasm.

Reason (R) : Tonoplast facilitates the transport of ions and other material against concentration to the vacuole.

The correct option among the following is:

Options :

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

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

3. ✘ (A) is true but (R) is false

4. ✔

(A) is false but (R) is true

Question Number : 16 Question Id : 3426041456 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Fill up the blanks with suitable words respectively.

Each chromosome has a _____ or _____ on the sides, disc shaped structure is called _____. The _____ chromosome has two equal arms, _____

chromosome has one shorter and one long arm. _____ chromosome has no second arm. The secondary constriction develop small fragment called _____.

- A) metacentric B) telocentric C) centromere
D) primary constriction E) submetacentric F) satellite
G) kinetochore

Options :

A, C, B, D, G, E, F

1. ✘

D, C, G, A, E, B, F

2. ✔

B, A, C, D, G, E, F

3. ✘

B, A, D, G, C, E, F

4. ✘



Question Number : 17 Question Id : 3426041457 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the chemical components of nucleic acid

- | | |
|-------------|--------------------------|
| A) Cysteine | B) Heterocyclic compound |
| C) Tyrosine | D) Phosphoric acid |
| E) Ribulose | F) Monosaccharide |

Options :

1. ✘ A, B, E, F

2. ✘ A, B, D

3. ✔ B, D, F

4. ✘ A, C, D, F

Question Number : 18 Question Id : 3426041458 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the functions of these proteins respectively.

- i) Trypsin ii) Receptor iii) Insulin
iv) GLUT-4 v) Collagen

- A) Enables glucose transport into cells
B) Enzymes
C) Intercellular ground substance
D) Hormone
E) Taste receptor

Options :

1. ✘

i	ii	iii	iv	v
A	B	D	C	E

2. ✘

i	ii	iii	iv	v
B	A	D	C	E

3. ✔

i	ii	iii	iv	v
B	E	D	A	C

✘

i	ii	iii	iv	v
A	D	C	B	E

Question Number : 19 Question Id : 3426041459 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the incorrect statements among the following.

- A) Cells of the lining of the gut are replaced by mitotic division constantly
- B) Formation of liquid endosperm takes place, if karyokinesis is not followed by cytokinesis
- C) In telophase, the chromosomes reach the poles and start condense to form the chromatic network
- D) In quiescent stage, the cell is metabolically inactive

Options :

1. ✘ A, B

2. ✘ B, C

3. ✔ C, D

4. ✘ A, D

Question Number : 20 Question Id : 3426041460 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the tissues based upon the following characters respectively.

- I) Large, colourless, empty cells along with leaf veins are used for absorption of water
- II) Cells much elongated, unbranched with pointed needle like apices and thick cell wall are dead at maturity
- III) The cells are longitudinally arranged with perforated end walls
- IV) Cells left behind from shoot apical meristem

- A) Axillary bud
- B) Phloem fibre
- C) Bulliform cells
- D) Sieve tube elements

Options :

1. ✘

I	II	III	IV
A	B	D	C

✘

I	II	III	IV
B	C	D	A

3. ✔

I	II	III	IV
C	B	D	A

✘ I II III IV
A C D B

Question Number : 21 Question Id : 3426041461 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the following lists.

List-I	List-II	List-III
A) Lignified walled dead cells	i) Plants are less active	I) Secondary growth of root
B) During unfavourable seasons	ii) Pericycle above protoxylem	II) Medullary ray
C) Cambium forming narrow band of parenchyma	iii) Does not conduct water	III) Less number of xylem vessels with narrow lumen
D) Cambium forms below phloem	iv) Between secondary xylem and phloem	IV) Heart wood

The correct match is:

Options :

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

1. ✓

A

B

C

D

ii, II

iii, III

iv, I

i, IV

2. ✖

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

3. ✘

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

4. ✔

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 22 **Question Id :** 3426041462 **Question Type :** MCQ **Option Shuffling :** Yes
Display Question Number : Yes **Is Question Mandatory :** No **Option Orientation :** Vertical
Correct Marks : 1 **Wrong Marks :** 0

Match the following lists.

List-I	List -II
A) Submerged rooted hydrophyte	I) <i>Hydrilla</i>
B) Rooted hydrophyte with floating leaves	II) <i>Salvinia</i>
C) Free floating hydrophyte	III) <i>Victoria regia</i>
D) Submerged suspended hydrophyte	IV) <i>Limnophila</i>
	V) <i>Vallisneria</i>

The correct match is:

Options :

1. ✖

A	B	C	D
III	I	V	IV

A	B	C	D
V	III	II	I

2. ✓

A	B	C	D
V	I	IV	III

3. ✗

A	B	C	D
II	IV	III	I

4. ✗

Question Number : 23 Question Id : 3426041463 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct statements.

- A) The total annual account of wet organic matter of the forest can be estimated with the annual net productivity amount of standing forest.
- B) Ecosystems also exert direct physical influence that help to moderate regional and local weather.
- C) Decline in pollinator activity could mean rising cost of pollination dependent fruits and vegetables.
- D) Constanza and his colleagues have tried to put price tag on nature's life support services.

Options :

A, B, C

1. ✘

B, C, D

2. ✔

A, C, D

3. ✘

A, B, D

4. ✘

Question Number : 24 Question Id : 3426041464 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct statements.

- A) Carbonic anhydrase converts 20 molecules of H_2CO_3 in an hour
- B) By attaching the substrate to the enzyme active site, the structure of the substrate get transform into products
- C) Stability of the structural state is related to enzyme status of the molecule
- D) The difference between average energy content of the substrate and that of the transition state is called activation energy

Options :

A, B, C

1. ✘

2. ✔

B, C, D

A, B, D

3. ✖

A, C, D

4. ✖

Question Number : 25 Question Id : 3426041465 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Assertion (A) : Chromatographic separation of leaf pigments shows that leaves has four different pigments.

Reason (R) : Pigments absorb light at specific wavelengths and help in the process of photosynthesis. The major leaf pigments are chlorophyll-a, chlorophyll-b, xanthophylls and carotenoids.

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. ✓

3. ✗

(A) is true but (R) is false

(A) is false but (R) is true

4. ✘

Question Number : 26 Question Id : 3426041466 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A): When electrons move through the transport chain, protons are transported across the membrane.

Reason (R) : Because the primary acceptor of electron located towards the outside of the membrane , transfers its electrons to a H carrier (PQ).

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 : 27 Question Id : 3426041467 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the differences between C_3 and C_4 plants among the following characters

- A) Photorespiration rate B) Activity of RuBisCO
C) Type of light reactions D) CO_2 primary acceptor from atmosphere
E) Anatomy of the leaf

Options :

A, B, C

1. ✘

B, C, D

2. ✘

C, D, E

3. ✘

A, D, E

4. ✔

Question Number : 28 Question Id : 3426041468 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : There is a sufficient reason to believe that first cells on the planet lived in an atmosphere lacking oxygen.

Reason (R) : Thus even all living organisms retain the enzymatic mechanism to completely oxidize glucose without the help of oxygen.

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 : 29 Question Id : 3426041469 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the substrate level phosphorylation reactions among the following

- A) Triose bis Phosphate to triose phosphate
- B) Phosphoglycerate to Phosphoenol pyruvate
- C) Succinyl CoA to Succinic acid
- D) Malic acid to OAA

Options :

1. ✘ A, B

2. ✘ B, C

3. ✔ A, C

4. ✘ B, D

Question Number : 30 Question Id : 3426041470 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the biomolecule common to respiration involving fat, carbohydrate and protein.

Options :

1. ✖ Pyruvic acid

2. ✖

Glucose-6-phosphate

3. ✘ Citric acid

4. ✔ Acetyl CoA

Question Number : 31 Question Id : 3426041471 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the wrong statements.

- A) Cytochrome C is a small protein attached to inner surface of the outer membrane
- B) Electrons from complex I are transferred to ubiquinone located within the inner membrane
- C) The temperature optimum for photosynthesis of different plants does not depend on the habitat that they are adapted to.
- D) There is no linear relationship between incident light and CO₂ fixation rates at low light intensities.

Options :

1. ✘ A, B, C

2. ✘ B, A, D

3. ✖

C, B, D

A, C, D

4. ✓

Question Number : 32 Question Id : 3426041472 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A) : If the allele produces a less functional enzyme or non-functional enzyme the phenotype may be affected.

Reason (R) : The phenotype/trait will not be dependent on the functioning of the unmodified allele.

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 : 33 Question Id : 3426041473 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify the scientists who rediscovered the Mendel's result on the inheritance of characters.

- A) de Vries B) Morgan C) von Tschermak
D) Sutton

Options :

1. ✘ A, B

2. ✘ B, C

3. ✘ A, D

4. ✔ A, C

Question Number : 34 Question Id : 3426041474 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Chromatin is constituted by

- I) Non Histone chromosomal proteins
- II) Densely packed DNA with dark stain
- III) Repeated units of DNA with 200bp length
- IV) Repeated units of negatively charged DNA wrapped by positively charged histone protein

Options :

1. ✘ I, II

2. ✔ III, IV

3. ✘ I, III

4. ✘ II, IV

Question Number : 35 Question Id : 3426041475 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the correct statements.

- A) DNA directly codes for the synthesis of proteins
- B) DNA and RNA both can function as genetic material
- C) DNA is storage of genetic material and RNA transfers genetic information
- D) RNA is indirectly codes for the synthesis of protein

Options :

1. ✘ A, B

2. ✔ B, C

3. ✘ A, D

4. ✘ B, D

Question Number : 36 Question Id : 3426041476 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Choose the wrong statements

- A) Expressed sequences of eukaryotic genes are exons
- B) Intervening gene sequences of eukaryotes that do not appear in processed RNA are cistrons
- C) Process of removal of introns and joining of exons in defined order is splicing
- D) Monocistronic transcriptional unit has only exons

Options :

1. ✘ A, B

2. ✘

B, C

3. ✘

A, D

4. ✔

B, D

Question Number : 37 Question Id : 3426041477 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Match the following lists.

