Match the following

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
<th>List - III</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Chara</td>
<td>i) Selaginella</td>
<td>I) Having long and dwarf branches</td>
</tr>
<tr>
<td>B) Algin</td>
<td>ii) Pyrenoid</td>
<td>II) Sargassum</td>
</tr>
<tr>
<td>C) Microphylls</td>
<td>iii) Living fossil</td>
<td>III) Heterosporous</td>
</tr>
<tr>
<td>D) Ginkgo</td>
<td>iv) Water holding substances</td>
<td>IV) Cellulose and pectins</td>
</tr>
</tbody>
</table>

The correct answer is

Options:

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

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

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

4. A    B    C    D
   ii, IV  iv, II  i, III  iii, I
Match the following

List - I
A) Protostele
B) Siphonostele
C) Dictyostele
D) Solonostele

List - II
I) dissected siphonostele with leaf gap
II) dissected siphonostele with overlapping leaf gaps
III) Xylem surrounded by phloem
IV) Medullated protostele

The correct answer is

Options :

1. A  B  C  D
   I  II  III  IV

2. A  B  C  D
   II  I  IV  III

3. A  B  C  D
   III  IV  II  I

4. A  B  C  D
   III  II  I  IV
Study the following lists and choose the correct match

List - I
A) Tracheophytic, Archegoniate, Embryophytic, Phanerogams
B) Tracheophytic, Archegoniate, Embryophytic, Cryptogams
C) Atracheophytic, Archegoniate, Embryophytic, Cryptogams
D) Tracheophytic, Non-archegoniate, Embryophytic, Phanerogams

List - II
I) Angiosperms
II) Gymnosperms
III) Algae
IV) Bryophytes
V) Pteridophytes

The correct answer is

Options:

1. A B C D
II V IV III

2. A B C D
I III V II
Fill up the Blanks with suitable words

The gametophytes in gymnosperms are _______ but Cycas shows _______ because of presence of multiciliate male gamete. The retained multicellular female gametophyte is also called _______. In this thick cuticle and _______ will be useful to reduce water loss.

A. Sunken stomata  
B. Zoodogamy  
C. Endosperm  
D. Dependent  

Options:

A.  
B.  
C.  
D.  

Options:

D. B. C. A
Match the following

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
<th>List - III</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) False septum in Ovary</td>
<td>i) Fig</td>
<td>I) Storage of food and respiration</td>
</tr>
<tr>
<td>B) Carrot root</td>
<td>ii) Banana</td>
<td>II) Length of Stamen filament varies</td>
</tr>
<tr>
<td>C) Sucker</td>
<td>iii) Mustard</td>
<td>III) Sub aerial stem modification</td>
</tr>
<tr>
<td>D) Hypanthodium</td>
<td>iv) Absorption</td>
<td>IV) Blastophaga</td>
</tr>
</tbody>
</table>

The correct answer is

Options:

1. ii, II   iii, III   i, IV   iv, I
2. A   B   C   D
   iii, I   ii, III   iv, IV   i, II
Match the following

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
<th>List - III</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Acacia</td>
<td>i) Node of stem</td>
<td>I) Mericarp</td>
</tr>
<tr>
<td>B) Dichasial cyme</td>
<td>ii) False septum</td>
<td>II) Lamiaceae</td>
</tr>
<tr>
<td>C) Lateral out growth</td>
<td>iii) Monochasial cyme</td>
<td>III) Photosynthesis</td>
</tr>
<tr>
<td>D) Argemone</td>
<td>iv) Phyllode</td>
<td>IV) Parietal placentation</td>
</tr>
</tbody>
</table>

The correct answer is

Options:

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

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

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

4. A  B  C  D
   iv, II  ii, I  i, IV  iii, III
Choose the correct statement/s

A. In majority of algae formation of zygote occurs in female plant
B. *Cladophora* produces identical gamets
C. In Bryophytes and Pteridophytes the ratio of male gamets to female gamets will be several thousands
D. In Mangroves seeds germinate while in mother plant to increase environmental stress

Options:
1. A, B
2. A, B, C
3. B, C
4. A, B, C, D

Choose the correct option/s

A. విస్తారంలో వృక్షాల పోషకాంశాలు
B. ప్రతిఫలనంలో ప్రావిత్తిక పోషకాంశాలు
C. సమాచారాలు, సాధారణరూపాలు పోషకాంశాలు కొంత కొంతం పోషకాంశాలు కొంతం కొంతం పోషకాంశాలు కొంతం కొంతం పోషకాంశాలు
D. శతాబ్దంలో అధిక పోషకాంశాలు కొంతం కొంతం పోషకాంశాలు కొంతం కొంతం పోషకాంశాలు కొంతం కొంతం పోషకాంశాలు

Options:
1. A, B
2. A, B, C
3. B, C
4. A, B, C, D
Fill up the blanks with suitable words
The ability of the pistil to recognise pollen is dependent on _______ components and _______ guide the entry of pollentube. This study leads to help _______ in getting _______
even in _______.

A. Chemicals
B. Plant breeders
C. hybrids
D. Incompatible pollination
E. Synergids

Options:
1. A. B, C, D, E
2. A. E, B, C, D
3. E, A, D, C, B
4. A, C, B, D, E
Assertion (A): Unlike coconut, groundnut consume endosperm completely during embryo development

Reason (R): Though the embryogeny is similar in groundnut and coconut, perisperm is seen in coconut

Options:

Both (A) and (R) are true and (R) is the correct explanation of (A)

(A) మార్గం (R) తో సాధారణ మార్గం మార్గం (R) తో (A) తో సాధారణ మార్గం

1.

Both (A) and (R) are true but (R) is not the correct explanation of (A)

(A) మార్గం (R) తో సాధారణ మార్గం సాధారణ మార్గం (R) తో (A) తో సాధారణ మార్గం

(A) is true but (R) is false

(A) మార్గం (R) మార్గం

3.

(A) is false but (R) is true

(A) మార్గం (R) మార్గం

4.
Choose the wrong statement:

A. In hydrophilic plants, the pollens are covered by mucilaginous layer and in water hyacinth pollination takes place by insects.
B. Nectar and pollen are the rewards for animals in pollination but not in *Yucca* and *Amorphophallus*.
C. Autogamy can be prevented by herkogamy and cliestogamous flowers.
D. Wind-pollinated flowers will have multi-ovule condition for more seed production.

Options:

1. A, B
2. B, C
3. A, D
4. C, D
Choose the correct combination

<table>
<thead>
<tr>
<th>List - I</th>
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<th>List - III</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Raceme</td>
<td>i) Cup shaped thallamus</td>
<td>I) Derris indica</td>
</tr>
<tr>
<td>B) Mathematical model</td>
<td>ii) Codes</td>
<td>II) Use of computers</td>
</tr>
<tr>
<td>C) Trimerous</td>
<td>iii) Species plantarum</td>
<td>III) Artificial System</td>
</tr>
<tr>
<td>D) Historia plantarum</td>
<td>iv) Capsule</td>
<td>IV) Allium</td>
</tr>
</tbody>
</table>

The correct answer is

Options:

1. A, D
2. B, D
3. A, C
4. A, B
Assertion (A): Cis and Trans faces of the golgi associated with glyco proteins and glyco lipids

Reason (R): Golgi apparaus is in close association with rough Endoplasmic reticulum

Options:

1. Both (A) and (R) are true and (R) is the correct explanation of (A)

2. Both (A) and (R) are true but (R) is not the correct explanation of (A)

3. (A) is true but (R) is false

4. (A) is false but (R) is true
Choose the correct combination

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
<th>List - III</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Radial spikes</td>
<td>i) Sealing of DNA</td>
<td>I) Axoneme</td>
</tr>
<tr>
<td>B) H₁ Histone</td>
<td>ii) Positive charge histone</td>
<td>II) Lies outside of core</td>
</tr>
<tr>
<td>C) Negatively charged DNA</td>
<td>iii) Linkers</td>
<td>III) DNA package</td>
</tr>
<tr>
<td>D) Nucleolus</td>
<td>iv) No membrane</td>
<td>IV) r-RNA synthesis</td>
</tr>
</tbody>
</table>

The correct answer is

Options :

1. A, C
2. B, D
3. B, C
4. A, D
Choose the correct statements:

A. Acid soluble fractions have more than one thousand daltons
B. Common acid used in the living cell compound analysis is Hydrochloric acid
C. Number of carbons in Arachidonic acid is 20
D. Serine is the hydroxy methyl group amino acid

The correct answer is

Options:

1. A, B
2. B, C
3. C, D
4. A, D
Find the wrong statement
A. Polymers of polysaccharides, fats and proteins are synthesised from monomers by ionic bonding
B. Molecules with polar heads and hydrophobic tails are present in cell membrane
C. Left end of protein chain is N-terminal end
D. Right and Left handed helices are observed in protein

The correct answer is

Options:
1. A, B
2. B, C
3. C, D
4. A, D
Fill up the blanks with suitable words

In Meiosis, chromosomes start ______ which is called ______ thus a ______ of chromatids. Later the nonsister chromatids will undergo ______ leading to genetic material ______.

