

Question Paper Preview

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 :	M Sc Biotechnology 13th July 2024 Shift 1
Subject Name :	M.Sc. Biotechnology
Creation Date :	2024-07-13 13:02:05
Duration :	90
Total Marks :	100
Display Marks:	No
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

M.Sc. Biotechnology

Group Number :	1
Group Id :	501314104
Group Maximum Duration :	0
Group Minimum Duration :	90
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	100

Chemistry

Section Id :	501314185
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	40
Number of Questions to be attempted :	40
Section Marks :	40

Maximum Instruction Time : 0
Sub-Section Number : 1
Sub-Section Id : 501314218
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 50131410794 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

The correct order of bond strength is
బంధబలం యొక్క సరైన క్రమం

Options :

1. ✘ $O_2^- < O_2 < O_2^+ < O_2^{2-}$
2. ✔ $O_2^{2-} < O_2^- < O_2 < O_2^+$
3. ✘ $O_2^- < O_2^{2-} < O_2 < O_2^+$
4. ✘ $O_2^+ < O_2 < O_2^- < O_2^{2-}$

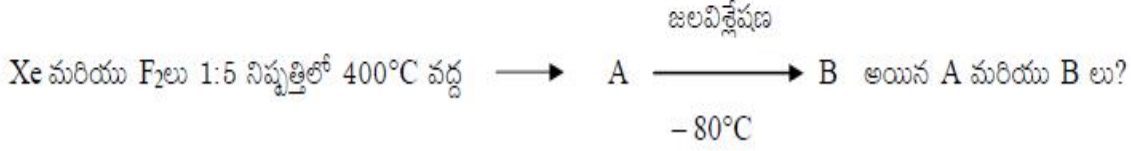
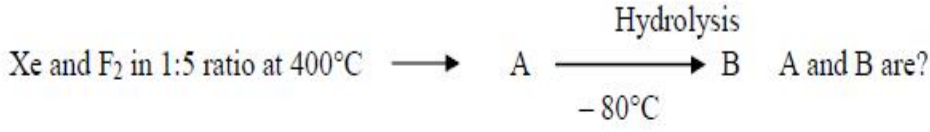
Question Number : 2 Question Id : 50131410795 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following correctly describes the behaviour of H_3PO_3 and H_3PO_4 ?
క్రింది వాటిలో ఏది H_3PO_3 మరియు H_3PO_4 యొక్క స్వభావాన్ని వర్ణిస్తుంది?

Options :

1. ✔ H_3PO_3 is dibasic and reducing
 H_3PO_3 ద్విక్షారము మరియు క్షయకరిణి
2. ✘ H_3PO_3 is dibasic and non-reducing
 H_3PO_3 ద్విక్షారము మరియు క్షయకరిణి కాదు
3. ✘ H_3PO_4 is tribasic and reducing
 H_3PO_4 త్రిక్షారము మరియు క్షయకరిణి
4. ✘ H_3PO_3 is tribasic and non-reducing
 H_3PO_3 త్రిక్షారము మరియు క్షయకరిణి కాదు

Question Number : 3 Question Id : 50131410796 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0



Options :

1. ✘ XeF₆ and XeOF₄
2. ✔ XeF₄ and XeOF₂
3. ✘ XF₄ and XeF₆
4. ✘ None

Question Number : 4 Question Id : 50131410797 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

What is the formula of sodium nitroprusside?

సోడియం నైట్రోప్రసైడ్ యొక్క ఫార్ములా ఏది?

Options :

1. ✘ Na₃[Fe(CN)₅NO]
2. ✘ Na₂[Fe(CN)₄NO]
3. ✔ Na₂[Fe(CN)₅NO]
4. ✘ Na₃[Fe(CN)₄NO]

Question Number : 5 Question Id : 50131410798 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

The IUPAC name of the coordination compound $K_3[Fe(CN)_6]$ is
 $K_3[Fe(CN)_6]$ సమన్వయ సమ్మేళనం యొక్క IUPAC నామము

Options :

1. ✘ Potassium hexacyanoferrate (II)
2. ✔ Potassium hexacyanoferrate (III)
3. ✘ Pottassiumhexacyanoiron (II)
4. ✘ Tripotassiumhexacyanoiron (II)

Question Number : 6 Question Id : 50131410799 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which one of the following complexes shows optical isomerism?
ఈ క్రింది ఏ సంక్లిష్ట సమ్మేళనం దృవణ సాదృశ్యాన్ని ప్రదర్శించును?

Options :

1. ✘ trans $[Co(en)_2Cl_2]Cl$
2. ✘ $[Co(NH_3)_4Cl_2]Cl$
3. ✘ $[Co(NH_3)_3Cl_3]$
4. ✔ Cis $[Co(en)_2Cl_2]Cl$

Question Number : 7 Question Id : 50131410800 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

The EAN of Wilkinson's catalyst is
విల్కిన్సన్స్ ఉత్ప్రేరకం యొక్క EAN

Options :

1. ✘ 36
2. ✘ 50
3. ✔ 52
4. ✘ 54

Question Number : 8 Question Id : 50131410801 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

The number of bridge bonds in B_4H_{10} are
 B_4H_{10} లో ఎన్ని వారధి బంధాలు ఉన్నాయి?

Options :

1. ✘ 2
2. ✘ 3
3. ✘ 5
4. ✔ 4

Question Number : 9 Question Id : 50131410802 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

The natural coordination compounds, chlorophyll and hemoglobin contain, which of the following metal
respectively?