List-I

List-II

- | | |
|---|-------------------|
| A) Remove nucleotides from the end of the DNA | I) Polymerases |
| B) Restriction enzyme | II) Endonucleases |
| C) Enzyme which cuts at specific position of DNA | III) Ligases |
| D) Stick the complementary cut ends of DNA with H ₂ bond | IV) Nucleases |
| | V) Exonucleases |

The correct match is:

Options :

1. 

A	B	C	D
V	IV	II	III

2. ✖

A	B	C	D
V	I	III	II

3. ✖

A	B	C	D
III	II	IV	V

4. ✖

A	B	C	D
IV	I	II	III

Question Number : 38 Question Id : 3426041478 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Features of sparged stirred tank bioreactor that differ from simple stirred bioreactors

- I) More bubble formation
- II) Decrease the surface area for O₂ transfer
- III) It has foam control system

Options :

I and II only

1. ✖

2. ✘ II and III only

3. ✔ I and III only

4. ✘ I, II and III

Question Number : 39 Question Id : 3426041479 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

Assertion (A) : Molecular farming is large scale production of biochemicals from plants.

Reason (R) : Transgenic plants are bioreactors for commercial production of antibodies.

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. ✘

3. ✖ (A) is true but (R) is false

(A) is false but (R) is true

4. ✖

Question Number : 40 Question Id : 3426041480 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Match the following lists:

List -I

List -II

A) Epidermis

I) Thin walled cells

B) Tapetum

II) One cell thick

C) Endothecium

III) Inner most layer

D) Stomium

IV) Fibrom thickenings

V) Meiosis

The correct match is:

Options :

A B C D

II III I IV

1. ✖

A B C D

II III IV I

2. ✔

3. ✖

A B C D
II V IV III

A B C D
IV I V II

4. ✖

Zoology

Section Id :	34260429
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
Sub-Section Number :	1
Sub-Section Id :	34260429
Question Shuffling Allowed :	Yes

Question Number : 41 Question Id : 3426041481 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A): Species is an ecological unit.

Reason (R): Species have similar structure and functional characteristics.

The correct option among the following is

Options :

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

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

3. ✘ (A) is true but (R) is false

4. ✘ (A) is false but (R) is true

Question Number : 42 Question Id : 3426041482 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The animals in which cleavages are radial and indeterminate and possess enterocoelom are generally

Options :

1. ✘ Protostomes

2. ✓ Deuterostomes

3. ✘ Diploblastic animals

4. ✘ Radially symmetrical

Question Number : 43 Question Id : 3426041483 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Statement I: Sacred groves are examples for on-site conservation.

Statement II: Gene banks are examples for in-situ conservation.

Options :

1. ✘ Both statement I and statement II are true

2. ✘ Both statement I and statement II are false

3. ✔ Statement I is true. But statement II is false

4. ✘ Statement I is false. But Statement II is true

Question Number : 44 Question Id : 3426041484 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Pick up the incorrect statement about neuroglia.

Options :

1. ✘ Ependymal cells are ciliated

2. ✔ Astrocytes are phagocytic cells

3. ✘ Oligodendrocytes form the myelin sheath

4. ✘ Satellite cells surround the cell bodies in ganglia

Question Number : 45 Question Id : 3426041485 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the following

List -I

- A) Dermal bones
- B) Replacing bones
- C) Visceral bones
- D) Sesmoid bones

List -II

- I) Girdles
- II) Pisiform bone
- III) Cranium
- IV) Os corids
- V) Osteon

The correct match is

Options :

1. ✘
A B C D
II I III IV

2. ✔
A B C D
III I IV II

3. ✘
A B C D
III I II IV

4. ✘
A B C D
II IV I III

Question Number : 46 Question Id : 3426041486 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Pick up the mismatched pair.

Options :

1. ✘
Replacing bones – Limb bones

2. ✓ Investing bones – Girdles

3. ✘ Sesamoid bones – Patella

4. ✘ Visceral bones – Os penis

Question Number : 47 Question Id : 3426041487 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Study the following table and pick up the correct combinations.

S.No	Class	Common name of animals	Special feature
I)	Echinoidea	Sea urchins	Aristotle's lantern
II)	Cephalopoda	Clams	Crystalline style
III)	Holothuroidea	Sea cucumbers	Respiratory trees
IV)	Gastropoda	Squids	Torsion

Options :

1. ✘ II, IV

2. ✔ I, III

3. ✖

I, II

4. ✖

II, III

Question Number : 48 Question Id : 3426041488 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Animals of this class in Annelida have definite number of segments.

Options :

1. ✘ Cestoda

2. ✘ Polychaeta

3. ✘ Oligochaeta

4. ✔ Hirudinea

Question Number : 49 Question Id : 3426041489 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A): During pulmonary respiration in frog, buccopharyngeal cavity acts like a force pump.

Reason (R): When the floor of buccopharyngeal cavity is lowered, air forces the glottis to open and reach the lungs.

The correct option among the following is

Options :

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

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

3. ✔ (A) is true but (R) is false

4. ✘ (A) is false but (R) is true

Question Number : 50 Question Id : 3426041490 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Study the following and pick up the correct combinations.

S.No	Class	Unique character	Flourished in
I)	Amphibia	Buccopharyngeal respiration	Carboniferous period
II)	Reptilia	Jacobson organs	Mesozoic era
III)	Mammalia	Pinna	Coenozoic era
IV)	Pisces	Meninx primitiva	Cretaceous period

Options :

1. ✘ I, II, IV

2. ✘ II, III, IV

3. ✔ I, II, III

4. ✘ I, III, IV

Question Number : 51 Question Id : 3426041491 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the following

Type of Flagellum		Example	
A)	Stichonematic	I)	<i>Cryptomonas</i>
B)	Pantonematic	II)	<i>Astasia</i>
C)	Anematic	III)	<i>Chlamydomonas</i>
D)	Acronematic	IV)	<i>Monas</i>
		V)	<i>Urceolus</i>

The correct match is

Options :

1. A B C D
 II IV III V

2. A B C D
 I III II IV

3. A B C D
 I IV V II

4. A B C D
 II IV I III

Question Number : 52 Question Id : 3426041492 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Multiple fission in *Amoeba* is called

Options :

1. ✘ Schizogony

2. ✘ Gametogony

3. ✘ Sporogony

4. ✔ Sporulation

Question Number : 53 Question Id : 3426041493 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Study the following table and pick up the correct combinations.

S.No	Type of parasite	Lives in ___ host	Example
I)	Cytozoic parasites	Live among cells of tissues of host	<i>Plasmodium</i>
II)	Histozoic parasites	Live within the host's cells	<i>Wuchereria</i>
III)	Coelozoic parasites	Live in cavities of host	<i>Ascaris</i>
IV)	Hyperparasites	Lives in the body of another parasite	<i>Nosema</i>

Options :

1. ✘ I, II

2. ✘ II, III

3. ✔ III, IV

4. ✘ II, IV

Question Number : 54 Question Id : 3426041494 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Statement I: *Haemophilus influenzae* causes the typhoid.

Statement II: Typhoid can be confirmed by widal test.

Options :

Both statement I and statement II are true

1. ✘

Both statement I and statement II are false

2. ✘

Statement I is true. But statement II is false

3. ✘

Statement I is false. But Statement II is true

4. ✔

Question Number : 55 Question Id : 3426041495 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

These are sleeping pills.

Options :

Amphetamines

1. ✘

Barbiturates

2. ✔

Benzodiazepines

3. ✘

4. ✖ Cannabinoids

Question Number : 56 Question Id : 3426041496 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following abdominal segment of cockroach is without a nerve ganglion?

Options :

1. ✘ 1st segment

2. ✘ 2nd segment

3. ✔ 5th segment

4. ✘ 7th segment

Question Number : 57 Question Id : 3426041497 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Stomodaeal valve is formed from

Options :

1. ✘ Crop

2. ✖

Mesenteron

3. ✓ Gizzard

4. ✗ Ventriculus

Question Number : 58 Question Id : 3426041498 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Study the following and pick up the correct statements.

- I) Contraction of dorsoventral muscles depress the wings in cockroach.
- II) Stomodaeal valve lies between gizzard and mesenteron in cockroach.
- III) In cockroach, the spiracles are holopneustic type.
- IV) Opening and closing of spiracles is influenced by O_2 tension in haemolymph and CO_2 tension in tracheae

Options :

1. ✗ I, II

2. ✓ II, III

3. ✗ III, IV

4. ✖ I, III

Question Number : 59 Question Id : 3426041499 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The orientation to light of a non-motile organism or part of its body is called

Options :

1. ✘ Phototaxis

2. ✘ Photokinesis

3. ✔ Phototropism

4. ✘ Photoperiodism

Question Number : 60 Question Id : 3426041500 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Study the following table and pick up the correct combinations.