A Pairing  B Synapsis  C Exchange  D Tetrads  E Crossing over

Correct sequence is

Options :

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

Assertion (A): Chromosomes are inactive and not transcribed to messenger RNA in phase of apparent division
Reason (R) Cells remains metabolically active but no longer divide in quiescent stage
1. Both (A) and (R) are true, and (R) is the correct explanation of (A)
   (A) కాంప్లెంట్ (R) కాంప్లెంట్ ఉంటుంది (R) కాంప్లెంట్ (A) కాంప్లెంట్ ఉంటుంది

2. Both (A) and (R) are correct but (R) is not the correct explanation of (A)
   (A) కాంప్లెంట్ (R) కాంప్లెంట్ ఉంటుంది (R) కాంప్లెంట్ (A) కాంప్లెంట్ ఉంటుంది

3. (A) is true but (R) is false
   (A) కాంప్లెంట్ (R) కాంప్లెంట్ ఉంటుంది

4. (A) is false but (R) is true
   (A) కాంప్లెంట్ (R) కాంప్లెంట్ ఉంటుంది

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Sclerenchyma gives mechanical support in

ప్రచురం నిష్పమైన శిఖరీ వస్తున్న నాయక

Options:

Seed coat of Legume, Fruit pulp of Guava, Leaf of Tea
కంప్లెంట్ రోబ్బ్యుల్ కంప్లెంట్, గుండలు ప్లుప్, టీ పెట్టడాన్ని

1. Seed coat of Sapota, Leaf of Guava, Pulp of Legume
   సాపోటా రోబ్బ్యుల్, గుండల ప్లుప్, టీ పెట్టడాన్ని

2. Seed coat of Guava, Leaf of Legumes Fruit pulp of Tea
   గుండల రోబ్బ్యుల్, లిగ్యుస్ పెట్టడాన్ని, టీ పెట్టడాన్ని

3. Leaf of Pear, Seed coat of guava, Pulp of Legumes
   పీర్ పెట్టడాన్ని, గుండల రోబ్బ్యుల్, లిగ్యుస్ పెట్టడాన్ని

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Question Number : 18  Question Id : 1874634818  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Question Number : 19  Question Id : 1874634819  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Epidermal hairs of shoot system
I. Unicellular or Multicellular
II. Multicellular, branched or unbranched
III. Secretary in function
IV. Absorbs water
V. Prevent transpiratory water loss

ఎపిడరెమాల షూట్ సస్యం
I. ఒక్కేపై అంశం కల్చుకునే అంశం
II. ఒక్కేపై రుంచుకునే అంశం
III. స్యారెంటరీ సంయోగ
IV. శిరీశ ఉండేది
V. ప్రతిసాపానికి శిరీశ ఏర్పడినది

Options :
1. II, III, V
2. I, III, V
3. II, III, IV
4. I, IV, V
Plants which show given characters respectively
A. Long petiolated leaves, Rooted hydrophytes with floating leaves
B. Succulent roots, water in the form of mucilage
C. Submerged and not rooted hydrophyte
D. Grows in saline soils, respiratory roots

**Options:**

1. *Nymphaea, Salvinia, Typha, Vanda*
2. *Victoria regia, Asparagus, Utricularia, Rhizophora*
3. *Sagittaria, Pistia, Hydrilla, Vallisneria*
4. *Victoria regia, Asparagus, Salvinia, Rhizophora*
Choose the correct statements

A. Porins allow molecules of small proteins present in membrane of Mitochondria, Chloroplast and bacteria
B. When a living cell kept in hypertonic solution, the water potential is equal to solute potential
C. Carrier proteins will allow all substances across the membrane where as pumps transport large molecules in a passive method
D. Bulk flow can be achieved through diffusion

The correct answer is

Options :

A. B

C. D

A. D

B. C
Choose the correct combination

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
<th>List - III</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Mo</td>
<td>i) Delay in flowering</td>
<td>I) And transported through Xylem</td>
</tr>
<tr>
<td>B) Amides</td>
<td>ii) Contain more Nitrogen</td>
<td>II) Whiptail in Cauliflower</td>
</tr>
<tr>
<td>C) Hydroponics</td>
<td>iii) Commercial Production of vegetables</td>
<td>III) Seedless Cucumber</td>
</tr>
<tr>
<td>D) Pseudomonas</td>
<td>iv) Denitrification</td>
<td>IV) Reduced to N₂</td>
</tr>
</tbody>
</table>

The correct answer is

Options:

1. A, B
2. A, C
3. C, D
4. B, D
Arrange the sequences in enzyme action

A. Product releases and free enzyme again binds to another substrate molecule
B. Enzyme to alter its shape
C. Substrate binds to active site of the enzyme
D. Fits in to the active site
E. Formation of enzyme product complex

The correct answer is

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

First reaction in electron transport of Photosynthesis

Options:
Photosystem II Chl a absorb light of 680 nm and transport \( e^- \) to cytochrome

2. Photosystem II Chl a absorb light of 700 nm and transport \( e^- \) to pheophytin

3. Photosystem II Chl a absorb light of 680 nm and excite \( e^- \) from atomic nucleus to farther orbit

4. Photosystem I Chl a absorb light of 700 nm and transport \( e^- \) to cytochrome
Choose the correct statement

A. Difference between C₄ and CAM pathway is the CO₂ fixation and Calvin cycle are separated in space and time respectively
B. Aldolase combines two 3-carbon compounds as well as one 4-carbon and one 7-carbon compound
C. Based on the labelled carbon studies CO₂ fixation products were identified
D. Stroma lamella and Grana lamella are identical in the distribution of the photosystems

The correct answer is

Options:

1. A, C
2. B, C
3. A, D
4. B, D
Choose the correct statement

A. Reduced ubiquinone is oxidized with transfer of electrons to cytochrome C via complex III
B. Intermediates in the respiratory pathway are not utilized for synthesis of other compounds
C. Fatty acid will broken down to acetyl CoA before entering the respiratory pathway
D. The energy released by oxidation in respiration is not used directly

The correct answer is

Options:
1. A, B, C
2. B, C, D
3. A, C, D
4. A, B, C, D

Question Number : 27  Question Id : 1874634827  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Identify the wrong statements in the following

A. Winter varieties when planted in spring normally comes to flower before growing season
B. In short day plants above critical photoperiod flowering will be initiated
C. Kinetin has specific effect on cytokinesis which is a modified purine
D. Auxins are used as herbicides

The correct answer is

Options:

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

Question Number : 28  Question Id : 1874634828  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Fill up blanks with suitable words
In a graph of length of organ against time, which is a typical ______ and expressed as ______. However, in a graph of growth against time ______ will appear with expression of ______. Where ______ is base of natural logarithm and also 'r' as ______.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sigmoid curve</td>
<td>[W_1 = W_0 e^{rt}]</td>
<td>[L_t = L_0 + rt]</td>
<td>Linear</td>
<td>e</td>
<td>Efficiency index</td>
</tr>
</tbody>
</table>

Correct sequence is

Options:
1. D, C, A, B, E, F
2. A, B, C, D, E, F
3. C, B, A, D, F, E
4. A, B, E, F, C, D
Match the following

List - I
A) Discovery of DNA as genetic material
B) *Chromatiun*
C) Conservative process
D) *Beggiotoa*

List - II
i) Transforming principle
ii) Derive energy from oxidation of inorganic substance
iii) Capture light energy
iv) Donor retain a copy of genetic material

List - III
I) Conjugation
II) Obtain carbon from atmosphere CO₂
III) *S. pneumoniae*
IV) Obtain carbon from CO₂

The correct answer is

Options:

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

2. A B C D  
   i, III iii, II iv, I ii, IV
Assertion (A): DNA from Bacteriophage head passes through tail core through plasma membrane and enters bacterial cell
Reason (R): Plasma membrane of the host cell gets dissolved due to lysozyme and releases the new virions

Options:
1. Both (A) and (R) are correct and (R) is the correct explanation of (A)
2. Both (A) and (R) are correct but (R) is not the correct explanation of (A)
3. (A) is correct but (R) is not correct
4. (A) is not correct but (R) is correct
Choose the wrong statement.

A. A single gene product may produce more than one effect thus it relates to pleiotropy
B. Dominance is an autonomous feature of a gene or the product
C. The frequency of recombination between gene pairs on the same chromosome as a measure of distance between those genes
D. Breeder cannot select the mutations of the desirable types as it has less variability

The correct answer is

Options:

1. A, B
2. B, C
3. A, D
4. B, D
Choose the correct statement

A. DNA is chemically more reactive and structurally stable compared to RNA
B. Catalytic RNA is known as Ribozymes
C. DNA can directly code for the synthesis of protein, whereas RNA dependent on DNA for protein synthesis
D. Presence of 5-methyl uracil in the DNA also confers stability

The correct answer is

Options:
1. B, D
2. B, C
3. A, B
4. C, D

Assertion (A): During transcription both the strands of DNA are copied
Reason (R): If both strands act as template DNA would code for RNA molecule with different sequences

♀♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂ steroid phytochemicals ♀♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂♂骰子 (A):  DNA కూడా సుందరంగా మాత్రం కందులు సూచించడానికి  
నేను (R): DNA కూడా సుందరంగా మాత్రం కందులు సూచించడానికి RNA ప్రత్యేకానికి ఉంది 
వినందంచే అలంకారం కొలువు ప్రత్యేకానికి ఉంది

Question Number : 33  Question Id : 1874634833  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Options:

1. Both (A) and (R) are correct and (R) is the correct explanation of (A)
   (A) విశ్లేషాలు (R) విశ్లేషాలు అనేవి (R) విశ్లేషాలు (A) విశ్లేషాలు

2. Both (A) and (R) are correct but (R) is not the correct explanation of (A)
   (A) విశ్లేషాలు (R) విశ్లేషాలు అనేవి (R) విశ్లేషాలు (A) విశ్లేషాలు

3. (A) is correct but (R) is not correct
   (A) విశ్లేషాలు (R) విశ్లేషాలు

4. (A) is not correct but (R) is correct
   (A) విశ్లేషాలు (R) విశ్లేషాలు
Match the following

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
<th>List - III</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Tailing</td>
<td>i) 28s, 18s, 5.8s</td>
<td>I) Transports out of nucleus</td>
</tr>
<tr>
<td>B) r-RNA</td>
<td>ii) Addition of methyl guanosine triphosphate</td>
<td>II) 3' end</td>
</tr>
<tr>
<td>C) Caping</td>
<td>iii) m-RNA</td>
<td>III) Transcribes by RNA polymerase</td>
</tr>
<tr>
<td>D) Processed hn RNA</td>
<td>iv) Addition of Adenylic Residue</td>
<td>IV) 5' end of hn RNA</td>
</tr>
</tbody>
</table>

The correct answer is

Options :

1. A iv, II i, III b, IV c, i, I
2. A iv, II ii, IV iii, III i, I
Find out the series of genes in the transcription unit of the following statements

I. Located towards 3' end of the structural gene
II. Flanked by promoter and terminator
III. Located towards 3' end of the coding strand

Options:

1. Promoter, Structural gene, Terminator

2. Terminator, Coding strand, Structural gene

3. Terminator, Structural gene, Promoter

Question Number : 35  Question Id : 1874634835  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Question Number : 36  Question Id : 1874634836  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Find the wrong statements

A. To cut DNA with restriction enzyme it needs to be pure form, free from RNA, Protein, Polysaccharides and lipids
B. RNA can be removed by protease enzyme
C. DNA separated as suspension can be removed by spooling
D. DNA can be precipitated by adding warm ethanol

The correct answer is

Options:

1. A, B

2. C, D

3. A, C

4. B, D
Choose the correct statements

A. Early detection of pathogen presence can be done by PCR.
B. Biochemical products produced by bacteria are inferior to products produced in transgenic plants.
C. Validity of the GM Research will be controlled by Genetic Engineering Approval Committee.
D. Use of bio resources by multinational companies with proper authorization is not possible.

