

# Telangana State Council Higher Education

## Notations :

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

|  |                     |
|--|---------------------|
| <b>Subject Name :</b>                          | Bio Technology      |
| <b>Creation Date :</b>                         | 2024-06-11 14:32:41 |
| <b>Duration :</b>                              | 120                 |
| <b>Total Marks :</b>                           | 120                 |
| <b>Display Marks:</b>                          | Yes                 |
| <b>Share Answer Key With Delivery Engine :</b> | Yes                 |
| <b>Actual Answer Key :</b>                     | Yes                 |
| <b>Change Font Color :</b>                     | No                  |
| <b>Change Background Color :</b>               | No                  |
| <b>Change Theme :</b>                          | No                  |
| <b>Help Button :</b>                           | No                  |
| <b>Show Reports :</b>                          | No                  |
| <b>Show Progress Bar :</b>                     | No                  |

## Bio Technology

|                                 |          |
|---------------------------------|----------|
| <b>Group Number :</b>           | 1        |
| <b>Group Id :</b>               | 38382336 |
| <b>Group Maximum Duration :</b> | 0        |
| <b>Group Minimum Duration :</b> | 120      |
| <b>Show Attended Group? :</b>   | No       |
| <b>Edit Attended Group? :</b>   | No       |
| <b>Break time :</b>             | 0        |
| <b>Group Marks :</b>            | 120      |

## Mathematics

|  |           |
|--|-----------|
| <b>Section Id :</b>                          | 383823103 |
| <b>Section Number :</b>                      | 1         |
| <b>Section type :</b>                        | Online    |
| <b>Mandatory or Optional :</b>               | Mandatory |
| <b>Number of Questions :</b>                 | 10        |
| <b>Number of Questions to be attempted :</b> | 10        |

|                              |           |
|------------------------------|-----------|
| Section Marks :              | 10        |
| Maximum Instruction Time :   | 0         |
| Sub-Section Number :         | 1         |
| Sub-Section Id :             | 383823103 |
| Question Shuffling Allowed : | Yes       |

Question Number : 1 Question Id : 3838235161 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If  $x = \alpha, y = \beta, z = \gamma$  is a positive integral solution of the equation  $x + y + z = 12$ , the probability that it is such that  $\alpha < \beta < \gamma$  is

Options :

1. ✓  $\frac{7}{55}$

2. ✗  $\frac{12}{55}$

3. ✗  $\frac{13}{55}$

4. ✗  $\frac{8}{55}$

Question Number : 2 Question Id : 3838235162 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following pairs of numbers is possible to be the regression coefficients for a data of two variables

Options :

1. ✗ (0.7, 3.2)

2. ✗ (-0.6, 0.5)

3. ✓ (0.85, 0.9)

4. ✗ (0.4, 2.6)

Question Number : 3 Question Id : 3838235163 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The order of convergence of the Newton's Raphson's method is

Options :

1. ✘ linear
2. ✔ quadratic
3. ✘ biquadratic
4. ✘ cubic

Question Number : 4 Question Id : 3838235164 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following numerical method is a multistep method to solve IVP or BVP's

Options :

1. ✘ Successive approximation method
2. ✔ Adams – Bashforth method
3. ✘ Runge – Kutta method
4. ✘ Euler's method

Question Number : 5 Question Id : 3838235165 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the Laplace transform of  $\int_0^t \frac{((1+2t)^2 - 1)e^{3t}}{t} dt = \frac{A}{S} + \frac{B}{(S-3)^2} + \frac{C}{(S-3)}$ , then

$3(A+B+C) =$

Options :

1. ✘ 8
2. ✔ 4

3. ✖ 12

4. ✖ 15

**Question Number : 6 Question Id : 3838235166 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Consider the following problem of vibration of a string. A tightly stretched string with fixed end points  $x=0$  and  $x=L$  is initially in a position given by  $y(x,0) = f(x)$ . It is released from this rest position and allowed to vibrate. The mathematical representation of this problem which depicts the displacement of the string  $y(x,t)$  at different times for different values of  $x$ ,  $0 \leq x \leq L$  is

**Options :**

1. ✖  $\frac{\partial y}{\partial x} = C^2 \frac{\partial^2 y}{\partial x^2}, y(x,0) = f(x), y(0,t) = 0, y(L,t) = 0$

2. ✖  $\frac{\partial y}{\partial t} = C^2 \frac{\partial^2 y}{\partial x^2}, y(0,t) = f(x), y(0,L) = 0, y(L,0) = 0, \left(\frac{\partial y}{\partial t}\right)_{t=0} = 0$

3. ✖  $\frac{\partial^2 y}{\partial x^2} = C^2 \frac{\partial^2 y}{\partial t^2}, y(x,0) = f(x), \left(\frac{\partial y}{\partial x}\right)_{x=0} = 0, y(0,L) = 0$

4. ✔  $\frac{\partial^2 y}{\partial t^2} = C^2 \frac{\partial^2 y}{\partial x^2}, y(x,0) = f(x), y(0,t) = 0, y(L,t) = 0, \left(\frac{\partial y}{\partial t}\right)_{t=0} = 0$

**Question Number : 7 Question Id : 3838235167 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

If  $x = f(t)$  changes the interval  $\alpha \leq t \leq \alpha + 2C$  to  $\beta \leq x \leq \beta + 2\pi$ , then  $\frac{f(t)}{\beta} =$

**Options :**

1. ✖  $t + \alpha$

2. ✔  $\frac{t}{\alpha}$

3. ✘  $at$

4. ✘  $t - \alpha$

Question Number : 8 Question Id : 3838235168 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is a convergent series?