సహజ సమన్వయ సమ్మేళనాలైన క్లోరోఫిల్ మరియు హిమోగ్లోబిన్లలో ఉన్న లోహాలు వరుసగా ఏవి?

Options :

1. ✘ Mg and Mn

2. ✘ Ca and Co

3. ✔ Mg and Fe

4. ✘ Fe and Ni

Question Number : 10 Question Id : 50131410803 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Inorganic benzene (borazole) is
అకర్బన బెంజీన్ (బోరాజోల్)

Options :

1. ✘ BH_3O_3

2. ✔ $B_3N_3H_6$

3. ✘ B_2H_6

4. ✘ B_6H_{10}

Question Number : 11 Question Id : 50131410804 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following transition metals shows the highest oxidation state in its compounds?
క్రింది పరివర్తన మూలకములలో, అత్యధిక ఆక్సీకరణ స్థితిని (దాని సమ్మేళనంలో) చూపునది ఏది?

Options :

1. ✘ Chromium

2. ✘ Cobalt

3. ✘ Iron

4. ✓ Manganese

Question Number : 12 Question Id : 50131410805 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

The correct order of electron affinity is
సరియైన ఎలక్ట్రాన్ అపేక్ష క్రమము

Options :

1. ✗ $F > Cl > Br$

2. ✗ $F > Cl < Br$

3. ✓ $F < Cl > Br$

4. ✗ $F < Cl < Br$

Question Number : 13 Question Id : 50131410806 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which salt of the following lanthanide ions is used as oxidizing reagent in analysis?
విశ్లేషణలో ఆక్సికరణిగా ఉపయోగించు లాంథనాయిడ్ అయాను ఏది?

Options :

1. ✓ Ce^{4+}

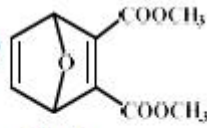
2. ✗ Gd^{4+}

3. ✗ Pr^{4+}

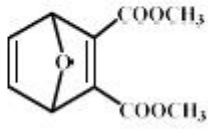
4. ✗ Yb^{4+}

Question Number : 14 Question Id : 50131410807 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following reactions will yield?



ఈ క్రింది ఏ చర్య

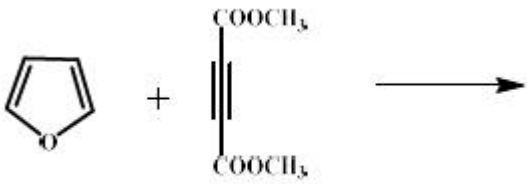


ఉత్పన్నాన్ని ఇచ్చును

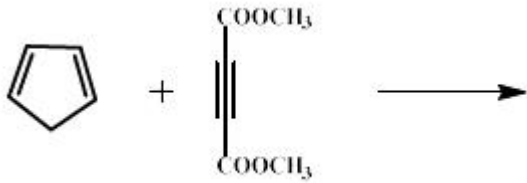
Options :



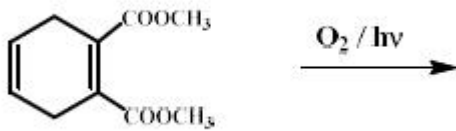
1. ✘



2. ✔



3. ✘



4. ✘

Question Number : 15 Question Id : 50131410808 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The basic amino acid among the following is

ఈ క్రింది వాటిలో క్షార అమీనో ఆమ్లము ఏది?

Options :

Arginine

అర్జినీన్

1. ✔

2. ✘

Aspartic acid

ఆస్పార్టికామ్లము

Cystine

సిస్టైన్

3. ✘

Glycine

గైసీన్

4. ✘

Question Number : 16 Question Id : 50131410809 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following acids has lowest P^{ka} value?

ఈ క్రింది వాటిలో అత్యల్ప P^{ka} విలువ కలిగిన ఆమ్లము?

Options :

CH_3COOH

1. ✘

$CH_2ClCOOH$

2. ✘

$CHCl_2COOH$

3. ✘

CCl_3COOH

4. ✔

Question Number : 17 Question Id : 50131410810 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

NMR spectra cannot be obtained for nuclei having the spin quantum number

స్పిన్ క్వాంటమ్ సంఖ్య _____ గా ఉన్న కేంద్రకముల NMR వర్ణ పటాలను పొందలేము

Options :

$I = 0$

1. ✔

$I = 1/2$

2. ✘

3. ✘ $I = 1$

4. ✘ $I \geq 1$

Question Number : 18 Question Id : 50131410811 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Cinnamic acid is prepared by
సిన్సమిక్ ఆమ్లమును ఏ చర్య ద్వారా తయారుచేస్తారు?

Options :

1. ✘ Friedal – Crafts reaction

2. ✘ Grignard reaction

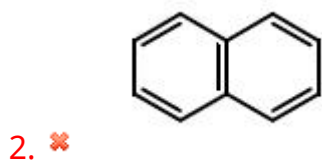
3. ✔ Perkin reaction

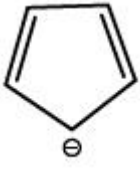
4. ✘ Wurtz reaction

Question Number : 19 Question Id : 50131410812 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which one of the following is not aromatic?
ఈ క్రింది వాటిలో ఎరోమాటిక్ కానిది ఏది?

Options :





3. ✘



4. ✔

Question Number : 20 Question Id : 50131410813 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Nucleophilic substitution takes place at saturated carbon opposite to the direction of the leaving group

In case of

క్రింది ఏ చర్యలో కేంద్రకప్రియ ప్రతిక్షేపణము, విడిచివెళ్ళు వర్గ వ్యతిరేక దిశనున్న సంతృప్త కార్బన్ వద్ద జరుగును.