The correct answer is

Options:

1. B, C
2. A, B
3. B, D
4. A, C
Arrange the steps to be followed in breeding techniques

A. Creating the plants as pure lines
B. Progeny of the hybrids to be tested for the homozygosity for generations
C. Evaluation by growing in research field, farmer field and then for three growing seasons in several locations
D. Evaluation with best available local crop cultivars
E. Pollen grain of desirable male plant to be collected and placed on the stigma of the selected female plant
F. Effective exploitation of natural genes available in the population

Options:

1. F B A E D C
2. B A C D E F
3. F A E B C D
4. A F E B C D
Match the following

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
<th>List - III</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Hairy leaves</td>
<td>i) Animal manure and sewage</td>
<td>I. Potato</td>
<td></td>
</tr>
<tr>
<td>B) <em>Spirulina</em></td>
<td>ii) Bacterial Blight</td>
<td>II. Jassids in cotton</td>
<td></td>
</tr>
<tr>
<td>C) Apical meristem</td>
<td>iii) Resistance to pests</td>
<td>III. Cow pea</td>
<td></td>
</tr>
<tr>
<td>D) Pusa komal</td>
<td>iv) Disease Resistance</td>
<td>IV. Rich with protein</td>
<td></td>
</tr>
</tbody>
</table>

Options:

<table>
<thead>
<tr>
<th>1. A B C D</th>
<th>i, II ii, III iii, IV iv, I</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. A B C D</td>
<td>iii, II iv, IV i, I ii, III</td>
</tr>
<tr>
<td>3. A B C D</td>
<td>i, III ii, II iv, IV iii, I</td>
</tr>
<tr>
<td>4. A B C D</td>
<td>iii, II i, IV ii, III</td>
</tr>
</tbody>
</table>

The correct answer is

Orders of the options:

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

Question Number : 40  Question Id : 1874634840  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Match the following

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
<th>List - III</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Wine</td>
<td>i) Useful aerobic microbes</td>
<td>I) Beverage</td>
</tr>
<tr>
<td>B) Flocs</td>
<td>ii) Without distillation</td>
<td>II) Sedimented flocks</td>
</tr>
<tr>
<td>C) Ethanol</td>
<td>iii) Brewer’s yeast</td>
<td>III) Associated with fungal filament</td>
</tr>
<tr>
<td>D) Activated sludge</td>
<td>iv) Reduced BOD</td>
<td>IV) Fermentation of Malted cereals</td>
</tr>
</tbody>
</table>

The correct answer is

Options:

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

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

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

4. A B C D
   ii. I i. III iii. IV iv. II
Zoology

Display Number Panel: Yes
Group All Questions: No

Question Number: 41  Question Id: 1874634841  Question Type: MCQ  Option Shuffling: Yes  Display Question Number: Yes  Single Line Question Option: No  Option Orientation: Vertical

Assertion (A): Species is an evolutionary unit
Reason (R): Individuals of a species have similar structure and functional characteristics

Options:

1. Both (A) and (R) are correct and (R) is the correct explanation of (A)

2. Both (A) and (R) are correct but (R) is not the correct explanation of (A)

3. (A) is correct but (R) is not correct

4. (A) is not correct but (R) is correct

---

Question Number: 42  Question Id: 1874634842  Question Type: MCQ  Option Shuffling: Yes  Display Question Number: Yes  Single Line Question Option: No  Option Orientation: Vertical

---
Assertion (A): Mammary glands are apocrine glands
Reason (R): In apocrine glands, the entire gland cell disintegrates to discharge the contents

Options:

Both (A) and (R) are correct and (R) is the correct explanation of (A)

1. (A) మమార్య గ్లాండ్స్‌ రాయి మార్య గ్లాండ్స్‌ (R) మార్య గ్లాండ్స్‌లో మార్య గ్లాండ్స్‌ (A) రోహణ విధానం

Both (A) and (R) are correct but (R) is not the correct explanation of (A)

2. (A) మమార్య గ్లాండ్స్‌ రాయి మార్య గ్లాండ్స్‌ (R) మార్య గ్లాండ్స్‌లో మార్య గ్లాండ్స్‌ (A) రోహణ విధానం

(A) is correct but (R) is not correct

3. (A) మమార్య గ్లాండ్స్‌ రాయి (R) మమార్య గ్లాండ్స్‌ (A) రోహణ విధానం

(A) is not correct but (R) is correct

4. (A) మమార్య గ్లాండ్స్‌ రాయి (R) మమార్య గ్లాండ్స్‌ (A) రోహణ విధానం
Study the following statements
I) Stereocilia are long, non motile cilia like processes and are found in epididymis, internal ear etc.
II) Os cordis is a cartilage bone
III) Adjacent myocardial cells are joined by gap junctions
IV) Nissil bodies represent the smooth endoplasmic reticulum

Identify the correct statements

Options:
1. I, IV
2. I, III
3. II, IV
4. III, IV
Match the following

List - I
A) Gorgonia
B) Trichirius
C) Astacus
D) Lepidopleurus

List - II
I) Crustacea
II) Polyplacophora
III) Actinopterygii
IV) Scaphopoda
V) Aphanida

The correct answer is

Options:
A B C D
III I V II

1. A B C D

2. I III II V

3. A B C D

III V I II

4. A B C D

IV III II I
Study the following statements

I) Digestion in sponges is extra cellular
II) Primary function of flame cells in flatworms is osmoregulation
III) Clitellum is absent in unisexual annelids
IV) Dipleurula larva is considered as the ancestor of echinoderms

Among the above, correct statements are

Options :
1. I, II, III
2. I, III, IV
3. I, II, IV
4. II, III, IV

Renal portal system is absent in

Options :
Fishes and Amphibians

1.
Cyclostomes and Fishes

Reptiles and Birds

Cyclostomes and Mammals
Study the following table:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Group</th>
<th>Characters</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Urochordata</td>
<td>Tunicin, ventral heart with reverse flow of blood, bisexual, tadpole larva</td>
<td><em>Doliolum</em></td>
</tr>
<tr>
<td>II</td>
<td>Cephalochordata</td>
<td>Solenocytes, ciliary feeding, presence of atrium, closed circulation without heart, gonads with gonducts</td>
<td><em>Branchiostoma</em></td>
</tr>
<tr>
<td>III</td>
<td>Vertebrata</td>
<td>Paired fins/limbs, ventral heart, kidneys, hepatic portal system</td>
<td><em>Bufo</em></td>
</tr>
</tbody>
</table>

From the above, the correct combinations are:

Options:

1. I, II
2. I, III
3. II, III
4. II only
Match the following

**List - I**
A) Isogamy
B) Anisogamy
C) Hologamy
D) Conjugation

**List - II**
I) Plasmodium
II) Vorticella
III) Astasia
IV) Monocystis
V) Trichonympha

The correct answer is

Options:

1. A B C D
   IV I III II

2. A B C D
   IV I V II

3. A B C D
   II III I IV
Question Number : 49  Question Id : 1874634849  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Tashkent ulcers are caused by

Options :

1. **Leishmania tropica**
2. **Leishmania donovoni**
3. **Trypanosoma gambiense**
4. **Wuchereria bancroftii**

---

Question Number : 50  Question Id : 1874634850  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

**Assertion (A):** *Entamoeba histolytica* is an obligate anaerobe

**Reason (R):** It lacks mitochondria

Options :

1. Both (A) and (R) are correct and (R) is the correct explanation of (A)
Both (A) and (R) are correct but (R) is not the correct explanation of (A)

(A) is correct but (R) is not correct

(A) is not correct but (R) is correct

Match the following

List - I

A) Plasmodium malariae
B) Plasmodium falciparum
C) Plasmodium vivax
D) Plasmodium ovale

List - II

I) Malignant tertian malaria
II) Mild tertian malaria
III) Quarten malaria
IV) Dham dham fever
V) Benign tertian malaria

The correct answer is

Options:
Read the following statements and pick up the correct one

1. Rhabditiform larva of *Ascaris* undergoes 4th moulting in alveoli of lungs of man.
   - 拉哈義果尼拉的 4 畔絡 在肺中的 肺泡

2. Inflammation of lymph glands due to *Wuchereria* is called lymphangitis.
   - 淋巴節 炎 炎症 淋巴環

3. Cocaine is obtained by the acetylation of morphine.
   - 可卡因 由 葡萄糖醛酸化

4. Excessive dosage of cocaine causes hallucinations.
   - 高量 可卡因 會 產生 幻覺
These cells of corpora adiposa of cockroach store food materials

_OPTIONS:

1. Mycetocytes

2. Trophocytes

3. Oenocytes

4. Urate cells

Question Number : 54  Question Id : 1874634854  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Study the following regarding blood circulation in cockroach and identify I and II

Options:

1. I - Ostia; II - Perivisceral sinus
   I - రోటీయం; II - పరివిస్కేర శిశుని

2. I - Haemocoel; II - Ostia
   I - హైంమాకిల్; II - రోటీయం

3. I - Perivisceral sinus; II - Ostia
   I - పరివిస్కేర శిశుని; II - రోటీయం

4. I - Atria; II - Perivisceral sinus
   I - అట్రియా; II - పరివిస్కేర శిశుని

Question Number : 55  Question Id : 1874634855  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Oriented locomotor movement of an organism towards or away from light source is called

Options:

Photokinesis

Phototropism

Phototaxis

Photoperiodism

Assertion (A): *Daphnia* exhibits cyclomorhosis

Reason (R): It is an adaptation for *Daphnia* to lead benthic life

Options:

Both (A) and (R) are correct and (R) is the correct explanation of (A)

Both (A) and (R) are correct but (R) is not the correct explanation of (A)
(A) is correct but (R) is not correct

(A) సామర్థ్యం రావు (R) సామర్థ్యం రావు

(A) is not correct but (R) is correct

(A) సామర్థ్యం రావు (R) సామర్థ్యం రావు

Match the following

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Metabolic rate</td>
<td>I) Jordon’s rule</td>
</tr>
<tr>
<td>B) Body size</td>
<td>II) Allen’s rule</td>
</tr>
<tr>
<td>C) Size of body parts</td>
<td>III) 10 percent law</td>
</tr>
<tr>
<td>D) Energy flow</td>
<td>IV) Van’t Hoff’s rule</td>
</tr>
<tr>
<td></td>
<td>V) Bergmann’s rule</td>
</tr>
</tbody>
</table>

The correct answer is

Options:

1. A B C D
   IV  I  II  III

2. A B C D
   IV  V  II  III
Study the following statements

I) Camels are partial regulators or partial conformers

II) In limnetic zone of a lake, decomposers are almost absent

III) Ten percent law for the transfer of energy from one trophic level to the next was proposed by Elton

IV) The natural reservoir of phosphorus is sea

V) In case of parasitic food chain, the pyramid of number is inverted

Among the above, the incorrect statements are

Options :

1. III, V

2. II, III

3. III, IV
If 4 individuals are died and 8 individuals are born in a laboratory population of 40 fruit flies during time interval of 7 days, calculate the intrinsic rate of natural increase for fruit fly population per week.

Options:
1. 0.03
2. 3
3. 0.01
4. 0.1

Left side shift of oxygen-haemoglobin dissociation curve occurs during

Options:
1. Low pH, low CO₂, low temperature
2. High pH, high CO₂, low temperature
3. High pH, high CO2, low temperature
   ఉగ్రవాదం, ఉగ్రవాద కాశు, అత్యధిక నాశనం

4. Low pH, high CO2, high temperature
   ప్రత్యేకంగా, ఉగ్రవాద కాశు, అత్యధిక నాశనం

The following are the parts of human respiratory system
I) Glottis
II) Trachea
III) External nostrils
IV) Larynx
V) Nasal chambers
VI) Bronchi
VII) Alveolar ducts
VIII) Bronchioles

Arrange them in correct sequence through which inhaled air reaches the alveoli
కొచ్చితే, అప్పుడు ఔగ్రావాద శాసు కాశి ఉగ్రవాద కాశి లియా నాశనం ఆధారం

Options:

1. III, V, I, IV, VI, II, VIII, VII
2. VII, VIII, VI, II, IV, I, V, III
3. V, I, IV, II, VI, VIII, VII, III
4. III, V, I, IV, II, VI, VIII, VII
Study the following diagram of V.S. of tooth and identify the parts I, II, III and IV

Options:

1. I  
   Dentine  
   ్ డెంటీన్

2. II  
   Enamel  
   ్ ఏనమల్

3. III  
   Pulp cavity  
   పంపు కావియా

4. IV  
   Periodontal membrane  
   పరిదేశానిక మైమెనార్

5. I  
   Enamel  
   ్ ఏనమల్

6. II  
   Dentine  
   ్ డెంటీన్

7. III  
   Pulp cavity  
   పంపు కావియా

8. IV  
   Periodontal membrane  
   పరిదేశానిక మైమెనార్
Assertion (A): Glomerular filtrate becomes hypertonic in distal convoluted tubule of the nephron

Reason (R): In distal convoluted tubule obligatory reabsorption of water and Na\(^+\) takes place

Options:

1. Both (A) and (R) are correct and (R) is the correct explanation of (A)
2. Both (A) and (R) are correct but (R) is not the correct explanation of (A)
3. (A) is correct but (R) is not correct
4. (A) is not correct but (R) is correct
Study the following table

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Group</th>
<th>Number of chambers in heart</th>
<th>Type of circulation</th>
<th>Oxygenation of blood occurs in</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Pisces</td>
<td>2</td>
<td>Single</td>
<td>Gills</td>
</tr>
<tr>
<td>II</td>
<td>Amphibia</td>
<td>3</td>
<td>Single</td>
<td>Skin, buccal cavity, lungs</td>
</tr>
<tr>
<td>III</td>
<td>Reptilia</td>
<td>3</td>
<td>Double</td>
<td>Lungs, skin</td>
</tr>
<tr>
<td>IV</td>
<td>Mammalia</td>
<td>4</td>
<td>Double</td>
<td>Lungs</td>
</tr>
</tbody>
</table>

Pick up the correct combinations from the above

Options:

1. I, IV
2. I, II
3. II, III
4. III, IV
Study the following statements

I) In the wall of veins of man elastic laminae are present on either side of tunica media
II) Angina pectoris is due to insufficient supply of blood to heart muscles
III) Juxta Glomerular cells of kidney secrete the enzyme rennin
IV) Cellophane membrane of dialyser is impermeable to micromolecules like creatinine

Identify the incorrect statements among the above

Options:

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

Fibrous membrane in the middle of a sarcomere is

Options:

1. A
2. I
Observe the following diagram of V.S. of eye and identify the parts I, II, III and IV

Options:

1. Blind spot  Fovea  Choroid  Cornea
2. Fovea  Blind spot  Choroid  Cornea
3. Yellow spot  Fovea  Conjunctiva  Choroid
Match the following

List - I
A) Diabetes insipidus
B) Diabetes mellitus
C) Addison’s disease
D) Cushing’s disease

List - II
I) Cretinism
II) Bronze coloured scars on skin
III) Insulin
IV) Buffalo hump
V) Vasopressin

The correct answer is

Options:
A  B  C  D

V  III  II  IV
3. Study the following statements.
I) The largest endocrine gland of man secretes adrenalin
II) $T_H$ cells are involved in humoral and cell mediated immunity
III) Natural Killer cells are a type of lymphocytes
IV) $T_C$ cells are involved in humoral immunity

Pick up the correct statements.

Options:
1. I, II
2. II, III
3. III, IV
4. I, IV
Acidity of urethra of man is neutralised by the secretion of

Options:
1. Prostate gland
2. Cowper's gland
3. Seminal vesicles
4. Skene glands

Question Number : 71  Question Id : 1874634871  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Study the following

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Foetal membranes in man</th>
<th>Formed by</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Yolk sac</td>
<td>Splanchnopleure</td>
<td>Not useful for nutrition</td>
</tr>
<tr>
<td>II</td>
<td>Allantois</td>
<td>Splanchnopleure</td>
<td>Store nitrogenous wastes</td>
</tr>
<tr>
<td>III</td>
<td>Amnion</td>
<td>Somatopleure</td>
<td>Form placenta</td>
</tr>
<tr>
<td>IV</td>
<td>Chorion</td>
<td>Splanchnopleure</td>
<td>Prevent dessication of embryo</td>
</tr>
</tbody>
</table>

Among the above, the correct combinations are

Options:

1. I, II
2. II, III
3. III, IV
4. I, IV
A colour blind man married a woman who is a daughter of a colour blind father and normal homozygous mother. What are the chances of their daughters to become colour blind?

Options:

1. 25%
2. 75%
3. 100%
4. 50%
Assertion (A): Persons with O group of blood are called universal donors
Reason (R): Their blood plasma contains both antigen A and antigen B

Options:
1. Both (A) and (R) are correct and (R) is the correct explanation of (A)
2. Both (A) and (R) are correct but (R) is not the correct explanation of (A)
3. (A) is correct but (R) is not correct
4. (A) is not correct but (R) is correct
Study the following statements
I) Karyotype of Klinefelter's syndrome is AA + XO
II) Turner's syndrome is an example for trisomy
III) AA + XX + 21st chromosome is the karyotype of Down's syndrome
IV) Individual with Klinefelter's syndrome is Barr body positive

Among the above, correct statements are

Options:
1. I, II
2. II, III
3. III, IV
4. I, IV

Which one of the following theories contradicts Lamark’s theory?

Options:
1. Theory of Natural Selection
2. Theory of Evolution by Natural Selection
Germplasm theory

Mutation theory

Theory of biogenesis

Question Number : 77  Question Id : 1874634877  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Assertion (A) : Long neck for Giraffes is due to directional selection
Reason (R) : It works constantly removing the individuals from one end and constantly shifting the average value to the other end.