Options :

1. ✘  $\sum_{n=0}^{\infty} \frac{3n^2 + 5n + 6}{5n^2 + 6n + 3}$

2. ✘  $\sum_{n=0}^{\infty} (-1)^n \frac{2n+3}{2n}$

3. ✘  $\sum_{n=0}^{\infty} \frac{2^n - 2}{2^n + 1}$

4. ✔  $\sum_{n=1}^{\infty} (-1)^{n+1} \frac{1}{\log(n+1)}$

Question Number : 9 Question Id : 3838235169 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A and B are two nonsingular matrices. If the characteristic equation of A is

$a_0x^3 + a_1x^2 + a_2x + a_3 = 0$  and characteristic equation of  $B^{-1}A^{-1}B$  is

$b_0x^3 + b_1x^2 + b_2x + b_3 = 0$ , then

Options :

1. ✘  $\frac{a_0}{b_0} = \frac{a_1}{b_1} = \frac{a_2}{b_2} = \frac{a_3}{b_3}$

2. ✔  $\frac{a_0}{b_3} = \frac{a_1}{b_2} = \frac{a_2}{b_1} = \frac{a_3}{b_0}$

3. ✘  $a_0 + a_1 + a_2 + a_3 = b_0 + b_1 + b_2 + b_3$

4. ✘  $a_0 a_1 a_2 a_3 = b_0 b_1 b_2 b_3$

Question Number : 10 Question Id : 3838235170 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the linear system of non homogeneous equation in three variables  $AX = B$ .

$\rho(A)$  and  $\rho([A : B])$  are roots of the equation  $x^2 + bx + c = 0$ .  $AX = B$  has infinite number of solutions, then the option containing two possible pairs of values of  $(b, c)$  is

Options :

1. ✘  $(1, 1) (2, 1)$

2. ✘  $(1, -2) (4, -4)$

3. ✔  $(-4, 4) (-2, 1)$

4. ✘  $(1, 1) (1, 2)$

## Bio Technology

|                                       |           |
|---------------------------------------|-----------|
| Section Id :                          | 383823104 |
| Section Number :                      | 2         |
| Section type :                        | Online    |
| Mandatory or Optional :               | Mandatory |
| Number of Questions :                 | 110       |
| Number of Questions to be attempted : | 110       |
| Section Marks :                       | 110       |
| Maximum Instruction Time :            | 0         |
| Sub-Section Number :                  | 1         |
| Sub-Section Id :                      | 383823104 |
| Question Shuffling Allowed :          | Yes       |

Question Number : 11 Question Id : 3838235171 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Spontaneous generation or Abiogenesis was disproved by

Options :

1. ✘ Antony van Leeuwenhoek

2. ✘ Aristotle
3. ✔ Louis Pasteur
4. ✘ Ferdinand Cohn

**Question Number : 12 Question Id : 3838235172 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Endoplasmic reticulum and Golgi bodies are present in

**Options :**

1. ✘ Prokaryotic cell
2. ✘ Animal cell only
3. ✘ Plant cell only
4. ✔ Both animal and plant cell

**Question Number : 13 Question Id : 3838235173 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Fimbriae in prokaryotes is used for

**Options :**

1. ✘ Motility
2. ✔ Attachment or adhesion
3. ✘ Conjugation
4. ✘ Motility, attachment and conjugation

**Question Number : 14 Question Id : 3838235174 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Transduction is a process of

**Options :**

1. ✘ Uptake of exogenous DNA by microbe
2. ✘ Sexual transfer of DNA from two microbes
3. ✔ Transfer of genetic material through a bacteriophage or a virus
4. ✘ Uptake of exogenous DNA by microbe and Sexual transfer of DNA from two microbes

**Question Number : 15 Question Id : 3838235175 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Axenic culture means

**Options :**

1. ✘ Study of characteristics of a culture, in an environment of other living organisms
2. ✔ Study of characteristics of a culture, in an environment free of other living organisms
3. ✘ Study of characteristics of a culture, of living organisms without environment effect
4. ✘ Study of characteristics of a culture, in absence of nutrients

**Question Number : 16 Question Id : 3838235176 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Photo lithotrophic autotroph organisms use

**Options :**

1. ✔ Light energy, inorganic electron source and  $\text{CO}_2$  as its carbon source
2. ✘ Chemical energy, organic electron source and  $\text{CO}_2$  as its carbon source
3. ✘ Light energy, organic electron source and organic compounds as its carbon source
4. ✘ Chemical energy, inorganic electron source and  $\text{CO}_2$  as its carbon source

**Question Number : 17 Question Id : 3838235177 Question Type : MCQ Option Shuffling : Yes**



**Display Question Number : Yes**

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

Electron transport chain mechanism for generation of ATP is carried out in

**Options :**

1. ✘ Outer membrane of Endoplasmic reticulum
2. ✘ Mitochondrial Matrix
3. ✔ Mitochondrial folded inner membrane cristae
4. ✘ In Golgi bodies