Options :

1. ✔ S_N2 reaction
 S_N2 చర్య

2. ✘ S_N1 reaction
 S_N1 చర్య

3. ✘ S_{Ni} reaction
 S_{Ni} చర్య

4. ✘ S_{N1}, S_{Ni}
 S_{N1}, S_{Ni} చర్య

Question Number : 21 Question Id : 50131410814 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following will exhibit optical isomerism?

ఈ క్రింది వాటిలో ఏది క్షేత్రీయ సాదృశ్యమును ప్రదర్శించును?

Options :

1. ✔

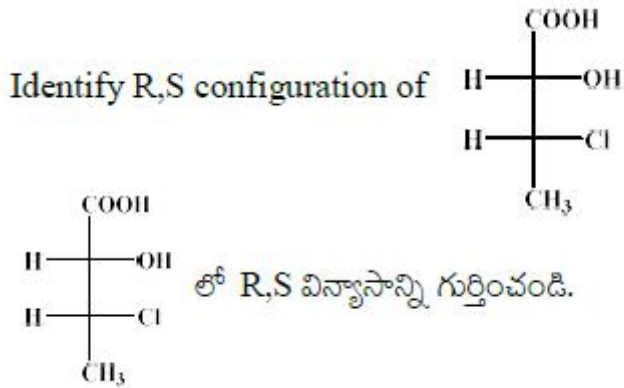
1-phenyl-2-butene

2. ✘ 3-phenyl-1-butene

3. ✘ 2-phenyl-1-butene

4. ✘ 1,1-diphenyl-1-butene

Question Number : 22 Question Id : 50131410815 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0



Options :

(2R, 3R)

1. ✘

2. ✔ (2S, 3R)

3. ✘ (2S, 3S)

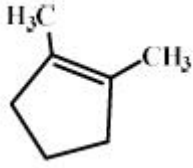
4. ✘ (2R, 3S)

Question Number : 23 Question Id : 50131410816 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

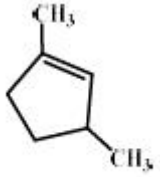
Which compound would give 5-keto-2-methyl hexanal upon ozonolysis?

ఈ క్రింది ఏ సమ్మేళనం ఓజోనాలసిస్‌లో 5-కీటో-2-మిథైల్ హెక్సనాల్‌ను ఇచ్చును.

Options :



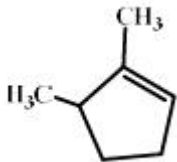
1. ✘



2. ✔



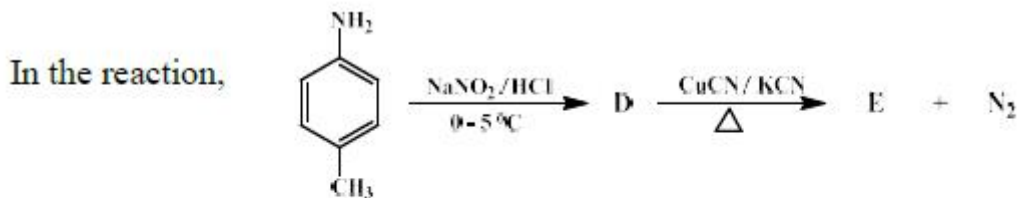
3. ✘



4. ✘

Question Number : 24 Question Id : 50131410817 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 1 Wrong Marks : 0

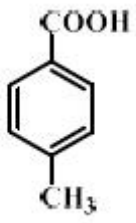


The product E is

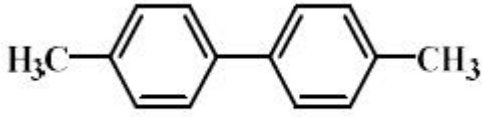
[పై చర్యలో E ఉత్పన్నాన్ని గుర్తించండి]

Options :

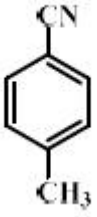
1. ✘



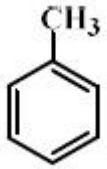
2. ✘



3. ✔



4. ✘



Question Number : 25 Question Id : 50131410818 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following compound is more basic than aniline
ఈ క్రింది వాటిలో ఎనిలీన్ కంటే ఎక్కువ జ్వారత్వం గల సమ్మేళనం ఏది?

Options :

1. ✘

Triphenylamine
ట్రైఫెన్యైల్ఎమీన్

2. ✘

4-Nitroaniline
4-నైట్రోఎనిలీన్

3. ✔

Benzylamine
బెంజైల్ఎమీన్

4. ✘

Diphenylamine
డైఫినైల్ఎమీన్

Question Number : 26 Question Id : 50131410819 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following forms osazone but does not get oxidized to C₆- monocarboxylic acid?
ఈ క్రింది వాటిలో ఏది ఓసజోన్‌ను ఏర్పరుస్తుంది కానీ C₆-మోనోకార్బాక్సిలిక్ ఆమ్లంగా ఆక్సీకరణం చెందదు?