Options :

Both (A) and (R) are correct and (R) is the correct explanation of (A)

1. Both (A) and (R) are correct but (R) is not the correct explanation of (A)

2. (A) is correct but (R) is not correct

3. (A) is not correct but (R) is correct

4.
Glue prepared and used by the worker bees to seal the cracks in honey combs

Options:
1. Chrysalis
2. Propolis
3. Bee Wax
4. Bee Venom

Question Number : 79  Question Id : 1874634879  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical
Match the following

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Carcinoma</td>
<td>I) Cancer of connective tissue</td>
</tr>
<tr>
<td>B) Sarcoma</td>
<td>II) Cancer of muscular tissue</td>
</tr>
<tr>
<td>C) Leukemia</td>
<td>III) Cancer of lymphatic system</td>
</tr>
<tr>
<td>D) Lymphoma</td>
<td>IV) Cancer of epithelial tissues</td>
</tr>
<tr>
<td></td>
<td>V) Cancer of bone marrow</td>
</tr>
</tbody>
</table>

Options:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td></td>
</tr>
</tbody>
</table>

The correct answer is

Options:

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

Question Number : 80 Question Id : 1874634880 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Study the following statements

I) Programmed death of cells is called apoptosis
II) p53 is called guardian angel of cell's genome
III) Transgenic cow Rosie produced milk containing α-1 antitrypsin
IV) Nitrosamines are non carcinogenic

Options :
Display Number Panel: Yes
Group All Questions: No
Question Number : 81  Question Id : 1874634881  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes
Single Line Question Option : No  Option Orientation : Vertical

Among the above, the incorrect statements are

Options :
1. I, II
2. I, II, III
3. III, IV
4. II, III, IV
If R, L, C, F, v, q, I and t represent resistance, inductance, capacitance, force, velocity, electric charge, electric current and time respectively, then which of the following will have same dimensions?

R, L, C, F, v, q, I రాక ప్రత్యేకించబడిన విభాగాలు, తొడివంతుడు, తొడివంతం, రాశి, నిష్ఠ, నిష్ఠ చైన్, చైన్ ప్రత్యేకించబడిన విభాగాలు. అందుకే యా యాదాద్రి కారణానికి వచ్చినది. ఇది రాశి ప్రత్యేకించబడినది.

(a) \( I^2R \)  (b) \( \frac{L}{Rt} \)  (c) \( \frac{q^2}{RC^2} \)  (d) \( \frac{Fv}{t} \)

Options:
1. a & b
2. a & c
3. b & d
4. a & d

At time \( t = 0 \), a body is dropped freely from the top of a tall building and at a later time \( t = T \), another body is thrown vertically downwards with a velocity ‘v’ from the top of the same building. The time at which the two bodies will meet is

\[ t = 0 \] లో ముందున్న కార్యాల మధ్య కార్యాల యొక్క దృఢంతత సమాచారాలు ఈ కార్యాల యొక్క దృఢంతత సమాచారాలు తుండిన కార్యాల యొక్క దృఢంతత సమాచారాలు. తోం మధ్య దృఢంతత సమాచారాలు

Options:
1. \[ T \left( \frac{2v - gT}{v - gT} \right) \]
2. \[ T \left( \frac{3v - gT}{2v - gT} \right) \]
The speed of a projectile at its maximum height is \( \frac{\sqrt{3}}{2} \) times its initial speed. If the range of a projectile is ‘p’ times the maximum height attained by it, then the value of ‘p’ is

\[ \sqrt{\frac{3}{2}} \]

Options:
1. \( 2\sqrt{3} \)
2. \( 3\sqrt{2} \)
3. \( \sqrt{3} \)
4. \( 4\sqrt{3} \)
Three particles A, B and C simultaneously start from the origin. Particle A moves with a velocity ‘a’ along X-axis, particle B moves with a velocity ‘b’ along Y-axis and particle C moves with a velocity ‘c’ in the X-Y plane along the straight line x = y. The magnitude of ‘c’ so that all the three particles always remain collinear is

\[ \frac{d}{a + b} \]

\[ \sqrt{ab} \]

\[ \frac{ab}{a + b} \]

\[ \frac{\sqrt{2} ab}{a + b} \]

---

For a truck with 14 tyres, only rear 8 wheels are power driven and can produce acceleration. These 8 wheels support half the entire load. If the coefficient of friction between road and each tyre is 0.6, the maximum attainable acceleration by this truck would be (Acceleration due to gravity = 10 ms\(^{-2}\))

\[ \frac{14 \times 0.6 \times 8 \times \frac{1}{2}}{10} \]

\[ \frac{3 \times \text{ms}^{-2}}{2} \]

Options:

1. 6 ms\(^{-2}\)
2. 3 ms\(^{-2}\)
A soccer ball is travelling at a velocity 20 m/s due south. At the end of its travel, it moves with a velocity 2 m/s due south. If the change in the linear momentum of the ball is 18 kg m/s due north, then the mass of the ball is

Options:
1. 3.0 kg
2. 0.81 kg
3. 1.0 kg
4. 0.5 kg

A stationary body explodes into four identical fragments such that three of them fly off mutually perpendicular to each other, each with a kinetic energy $\frac{E_0}{2}$. The total energy of explosion is

Options:
1. $6E_0$
Two point objects A and B each of mass 3 g and initially at rest are connected by massless threads as shown in the figure. A constant force 2 N acts on the system at point P along OP. After the point ‘O’ has moved a distance 20 cm in the direction of force, the two objects collide and stick together. The displacement and velocity of the centre of mass of the system immediately after collision are respectively.

Options:
1. 20 cm, 15 ms\(^{-1}\)
2. 10 cm, 15 ms\(^{-1}\)
A 13 m ladder is placed against a smooth vertical wall with its lower end at a distance 5 m from the wall. The minimum coefficient of friction between the ladder and the floor so that the ladder remains in equilibrium is nearly

Options:

1. 0.52
2. 0.72
3. 0.21
4. 0.36
Two blocks of masses 2 kg and 3 kg are attached with massless string passing over a fixed frictionless pulley as shown in the figure. When released, the velocity of the centre of mass of the system of two blocks after 1.5 seconds is 

(Acceleration due to gravity = 10 m/s²)

Options:

0.8 m/s ṭిరుప్పు
0.8 m/s తోటా
0.6 m/s ఉపరిస్థితి
0.6 m/s తోటా
0.8 m/s తోటా
0.8 m/s తోటా
A block of mass 1 kg tied to a long spring of spring constant 100 Nm⁻¹ is at rest on a horizontal frictionless surface. The block is pulled through a distance 5 cm from its equilibrium position and released. Then the total energy of the block when it is at a distance 4 cm from the equilibrium position is

\[ 100 \text{ Nm}^{-1} \text{ అంశంతో సాధ్యంగా ఉండే 1 kg రాణు యొక్క త్రించడానే 5 \text{ cm} అంశం తో ఎంపించారు యొక్క ఎంపించారు కంటే 4 \text{ cm} అంశం యొక్క ఎంపించారు యొక్క ఎంపించారు కంటే} \]

Options:
1. 0.125 J
2. 12.5 J
3. 125 J
4. 1250 J

A number of planets are revolving around the Sun. Time period is ‘T’ and average orbital radius of a planet is ‘R’. A graph is drawn between log T on the Y-axis and log R on the X-axis with the origin at (0, 0). The graph is a

\[ \text{స్రిక్షేత్ర లో ప్లానెట్లు సూచి గారు అంశంతో నడిచే సంఖ్యలు యొక్క విశేషాత్మకంగా ఉండే ప్లానెట్లు యొక్క విశేషాత్మకంగా ఉండే ప్లానెట్లు యొక్క విశేషాత్మకంగా ఉండే} \]

Options:
1. Straight line with slope $\frac{3}{2}$ and passing through the origin
2. $\frac{3}{2}$ స్లో లేదా రేకాంతం చేయడానే స్లో లేదా రేకాంతం చేయడానే
Straight line with slope \(\frac{3}{2}\) and not passing through the origin.

2. Parabola

3. Ellipse

4. 

A wire is suspended vertically from a rigid support. When loaded with a body in air, the wire extends by 6 mm and when the body is immersed completely in water, the extension is reduced to 4 mm. The relative density of material of the body is

5. 

Options:

1. \(\frac{3}{2}\)

2. 3

3. 2

4. \(\frac{2}{3}\)
In a barometer, the mercury level is 76 cm at sea level. On a hill of height 3 km, if the ratio of density of Hg to that of air is $10^4$, the atmospheric pressure on the hill is

Options:

26 cm of Hg

46 cm of Hg

36 cm of Hg

56 cm of Hg

Two metal slabs of equal lengths, equal cross sectional areas and having resistances in the ratio $1:2$ are connected first in series and then in parallel separately. The ratio of their effective conductivities is

Options:

1 : 2

1 : 4

4 : 9
The ends of a uniform metal rod of length 100 cm and area of cross-section 2 cm² are maintained at 0 °C and 100 °C. At the mid point of the rod, heat is supplied at a constant rate of 40 Js⁻¹. If the temperature gradient on the higher temperature side of the rod in steady state is 50x °Cm⁻¹, then the value of x is

(Termal conductivity of the metal = 400 Js⁻¹ m⁻¹ K⁻¹)

100 cm ల ఏకాంతంగా 2 cm² అంతర్భువు వైశాల్యం కూడా అంటే ఓ ఉండాయి కానీ సంఖ్యలు 0 °C లో తయారం కములు. కముల మధ్య కొరకు 40 Js⁻¹ స్పీడ్గుల సమాచారు సాధారణం. ప్రధాన సంఖ్యాత్మక వెలుగు కోటియిది 50x °Cm⁻¹, తదుపారు

(x కొరకు సంఖ్యాత్మక ఉండేదు = 400 Js⁻¹ m⁻¹ K⁻¹)

Options:
1. 2
2. 3
3. 6
4. 9
The work done on the system in changing the state of a gas adiabatically from equilibrium state A to equilibrium state B is 32.4 J. If the gas is taken from state A to B through another process in which the net heat absorbed by the system is 13.5 cal, then the net work done by the system in the later case is

\[ (1 \text{ cal} = 4.2 \text{ J}) \]

Options:
1. 32.4 J
2. 56 J
3. 14.3 J
4. 24.3 J

A given mass of gas at a pressure ‘P’ and absolute temperature ‘T’ obeys the law \( P \propto T^3 \) during an adiabatic process. The adiabatic bulk modulus of the gas at a pressure ‘P’ is

\( P \propto T^3 \) లేదా నియమం నుంచి ‘T’ లో యేందుకు ఏ ప్రాతిష్ఠించి వచ్చి లభించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినందుకు ప్రాతిష్ఠించినం...
The number of degrees of freedom of a gas whose specific heat capacity at constant pressure is 33.24 J mol\(^{-1}\) K\(^{-1}\), is

\[(\text{universal gas constant } = 8.31 \text{ J mol}^{-1}\text{K}^{-1})\]