S.No.	Interaction	Species A	Species B
I)	Mutualism	+	+
II)	Competition	-	+
III)	Predation	+	-
IV)	Parasitism	-	-
V)	Commensalism	0	+
VI)	Amensalism	-	0

Options :

1. ✘ II, IV, III, V

2. ✘ I, II, III, V

3. ✘ II, III, IV, VI

4. ✔ I, III, V, VI

Question Number : 61 Question Id : 3426041501 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the following

- List-1
- A) Global warming
 - B) Eutrophication
 - C) Biomagnification
 - D) Ozone depletion

- List-2
- I) Mercury
 - II) UV-B rays
 - III) Methane
 - IV) Algal blooms
 - V) Terror of Bengal

The correct match is

Options :

1. ✘

A	B	C	D
III	V	I	II

2. ✔

A	B	C	D
III	IV	I	II

3. ✘

A	B	C	D
II	I	IV	III

4. ✘

A	B	C	D
V	IV	II	I

Question Number : 62 Question Id : 3426041502 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum volume of air a person can breath in after forced expiration is called

Options :

Total lung capacity

1. ✘

Vital capacity

2. ✔

Inspiratory capacity

3. ✘

Inspiratory Reserve Volume

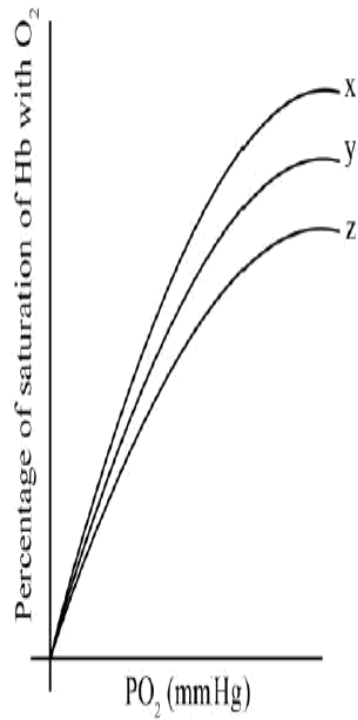
4. ✘

Question Number : 63 Question Id : 3426041503 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Study the following oxygen – haemoglobin dissociation curve which explains the effect of p^H on the saturation of haemoglobin with oxygen. Find out option that gives the correct descending order of p^H for x, y and z.



Options :

1. ✘ $z > y > x$

2. ✘ $x > z > y$

3. ✘ $y > x > z$

4. ✔ $x > y > z$

**Question Number : 64 Question Id : 3426041504 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical**

Correct Marks : 1 Wrong Marks : 0

Clotting of blood in blood banks can be prevented by addition of

Options :

1. ✘ Calcium ions

2. ✔ Citrates

3. ✘ Omega 3 fatty acid

4. ✘ Naphthoquinone

Question Number : 65 Question Id : 3426041505 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Assertion (A): Wall of heart of man release the atrial natriuretic factor.

Reason (R): Increased flow of blood into the atria.

The correct option among the following is

Options :

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

2. ✖

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

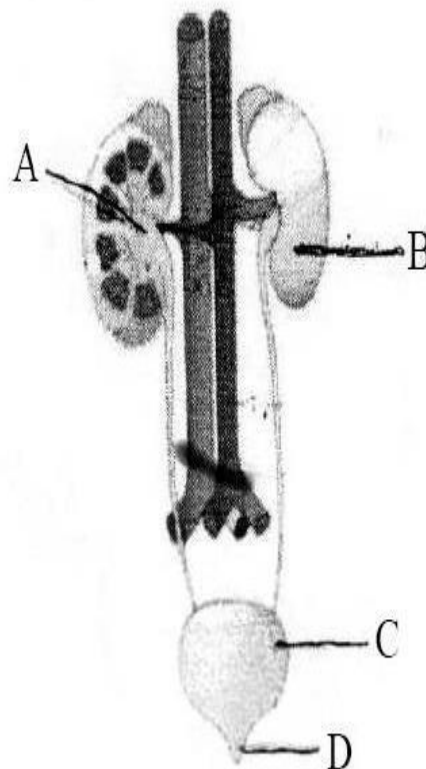
3. ✘

(A) is true but (R) is false

4. ✘

(A) is false but (R) is true

Question Number : 66 Question Id : 3426041506 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0



Identify A, B, C, D in the above diagram of excretory system of man.

Options :

1. ✘

A	B	C	D
Medulla	Kidney	Urethra	Urinary bladder

2. ✓

A	B	C	D
Renal pelvis	Kidney	Urinary bladder	Urethra

3. ✗

A	B	C	D
Renal pelvis	Left Kidney	Ureter	Urinary bladder

4. ✗

A	B	C	D
Hilus	Renal capsule	Urinary bladder	Urethra

Question Number : 67 Question Id : 3426041507 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

In a striated myofibril, the F-actin of thin filament is formed by

Options :

1. ✓ G-actin

2. ✗ Meromyosin

3. ✖ Troponin-C

4. ✘ $T_n - I$

Question Number : 68 Question Id : 3426041508 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

This part of brain is called gyroscope of the body

Options :

1. ✘ Cerebral hemispheres

2. ✘ Diancephalon

3. ✘ Pons varoli

4. ✔ Cerebellum

Question Number : 69 Question Id : 3426041509 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Study the following statements regarding human brain.

- I) White matter of cerebellum is called arbor vitae
- II) Cerebral hemispheres are centres for memory and communications.
- III) Pons contains the pneumotoxic centre.
- IV) Limbic system involved in expression of emotional reactions.

Identify correct statements from the above.

Options :

1. ✘ I, II only

2. ✘ I, II, III only

3. ✔ I, II, III and IV

4. ✘ II, III, IV only

Question Number : 70 Question Id : 3426041510 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Study the following table and pick up the correct combinations.

S.No	Hormone	Chemical nature	Function
I)	Melatonin	Amine hormone	Regulation of circadian rhythms of the body
II)	Oxytocin	Peptide hormone	Stimulate powerful contractions of uterus during child birth
III)	Insulin	Proteinous hormone	Increases the uptake and utilisation of glucose by body cells
IV)	Testosterone	Steroid hormone	Development and maturation of male sex organs

Options :

1. ✘ I only

2. ✘ I and II only

3. ✘ I, II, and III only

4. ✔ I, II, III and IV

Question Number : 71 Question Id : 3426041511 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Non iodised hormone secreted by the largest endocrine gland is

Options :

1. ✘ Thyroxine

2. ✘ Parathormone

3. ✘ Adrenaline

4. ✔ Calcitonin

Question Number : 72 Question Id : 3426041512 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Statement I: Due to HIV, the number of T_H cells progressively decrease in an infected person.

Statement II: Thymus gland of mammals is a secondary lymphoid organ.

Options :

1. ✘ Both statement I and statement II are true

2. ✘ Both statement I and statement II are false

3. ✓

Statement I is true. But statement II is false

Statement I is false. But Statement II is true

4. ✘

Question Number : 73 Question Id : 3426041513 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Payer's patches of small intestine are

Options :

Primary lymphoid organs

1. ✘

Secondary lymphoid organs

2. ✔

Immunoglobulins

3. ✘

Interferons

4. ✘

Question Number : 74 Question Id : 3426041514 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Skene's glands in females are homologous to



Options :

1. ✘ Seminal vesicle
2. ✔ Prostate gland
3. ✘ Cowper gland
4. ✘ Sebaceous glands

Question Number : 75 Question Id : 3426041515 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Identify one of the physical barrier in females.

Options :

1. ✔ Vaults
2. ✘ Saheli
3. ✘ Implants
4. ✘ Skin patches

Question Number : 76 Question Id : 3426041516 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Colour blindness in human beings is

Options :

1. ✓ Sex linked recessive disorder
2. ✗ Sex limited recessive disorder
3. ✗ Sex linked dominant disorder
4. ✗ Sex influenced disorder

Question Number : 77 Question Id : 3426041517 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the following

Disorder	Reason
A) Thalassemia	I) Point mutation
B) Haemophilia	II) Autosomal recessive metabolic disorder
C) Sickle cell anaemia	III) Abnormal haemoglobin
D) Alkaptonuria	IV) Non-disjunction of chromosomes
	V) Sex linked recessive disorder

The correct match is

Options :

1. ✘

A	B	C	D
III	IV	I	II

2. ✔

A	B	C	D
III	V	I	II

3. ✘

A	B	C	D
II	I	V	III

4. ✘

A	B	C	D
IV	III	II	I

Question Number : 78 Question Id : 3426041518 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Ratio of long winged and vestigial winged *Drosophila* are formed when a pure long winged (dominant) and a pure vestigial winged (recessive) *Drosophila* are crossed.

Options :

1. ✘ 3 : 1

2. ✘ 1 : 2 : 1

3. ✘ 3 : 1, 1 : 2 : 1

4. ✔ 1 : 0

Question Number : 79 Question Id : 3426041519 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Hinny is an interspecific hybrid of

Options :

1. ✔ Male horse and female donkey

2. ✘ Male donkey and female horse

3. ✘ Jack and Jennet

4. ✖

Mare and Stallion

Question Number : 80 Question Id : 3426041520 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1

- A) Totipotent cell
- B) Pluripotent cell
- C) Multipotent cell
- D) Unipotent cell

List-2

- I) Haemopoietic stem cells
- II) Muscle stem cells
- III) 8 cell stage blastocyst
- IV) Inner cell mass
- V) Mast cell

The correct match is

Options :

1. ✘

A	B	C	D
III	V	IV	II

2. ✔

A	B	C	D
III	IV	I	II

3. ✖

A

B

C

D

II

III

IV

I

A

B

C

D

V

III

II

IV

4. ✖

Physics

Section Id :	34260430
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
Sub-Section Number :	1
Sub-Section Id :	34260430
Question Shuffling Allowed :	Yes

Question Number : 81 Question Id : 3426041521 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following is a possible final step in applying the scientific method?