**Question Number : 18 Question Id : 3838235178 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Microbes at exponential growth phase will have

**Options :**

1. ✘ Rate of growth is inversely proportional to division
2. ✔ Rate of growth and division is constant and maximal
3. ✘ Population is not uniform in terms of chemical and physical properties during this phase
4. ✘ Population is uniform but not in terms of chemical and physical properties during this phase

**Question Number : 19 Question Id : 3838235179 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Chemoorganotrophic heterotroph organisms use

**Options :**

1. ✔ Organic compounds as sources of energy, hydrogen, electrons and carbon
2. ✘ Light energy, organic electron source and organic compounds as its carbon source
3. ✘ Chemical energy, inorganic electron source and CO<sub>2</sub> as its carbon source
4. ✘

Organic compounds as sources of energy, hydrogen, inorganic compounds for electrons and carbon

**Question Number : 20 Question Id : 3838235180 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Fermentation is a process where

**Options :**

1. ✘ Glucose is converted into pyruvate in the presence of oxygen
2. ✘ Glucose is converted into pyruvate in the absence of oxygen
3. ✔ Glucose is converted into lactate and / or alcohol in the absence of oxygen
4. ✘ Glucose is converted into lactate and / or alcohol in the presence of oxygen

**Question Number : 21 Question Id : 3838235181 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Lyophilization or freeze-drying involves

**Options :**

1. ✘ Freezing the cells in liquid nitrogen
2. ✔ Sublimation of cells water by its drying under vacuum
3. ✘ Making into powder by dry heat
4. ✘ Wet heat and freezing of cells

**Question Number : 22 Question Id : 3838235182 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

The following is not an inhibitor of protein synthesis

**Options :**

1. ✘ Streptomycin

2. ✓ Penicillin
3. ✗ Tetracyclin
4. ✗ Erythromycin

Question Number : 23 Question Id : 3838235183 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which among the following is a compound lipid

Options :

1. ✗ Fats
2. ✗ Oils
3. ✓ Phospholipids
4. ✗ Waxes

Question Number : 24 Question Id : 3838235184 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Select a conjugated protein

Options :

1. ✗ Collagen
2. ✗ Albumin
3. ✗ Keratin
4. ✓ Hemoglobin

Question Number : 25 Question Id : 3838235185 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which one is incorrect with regard to  $pK_a$ ?

Options :

- ✘ In  $pK_a$ ,  $K_a$  is acid dissociation constant
- ✔  $pK_a$  is measurement of the concentration of hydrogen ions in a solution
- ✘ Higher the  $K_a$  the stronger the acid
- ✘  $pK_a$  is used to show the strength of an acid

Question Number : 26 Question Id : 3838235186 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which is correct for bisubstrate reactions?

Options :

- ✔ They are classified into sequential and double displacement reactions
- ✘ The most widely used rate expression for them is Michaelis- Menten kinetics
- ✘ Enzyme concentration is in excess of the substrate in the medium
- ✘ The rate is mainly limited by the substrate concentration

Question Number : 27 Question Id : 3838235187 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Select the wrong option regarding enthalpy

Options :

Enthalpy is the measure of total heat in a thermodynamic system where pressure is

- ✘ constant
- ✘ It is represented as  $\Delta H = \Delta E + P \Delta V$
- ✔ It is a measure of disorder in a thermodynamic system
- ✘ It represents the heat constant of a system

Question Number : 28 Question Id : 3838235188 Question Type : MCQ Option Shuffling : Yes

**Display Question Number : Yes**

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

Mitochondria known as the “powerhouse” of the cell, generates ATP *via* oxidative phosphorylation complexes. Which among the following is known as complex I?

**Options :**

1. ✘ Succinate dehydrogenase
2. ✘ Ubiquinol–cytochrome c oxidoreductase
3. ✘ Cytochrome c oxidase
4. ✔ NADH: ubiquinone oxidoreductase

**Question Number : 29 Question Id : 3838235189 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Which of the following is not a transport protein?

**Options :**

1. ✘ Sodium-potassium pump
2. ✔ Mechano-Sensitive Ion Channels
3. ✘ The sodium-calcium exchanger
4. ✘ Lactose permease

**Question Number : 30 Question Id : 3838235190 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Which of the following are positive regulators of cell cycle?

**Options :**

1. ✔ Cyclin and cyclin dependent kinases
2. ✘ Retinoblastoma protein
3. ✘ P53

4. ✖ P21

**Question Number : 31 Question Id : 3838235191 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which among the following belongs to the class of second messengers?

**Options :**

1. ✖ Hormones, neurotransmitters
2. ✖ Pharmacological agonists
3. ✔ cAMP, cGMP, DNA binding
4. ✖ Ions, protein kinases

**Question Number : 32 Question Id : 3838235192 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

What are Alleles?