Options :

1. ✘ D-Mannose
D-మానోజ్

2. ✘ D-Glucose
D-గ్లూకోజ్

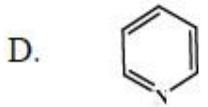
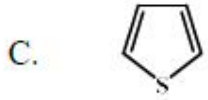
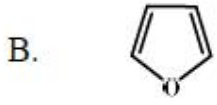
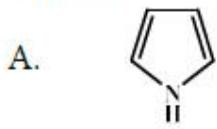
3. ✔ D-fructose
D-ఫ్రక్టోజ్

4. ✘ D-Galactose
D-గలాక్టోజ్

Question Number : 27 Question Id : 50131410820 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Match list-I with list-II

List - I



List - II

i. Diel's Alder Reaction
డీల్స్-ఆల్డర్ చర్య

ii. Nucleophilic substitution
న్యూక్లియోఫిలిక్ ప్రతిక్షేపణ

iii. Amphoteric
ద్విస్వభావక

iv. More Aromatic five membered Heterocyclic

Options :

A B C D
1 2 3 4

1. ✘

A B C D
3 4 2 1

2. ✘

A B C D
4 3 2 1

3. ✘

A B C D
3 1 4 2

4. ✔

Question Number : 28 Question Id : 50131410821 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Quantum yield (θ) is equal to
క్వాంటం దక్షత (θ) క్రింది వాటికి సమానము

Options :

1. ✘

$$\theta = \frac{\text{No. of molecules of reactant reacts in given time}}{\text{No. of Einsteins absorbed in the same time}}$$

$$\theta = \frac{\text{ఇవ్వబడిన సమయంలో చర్యనొందిన క్రియాజనకపు అణువుల సంఖ్య}}{\text{అదే సమయంలో శోషింపబడిన ఐన్స్టీన్ల సంఖ్య}}$$

$$\theta = \frac{\text{No. of moles of reactant reacted in given time}}{\text{No. of photons absorbed in the same time}}$$

$$\theta = \frac{\text{ఇవ్వబడిన సమయంలో చర్యనొందిన క్రియాజనకపు అణువుల సంఖ్య}}{\text{అదే సమయంలో శోషింపబడిన ఫోటాన్ల సంఖ్య}}$$

2. ✖

$$\theta = \frac{\text{No. of molecules of reactant reacts in given time}}{\text{No. of photons absorbed in the same time}}$$

$$\theta = \frac{\text{ఇవ్వబడిన సమయంలో చర్యనొందిన క్రియాజనకపు అణువుల సంఖ్య}}{\text{అదే సమయంలో శోషింపబడిన ఫోటాన్ల సంఖ్య}}$$

3. ✔

$$\theta = \frac{\text{No. of photons absorbed in the given time}}{\text{No. of moles of reactant reacted in the same time}}$$

$$\theta = \frac{\text{ఇవ్వబడిన సమయంలో శోషింపబడిన ఫోటాన్ల సంఖ్య}}{\text{అదే సమయంలో చర్యనొందిన క్రియాజనకాల మోల్ల సంఖ్య}}$$

4. ✖

Question Number : 29 Question Id : 50131410822 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Half life period of a second order reaction is t_1 , then the time required to complete 99% of the reaction is

(రెండవ క్రమాంకపు చర్య యొక్క అర్ధాయువు t_1 , ఈ చర్య 99% పూర్తి కావడానికి పట్టే సమయం)

Options :

1. ✔ $99t_1$

2. ✖ $90t_1$

3. ✖ $50t_1$

4. ✘ 99.9t₁

Question Number : 30 Question Id : 50131410823 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following is not a colligative property of dilute solution
క్రింది వాటిలో ఏది విలీన ద్రావణం యొక్క కణాధార ధర్మము కాదు.

Options :

1. ✘ Osmotic pressure of dilute solution
విలీన ద్రావణం యొక్క ద్రవాభిసరణ పీడనము
2. ✘ Elevation of boiling point of dilute solution
విలీన ద్రావణం యొక్క బాష్పీభవన స్థానములో ఉన్నతి
3. ✔ Relative lowering of vapour pressure of solvent
ద్రావణి యొక్క సాపేక్ష పీడనములో నిమ్నత
4. ✘ Depression in freezing point of dilute solution
విలీన ద్రావణం యొక్క ఘనీభవన స్థానములో నిమ్నత

Question Number : 31 Question Id : 50131410824 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Molarity of 4% $\left(\frac{W}{V}\right)$ NaOH aqueous solution is _____

4% $\left(\frac{W}{V}\right)$ NaOH జల ద్రావణం యొక్క మోలారిటీ

Options :

1. ✔ 1 molar
1 మోలార్
2. ✘ 2 Decimolar
2 డెసిమోలార్
3. ✘

0.001 molar
0.001 మోలార్

4. ✘ 1 Deca molar
1 డెకా మోలార్

Question Number : 32 Question Id : 50131410825 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The two electrons are occupying an orbital are distinguished by
ఒక ఆర్బిటాల్‌లో ఉన్న రెండు ఎలక్ట్రాన్లు క్రింది వాటిలో దేనిని విభేదిస్తుంది.

Options :

1. ✘ Principal Quantum number
ప్రధాన క్వాంటం సంఖ్య

2. ✘ Azimutal Quantum numer
ఎజిముతల్ క్వాంటం సంఖ్య

3. ✘ Magnetic Quantum number
అయస్కాంత క్వాంటం సంఖ్య

4. ✔ Spin Quantum number
స్పిన్ క్వాంటం సంఖ్య

Question Number : 33 Question Id : 50131410826 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

General conditions for liquification of a gas. (liquid state)
(సాధారణంగా వాయువును ఏ పరిస్థితులలో ద్రవీకరించవచ్చు)

Options :

1. ✔ Low temperature and high pressure
తక్కువ ఉష్ణోగ్రత మరియు అధిక పీడనము

2. ✘ High temperature and low pressure
అధిక ఉష్ణోగ్రత మరియు తక్కువ పీడనం

3. ✘ High temperature and high pressure
అధిక ఉష్ణోగ్రత మరియు అధిక పీడనం

4. ✘ Low temperature and low pressure
తక్కువ ఉష్ణోగ్రత మరియు తక్కువ పీడనం

Question Number : 34 Question Id : 50131410827 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The rate of diffusion of methane is twice that of the following gas under the same conditions
సమాన పరిస్థితులలో క్రింది వాటిలో ఏ వాయువు కంటే మిథేన్ రెట్టింపుగా వ్యాపనం చెందుతుంది?