Options :

1. ✖ Formulating a hypothesis

2. ✖

Building a theory

3. ✓ Analysis of test results

4. ✘ Formulation of a question

Question Number : 82 Question Id : 3426041522 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If momentum (P), area (A) and time (T) are taken to be the fundamental quantities then the dimensional formula for power is

Options :

1. ✘ $P^{\frac{1}{2}} AT^{-1}$

2. ✘ $P^2 AT^{-2}$

3. ✓ $PA^{\frac{1}{2}} T^{-2}$

4. ✖

$$PA^{-1}T^{-2}$$

Question Number : 83 Question Id : 3426041523 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A body starts from rest with uniform acceleration and moves in a straight line. If its speed after 'n' seconds is 'v', then the distance covered in the last 2 sec is,

Options :

1. ✘
$$\frac{2v(n+1)}{n}$$

2. ✘
$$\frac{v(n+1)}{n}$$

3. ✘
$$\frac{v(n-1)}{n}$$

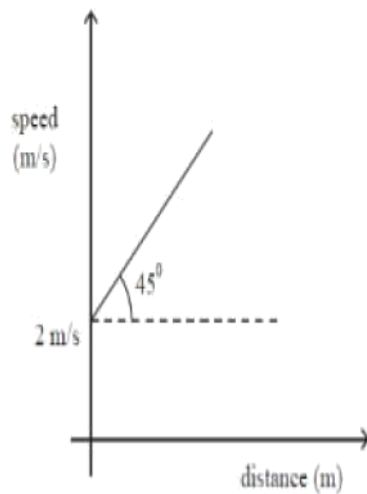
4. ✔
$$\frac{2v(n-1)}{n}$$

Question Number : 84 Question Id : 3426041524 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The speed distance graph is shown below. At what instant of time (in sec) the speed becomes 4 m/s?



Options :

1. ✓ $t = \ln(2)$

2. ✗ $t = \ln(4)$

3. ✗ $t = \ln(8)$

4. ✗ $t = \ln(6)$

Question Number : 85 Question Id : 3426041525 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

At $t = 0$, a particle starts moving from origin with velocity $5.0\hat{i}$ m/s and it moves in $x - y$ plane due to a force having a constant acceleration of $(2.0\hat{i} + 3.0\hat{j})\text{m/s}^2$. Find the coordinate of the particle at $t = 6\text{s}$.

Options :

1. ✘ $(x = 54\text{m}, y = 66\text{m})$

2. ✔ $(x = 66\text{m}, y = 54\text{m})$

3. ✘ $(x = 36\text{m}, y = 48\text{m})$

4. ✘ $(x = 48\text{m}, y = 36\text{m})$

Question Number : 86 Question Id : 3426041526 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A particle is moving in the $x - y$ plane and its coordinates at any time t are given by

$$x = 5 \cos \omega t$$

$$y = 5 \sin \omega t$$

where $\omega = \frac{\pi}{4}$ rad/s. The direction of force it experiences at $t = 3$ s is,

Options :

1. ✘ $\hat{i} + \hat{j}$

2. ✔ $\hat{i} - \hat{j}$

3. ✘ \hat{i}

4. ✘ \hat{j}

Question Number : 87 Question Id : 3426041527 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An object of mass 15 kg moves at a constant speed of 15 ms^{-1} . A constant force, which acts for 5 seconds on the object, gives it a speed 5 ms^{-1} in opposite direction. The force acting on the object is?

Options :

1. ✘ -50 N

2. ✘ 60 N

3. ✖ -40 N

4. ✓ -60 N

Question Number : 88 Question Id : 3426041528 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Find the position of the particle which starts from rest at time $t = 10 \text{ s}$, given the force acting on the particle with a mass of 50 g is $(5\vec{i} + 10\vec{j}) \text{ N}$

Options :

1. ✗ $(10000\vec{i} + 5000\vec{j}) \text{ m}$

2. ✗ $(5000\vec{i} + 5000\vec{j}) \text{ m}$

3. ✓ $(5000\vec{i} + 10000\vec{j}) \text{ m}$

4. ✗ $(10000\vec{i} + 10000\vec{j}) \text{ m}$

Question Number : 89 Question Id : 3426041529 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A machine gun fires 360 bullets per minute. Each bullet travels with velocity of 500 m/s. If the power of the machine gun is 4.5 kW then the mass of each bullet is

Options :

1. ✘ 2 g

2. ✘ 5 g

3. ✔ 6 g

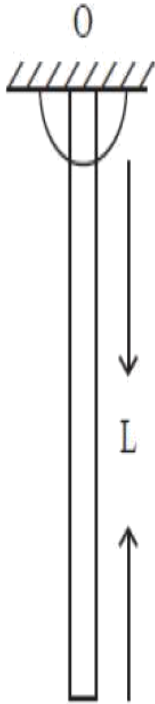
4. ✘ 10 g

Question Number : 90 Question Id : 3426041530 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A rod of length L can rotate about end O . What is the work done if the rod is rotated by 180° .



Options :

1. ✓ MgL

2. ✗ $\frac{MgL}{2}$

✗ $\frac{3}{4}MgL$

✗ $\frac{1}{4}MgL$

Question Number : 91 Question Id : 3426041531 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A solid cylinder rolls without slipping from top of an incline of length 2.7 m with angle of inclination 30° . What will be its speed when it reaches the bottom of the incline?

[use $g = 10 \text{ m/s}^2$]

Options :

1. ✘ 2 m/s

2. ✘ $2\sqrt{2} \text{ m/s}$

3. ✘ 3 m/s

4. ✔ $3\sqrt{2} \text{ m/s}$

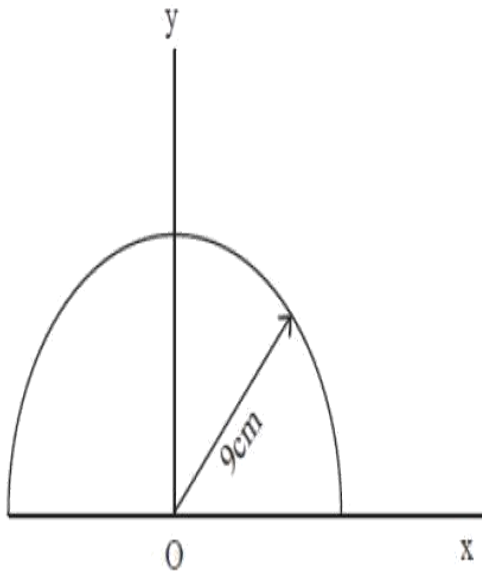
Question Number : 92 Question Id : 3426041532 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A homogenous semi circular plate of radius 9 cm placed at the origin as shown in the figure. The coordinate of center of mass is

(Assume thickness is negligible)



Options :

1. ✘ (0 cm, 6 cm)
2. ✔ (0 cm, 4.5 cm)
3. ✘ (-4.5 cm, 0 cm)
4. ✘ (-4.5 cm, 4.5 cm)

Question Number : 93 Question Id : 3426041533 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An oscillating simple pendulum slow down its motion and finally stops due to?

Options :

1. ✓ Air friction
2. ✗ Earth's gravity
3. ✗ Mass of pendulum
4. ✗ Centre of gravity

Question Number : 94 Question Id : 3426041534 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider a satellite which is rotating in a circular orbit of radius $2R_E$ about the earth.

The mass of satellite is 1600 kg. What is the energy required to transfer it to a circular orbit of radius $8 R_E$?

[use $g = 10\text{ms}^{-2}$, $R_E = 6 \times 10^6\text{m}$]

Options :

1. ✓ $18 \times 10^9 \text{ J}$

2. ✖

$$9 \times 10^9 \text{ J}$$

3. ✘ $27 \times 10^9 \text{ J}$

4. ✘ $3 \times 10^9 \text{ J}$

Question Number : 95 Question Id : 3426041535 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A body is subjected to a stress resulting in the change in volume of the body. The stress must be

Options :

1. ✘ Tensile

2. ✘ Compressive

3. ✔ Hydraulic

4. ✘ Shearing

Question Number : 96 Question Id : 3426041536 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A cylindrical wire of length l , density d is kept on the surface of liquid. What can be the maximum radius (r) of the wire such that it is in equilibrium due to surface tension (T) of liquid?

(Assume $l \gg r$ and the contact angle is 0° , g is acceleration due to gravity)

Options :

1. ✓ $\sqrt{\frac{2T}{\pi dg}}$

2. ✗ $\frac{2T}{\pi dg}$

3. ✗ $\sqrt{\frac{T}{\pi dg}}$

4. ✗ $\frac{T}{\pi dg}$

Question Number : 97 Question Id : 3426041537 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Total pressure at the bottom of a filled water tank is 2.0 atm. If a small hole is made at the bottom of the tank, then what is the velocity of flux?

[use density of water as 1000 kg/m^3 , $1 \text{ atm} = 10^5 \text{ Pa}$]

Options :

1. ✘ 10 m/s
2. ✔ $10\sqrt{2} \text{ m/s}$
3. ✘ 20 m/s
4. ✘ $20\sqrt{2} \text{ m/s}$

Question Number : 98 Question Id : 3426041538 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An ideal gas at temperature T & pressure P fills the chamber A which is separated from chamber B which has vacuum. The two chambers are thermally insulated. When plug is removed the gas fills both the chambers. Both A & B have same volume. What will be the pressure & temperature of the gas after it comes to equilibrium.?

Options :

1. ✖

P, T

2. ✓ $P/2, T$

3. ✗ $P/2, T/2$

4. ✗ $P, T/2$

Question Number : 99 Question Id : 3426041539 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A block of ice at 0°C is kept on the upper surface of a slab of thickness 10cm and having a lower surface area of 3360 cm^2 . The lower surface of the slab is exposed to steam at 100°C . 5 g of ice melts in 10 min. What is the thermal conductivity of the slab. [latent heat of fusion of ice = $3.36 \times 10^5\text{ J kg}^{-1}$]

Options :

1. ✗ $6.3 \times 10^{-3}\text{ Wm}^{-1}\text{ }^\circ\text{C}^{-1}$

2. ✗ $7.3 \times 10^{-3}\text{ Wm}^{-1}\text{ }^\circ\text{C}^{-1}$

3. ✓

$$8.3 \times 10^{-3} \text{ Wm}^{-1} \text{ } ^\circ\text{C}^{-1}$$

$$9.3 \times 10^{-3} \text{ Wm}^{-1} \text{ }^\circ\text{C}^{-1}$$

4. ✖

Question Number : 100 Question Id : 3426041540 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is incorrect

Options :

In an adiabatic process the system is insulated from surroundings and the heat absorbed or released is zero.