Options:
1. 2
2. 3
3. 6
4. 8

A man standing far from a hill, fires a gun and hears its echo after 4 s. Later he moves 320 m from his initial position away from the hill and fires the gun again and now he hears the echo after 6 s. Then the velocity of the sound in air is

\[(\text{universal gas constant } = 8.31 \text{ J mol}^{-1}\text{K}^{-1})\]

Options:
1. 330 ms\(^{-1}\)
2. 340 ms\(^{-1}\)
3. 320 ms\(^{-1}\)
A whistle of frequency 540 Hz rotates along a circle of radius 2 m at an angular speed of 15 rad s⁻¹. The difference in maximum and minimum frequencies heard by a listener at some distance and at rest with respect to the centre of the circle, is

(Speed of sound in air = 330 ms⁻¹)

Options:
1. 99 Hz
2. 59 Hz
3. 49 Hz
4. 109 Hz
Match the following List-I with the List-II

<table>
<thead>
<tr>
<th>List - I</th>
<th>List - II</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Mirages</td>
<td>I) Semiconductor</td>
</tr>
<tr>
<td>B) Nichrome</td>
<td>II) Natural convection</td>
</tr>
<tr>
<td>C) Germanium</td>
<td>III) Total internal reflection</td>
</tr>
<tr>
<td>D) Sea breeze</td>
<td>IV) High resistivity</td>
</tr>
</tbody>
</table>

The correct answer is

Options:

1. A B C D
   III IV I II

2. A B C D
   IV III II I

3. A B C D
   II III I IV

4. A B C D
   I II III IV
A beam of light is incident on a glass slab of refractive index 1.54 in a direction as shown in the figure. The reflected light is analysed by a polaroid prism. On rotating the polaroid (\(\tan 57^\circ = 1.54\))

Options:

1. The intensity remains unchanged
2. The intensity is reduced to zero and remains at zero
3. The intensity gradually reduces to zero and then increases
4. The intensity increases gradually

A solid conducting sphere of radius 20 cm is enclosed by a thin metallic shell of radius 40 cm. A charge of 40 \(\mu\)C is given to the inner sphere. If the metallic shell is earthed, then the heat generated in the process is
A particle of mass 1 kg carrying a charge of 0.01 C is able to remain at rest on a rough inclined plane of inclination 30° when a uniform horizontal electric field of \( \frac{490}{\sqrt{3}} \) \( \text{Vm}^{-1} \) is applied. Coefficient of friction is (Acceleration due to gravity = 9.8 \( \text{ms}^{-2} \))

\[
\frac{490}{\sqrt{3}} \text{Vm}^{-1}
\]

\[
\begin{align*}
\text{option 1:} & 0.5 \\
\text{option 2:} & \frac{1}{\sqrt{3}} \\
\text{option 3:} & \frac{\sqrt{3}}{7} \\
\text{option 4:} & \frac{\sqrt{3}}{2}
\end{align*}
\]
Two identical rings each of radius ‘R’ are coaxially placed a distance ‘R’ apart. They carry charges \( Q_1 \) and \( Q_2 \) respectively. If a charge ‘q’ is moved from the centre of one ring to the centre of the other ring, the work done is

\[
\frac{q(Q_1 - Q_2)(\sqrt{2} - 1)}{\sqrt{2}(4\pi \varepsilon_0 R)}
\]

Options :
1. 0
2. \[
\frac{q\sqrt{2}(Q_1 + Q_2)}{4\pi \varepsilon_0 R}
\]
3. \[
\frac{q(Q_1 + Q_2)}{(\sqrt{2} + 1)4\pi \varepsilon_0 R}
\]
4. 

A conducting spherical bubble of radius ‘r’ and thickness \( t (t << r) \) is charged to a potential ‘V’. If it collapses to form a small spherical drop, then the potential of the drop is

\[
V(3tr)^{\frac{1}{3}}
\]

Options :
1. \[
\left( \frac{3t}{r} \right)^{\frac{1}{3}} V
\]
A graph drawn between current ‘I’ and voltage ‘V’ in a conductor is as shown in the figure. The changes in the resistance in 1st and 3rd parts respectively

Options:

1. Remains constant, Increases
2. Decreases, Increases
3. Increases, remains constant

\[ \left( \frac{r}{3t} \right)^{\frac{1}{3}} V \]

\[ \left( \frac{3Vl}{r} \right)^{\frac{1}{3}} \]
Decrees, remains constant

4.

Question Number : 109  Question Id : 1874634909  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

A steady current is passing through a cylindrical conductor of radius ‘r’ placed in vacuum. Assuming Stefan’s law of radiation, steady temperature will be proportional to

Options :

1. \( r^{-3} \)
2. \( \frac{3}{r^4} \)
3. \( \frac{2}{r^3} \)
4. \( \frac{3}{r^5} \)

Question Number : 110  Question Id : 1874634910  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

The two ends of a non-conducting spring of force constant 50 Nm\(^{-1}\) and unstretched length of 2 cm are connected to the mid points of two straight parallel rods each of length 4 m. When 100 A current is passed through each rod in the same direction, the work done on the spring in mJ is

\( 50 \text{ Nm}^{-1} \) వష్టిగాను చేస్తుంది ఇది 2 cm ల అడుగు గుడి ప్రయోగం ద్వారా అడుగు విడి దాని విషయంగా 4 m ల ఆకృతి కుటుంబానికి లేదా కేంద్రం లేక మధ్యము విస్తరణ చేసుకునే స్ప్రింగ్ ఉంది. స్ప్రింగ్ చేస్తుంది 100 A ప్రత్యేకంగా వంటి అంశం మిలియన్లు ఎక్కడ మీటర్లు ఎక్కడ mJ ఎక్కడ

Options :
The magnetic field normal to the plane of a coil of ‘n’ turns and radius ‘r’ carrying a current ‘i’ is measured on the axis of the coil at a distance ‘h’ (h<<r) from the centre of the coil. This is smaller than the field at the centre by the fraction

\[
\frac{i}{n} \times \frac{1}{r^2} \times \frac{1}{h^2} = \frac{2h^2}{3r^2}
\]

Options:
1. \( \frac{2h^2}{3r^2} \)
2. \( \frac{3r^2}{2h^2} \)
3. \( \frac{3h^2}{2r^2} \)
4. \( \frac{2r^2}{3h^3} \)
A thin bar magnet oscillates with a time period $T$. If it is cut into two equal pieces along its axis, time period of oscillation of each piece is

Options:
1. $T$
2. $2T$
3. $\frac{T}{2}$
4. $\frac{T}{4}$

A coil having 200 turns is placed in a magnetic field of $60 \ e^{-200t} \ T$ with its plane perpendicular to the magnetic field. The cross sectional area of the coil is $5e^2 \ cm^2$. The ends of the coil are connected to $100 \ \Omega$ resistance. The current in the coil at $t = 0.01$ second is

Options:
1. $6 \ A$
2. $12 \ A$
3. $18 \ A$
4. $24 \ A$
A steady current of 2A flows when an inductor of inductance 2 mH is connected to an ac source of emf 10 V. Now a capacitor of capacity 2 μF is connected in series. If the current in the circuit is along the emf, the rms value of the current is

10 V వలన రెగ్గులు 2 mH యొక్క మగ్నిట్ హబ్బిల్స్ అత్యధికంగా రెగ్గులు 2 A శీతలంతు. తరువాత 2 μF రెగ్గులు రెగ్గులు ఈ తరువాత నిర్ధిష్టంగా వేస్తున్నారు, ఈంటకపోయిన రెగ్గులు రెగ్గులు రెగ్గులు rms వేస్తుంటాయి.

Options:
1. 2.0 A
2. 1.5 A
3. 5.0 A
4. 0.2 A

A parallel plate capacitor with plate area 1 m² and plate separation 1 mm is charged at the rate of 25 Vs⁻¹. The dielectric between the plates has a dielectric constant 'k'. If the displacement current through the capacitor is 2.21μA then the value of 'k' is nearly

1 mm నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట 1 m² ప్లాట్ ప్లాట్ ప్లాట్ ప్లాట్ ప్లాట్ ప్లాట్ ప్లాట్ ప్లాట్ ప్లాట్ 25 Vs⁻¹ నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట 'k'. నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట 2.21μA వేస్తాయి 'k' వేస్తాయి నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట నిష్ట

Options:
1. 25
2. 20
3. 15
4. 10
In a photoelectric effect experiment, collector plate is placed vertically above the emitter plate. Light is allowed to incident on emitter and saturation photocurrent is recorded. Now parallel electric and magnetic fields are applied vertically downwards between the plates. Then

_options_

1. The photocurrent will increase
2. The kinetic energy of photoelectrons will decrease
3. The stopping potential will increase
4. The threshold wavelength will increase

---

Question Number : 117  Question Id : 1874634917  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Hydrogen atom in its ground state is excited by means of monochromatic radiation of energy 12.75 eV. The minimum energy of the emitted spectral lines is nearly

_options_

1. 0.22 eV
2. 0.44 eV
3. 0.66 eV

4. 0.88 eV

Question Number : 118  Question Id : 1874634918  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Two radio active nuclei ‘x’ and ‘y’ initially contain equal number of atoms. Their half-life periods are 1 hour and 2 hours respectively. The ratio of their rates of disintegration after 2 hours from the start is

Options :
1. 1 : 1
2. 1 : 2
3. 2 : 1
4. 1 : 3

Question Number : 119  Question Id : 1874634919  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

The current gain of a transistor in a common emitter circuit is 25, then the ratio of emitter current to base current is

Options :
\[
\frac{25}{26}
\]
1. 
2. 26
1. \[
\frac{1}{25}
\]

2. \[
\frac{26}{25}
\]

Question Number : 120  Question Id : 1874634920  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Assertion (A): FM signal is less susceptible to noise than AM signal.
Reason (R): FM has small operating frequency range.