Options :

1. ✘ O₃

2. ✘ O₂

3. ✔ SO₂

4. ✘ SO₃

Question Number : 35 Question Id : 50131410828 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Find the number of molecules in 68gm of NH₃ (mole concept) (molar mass of NH₃ = 17)
68 గ్రాముల అమోనియాలో గల అణువుల సంఖ్య (NH₃ యొక్క అణు భారము NH₃= 17)

Options :

1. ✘ 6.023 x 10²³

2. ✘ 12.046 x 10²³

3. ✘ 18.069 x 10²³

$$24.092 \times 10^{23}$$

4. ✓

Question Number : 36 Question Id : 50131410829 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

For an adiabatic process which of the following relations is correct
ఈ క్రింది ఏ సంబంధం స్థిరోష్ణక ప్రక్రియకు సరైనది

Options :

1. ✗ $\Delta E = 0$

2. ✗ $P \Delta V = 0$

3. ✓ $Q = 0$

4. ✗ $Q = +w$

Question Number : 37 Question Id : 50131410830 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The packing efficiency of simple cubic (SC), Body centered cubic (BCC) & cubic close packing (CCP) Lattice follow the order
సాధారణ క్యూబిక్, బాడీ కేంద్రీకృత క్యూబిక్ (BCC), క్యూబిక్ క్లోస్ ప్యాకింగ్ (CCP) లాటిస్ ప్యాకింగ్ ఈ క్రమాన్ని అనుసరిస్తుంది.

Options :

1. ✓ SC < BCC < CCP

2. ✗ SC < CCP < BCC

3. ✗ CCP < BCC < SC

4. ✗ BCC < CCP < SC

Question Number : 38 Question Id : 50131410831 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

The correct order of chemical reactivity with water according to electrochemical series
విద్యుత్ రసాయన శ్రేణిలో క్రింది వాటిలో ఏది సరియైన క్రమము

Options :

1. ✘ $Mg > Zn > Cu > K$

2. ✔ $K > Mg > Zn > Cu$

3. ✘ $K > Zn > Mg > Cu$

4. ✘ $Cu > Zn > Mg > K$

Question Number : 39 Question Id : 50131410832 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Gold number denotes the
గోల్డ్ నెంబరు దేనిని సూచించును

Options :

1. ✘ Flocculating value of an electrolyte
ఎలక్ట్రోలైట్ యొక్క అవక్షేపణ సామర్థ్యం తెలియజేయును

2. ✘ Peptizing power of an electrolyte
ఎలక్ట్రోలైట్ యొక్క పెప్టికరణ సామర్థ్యం

3. ✔ Protecting power of a lyophilic colloidal solution
లియోఫిలిక్ కొల్లాయిడల్ ద్రావణం యొక్క రక్షిత సామర్థ్యం

4. ✘ Electrophoretic movement of colloidal particles
కొల్లాయిడల్ కణాల యొక్క ఎలక్ట్రోఫోరెటిక్ గమనమును తెలియజేయుము

Question Number : 40 Question Id : 50131410833 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 1 Wrong Marks : 0

The amount of ion discharged during electrolysis is not directly proportional to
(విద్యుద్విశ్లేషణలో అయాన్ డిశ్చార్జ్ పరిమాణం క్రింది వాటిపై ఆధారపడును)

Options :

1. ✘ Current
విద్యుత్తు పరిమాణం
2. ✘ Time
సమయం
3. ✔ Resistance
నిరోధం
4. ✘ Chemical equivalent of the ion
అయాన్ యొక్క రసాయన తుల్యాంకం

Biotechnology

Section Id :	501314186
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	60
Number of Questions to be attempted :	60
Section Marks :	60
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	501314219
Question Shuffling Allowed :	Yes

Question Number : 41 Question Id : 50131410834 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

1. _____ is involved in the synthesis of phospholipids.

Options :

1. ✘ Mitochondria

2. ✘ Cytoplasm

3. ✘ Endoplasmic Reticulum

4. ✔ Smooth Endoplasmic Reticulum

Question Number : 42 Question Id : 50131410835 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following cell organelles is present in animal cells and absent in plant cells?

Options :

1. ✘ Nucleus

2. ✔ Centrosome

3. ✘ Golgi bodies

4. ✘ Chloroplast

Question Number : 43 Question Id : 50131410836 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Chromatin is composed of

Options :

1. ✘ DNA

2. ✔ DNA and proteins

3. ✘ DNA, RNA and proteins

4. ✘ RNA and Proteins

Question Number : 44 Question Id : 50131410837 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

In which typical stage are Lampbrush chromosomes observed?

Options :

1. ✔ Meiotic prophase
2. ✘ Mitotic metaphase
3. ✘ Mitotic prophase
4. ✘ Mitotic anaphase

Question Number : 45 Question Id : 50131410838 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

How many hepatocytes would be produced by a series of four mitotic divisions that began with a single liver cell?