1. ✖

In an isochoric process volume is variable.

2. ✔

In isobaric process pressure is constant.

3. ✖

In a cyclic process the system returns to initial state.

4. ✖

Question Number : 101 Question Id : 3426041541 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In an isothermal process if heat is supplied to an ideal gas, then

Options :

1. ✘ The internal energy of the gas will decrease
2. ✘ The internal energy of the gas will increase
3. ✔ The gas will do positive work
4. ✘ The gas will do negative work

Question Number : 102 Question Id : 3426041542 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The rms speed of H_2 molecules is C at $27^\circ C$. The molecules break into atoms. What should be the new temperature such that atoms have same speed as molecules

(Assume the mass of H_2 molecules is twice the mass of H-atom)

Options :

1. ✘ 600 K
2. ✔ 150 K

3. ✖

100 K

4. ✘ 300 K

Question Number : 103 Question Id : 3426041543 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Two waves of sound of wavelength 1.2 m and 1.25 m in a medium produce 90 beats in 10 s. The speed of sound in the medium is

Options :

1. ✘ 300 m/s

2. ✘ 290 m/s

3. ✔ 270 m

4. ✘ 240 m/s

Question Number : 104 Question Id : 3426041544 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Conditions for total internal reflection to occur are

- a) The ray should travel from rarer to denser medium
- b) The ray should travel from denser to rarer medium
- c) The angle of incidence should be greater than the critical angle
- d) The angle of incidence should be less than the critical angle

Options :

1. ✓ (b, c)

2. ✗ (a, c)

3. ✗ (a, d)

4. ✗ (b, d)

Question Number : 105 Question Id : 3426041545 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For what distance the ray optics will be a good approximation when the aperture is 5 mm wide and the wavelength is 450 nm?

Options :

1. ✖

45.55 m

2. ✓ 55.55 m

3. ✗ 35.55 m

4. ✗ 40.55 m

Question Number : 106 Question Id : 3426041546 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The electric field in a region is given as $\vec{E} = (10\hat{i} + 20\hat{j}) \text{ V/m}$. The net flux passing through a square area of side 2 m parallel to x - z plane is

Options :

1. ✗ $80\sqrt{5} \text{ Vm}$

2. ✗ $40\sqrt{5} \text{ Vm}$

3. ✖ 40 Vm

80 Vm

4. ✓

Question Number : 107 Question Id : 3426041547 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Two equal and opposite charges are placed at points P and Q. The null point on the line joining them is

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. at P

2. at Q

3. middle of line joining P and Q

4.

Question Number : 108 Question Id : 3426041548 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Drift velocity of electrons in a wire of certain length and circular cross section is V_d . The potential difference across the wire and the wire length are doubled but radius of the cross section is halved. What is the new drift speed?

Options :

1. ✘ $V_d/2$

2. ✘ $2V_d$

3. ✔ V_d

4. ✘ $V_d/3$

Question Number : 109 Question Id : 3426041549 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Electron moves to a region of uniform magnetic field B in the plane perpendicular to B . It finishes an orbit in $1 \mu\text{s}$. What is the nearest value of B among the following

[mass of electron = $9 \times 10^{-31} \text{ kg}$]

Options :

1. ✘ $2.5 \mu\text{T}$

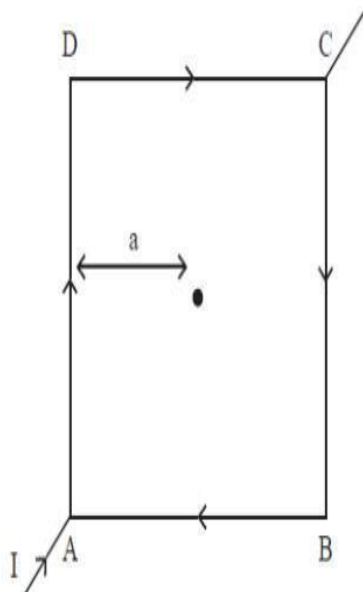
2. ✘ $3.5 \mu\text{T}$

3. ✔ $35 \mu\text{T}$

4. ✘ $350 \mu\text{T}$

Question Number : 110 Question Id : 3426041550 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical Correct Marks : 1 Wrong Marks : 0

A square loop is made from a uniform wire as shown in the figure. If a battery is connected between the points A & C, then the magnitude of the magnetic field at the centre of the square is



Options :

$$\frac{\mu_0 I}{2\sqrt{2}\pi a}$$

1. ✘

$$\frac{\mu_0 I}{4\sqrt{2}\pi a}$$

2. ✘

zero

3. ✔

$$\frac{\mu_0 I}{2\pi a}$$

4. ✘

Question Number : 111 Question Id : 3426041551 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The strength of earth's magnetic field on the earth's surface is of the order

Options :

$$10^{-5} \text{ T}$$

1. ✔

$$10^{-15} \text{ T}$$

2. ✘

3. ✖

10^{-10} T

$$10^{-20} \text{ T}$$

4. ✘

Question Number : 112 Question Id : 3426041552 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Find the zero induced *emf* position for a conducting circular loop of radius r . The circular loop is rotated about its diameter at a constant angular velocity ω in a magnetic field B perpendicular to the axis of rotation.

Options :

1. ✔

$$0^\circ$$

2. ✘

$$\frac{\pi}{3}$$

3. ✘

$$\frac{\pi}{4}$$

4. ✘

$$\frac{\pi}{2}$$

Question Number : 113 Question Id : 3426041553 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A light bulb is rated at 110 W for a 220 V supply. The resistance of the bulb is

Options :

1. ✓ 440 Ω
2. ✗ 220 Ω
3. ✗ 55 Ω
4. ✗ 110 Ω

Question Number : 114 Question Id : 3426041554 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A plane electromagnetic wave of frequency 10 MHz travels in free space in X – Y plane making an angle of 45° with + x – axis. At a particular point in space and time,

$\vec{E} = 6\hat{k}$ V/m. What is \vec{B} at this point?

Options :

1. ✓ $\sqrt{2} \times 10^{-8} (\hat{i} - \hat{j})$ T

2. ✖

$$2 \times 10^{-8} (\hat{i} - \hat{j}) \text{ T}$$

$$2 \times 10^{-8} (\hat{i} + \hat{j}) \text{ T}$$

3. ✖

$$\sqrt{2} \times 10^{-8} (\hat{i} + \hat{j}) \text{ T}$$

4. ✖

Question Number : 115 Question Id : 3426041555 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An electron is moving with a speed in a constant magnetic field, it's de Broglie wavelength

(Assume magnetic field is perpendicular to plane of motion of electron)

Options :

increases with time

1. ✖

decreases with time

2. ✖

3. ✓

remains constant

follow sinusoidal behaviour

4. ✘

Question Number : 116 Question Id : 3426041556 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If R is Rydberg constant then, the shortest wavelength of Balmer series of hydrogen atom, is

Options :

1. ✘ $2/R$

2. ✘ $9/R$

3. ✘ $R/2$

4. ✔ $4/R$

Question Number : 117 Question Id : 3426041557 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

200 MeV energy is released when one nucleus of ^{235}U undergoes fission. The approximate energy released by fission of 2 kg of uranium is

Options :

1. ✘ $8.0 \times 10^{13} \text{ J}$

2. ✘ $1.0 \times 10^{15} \text{ J}$

3. ✔ $1.63 \times 10^{14} \text{ J}$

4. ✘ $1.8 \times 10^{12} \text{ J}$

Question Number : 118 Question Id : 3426041558 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a p – type semiconductor; the concentration of holes is $2 \times 10^{15} \text{ cm}^{-3}$. The intrinsic carrier concentration is $2 \times 10^{10} \text{ cm}^{-3}$. The concentration of electrons will be

Options :

1. ✘ $1 \times 10^5 \text{ cm}^{-3}$

2. ✔ $2 \times 10^5 \text{ cm}^{-3}$

3. ✘ $2 \times 10^{15} \text{ cm}^{-3}$

4. ✖

$$1 \times 10^{15} \text{ cm}^{-3}$$

Question Number : 119 Question Id : 3426041559 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The depletion layer thickness of a p - n junction is 10^{-6} m. If the potential across it is 0.2 V, then the electric field will be

Options :

1. ✘ 10^7 V/m

2. ✔ $2 \times 10^5 \text{ V/m}$

3. ✘ 10^5 V/m

4. ✘ 10^{-5} V/m

Question Number : 120 Question Id : 3426041560 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In an amplitude modulation process, the modulation index is μ . The modulation index is changed to μ_1 if the amplitude of modulation signal is increased by 1%. The modulation index is changed to μ_2 if the amplitude of carrier signal is increased by 1%. Which of the following is true statement?

Options :

1. ✓
$$\mu = \left(\frac{\mu_1 + \mu_2}{2} \right)$$

2. ✗
$$\mu = \frac{|\mu_1 - \mu_2|}{2}$$

3. ✗
$$\mu > \mu_1$$

4. ✗
$$\mu < \mu_2$$

Chemistry

Section Id : 34260431

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
Sub-Section Number :	1
Sub-Section Id :	34260431
Question Shuffling Allowed :	Yes

Question Number : 121 Question Id : 3426041561 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The ratio of potential energy (PE) and total energy of an electron in a Bohr orbit of a hydrogen like atom is

Options :

1. ✘ 1

2. ✔ 2

3. ✘ -1

4. ✘ $-\frac{1}{2}$

Question Number : 122 Question Id : 3426041562 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Both the position and exact velocity of an electron in an atom can not be determined simultaneously and accurately. This is known as

Options :

1. ✘ de Broglie principle
2. ✘ Hamiltonian law
3. ✔ Heisenberg uncertainty principle
4. ✘ Bohr theory of hydrogen atom

Question Number : 123 Question Id : 3426041563 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In which of the following options, the law of triad is applicable?