**Options :**

1. ✖ two genes that occupy the different position on non-homologous chromosomes and that cover the same trait
2. ✔ two genes that occupy the same position on homologous chromosomes and that cover the same trait
3. ✖ two genes that occupy the same position on non-homologous chromosomes and that cover different trait
4. ✖ two genes that occupy the same position on homologous chromosomes and that cover different trait

**Question Number : 33 Question Id : 3838235193 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

In Mendel's dihybrid cross study mating that involve parents that differ in two genes (two independent traits) the F<sub>2</sub> generation phenotype ratio would be

**Options :**

1. ✘ 1:2:1
2. ✘ 9:3:1:3
3. ✔ 9:3:3:1
4. ✘ 9:1:3:3

**Question Number : 34 Question Id : 3838235194 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Polygenic Trait means

**Options :**

Several genes influence different traits; genes for a polygenic trait may be scattered

1. ✘ along the same chromosome

Several genes influence a trait; genes for a polygenic trait are not scattered along the

2. ✘ same chromosome or different chromosomes

Several genes influence different traits; genes for a polygenic trait are not scattered

3. ✘ along the same chromosome or on different chromosomes

Several genes influence a trait; genes for a polygenic trait may be scattered along the

4. ✔ same chromosome or located on different chromosomes

**Question Number : 35 Question Id : 3838235195 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Frequency of crossing-over between linked genes is

**Options :**

1. ✘ Inversely proportional to the distance between them
2. ✔ Proportional to the distance between them
3. ✘ Inversely proportional to the square of the distance between them
4. ✘ Proportional to the square of the distance between them

**Question Number : 36 Question Id : 3838235196 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Epistasis refers to

**Options :**

1. ✘ No variation resulting from the interaction of alleles at different loci
2. ✘ Variation resulting from the interaction of alleles at same loci
3. ✘ No variation resulting from the interaction of alleles at different chromosomes
4. ✔ Variation resulting from the interaction of alleles at different loci

**Question Number : 37 Question Id : 3838235197 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

What is transition and transversion mutations respectively means?

**Options :**

1. ✘ Purine is replaced by pyrimidine in transition and purine is replaced by purine in transversion
2. ✔ Purine is replaced by purine in transition and purine is replaced by pyrimidine in transversion
3. ✘ Purine is replaced by purine in transition and transversion
4. ✘ Pyrimidine is replaced by pyrimidine in transition and in transversion

**Question Number : 38 Question Id : 3838235198 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

In structural chromosome mutations pericentric inversion mutation means

**Options :**

A portion in the chromosome is reversed and gets inserted back into the other arm of

1. ✔ the same chromosome
2. ✘ Some part of the chromosome is deleted and new is added



A portion in the chromosome is reversed and gets inserted back into the same arm of

3. ✘ the chromosome
4. ✘ A portion in the chromosome is reversed and gets inserted back into the other chromosome

**Question Number : 39 Question Id : 3838235199 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

UV light effect the DNA by causing

**Options :**

1. ✘ G-G dimerization
2. ✘ G-C dimerization
3. ✔ T-T dimerization
4. ✘ A-T dimerization

**Question Number : 40 Question Id : 3838235200 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Smaller subunit of ribosomes binds to what for initiation of translation

**Options :**

1. ✘ DNA
2. ✔ mRNA
3. ✘ tRNA
4. ✘ microsatellite RNA

**Question Number : 41 Question Id : 3838235201 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Promotor and operator are cis sites on DNA for binding of

**Options :**

1. ✓ RNA polymerase binds to promotor and repressor binds to operator
2. ✗ Repressor binds to promotor and RNA polymerase binds to operator
3. ✗ DNA polymerase binds to promotor and repressor binds to operator
4. ✗ DNA polymerase binds to promotor and RNA polymerase binds to operator

**Question Number : 42 Question Id : 3838235202 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Post transcriptional modification includes

**Options :**

1. ✗ RNA editing
2. ✗ Phosphorylation, Acetylation
3. ✓ 5' capping, 3' poly adenylating and intron removal by splicing
4. ✗ Ubiquitination

**Question Number : 43 Question Id : 3838235203 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Function of signal sequences in translation

**Options :**

1. ✗ Protein modifications
2. ✓ Protein targeting to other organelles for further protein synthesis
3. ✗ Protein degradation
4. ✗ Protein transport to target specific sites for function

**Question Number : 44 Question Id : 3838235204 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Mismatch repair mechanism in DNA deals with

**Options :**

1. ✘ Deamination
2. ✘ Adducts and cross-links
3. ✘ Double stranded breaks
4. ✔ Replication errors

**Question Number : 45 Question Id : 3838235205 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Hardy-Weinberg Law / equilibrium model in population genetics means

**Options :**

- Allele and genotype frequencies in a population do not remain constant in the absence
1. ✘ of other evolutionary influences
- Allele and genotype frequencies in a population remain constant in the absence of other
2. ✔ evolutionary influences
- Allele and genotype frequencies in a population remain constant in the presence of other
3. ✘ evolutionary influences
- Allele and genotype frequencies in a population defer in the absence of other
4. ✘ evolutionary influences

**Question Number : 46 Question Id : 3838235206 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Which of the following is a primary metabolite?

**Options :**

1. ✘ Antibiotics
2. ✔ Ethanol
3. ✘ Penicillin

4. ✖ Taxol

Question Number : 47 Question Id : 3838235207 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Antibiotics are substances produced by microorganisms to

Options :

1. ✔ Inhibit the growth of other microorganisms
2. ✖ Enhance the growth of other microorganisms
3. ✖ Act as nutrients for other microorganisms
4. ✖ Regulate microbial metabolism

Question Number : 48 Question Id : 3838235208 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example of a microbial pigment used in industrial applications?