Options :

1. ✘ 4
2. ✘ 8
3. ✔ 16
4. ✘ 32

Question Number : 46 Question Id : 50131410839 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Oogenesis, the process that creates female gametes, is halted at prophase I until puberty. Which of the following describes the DNA content of a female's gametes during her childhood?

Options :

1. ✘ 23 Chromosomes, 46 Chromatids
2. ✘ 23 Chromosomes, 23 Chromatids
3. ✘ 46 Chromosomes, 46 Chromatids
4. ✔ 46 Chromosomes, 92 Chromatids

Question Number : 47 Question Id : 50131410840 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

A gene for corn has two alleles, one for yellow kernels and one for white kernels. Cross pollination of yellow corn and white corn results in ears of corn that have an approximately even mix of yellow and white kernels. Which term best describes the relationship between the two alleles?

Options :

1. ✘ Genetic recombination
2. ✔ Codominance
3. ✘ Chimerism
4. ✘ Incomplete dominance

Question Number : 48 Question Id : 50131410841 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The X-linked recessive trait of color-blindness is present in 5% of males. If a mother who is a carrier and father who is unaffected plan to have 2 children, what is the probability the children will both be male and color-blind?

Options :

1. ✘ 50%
2. ✘ <1%
3. ✘ 25%
4. ✔ 6.25%

Question Number : 49 Question Id : 50131410842 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

If the percentage of crossing over between two genes is 10, then the distance between two genes will be

Options :

1. ✘ 5 morganoid
2. ✔ 10 centimorgans
3. ✘ 20 centimorgans
4. ✘ 40 map units

Question Number : 50 Question Id : 50131410843 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

When the activity of one gene is suppressed by the activity of a non-allelic gene, it is known as

Options :

1. ✘ Pseudo-dominance
2. ✘ Hypostasis
3. ✔ Epistasis
4. ✘ Incomplete dominance

Question Number : 51 Question Id : 50131410844 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

During their experiments, Alfred Hershey and Martha Chase helped confirm that DNA was the hereditary material. Which method did they use to discover this?

Options :

1. ✘ Transformation of DNA in *Streptococcus pneumoniae*
2. ✘ DNA linkage mapping
3. ✔ Radio-labelling DNA and protein
4. ✘ X-ray crystallography of DNA molecules

Question Number : 52 Question Id : 50131410845 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

In a sample of double-stranded DNA, 30% of the nitrogenous bases are guanine (G). What percentage of the nitrogenous bases in the sample are adenine (A)?

Options :

1. ✘ 30%
2. ✘

70%

3. ✘ 80%

4. ✔ 20%

Question Number : 53 Question Id : 50131410846 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

DNA replication produces a new strand of DNA that is complementary to the parent strand. The parent strand's sequence is 5'GGCATCGAG3'. What is the sequence of the complementary DNA strand?

Options :

1. ✘ 5'CCGTAGCTC 3'

2. ✘ 5'GGCATCGAG 3'

3. ✘ 5'GAGCTACGG 3'

4. ✔ 5'CTCGATGCC3'

Question Number : 54 Question Id : 50131410847 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

What is the composition of nucleotide?

Options :

1. ✔ a base + a sugar + phosphate

2. ✘ a base + a phosphate

3. ✘ a base + a sugar

4. ✘ a sugar + a phosphate

Question Number : 55 Question Id : 50131410848 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

LINE, SNES and LTRs DNA belongs to

Options :

1. ✘ Unique DNA sequences

2. ✔ Moderately repetitive DNA

3. ✔ Highly repetitive DNA

4. ✘ RNA Sequence

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 : 56 Question Id : 50131410849 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

The DNA polymerase involved in base excision repair is _____

Options :

1. ✘ DNA polymerase α

2. ✔ DNA polymerase β

3. ✘ DNA polymerase σ

4. ✘ DNA polymerase γ

Question Number : 57 Question Id : 50131410850 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which DNA repair mechanism relies on the intact complementary strand to guide the repair of single-strand damage?

Options :

1. ✓ Homologous Recombination (HR)
2. ✗ Double-Strand Break Repair
3. ✗ Nonhomologous End-Joining (NHEJ)
4. ✓ Base Excision Repair (BER)

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 : 58 Question Id : 50131410851 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Can you identify the Homology and similarity tool from the options below?

Options :

1. ✓ BLAST
2. ✗ RasMol
3. ✗ EMBOSS
4. ✗ PROSPECT

Question Number : 59 Question Id : 50131410852 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The first secondary database developed was

Options :

1. ✘ PRINTS
2. ✘ PROSITE
3. ✘ PDB
4. ✔ PIR

Question Number : 60 Question Id : 50131410853 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following is a protein sequence database?

Options :

1. ✘ DDBJ
2. ✘ EMBL
3. ✘ GenBank
4. ✔ PIR

Question Number : 61 Question Id : 50131410854 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following amino acids has a net negative charge at physiologic pH (~7.4)?

Options :

1. ✔ Glutamic Acid

2. ✘ Histidine
3. ✘ Lysine
4. ✘ Asparagine

Question Number : 62 Question Id : 50131410855 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The alpha helix is an example of which of the following structural properties of proteins?

Options :

1. ✔ Secondary
2. ✘ Quaternary
3. ✘ Primary
4. ✘ Tertiary

Question Number : 63 Question Id : 50131410856 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

How many total molecules of ATP are synthesized from ADP via glycolysis of a single molecule of glucose?