Options :

1. ✘ Na, K, Rb
2. ✔ Cl, Br, I
3. ✘ C, N, O

4. ✖

Mg, Ca, Sr

Question Number : 124 Question Id : 3426041564 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements are correct?

- A) The separation of actinoid elements from each other is difficult
- B) The covalency of the compounds of actinoid metals decrease from left to right along actinoid series
- C) The compounds of Lawrencium are most covalent
- D) U and Th occur naturally in substantial quantities

Options :

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

Question Number : 125 Question Id : 3426041565 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The molecule which has the maximum bond enthalpy is?

Options :

1. N_2

2. HF

3. F_2

4. CO

Question Number : 126 Question Id : 3426041566 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the hybridization present in the complex $[\text{Co}(\text{NH}_3)_6]^{3+}$

Options :

1. d^2sp^3

2. sp^3d^2

3. dsp^3



4. ✖

sp^3d

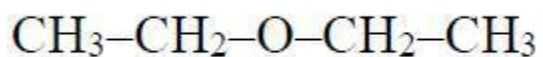
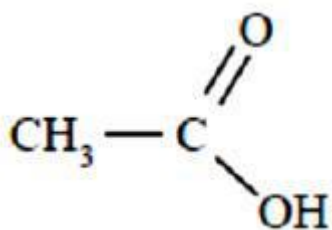
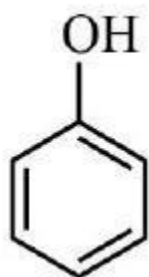
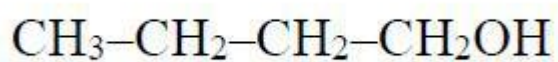
Question Number : 127 Question Id : 3426041567 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The compound with maximum vapour pressure at a given temperature is

Options :



Question Number : 128 Question Id : 3426041568 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The units of surface tension and viscosity of a liquid, respectively, are

Options :

1. ✘ $\text{kg m}^{-1} \text{s}^{-1}, \text{N m}^{-1}$

2. ✔ $\text{N m}^{-1}, \text{kg m}^{-1} \text{s}^{-1}$

3. ✘ $\text{kg m}^2 \text{s}^{-1}, \text{N m}^{-2}$

4. ✘ $\text{N m}^{-1}, \text{kg m}^2 \text{s}^{-1}$

Question Number : 129 Question Id : 3426041569 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

20 g of CaCO_3 on heating produces x amount of CO_2 . If the final weight of CaCO_3 after the reaction is 5 g, the amount of CO_2 liberated in L at STP is

Options :

1. ✘ 44

2. ✔ 3.36

3. 

4. ✘ 6.66

Question Number : 130 Question Id : 3426041570 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Number of moles of dichromate needed to oxidise one mole of Sn^{2+} is

Options :

1. ✘ 3

2. ✘ 2

3. ✔ $\frac{1}{3}$

4. ✘ $\frac{1}{2}$

Question Number : 131 Question Id : 3426041571 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The number of translational degrees of freedom for $\text{NH}_3(\text{g})$ is

Options :

1. ✘ 4

2. ✘ 5

3. ✔ 3

4. ✘ 9

Question Number : 132 Question Id : 3426041572 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

At 298 K, the ratio of dissociated water to that of undissociated water is
[Assume pure water]

Options :

1. ✘ 1×10^{-7}

2. ✔ 1.8×10^{-9}

3. ✖ 1×10^{-3}

4. ✘ 1000

Question Number : 133 Question Id : 3426041573 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Acetylsalicylic acid has pK_a value 3.5. The pH of gastric juice in human stomach is 2–3 and the pH in the small intestine is approximately 7.4. Then acetylsalicylic acid will be

Options :

Unionized in the stomach and ionized in the small intestine

1. ✔

Unionized in the small intestine and in the stomach

2. ✘

Completely get ionized in both small intestine and stomach

3. ✘

Ionized in the stomach and almost unionized in the small intestine

4. ✘

Question Number : 134 Question Id : 3426041574 Question Type : MCQ Option Shuffling : Yes

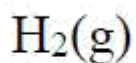
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Among the fuels given, the fuel with the highest calorific value (kJ/mole) is

Options :

1. ✖



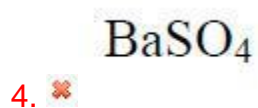
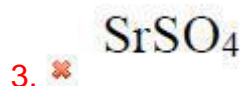
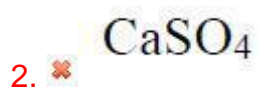
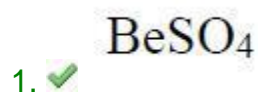
Question Number : 135 Question Id : 3426041575 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following compounds has the highest hydration energy?

Options :



Question Number : 136 Question Id : 3426041576 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The correct statements from below are

- (I) H_3BO_3 is a liquid
- (II) H_3BO_3 forms a layer structure
- (III) In H_3BO_3 , each BO_3 unit is joined by hydrogen bonds
- (IV) H_3BO_3 is tribasic

Options :

1. ✘ (I) and (II)

2. ✔ (II) and (III)

3. ✘ (III) and (IV)

4. ✘ (II) and (IV)

Question Number : 137 Question Id : 3426041577 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following options is true?

Options :

1. ✓ SnF_4 is ionic

2. ✘ PbI_4 can be prepared

3. ✘ CCl_4 undergoes hydrolysis

4. ✘ GeBr_4 is less stable than GeBr_2

Question Number : 138 Question Id : 3426041578 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The acidity of the soil can be reduced by

Options :

1. ✘ Sprinkling dil. NaOH solution

2. ✘ Spraying CO_2 dissolved water

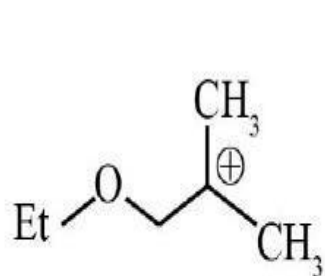
3. ✔ Adding powdered Limestone

4. ✘ Adding powdered Na_2CO_3

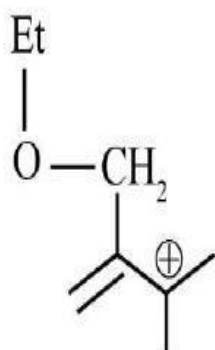
**Question Number : 139 Question Id : 3426041579 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical**

Correct Marks : 1 Wrong Marks : 0

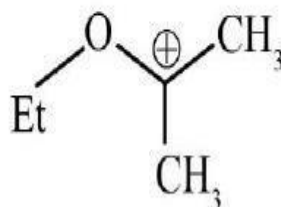
The decreasing order of the stability of the following carbocations is



(A)



(B)



(C)

Options :

1. ✘ A > B > C

2. ✘ B > C > A

3. ✔ C > B > A

4. ✘ A > C > B

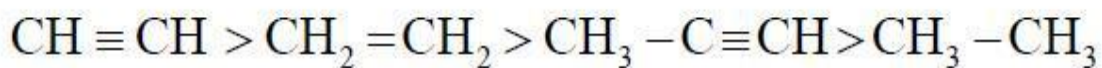
Question Number : 140 Question Id : 3426041580 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The correct order of decreasing acidity for the following is

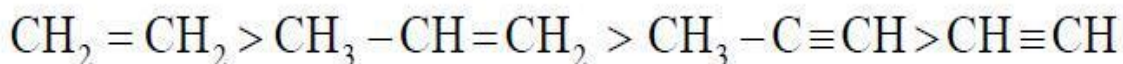
Options :



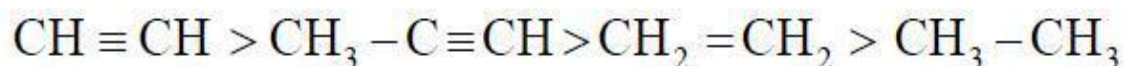
1. ✘



2. ✘



3. ✘



4. ✔

Question Number : 141 Question Id : 3426041581 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

One mole of an organic compound with a double bond and a triple bond is reacted with Br_2/CCl_4 . The amount of Br_2 required to completely brominate all π -bonds in the compound is (Given Br mass is 80 amu)

Options :

1. ✔ 480 g

2. ✘ 160 g

3. ✘ 320 g

4. ✖ 240 g

Question Number : 142 Question Id : 3426041582 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The ratio of packing density in FCC, BCC, simple cubic and HCP, respectively, is

Options :

1. ✘ $0.7 : 0.92 : 1.0 : 1.0$

2. ✘ $1.0 : 0.7 : 0.92 : 1.0$

3. ✔ $1.0 : 0.92 : 0.7 : 1.0$

4. ✘ $0.92 : 0.5 : 1.0 : 0.92$

Question Number : 143 Question Id : 3426041583 Question Type : MCQ Option Shuffling : Yes