Options :

1. ✖ Chlorophyll
2. ✖ Melanin
3. ✔ Carotene
4. ✖ Hemoglobin

Question Number : 49 Question Id : 3838235209 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Membrane-based bio separation methods rely on the principle of

Options :

1. ✖ Centrifugation

2. ✓ Filtration
3. ✗ Precipitation
4. ✗ Sedimentation

**Question Number : 50 Question Id : 3838235210 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

In immobilization of enzymes, the term "carrier" refers to

**Options :**

1. ✗ The substrate of the enzyme
2. ✓ The support material for enzyme attachment
3. ✗ The product of enzyme catalysis
4. ✗ The cofactor of the enzyme

**Question Number : 51 Question Id : 3838235211 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Recombinant proteins are often produced on a large scale using

**Options :**

1. ✗ Conventional chemical methods
2. ✗ Plant cells
3. ✓ Microbial systems
4. ✗ Inorganic catalysts

**Question Number : 52 Question Id : 3838235212 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Citric acid is widely used in the food and beverage industry. It is primarily produced by

**Options :**

1. ✘ Bacteria
2. ✘ Yeast
3. ✔ Fungi
4. ✘ Algae

**Question Number : 53 Question Id : 3838235213 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

What is the purpose of a fed-batch culture in bioprocess technology?

**Options :**

1. ✔ To feed the cells with nutrients continuously
2. ✘ To maintain a constant volume of the culture
3. ✘ To induce stress on the cells
4. ✘ To stop the bioprocess abruptly

**Question Number : 54 Question Id : 3838235214 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Which of the following is a common aerobic process for the stabilization of solid wastes?

**Options :**

1. ✘ Incineration
2. ✔ Composting
3. ✘ Landfilling
4. ✘ Pyrolysis

**Question Number : 55 Question Id : 3838235215 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Bioremediation can be applied to clean up contaminants in

**Options :**

1. ✘ Air only
2. ✘ Water only
3. ✔ Soil, water, and air
4. ✘ Metals only

**Question Number : 56 Question Id : 3838235216 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Reverse-phase chromatography involves the use of a stationary phase that is

**Options :**

1. ✔ Nonpolar
2. ✘ Polar
3. ✘ Neutral
4. ✘ Electrically charged

**Question Number : 57 Question Id : 3838235217 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Penicillin belongs to which class of antibiotics?

**Options :**

1. ✘ Aminoglycosides
2. ✘ Cephalosporins
3. ✔ Beta-lactams
4. ✘ Tetracyclines

**Question Number : 58 Question Id : 3838235218 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Exopolysaccharides are often produced by microorganisms in response to

**Options :**

1. ✓ Low nutrient availability
2. ✗ High temperatures
3. ✗ Presence of antibiotics
4. ✗ Sunlight exposure

**Question Number : 59 Question Id : 3838235219 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Which phase of microbial growth is characterized by a balance between cell division and cell death?

**Options :**

1. ✗ Lag phase
2. ✗ Exponential phase
3. ✓ Stationary phase
4. ✗ Death phase

**Question Number : 60 Question Id : 3838235220 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

The Monod equation describes the relationship between

**Options :**

1. ✗ Substrate concentration and product formation rate
2. ✓ Specific growth rate and substrate concentration



3. ✘ Biomass concentration and time
4. ✘ Product formation rate and biomass concentration

**Question Number : 61 Question Id : 3838235221 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

The specific growth rate ( $\mu$ ) is defined as

**Options :**

1. ✔ The rate of biomass production per unit time
2. ✘ The rate of substrate utilization per unit biomass
3. ✘ The rate of product formation per unit substrate
4. ✘ The rate of nutrient consumption per unit volume

**Question Number : 62 Question Id : 3838235222 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Agitation in a bioreactor is essential for

**Options :**

1. ✔ Mixing nutrients and maintaining uniform conditions
2. ✘ Sterilizing the medium
3. ✘ Reducing oxygen concentration
4. ✘ Minimizing microbial contamination

**Question Number : 63 Question Id : 3838235223 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which sterilization method is suitable for heat-sensitive media and is commonly used in the pharmaceutical industry?

**Options :**

1. ✘ Autoclaving
2. ✔ Membrane filtration
3. ✘ Pasteurization
4. ✘ Dry heat sterilization

**Question Number : 64 Question Id : 3838235224 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Rheology of fermentation fluids refers to the study of

**Options :**

1. ✘ Heat transfer properties
2. ✔ Flow and deformation characteristics
3. ✘ Oxygen transfer rates
4. ✘ pH variations

**Question Number : 65 Question Id : 3838235225 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Biot number is associated with

**Options :**

1. ✘ Rheology of fluids
2. ✘ Mass transfer
3. ✘ Conduction
4. ✔ Heat transfer

**Question Number : 66 Question Id : 3838235226 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which of the following component is a common nitrogen source in fermentation media?