Options:
1. Both (A) and (R) are correct and (R) is the correct explanation of (A)
2. Both (A) and (R) are correct but (R) is not the correct explanation of (A)
3. (A) is correct but (R) is not correct
4. (A) is not correct but (R) is correct

Chemistry
Display Number Panel: Yes
Group All Questions: No
The kinetic energy of electron ejected from a metal surface is 0.70 eV. If the work function \((W_0)\) of the metal is 2.30 eV, the frequency of radiation falling on the metal surface in Hz is \((1 \text{ eV} = 1.602 \times 10^{-19} \text{ J})\)

The kinetic energy of electron ejected from a metal surface is 0.70 eV. The work function of the metal \((W_0)\) is 2.30 eV. The frequency of radiation falling on the metal surface in Hz is \((1 \text{ eV} = 1.602 \times 10^{-19} \text{ J})\)

Options:

1. \(7.25 \times 10^{13}\)
2. \(1.38 \times 10^{13}\)
3. \(1.38 \times 10^{14}\)
4. \(7.25 \times 10^{14}\)

Question Number: 122  Question Id: 1874634922  Question Type: MCQ  Option Shuffling: Yes  Display Question Number: Yes  Single Line Question Option: No  Option Orientation: Vertical

If the ratio of radii of electron in the first excited states of \(\text{He}^+\) and \(\text{Be}^{3+}\) is 2:1, the energies of electron in their corresponding excited states in J is

\(\text{He}^+, \text{Be}^{3+}\) వండి ఎనిమిద ప్రాంతాల వండి నుండి రెండు రెండు జి ఎన్నికలు ఇచ్చాం, రెండు రెండు ప్రాంతాల నుండి వండి నుండి జి ఎన్నికలు ఇచ్చాం

Options:

1. \(-2.18 \times 10^{-18}, -8.72 \times 10^{-18}\)
2. \(-8.72 \times 10^{-18}, -2.18 \times 10^{-18}\)
3. \(-2.18 \times 10^{-18}, -4.36 \times 10^{-18}\)
4. \(-4.36 \times 10^{-18}, -2.18 \times 10^{-18}\)

Question Number: 123  Question Id: 1874634923  Question Type: MCQ  Option Shuffling: Yes  Display Question Number: Yes  Single Line Question Option: No  Option Orientation: Vertical
Identify the correct statements from the following

i. CO is an amphoteric oxide
ii. As₂O₃ is a neutral oxide
iii. Cl₂O₇ is an acidic oxide
iv. CaO is a basic oxide

Options:

1. i, ii, iii, iv
2. ii, iii, iv only
3. iii, iv only
4. iv, ii only
Atom X (in molecule 1) has electrons in 1s, 2s and 2p orbitals. Atom Y (in molecule 2) has electrons in 1s, 2s, 2p, 3s and 3p orbitals. Atom Z (in molecule 3) has electrons in 1s, 2s, 2p, 3s, 3p, 3d and 4s orbitals. Observe the following statements

i. Atom X can undergo sp, sp² and sp³ type of hybridisation
ii. Atom Y can undergo sp³, sp³d type of hybridisation
iii. Atom Z can undergo sp²d², d²sp³, dsp³, sp³ type of hybridisation

The correct statements are

Options:

1. i, ii only
2. i, iii only
3. ii, iii only
4. i, ii, iii
A hydrogen, neon gas mixture contains 0.5 g of hydrogen and 10 g of neon in a cylinder. If pressure of the mixture of gases in the cylinder is 2.4 bar, the partial pressures of neon and hydrogen in the mixture respectively in bar are (H = 1.0; Ne = 20.0)

Options :
1. 0.9, 1.5
2. 1.6, 0.8
3. 0.8, 1.6
4. 1.5, 0.9

20 mL of 0.04M CuSO₄ solution reacts completely with 20 mL of certain concentration of KI solution. If I₂ thus liberated reacts completely with 20 mL of sodium thiosulphate solution, the molarity of thiosulphate in mol L⁻¹ is

Options :
The enthalpy and entropy changes for a reaction at 298 K are 400 kJ mol\(^{-1}\), 400 J K\(^{-1}\) mol\(^{-1}\) respectively. If \(\Delta H\) and \(\Delta S\) are constant over the temperature range, the temperature at which the reaction becomes spontaneous in K is

\[
298 K \text{ లో ఎలా సంప్రదాయం ఉండదు, మాత్రమే \(\Delta H\) మరియు \(\Delta S\) ఎలా సంప్రదాయం ఉండదు. ప్రత్యేకించడం ప్రారంభం కంటే కొంతమే చివరం ఆనుకుంటుంది.}
\]

Options:

1. 1001
2. 800
3. 101
4. 500

If the equilibrium constant, \(K_c\), for a reaction at certain temperature is \(> 10^3\), which one of the following statements is correct?

\[
\text{ఈ ప్రత్యేక సాధనాలు కొంతమే చివరం కొంతమే ప్రత్యేకించడం ప్రారంభం కొంతమే ప్రత్యేకించడం కొంతమే చివరం ఆనుకుంటుంది.}
\]

Options:
The reaction hardly proceeds

1.

The products predominate over reactants at equilibrium

2.

The reactants predominate over products at equilibrium

3.

The equilibrium constant is less than reaction quotient

4.

**Question Number : 130  Question Id : 1874634930  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical**

**Assertion (A):** Higher order ionization constants \( (K_{a2}, K_{a3}) \) are smaller than the lower order ionization constant \( (K_{a1}) \) of polyprotic acid

**Reason (R):** It is easy to remove a \( H^+ \) from a negative ion due to electrostatic forces

**Option 1:** Both (A) and (R) are correct and (R) is the correct explanation of (A)

**Option 2:** Both (A) and (B) are correct but (R) is not the correct explanation of (A)
What is the approximate volume (in L) of 0.02 M KMnO₄ solution required to completely react with 0.5 L of 10 vol H₂O₂ solution in acid medium?

Options:
1. 89.29
2. 44.64
3. 4.464
4. 8.929

In portland cement, the major constituents (in mol %) are

Options:
1. MgO, Fe₂O₃, Cr₂O₃
2. Al₂O₃, MgO, TiO₂
3. CaO, SiO₂, Al₂O₃
Question Number : 133  Question Id : 1874634933  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Sodium borohydride reacts with I₂ to form NaI, H₂ and X. When X reacts with NaH in diethyl ether, Y is formed. What is Y?

Options :
1. B₂H₆
2. H₃BO₃
3. B₂O₃
4. NaBH₄

Question Number : 134  Question Id : 1874634934  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Identify the correct statements from the following
i.  \( \Delta_f H^0 \) of graphite is taken as zero
ii. In fullerene, every five carbon ring is fused to six carbon rings only
iii. CO₂ is prepared by dehydrating formic acid using conc. H₂SO₄ at 373 K

Options :
1. i, ii, iii
2. i, iii only
Identify correct statements from the following

i. Conventional smog is a mixture of smoke, SO₂ and fog
ii. Conventional smog has oxidizing nature
iii. In the photochemical smog, the unburnt unsaturated hydrocarbons are converted into PAN, acrolein and HCHO
iv. Photochemical smog can be controlled by fixing catalytic converters in automobile engines

Options:

1. i, ii, iii, iv

2. i, ii, iii only

3. iii, iv only

4. i, ii only
In C and H estimation experiment, H₂O and CO₂ formed are absorbed in A and B respectively. A and B are

C, H ని అమలు చేసిన తరువాత విడితున్న H₂O, CO₂ చెంబర్ లో అన్ని A, B లో విలాసం చేసకుండా. A, B లు

Options :

1. A  
   anhydrous CuSO₄  
   CuSO₄

2. A  
   anhydrous CuSO₄  
   CuSO₄

3. A  
   anhydrous CaCl₂  
   CaCl₂

4. A  
   anhydrous CaCl₂  
   CaCl₂

Ozonolysis of alkene X gives acetone. X is

మాత్రమే X మొగ్గ చేసి వాటికి అలాంటి పండితం. X ని నిర్ణయించండి

Options :

1. 2, 3 - dimethyl but - 2 - ene
2. 2, 3 - డిమెథయలు బుట్ - 2 - ఎన్నె
What are X and Y in the following reactions?

\[
\begin{align*}
&X \xrightleftharpoons[500K]{\text{Cl}_2/\text{UV}} \text{Benzene} \xrightleftharpoons[\text{dark, cold}]{\text{Cl}_2/\text{Anhydrous AlCl}_3} Y \\
X \xrightleftharpoons[500K]{\text{Cl}_2/\text{UV}} \text{Benzene} \xrightleftharpoons[\text{dark, cold}]{\text{Cl}_2/\text{Anhydrous AlCl}_3} Y
\end{align*}
\]
An element has body-centered cubic structure with a cell edge length of 300 pm. If the density of the element is 7.2 g cm$^{-3}$, the number of unit cells in 194.4g of the element is

\[
\text{Density} = \frac{\text{Mass}}{\text{Volume}} = \frac{194.4 \text{ g}}{7.2 \text{ g cm}^{-3} \text{ cm}^3} = 27 \text{ cm}^3 \\
\text{Volume of one unit cell} = a^3 = (300 \times 10^{-10})^3 \text{ cm}^3 \\
\text{Number of unit cells} = \frac{27 \text{ cm}^3}{(300 \times 10^{-10})^3 \text{ cm}^3} = 2.0 \times 10^{24}
\]

Options:
1. $2.0 \times 10^{24}$
2. $6.0 \times 10^{24}$
3. $3.0 \times 10^{24}$
4. $1.0 \times 10^{24}$
The vapour pressure of a solution of 6.0 g of non-volatile solute in 390 g of benzene at 298 K is 3.00 kPa. If 78 g of benzene is added to this solution the vapour pressure becomes 3.02 kPa at the same temperature. The molar mass of solute in g mol\(^{-1}\) is

298 K అనేది 6.0 గ వాస్తు మాత్రము 390 గ బెన్జేనె మిగిలించే వాయువు ప్రచ్ఛందం 3.00 kPa. యే తరువాత 78 g బెన్జేనె కూడా చాలా. అందువల్ల వాయువు ప్రచ్ఛందం 3.02 kPa ప్రామాణికం. మాత్రము వాయువు ప్రచ్ఛందం g mol\(^{-1}\).