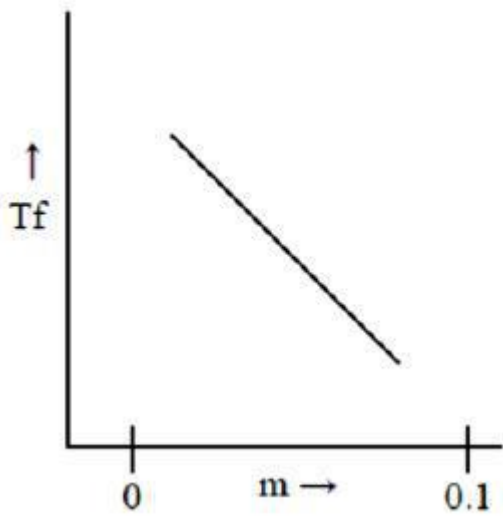
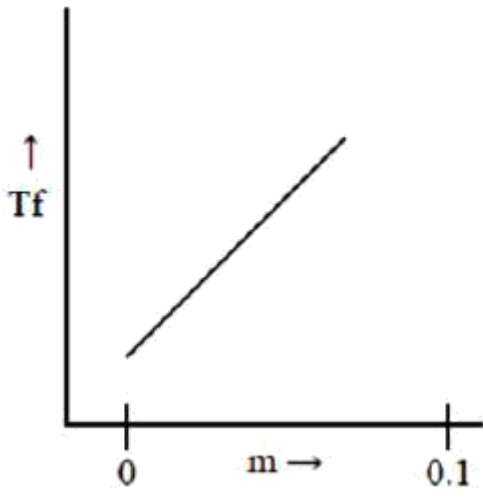
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

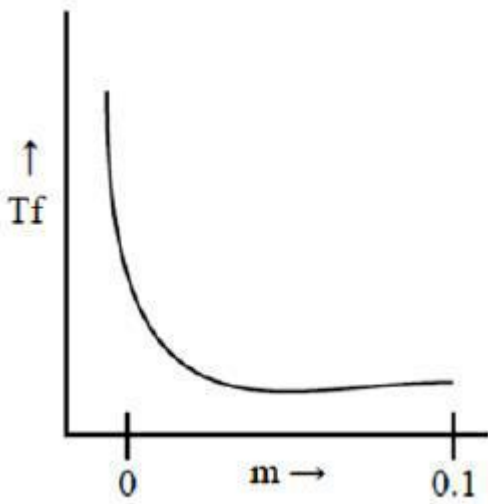
Which one of the following graphs correctly represents change in freezing point as a function of solute concentration?

Options :

1. ✘

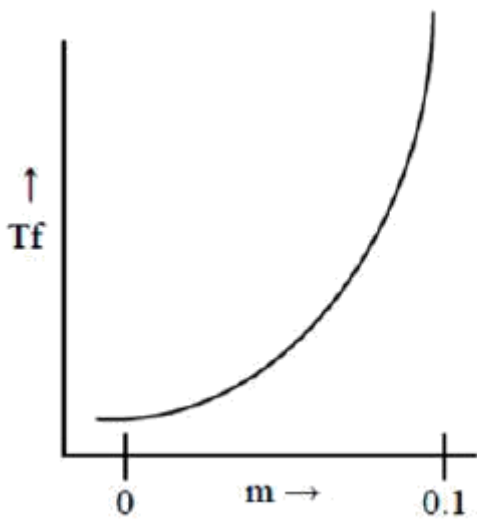


2. ✓



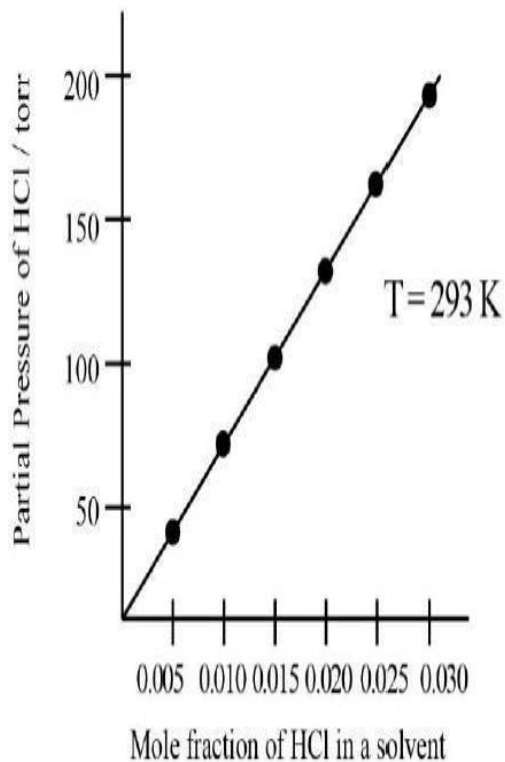
3. ✗

4. ✖



Question Number : 144 Question Id : 3426041584 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
 Correct Marks : 1 Wrong Marks : 0

From the graph, the value of Henry's constant for the solubility of HCl gas in cyclohexane is



Options :

1. ✓ 10 k torr

2. ✘ 100 torr

3. ✘ 50 torr

4. ✘ 2.4×10^2 torr

Question Number : 145 Question Id : 3426041585 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For a chemical reaction $A + B \xrightleftharpoons[k_{-1}]{k_1} C \xrightarrow{k_2} D$. The rate $\frac{dc}{dt}$ is

Options :

1. ✔ $k_1[A][B] - k_{-1}[C] - k_2[C]$

2. ✘ $-k_1[A][B] + (k_{-1} + k_2)[C]$

3. ✘ $k_1[A][B]$

4. ✘ $[k_1 - k_2 - k_{-1}][C]$

Question Number : 146 Question Id : 3426041586 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For the reaction of the type $A+B \rightarrow$ products, it is observed that doubling the concentration of 'A' increases the reaction rate by four times, but doubling the concentration of 'B' there is no apparent effect on the rate. The rate equation is

Options :

1. ✘ $\text{rate} = k[A][B]$

2. ✔ $\text{rate} = k[A]^2$

3. ✘ $\text{rate} = k[A]^2[B]$

4. ✘ $\text{rate} = k[A]^2[B]^2$

Question Number : 147 Question Id : 3426041587 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

To stop blood from a wound, which of the following sol is preferred?

Options :

1. ✘ CdS sol

2. ✓ FeCl_3 sol

3. ✘ Silver sol

4. ✘ Charcoal sol

Question Number : 148 Question Id : 3426041588 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The correct option from below is

Options :

1. ✘ Both α - and β - forms of black phosphorus can be made from red phosphorus

2. ✔ White phosphorus is more reactive due to angular strain in the P_4 - molecule

3. ✘ Red phosphorus can be prepared from white phosphorus under open air condition

4. ✘ Red phosphorus is poisonous and soluble in carbon disulphide

Question Number : 149 Question Id : 3426041589 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Match the following

Column -1 Type of sulphur	Column -2 Property
(A) α - Sulphur	(I) soluble in CS_2
(B) S_2	(II) soluble in H_2O
(C) β - Sulphur	(III) Puckered ring
	(IV) Paramagnetic
	(V) Chair form

The correct match is

Options :

A	B	C
I, III	IV	I, III

1. ✓

A	B	C
I, II, III	IV	I, III

2. ✗

A	B	C
II, III	II	II, V

3. ✗

A	B	C
I, IV, V	II	I, IV, V

✗

Question Number : 150 Question Id : 3426041590 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The structure of XeOF_4 and XeO_3 , respectively, are

Options :

1. ✓ Square pyramidal and pyramidal
2. ✗ Pentagonal planar and pyramidal
3. ✗ Pentagonal pyramidal and planar
4. ✗ Pentagonal bipyramidal and planar

Question Number : 151 Question Id : 3426041591 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Among the options, the set of metals can form trihalides is

Options :

1. ✓ Fe and Co
2. ✗ Co and Cu

3. ✖ Zn and Cu

4. ✘ Fe and Cu

Question Number : 152 Question Id : 3426041592 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The type of isomerism shown by the complex $[\text{CoCl}_2(\text{en})_2]$ is

Options :

1. ✔ Geometrical isomerism

2. ✘ Coordination isomerism

3. ✘ Linkage isomerism

4. ✘ Ionization isomerism

Question Number : 153 Question Id : 3426041593 Question Type : MCQ Option Shuffling : Yes

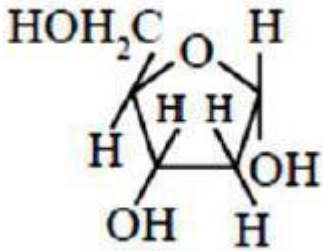
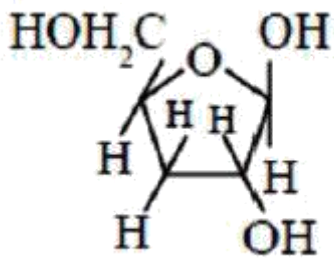
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

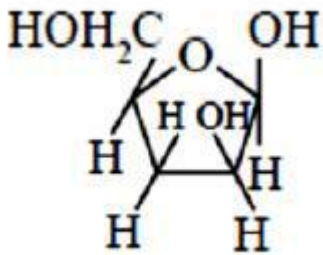
The structure of β -D-2-deoxyribose is

Options :

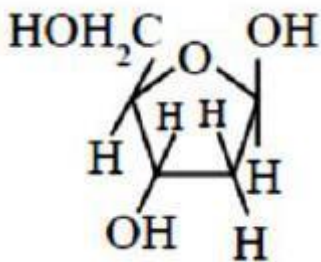
1. ✘



2. ✘



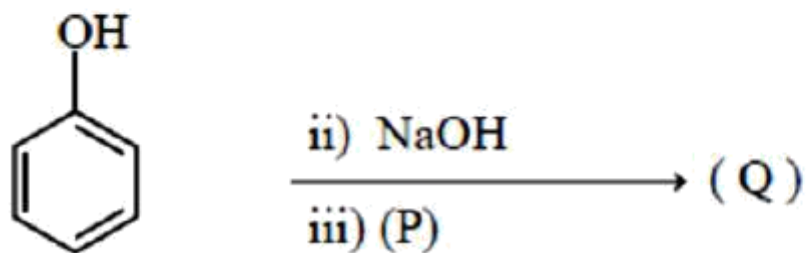
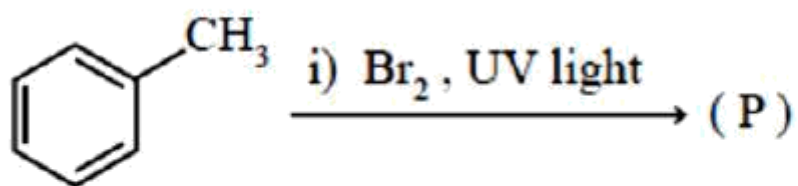
3. ✘