**Options :**

1. ✘ Glucose
2. ✔ Peptone
3. ✘ Phosphate
4. ✘ Ethanol

**Question Number : 67 Question Id : 3838235227 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

The purpose of a plug-flow reactor is to

**Options :**

1. ✘ Minimize reactor volume
2. ✔ Maximize contact time between substrate and microorganisms
3. ✘ Allow continuous addition and removal of substrate
4. ✘ Enhance heat transfer

**Question Number : 68 Question Id : 3838235228 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Which parameter is not commonly monitored in a bioreactor?

**Options :**

1. ✘ Dissolved oxygen
2. ✘ Carbon dioxide concentration
3. ✔ Ambient light intensity
4. ✘ Cell density

Question Number : 69 Question Id : 3838235229 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The concept of totipotency in plants was given by

Options :

1. ✘ Schwan
2. ✘ Morgan
3. ✘ Murashige
4. ✔ Haberlandt

Question Number : 70 Question Id : 3838235230 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which group of phytohormone in plants is used for shoot multiplication under *in vitro* Conditions?

Options :

1. ✘ Auxin
2. ✔ Cytokinin
3. ✘ GA<sub>3</sub>
4. ✘ Abscisic Acid

Question Number : 71 Question Id : 3838235231 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Hairy root cultures in plants are induced by infection with which bacterial sps

Options :

1. ✘ *Bacillus*
2. ✔ *Agrobacterium*
3. ✘ *Staphylococcus*
4. ✘ *Pseudomonas*

**Question Number : 72 Question Id : 3838235232 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

In the production of transgenic plants the following technique is used for DNA transfer

**Options :**

1. ✓ Gene Gun
2. ✗ PCR
3. ✗ RT PCR
4. ✗ Electrophoresis

**Question Number : 73 Question Id : 3838235233 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Cell suspension cultures are grown in

**Options :**

1. ✗ Semisolid media
2. ✓ Liquid media
3. ✗ Solid media
4. ✗ Gaseous media

**Question Number : 74 Question Id : 3838235234 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Contact Inhibition means

**Options :**

1. ✗ Cells stop growing without any reason
2. ✓ Cells stop growing once the entire surface is spread
3. ✗ Uninhibited growth

4. ✘ Cells keep growing without any inhibition

Question Number : 75 Question Id : 3838235235 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

L-Glutamine amino acid is added in the animal cell media because

Options :

1. ✘ It is an energy source

2. ✘ It is a carbon source for nucleic acid for synthesis

3. ✔ It is an energy and carbon source for cell culture

4. ✘ Cells cannot produce it

Question Number : 76 Question Id : 3838235236 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Finite cell lines are known as

Options :

1. ✘ Fresh cell lines

2. ✘ Immortal cell lines

3. ✔ Cell lines which grow through a limited number of cell generation

4. ✘ Secondary cell lines

Question Number : 77 Question Id : 3838235237 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Humanized monoclonal antibodies are a combination of

Options :

1. ✔ Heavy and light chain constant domains are from human and variable from mouse

2. ✘ Heavy chain constant domain from mouse and light chain constant domain from human

3. ✘ Heavy and light chain constant domains and variable from mouse
4. ✘ Heavy and light chain constant domains are from mouse and variable from human

**Question Number : 78 Question Id : 3838235238 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Transgenic and knock out animal's means

**Options :**

1. ✘ Gene knocked out and new gene added animals
2. ✘ Gene knocked out but no new gene added animals
3. ✘ Gene not removed but new gene added animals
4. ✔ New Gene added and existing gene knocked out animals

**Question Number : 79 Question Id : 3838235239 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Is Immunity hereditary?

**Options :**

1. ✘ Yes, maternal derived
2. ✘ Yes, paternal derived
3. ✔ Non-hereditary
4. ✘ Maternal and paternal derived

**Question Number : 80 Question Id : 3838235240 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

What are Haptens?

**Options :**

1. ✘ Antigens which induce low immune response
2. ✔ Antigens which are not immunogenic on their own
3. ✘ Antigens which induce high immune response
4. ✘ Antigens which are nonspecific stimulators of immune response

**Question Number : 81 Question Id : 3838235241 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Best antigen presenting cell is

**Options :**

1. ✘ Mast cell
2. ✘ B cell
3. ✘ Neutrophils
4. ✔ Dendritic cells

**Question Number : 82 Question Id : 3838235242 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Hypersensitivity –I is associated with what type of immune complex?

**Options :**

1. ✘ IgM antibody + Protein antigen complex
2. ✘ IgG antibody + Protein antigen complex
3. ✔ IgE antibody + Allergen complex
4. ✘ IgA antibody + antigen complex

**Question Number : 83 Question Id : 3838235243 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**



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

Antibody can become a killer when it is bound with

**Options :**

1. ✘ Cytokines
2. ✘ Interleukins
3. ✘ Chemokines
4. ✔ Complement

**Question Number : 84 Question Id : 3838235244 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Chronic rejection mechanism in host vs graft is caused by

**Options :**

1. ✔ CD4+ T cells
2. ✘ Antibody
3. ✘ CD8+ T cells
4. ✘ Macrophages

**Question Number : 85 Question Id : 3838235245 Question Type : MCQ Option Shuffling : Yes**

**Display Question Number : Yes**

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

Plasma treatment used for covid patients provides

**Options :**

1. ✘ Blood
2. ✘ Fibrinogen
3. ✔ Antibodies for CoV-2 virus
4. ✘ Immune tolerance to CoV-2 virus

Question Number : 86 Question Id : 3838235246 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which one of the following is an autoimmune disease?