Options :

1. ✘ 36
2. ✘ 2
3. ✔ 4

4. ✖

Question Number : 64 Question Id : 50131410857 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

In order to analyze the catalytic effect of two different enzymes on the same chemical reaction, it is best to compare which of the following quantities?

Options :

1. ✖ The differences in enthalpy between the reactants and products
2. ✔ The difference between transition state energies
3. ✖ The differences in entropy between the reactants and products
4. ✖ The differences in free energy between the reactants and products

Question Number : 65 Question Id : 50131410858 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following is false about lipids?

Options :

1. ✖ They are either strongly hydrophobic or amphipathic
2. ✔ They are more soluble in water
3. ✖ Extraction of lipids from tissues require organic solvents
4. ✖ They are insoluble in water

Question Number : 66 Question Id : 50131410859 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 1 Wrong Marks : 0

The active site of an enzyme E, which catalyzes a reaction X, is partially denatured: which of the following quantities associated with X is most likely to be affected by the partial denaturation of E compared to the native form of E?

Options :

1. ✘ The equilibrium constant K_{eq}
2. ✘ The boltzmann constant k_B
3. ✘ The heat of reaction ΔH
4. ✔ The rate-constant k

Question Number : 67 Question Id : 50131410860 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following statement is true regarding the Chi-square test?

Options :

1. ✘ It tests the difference between two proportions
2. ✔ It test the independence between the two categorical variables
3. ✘ It tests the difference between the two means
4. ✘ It tests the correlation between the two continuous variables

Question Number : 68 Question Id : 50131410861 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Analysis of variance is a statistical method of comparing the _____ of several populations.

Options :

1. ✘ Standard deviations
2. ✘ Variances
3. ✔ Means
4. ✘ Proportions

Question Number : 69 Question Id : 50131410862 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

In a study carried out in the hospital ward, every 10th admitted patient was included in the sample, which sampling procedure is this:

Options :

1. ✘ Random sampling
2. ✔ Systematic sampling
3. ✘ Convenient sampling
4. ✘ Quota sampling

Question Number : 70 Question Id : 50131410863 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

What is the probability of getting the sum as a prime number if two dice are thrown?

Options :

1. ✘ $5/24$

2. ✓ 5/12

3. ✗ 5/30

4. ✗ $\frac{1}{4}$

Question Number : 71 Question Id : 50131410864 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

What is the standard free energy change of ATP?

Options :

1. ✗ Small and negative

2. ✗ Large and positive

3. ✓ Large and negative

4. ✗ Small and positive

Question Number : 72 Question Id : 50131410865 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

What is reduction potential?

Options :

1. ✗ The molecule loses an electron

2. ✓ An atom/molecule gains an electron

3. ✗ Reducing the power of an electron

4. ✗ Oxidation power of an electron

Question Number : 73 Question Id : 50131410866 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

What is the basic principle of HPLC?

Options :

1. ✘ It is a gas-gas partition chromatographic technique
2. ✔ It is a liquid-solid partition chromatographic technique
3. ✘ It is a liquid-liquid partition chromatographic technique
4. ✘ It is a gas-solid partition chromatographic technique

Question Number : 74 Question Id : 50131410867 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

What is used to detect hydrocarbon spots in TLC plate with silica gel?

Options :

1. ✔ UV light exposure
2. ✘ Alkaline Tetrazolium
3. ✘ KMnO_4
4. ✘ Ninhydrin test

Question Number : 75 Question Id : 50131410868 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which technique is preferably used for the separation of labeled and unlabeled DNA molecules?

Options :

1. ✓ CsCl gradient centrifugation
2. ✗ Sucrose gradient centrifugation
3. ✗ Discontinuous density gradient centrifugation
4. ✗ Gel gradient centrifugation

Question Number : 76 Question Id : 50131410869 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The father of Medical Microbiology is

Options :

1. ✓ Pasteur
2. ✗ Jenner
3. ✗ Koch
4. ✗ A.L.Hock

Question Number : 77 Question Id : 50131410870 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following is the standard resource for identifying bacteria?

Options :

1. ✗ *Systema Naturae*

2. ✓ Bergey's *Manual of Determinative Bacteriology*

3. ✘ Woese and Fox's phylogenetic tree

4. ✘ Haeckel's *General Morphology of Organisms*

Question Number : 78 Question Id : 50131410871 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Jams and dried meats often do not require refrigeration to prevent spoilage due to _____

Options :

1. ✘ Low pH

2. ✘ Toxic alkaline chemicals

3. ✘ Naturally occurring antibiotics

4. ✓ Low water activity

Question Number : 79 Question Id : 50131410872 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

A blanket from a child with chickenpox is likely to be contaminated with the virus that causes chickenpox (Varicella-zoster virus) What is the blanket called?

Options :

1. ✓ Fomite

2. ✘ Host

3. ✘ Pathogen

4. ✖ Vector

Question Number : 80 Question Id : 50131410873 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following is a set of bacterial diseases?

Options :

1. ✖ Malaria, poliomyelitis, mumps
2. ✖ Mumps, cholera, typhoid
3. ✔ Plague, Leprosy, Diphtheria
4. ✖ Measles, Tuberculosis, Tetanus

Question Number : 81 Question Id : 50131410874 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following statements is true about the IgM of humans?

Options :

1. ✖ IgM can cross the placenta
2. ✖ IgM can protect the mucosal surface
3. ✖ IgM is produced by high-affinity plasma cells
4. ✔ IgM is primarily restricted in the circulation

Question Number : 82 Question Id : 50131410875 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 1 Wrong Marks : 0

Human immunodeficiency virus (HIV) is the major cause of secondary immunodeficiency (but not the only one) Which immune effector does it target?