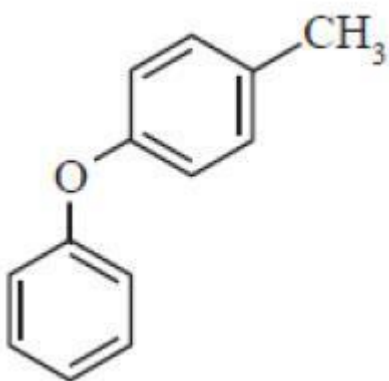
4. ✔

Question Number : 154 Question Id : 3426041594 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

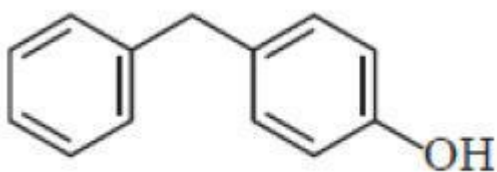
The major product (Q) of the below reactions is



Options :

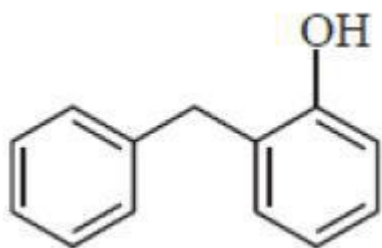


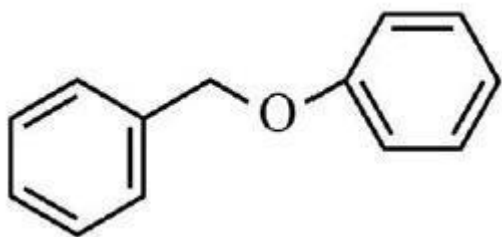
1. ✘



✘

3. ✖





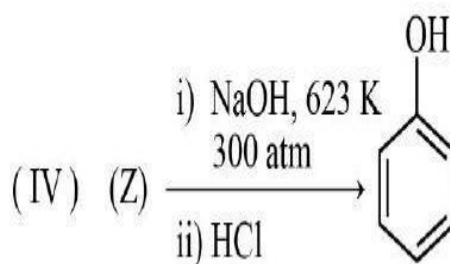
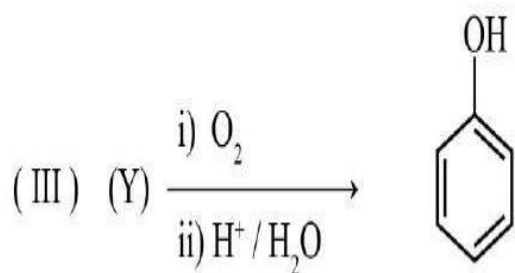
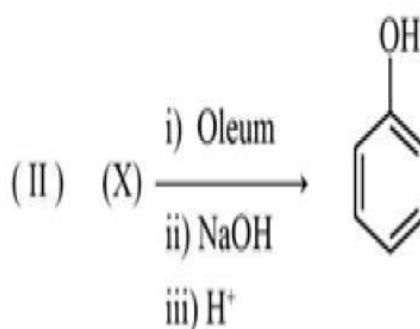
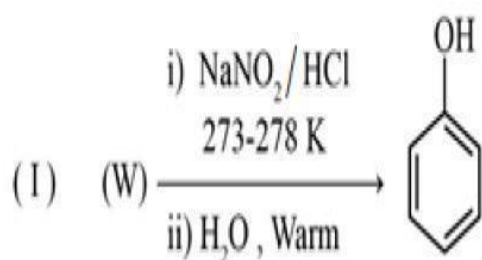
4. ✓

Question Number : 155 Question Id : 3426041595 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The possible starting materials in each of the following reactions are



Options :

W	X	Y	Z
chlorobenzene	benzene	cumene	aniline

1. ✗

W	X	Y	Z
aniline	benzene	cumene	chlorobenzene

2. ✓

3. ✘

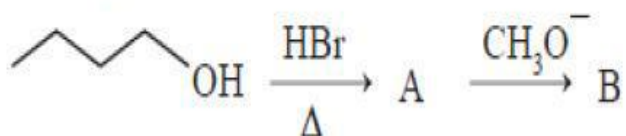
W	X	Y	Z
aniline	cumene	benzene	chlorobenzene

4. ✘

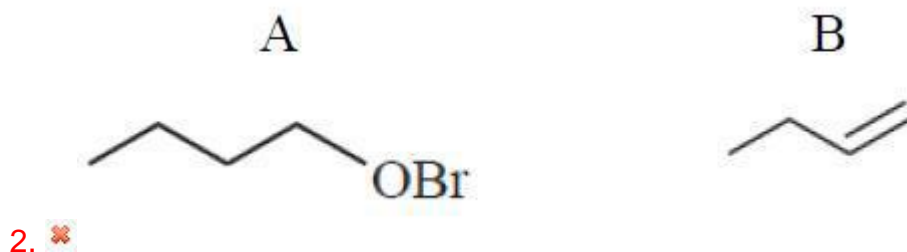
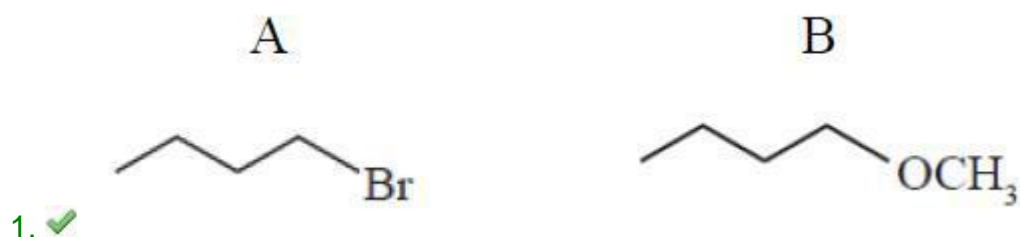
W	X	Y	Z
aniline	cumene	chlorobenzene	benzene

Question Number : 156 Question Id : 3426041596 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical
 Correct Marks : 1 Wrong Marks : 0

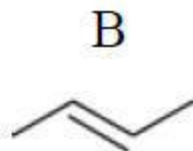
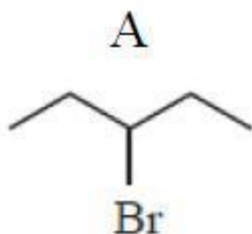
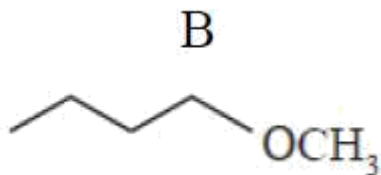
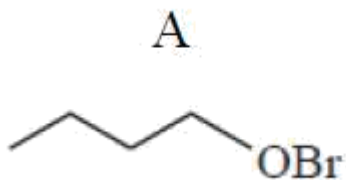
The major products A and B in the following reaction sequences are



Options :



3. ✘



4. ✘

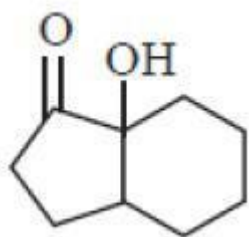
Question Number : 157 Question Id : 3426041597 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

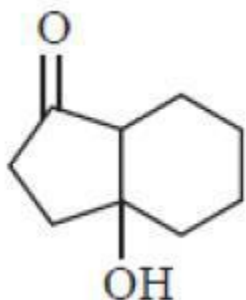
Correct Marks : 1 Wrong Marks : 0

Among the following, the one which undergo acid catalysed dehydration relatively easily, is

Options :

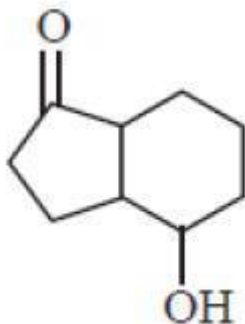
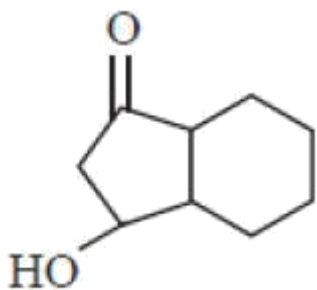


1. ✘



2. ✔

3. ✖



4. ✘

Question Number : 158 Question Id : 3426041598 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Acetone reacts with HCN to form a cyanohydrin. It is an example of

Options :

1. ✘ electrophilic addition

2. ✘ electrophilic substitution

3. ✔ nucleophilic addition

4. ✖ nucleophilic substitution

Question Number : 159 Question Id : 3426041599 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When benzyl alcohol is reacted with concentrated HBr, produces the product 'P'. The product 'P' on reaction with KCN, gives "Q". The product "Q" on heating with H_3O^+ generates "R". The molecular formula of "R" is

Options :

1. ✓ $C_8H_8O_2$

2. ✗ $C_7H_6O_2$

3. ✗ $C_8H_9NO_2$

4. ✗ C_8H_7N

Question Number : 160 Question Id : 3426041600 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The amines that undergo carbylamine reaction are

Options :

1. ✗ 2° – aliphatic amines, 1° – aromatic amines



2. ✓

1° – aliphatic amines, 1° – aromatic amines

✘ 2° – aliphatic amines, 2° – aromatic amines

4. ✘ 1° – aliphatic amines, 2° – aromatic amines