Options :

1. ✘ Tuberculosis
2. ✘ Covid-19
3. ✘ Common cold
4. ✔ Type 1 Diabetes

Question Number : 87 Question Id : 3838235247 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Covaxin, a vaccine developed by Bharat Biotech for covid-19 is

Options :

1. ✘ DNA based vaccine
2. ✘ Protein based Vaccine
3. ✔ Inactivated Virus based vaccine
4. ✘ mRNA based vaccine

Question Number : 88 Question Id : 3838235248 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which type of restriction enzymes are used in genetic engineering work

Options :

1. ✘ Type I
2. ✔ Type II
3. ✘ Type III
4. ✘ Type IV

Question Number : 89 Question Id : 3838235249 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the vector which is not a phage vector among the following?

Options :

1. ✓ pBR322
2. ✗ MP13MP2
3. ✗  $\lambda$ gt 10
4. ✗  $\lambda$ ZAP11

Question Number : 90 Question Id : 3838235250 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

pBluscript II KS is a

Options :

1. ✗ Plasmid
2. ✗ Cosmid
3. ✓ Phagemid
4. ✗ Artificial chromosome

Question Number : 91 Question Id : 3838235251 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which among the following is incorrect with reference to Yeast Artificial Chromosomes?

Options :

1. ✗ YACs have ORS, Telomere and Centromere
2. ✗ They are used for physical mapping of complex genomes
3. ✗ They can be used to express eukaryotic proteins that require post translational modifications

4. ✓ YAC do not favor cloning of large fragments of DNA

**Question Number : 92 Question Id : 3838235252 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

For expression of eukaryotic gene in a prokaryotic system, which sequence has to be inserted from its first codon?

**Options :**

1. ✗ Kozak sequence
2. ✓ Shine Dalgarno sequence
3. ✗ Enhancers
4. ✗ Silencers

**Question Number : 93 Question Id : 3838235253 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

The correct sequence of enzymes used for cDNA library preparation is

**Options :**

1. ✓ Reverse transcriptase, RNAs H, DNA polymerase, Terminal transferase
2. ✗ RNAs H, DNA polymerase, Reverse transcriptase, Terminal transferase
3. ✗ DNA polymerase, Terminal transferase, Reverse transcriptase, RNAs H
4. ✗ Reverse transcriptase, Terminal transferase, RNAs H, DNA polymerase

**Question Number : 94 Question Id : 3838235254 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which vector is not suitable for Genomic DNA library construction?

**Options :**

1. ✗  $\lambda$  replacement vector

2. ✘ Yeast Artificial Chromosomes
3. ✘ Bacterial Artificial Chromosomes
4. ✔ Plasmids

**Question Number : 95 Question Id : 3838235255 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Match the following

|   |                       |   |   |
|---|-----------------------|---|---|
| X | Ribosome binding site | 1 | Enhance transcription                       |
| Y | Promoter              | 2 | Shine Dalgarno Sequence                     |
| Z | Enhancer              | 3 | Molecular Switches to turn on transcription |

**Options :**

1. ✔ X-2; Y-3; Z-1
2. ✘ X-1; Y-2; Z-3
3. ✘ X-3; Y-1; Z-2
4. ✘ X-3; Y-2, Z-1

**Question Number : 96 Question Id : 3838235256 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which is incorrect with reference to transposon?

**Options :**

1. ✘ It is known as jumping genes
2. ✘ It was first discovered by Barbara Mcclintock
3. ✘ Retrotransposons can move through RNA intermediates
4. ✔ 2/3 of human genome is made up of transposons

Question Number : 97 Question Id : 3838235257 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which one makes correct components of a PCR reaction?

Options :

1. ✘ DNA template, Primers, DNTPs
2. ✘ DNA polymerase, DNTPs, Primers, DNA template
3. ✔ DNA template, Taq DNA polymerase, Primers, DNTPs
4. ✘ DNA template, DNTPs, Taq DNA polymerase

Question Number : 98 Question Id : 3838235258 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which technique is not used for site directed mutagenesis?

Options :

1. ✘ Oligonucleotide directed mutagenesis
2. ✘ Cassette mutagenesis
3. ✔ Physical mutagenesis
4. ✘ SDM with PCR

Question Number : 99 Question Id : 3838235259 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which is an endonuclease in CRISPR Cas9 Technique?

Options :

1. ✘ gRNA
2. ✔ Cas 9
3. ✘ PAM
4. ✘ Cr RNA

Question Number : 100 Question Id : 3838235260 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which is correct regarding *ex vivo* gene therapy?

Options :

1. ✘ Therapeutic Genes are transferred to germ line cells
2. ✔ Cells are modified outside body and transferred back to the body
3. ✘ Genes are changed in cells when cells are inside the body
4. ✘ Luxturna is an example of *ex vivo* gene therapy

Question Number : 101 Question Id : 3838235261 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which blotting technique is used for detection of proteins?

Options :

1. ✘ Southern blotting
2. ✘ Northern blotting
3. ✔ Western blotting
4. ✘ Eastern blotting

Question Number : 102 Question Id : 3838235262 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a variant of BLAST?