Options :

1. ✘ B cells and plasma cells
2. ✘ Stem cells
3. ✔ CD4 expressing T cells
4. ✘ CD8 expressing T cells

Question Number : 83 Question Id : 50131410876 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 1 Wrong Marks : 0

Tumor antigens are _____ that are inappropriately expressed and found on abnormal cells.

Options :

1. ✔ Self-antigens
2. ✘ Foreign antigens
3. ✘ Antibodies
4. ✘ T-cell receptors

Question Number : 84 Question Id : 50131410877 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following cells is involved in cell-mediated immunity?

Options :

1. ✘ Leukaemia

2. ✔ T cells

3. ✘ Mast cells

4. ✘ Thrombocytes

Question Number : 85 Question Id : 50131410878 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The hinge region of the immunoglobulin consists of the disulfide bond that held the hetero tetramer together. Also, it contributes to the flexibility of the antibody chain. Which of the following antibody class do not have a hinge region?

Options :

1. ✘ IgA

2. ✘ IgD

3. ✔ IgE

4. ✘ IgG

Question Number : 86 Question Id : 50131410879 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The following RNA strand was produced:
5' AAA AUG AGU AAG 3'. Which of the following DNA strands could have been the template for this RNA?

Options :

1. ✘

3' AAA ATG AGT AAG 5'

2. ✘ 3'UUU TAC UCA UUC5'

3. ✔ 3'TTT TAC TCA TTC 5'

4. ✘ 3'TTT ATG TGC TTC 5'

Question Number : 87 Question Id : 50131410880 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The transcription initiation factor associated with the RNA polymerase holoenzyme in prokaryotes is

Options :

1. ✘ β

2. ✘ ω

3. ✔ σ

4. ✘ αI

Question Number : 88 Question Id : 50131410881 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Shine-Dalgarno sequence is present in the _____

Options :

1. ✘ hnRNA

2. ✔ mRNA

3. ✘ tRNA

4. ✘ siRNA

Question Number : 89 Question Id : 50131410882 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The inducer for the lac operon is:

Options :

1. ✘ lactose

2. ✔ Allolactose

3. ✘ β -galactosidase

4. ✘ Galactose

Question Number : 90 Question Id : 50131410883 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

A spliceosome is a complex made of _____.

Options :

1. ✘ RNA polymerase and hnRNA

2. ✘ hnRNA and polyA polymerase

3. ✘ pre-mRNA and polyA polymerase

4. ✔ snRNPs, some proteins and the pre-mRNA being spliced

Question Number : 91 Question Id : 50131410884 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is an endonuclease?

Options :

1. ✘ DNase I
2. ✔ Hind II
3. ✘ Protease
4. ✘ RNase restriction

Question Number : 92 Question Id : 50131410885 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

What key feature of *Taq* polymerase allows PCR to be conveniently performed?

Options :

1. ✘ *Taq* polymerase does not require primers
2. ✘ *Taq* polymerase does not require a template
3. ✔ *Taq* polymerase is not damaged by heating
4. ✘ *Taq* polymerase can work at very low temperatures.

Question Number : 93 Question Id : 50131410886 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which gene transfer technique involves the use of a fatty bubble to carry a gene into a somatic cell?

Options :

1. ✘ Electroporation
2. ✔ Liposome transfer
3. ✘ Microinjection
4. ✘ Particle bombardment

Question Number : 94 Question Id : 50131410887 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

You are inserting your gene of interest into the Lac Z gene in a plasmid also containing a tetracycline resistant gene. You plate your transformed bacteria on media containing tetracycline and X-gal. Which of the following results would indicate a clone with recombinant plasmids?

Options :

1. ✘ A clone which did not grow on the tetracycline plates
2. ✔ A white colony on the tetracycline plates
3. ✘ A blue colony on the tetracycline plates
4. ✘ A red colony on the tetracycline plates

Question Number : 95 Question Id : 50131410888 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Vectors designed to replicate in cells of two different species are called

Options :

1. ✔ Shuttle vectors
2. ✘

Phasmids

3. ✘ Transfer Vectors

4. ✘ Phagemids

Question Number : 96 Question Id : 50131410889 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

In the citric acid production, the pH to be maintained in the fermenter is

Options :

1. ✘ 7.0

2. ✔ 5.0 to 6.0

3. ✘ 8.0 to 9.0

4. ✘ 1.0 to 6.0

Question Number : 97 Question Id : 50131410890 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The fungus used in the industrial production of citric acid:

Options :

1. ✘ *Rhizopus Oryzac*

2. ✘ *Fusarium moniliformae*

3. ✘ *Rhizopus nigricans*

4. ✔ *Aspergillus nigricans*

Question Number : 98 Question Id : 50131410891 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following raw materials are important for the production of glutamic acid?

Options :

1. ✓ glycerol
2. ✓ corn-steep liquor
3. ✗ tryptone
4. ✗ biotin

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 : 99 Question Id : 50131410892 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

The first genetically engineered and biotechnologically produced vaccine was against

Options :

1. ✗ AIDS
2. ✗ Small pox
3. ✗ Herpes simplex
4. ✓ Hepatitis B.

Question Number : 100 Question Id : 50131410893 Question Type : MCQ Option Shuffling : Yes Correct Marks : 1 Wrong Marks : 0

Microbial Fuel Cell is used for energy production in the form of _____

Options :

1. ✓ Electrical energy
2. ✗ Thermal energy
3. ✗ Mechanical energy
4. ✗ Methane