Options:

1. 60.8
2. 50.4
3. 31.2
4. 21.2

The mole fractions of benzene and toluene vapours in equilibrium with the ideal solution of benzene in toluene at 300 K are 0.61 and 0.39 respectively. The total vapour pressure of the solution is 41 mm Hg. If the vapour pressures of pure benzene and toluene at 300 K are 50 and 32 mm Hg respectively, the mole fractions of benzene and toluene in solution respectively are

300 K అనే తరువాత మాత్రము వాయువు ప్రచ్ఛందం 0.61, 0.39. మాత్రము వాయువు ప్రచ్ఛందం 41 mm Hg. 300 K అనే తరువాత మాత్రము వాయువు ప్రచ్ఛందం 50 మాత్రము 32 mm Hg మాత్రము వాయువు ప్రచ్ఛందం.

Options:

1. 0.25, 0.75
2. 0.75, 0.25
3. 0.30, 0.70
4. 0.50, 0.50
Solutions of CuSO₄ and AgNO₃ were electrolysed with a current of 1.93 amperes for 500 seconds separately. The amounts of copper and silver deposited at cathode respectively in g are

1.93 amperes for 500 seconds CuSO₄, AgNO₃ के रसायन के निश्चित रूप से दोनों के 500 सेकंडों में बहुत ही सप्ताहों के लिए निश्चित रूप से दोनों के काठनय में हाइड्रोजन रिकार्ड किया जाता है।

Options:
1. 0.63, 0.54
2. 0.315, 0.54
3. 0.315, 1.08
4. 1.08, 0.315

If the rate constant of zero order reaction is 3.0 \times 10^{-3} \text{ M s}^{-1}, the time taken for the initial concentration of the reactant to fall from 0.30 M to 0.03 M in seconds is

3.0 \times 10^{-3} \text{ M s}^{-1} के रेट कार्टन का साधनयो निश्चित रूप से मिश्रित रूप से मिश्रित रूप से दोनों के काठनय में हाइड्रोजन रिकार्ड किया जाता है।

Options:
1. 90
2. 10
3. 60
4. 30
Which one of the following methods is used to make gold sol?

ఖాళీ ఎంతగా చేయాలి ఈ వాటిని వాడాలి కావు కాసుచేయాలి?

Options:

1. Ultra filtration method
2. Peptization method
3. Electrical disintegration method
4. Dialysis method

In the van-Arkel method of refining Zr, the impurities (x) and the substance (y) used are respectively

వన్-ఆర్కెల విధానంలో Zr సంపద చేసిన మాదిరి (x) మాత్రమే కాల్చడానికి లేదు (y) అనే కారణం

Options:

1. \( x = (N_2, O_2) ; y = Cl_2 \)
2. \( x = (N_2, O_2) ; y = O_2 \)
3. \( x = (N_2, O_2) ; y = I_2 \)
4. \( x = (SO_2, O_2) ; y = I_2 \)
An oxoacid of P(A) on heating disproportionates to form an acid (X) and a base (Y). Y reacts with CuSO₄ solution to form Cu₃P₂ and sulphuric acid. A is a dibasic acid. A, X and Y are respectively

Options:
1. H₃PO₄, H₃PO₃, PH₃
2. H₃PO₂, H₃PO₄, PH₃
3. H₃PO₃, PH₃, H₃PO₄
4. H₃PO₃, H₃PO₄, PH₃

Phosphorous reacts with sulphuryl chloride to form PCl₅ and X. Hot and concentrated H₂SO₄ reacts with Cu to form CuSO₄, H₂O and Y. Zinc sulphide reacts with oxygen to form ZnO and Z. Then X, Y and Z are respectively

Options:
1. SO₂, SO₂, H₂S
2. SO₂, SO₂, SO₂
3. SO₂, H₂S, SO₂
4. \( \text{SO}_3, \text{SO}_2, \text{SO}_3 \)

Which one of the following diffuses through rubber, glass and plastic?

Which pair of elements does not exhibit multiple oxidation states?

Options:

1. He
2. Ne
3. Ar
4. Kr

Options:

1. Mn, Cr
2. Sc, Zn
3. Fe, Co
4. V, Ni
[ML₆]⁺⁺ is an octahedral complex. Its crystal field splitting energy (Δ₀) is 1.8 eV. If same metal ion (M⁺⁺) forms a tetrahedral complex with same ligands (L), then the crystal field splitting energy (Δ₁) of [ML₄]⁺⁺ in eV is

\[ [ML₆]⁺⁺ \text{ has octahedral coordination. If the same metal ion (M⁺⁺) forms a tetrahedral complex with same ligands (L), then the crystal field splitting energy (Δ₁) of [ML₄]⁺⁺ in eV is} \]

Options:
1. 1.8
2. 0.8
3. 4.05
4. 0.9
Examples of fibrous (X) and globular (Y) proteins are

Options:

<table>
<thead>
<tr>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>insulin</td>
<td>albumin</td>
</tr>
</tbody>
</table>

1. Keratin albumin

2. Keratin thyroxine

3. thyroxine insulin

4.
Match the following.

**List - I**
A) Receptor
B) Bactericidal
C) Neurotransmitter
D) Bacteriostatic

**List - II**
I) Noradrenaline
II) Tetracycline
III) Protein
IV) Ranitidine
V) Penicillin

The correct answer is

Options:
1. (A) (B) (C) (D)
   I      V     III     II

2. (A) (B) (C) (D)
   III     V    I     II

3. (A) (B) (C) (D)
   III    IV    V     II

4. (A) (B) (C) (D)
   IV     II    I     V
The order of reactivity of chlorobenzene (I), 4-nitrochlorobenzene (II), 2, 4, 6-trinitrochlorobenzene (III) and 2, 4-dinitrochlorobenzene (IV) towards nucleophilic substitution is

Options:

1. \( III > II > IV > I \)
2. \( III > IV > II > I \)
3. \( II > III > IV > I \)
4. \( I > II > IV > III \)

What are \( a, b, c \) and \( d \) in the following reaction?

\[
\text{6(CH}_3\text{)}_2\text{C-OH} + b \text{ Al} \rightarrow c [(\text{CH}_3)_2\text{C-O}]_3 \text{ Al} + d \text{ H}_2
\]

Options:

1. \( \begin{array}{cccc} a & b & c & d \\ 6 & 2 & 2 & 3 \end{array} \)
2. \( \begin{array}{cccc} a & b & c & d \\ 3 & 1 & 1 & 2 \end{array} \)
3. \( \begin{array}{cccc} a & b & c & d \\ 4 & 1 & 1 & 2 \end{array} \)
Question Number : 156  Question Id : 1874634956  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Lucas reagent is

Options :
1. $\text{Br}_2/\text{CCl}_4$
2. $\text{KMnO}_4/\text{H}^+$
3. $\text{HCl/ anhydrous ZnCl}_2$
4. $\text{HCl/ ZnCl}_2$
5. $\text{C}_6\text{H}_5\text{SO}_2\text{Cl}$

Question Number : 157  Question Id : 1874634957  Question Type : MCQ  Option Shuffling : Yes  Display Question Number : Yes  Single Line Question Option : No  Option Orientation : Vertical

Structures of catechol (I), propiophenone (II) and phthalaldehyde (III) are

Options :

<table>
<thead>
<tr>
<th></th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td><img src="catechol.png" alt="catechol" /></td>
<td><img src="propiophenone.png" alt="propiophenone" /></td>
</tr>
</tbody>
</table>
What are X, Y and Z in the following reactions?

చందనం చెందిన X, Y, Z ఎవో?

\[
\text{CH}_2\text{CH}_3 \quad \xrightarrow{1) \text{KMnO}_4-\text{KOH}/\Delta \quad 2) H_2O^\oplus} \quad \text{X}
\]

\[
\text{CH}_3 \quad \xrightarrow{1) \text{KMnO}_4-\text{KOH}/\Delta \quad 2) H_2O^\oplus} \quad \text{Y}
\]

\[
\text{CH}_2\text{CH}_2\text{CH}_3 \quad \xrightarrow{1) \text{KMnO}_4-\text{KOH}/\Delta \quad 2) H_2O^\oplus} \quad \text{Z}
\]

Options:

1. X: \text{CH}_2\text{COOH}, Y: \text{CH}_3\text{COOH}, Z: \text{CH}_2\text{CH}_2\text{COOH}

2. X: \text{CH}_2\text{CHO}, Y: \text{CHO}, Z: \text{CH}_2\text{CH}_2\text{CHO}

3. X: \text{COOH}, Y: \text{COOH}, Z: \text{COOH}
Identify X in the following reaction:

\[
\text{acetone} \xrightarrow{1) \text{Ba(OH)}_2} X \xrightarrow{2) \Delta} \text{X}
\]

Options:
1. 4-methylpent-3-ene-2-one
2. 3-methylpent-3-ene-2-one
3. hex-3-ene-2-one
4. pent-3-ene-2-one
What are X and Y in the following reactions?

RCHO $\xrightarrow{X} A \xrightarrow{Y} RCN$

Options:

1. $X$ $Y$

   $C_6H_5SO_2Cl / C_5H_5N / 343 K$ $NH_2OH$

2. $X$ $Y$

   $NaNO_2 / HCl$ $(CH_3CO)_2O$

3. $X$ $Y$

   $NH_2OH$ $C_6H_5SO_2Cl / C_5H_5N / 343 K$

4. $X$ $Y$

   $Cu / 573 K$ $(CH_3CO)_2O$