Options :

1. ✘ BLASTX
2. ✔ TBLASTNX

3. ✖ BLASTP

4. ✖ BLASTN

Question Number : 103 Question Id : 3838235263 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Proteomics refers to the study of

Options :

1. ✖ Set of proteins in a specific region of the cell
2. ✖ Biomolecules
3. ✖ Set of proteins
4. ✔ The entire set of expressed proteins in the cell

Question Number : 104 Question Id : 3838235264 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The term Bioinformatics was coined by

Options :

1. ✖ J.D Watson
2. ✔ Pauline Hogeweg
3. ✖ Margaret Dayhoff
4. ✖ Frederic Sanger

Question Number : 105 Question Id : 3838235265 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the alignment does not assume that the two sequences in question have similarity over the entire length?

Options :

1. ✔ Local



2. ✘ Global
3. ✘ Heuristic
4. ✘ Clustal

**Question Number : 106 Question Id : 3838235266 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Clustal W is a \_\_\_\_\_ multiple alignment program available either as a stand-alone or on-line program.

**Options :**

1. ✘ exhaustive
2. ✘ block based
3. ✔ progressive
4. ✘ iterative

**Question Number : 107 Question Id : 3838235267 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which of the following is not a sequence alignment tool

**Options :**

1. ✘ BLAST
2. ✘ FASTA
3. ✘ CLUSTAL
4. ✔ ROSMAL

**Question Number : 108 Question Id : 3838235268 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which of the following is a data bank exclusively for proteins?

**Options :**

1. ✘ DDBJ
2. ✘ EMBL
3. ✘ Genbank
4. ✔ PDB

**Question Number : 109 Question Id : 3838235269 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which method is commonly employed for predicting the energetically favorable binding pose of a ligand with a target protein?

**Options :**

1. ✘ Molecular dynamics simulation
2. ✘ Quantum mechanics
3. ✔ Docking simulation
4. ✘ Monte Carlo simulation

**Question Number : 110 Question Id : 3838235270 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which type of molecular modeling method is particularly suitable for studying large biomolecular systems, such as proteins and nucleic acids?

**Options :**

1. ✘ Quantum mechanics
2. ✔ Molecular dynamics simulation
3. ✘ Docking simulation
4. ✘ Energy minimization

Question Number : 111 Question Id : 3838235271 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What type of controller is commonly used to regulate temperature in a bioreactor?

Options :

1. ✓ PID controller
2. ✗ ON/OFF controller
3. ✗ Bang-bang controller
4. ✗ Proportional controller

Question Number : 112 Question Id : 3838235272 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a bioreactor, what is the term used to describe the resistance to mass transfer across the gas-liquid interface?

Options :

1. ✗ Interfacial tension
2. ✗ Gas holdup
3. ✗ Mass transfer coefficient
4. ✓ Film thickness

Question Number : 113 Question Id : 3838235273 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example of in-situ bioremediation?

Options :

1. ✗ Pumping contaminated groundwater to the surface for treatment
2. ✗ Excavating contaminated soil and treating it in a bioreactor
3. ✓ Injecting microorganisms directly into the contaminated site

4. ✖ Spraying chemical agents onto polluted surfaces

Question Number : 114 Question Id : 3838235274 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example of a primary metabolite?

Options :

1. ✖ Antibiotics

2. ✖ Alkaloids

3. ✔ Amino acids

4. ✖ Flavonoids

Question Number : 115 Question Id : 3838235275 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which NCBI database is used for searching and retrieving biomedical literature?

Options :

1. ✖ GenBank

2. ✔ PubMed

3. ✖ UniProt

4. ✖ BLAST

Question Number : 116 Question Id : 3838235276 Question Type : MCQ Option Shuffling : Yes  
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Nucleosome a repeating structural unit within eukaryotic chromatin is made up of

Options :

140 bp of DNA making 1.65 negative super helical turn wrapped around a hexamer of

1. ✖ histones

2. ✖

146 bp of DNA making 1.65 negative super helical turn wrapped around a dimer of histones

140 bp of DNA making 1.65 negative super helical turn wrapped around an octamer  
3. ✘ of histones

146 bp of DNA making 1.65 negative super helical turn wrapped around an octamer  
4. ✔ of histones

**Question Number : 117 Question Id : 3838235277 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which sequencing technique relies on the synthesis of complementary strands in the presence of chain-terminating dideoxynucleotides?

**Options :**

1. ✔ Sanger sequencing
2. ✘ Next-generation sequencing
3. ✘ Polymerase Chain Reaction (PCR)
4. ✘ Pyrosequencing

**Question Number : 118 Question Id : 3838235278 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes**

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

Which among the following is true for RFLP?

**Options :**

1. ✘ It cannot be used as a genetic marker
2. ✔ It refers to differences (or variations) in the DNA sequences at sites recognized by restriction enzymes
3. ✘ Restriction enzymes are not used for digesting DNA in this process
4. ✘ It is a PCR based marker

Question Number : 119 Question Id : 3838235279 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which among the following is not a transgenic plant?

Options :

1. ✘ Bt Cotton
2. ✘ Golden Rice
3. ✔ Samba Mahsuri
4. ✘ FLAVR SAVR

Question Number : 120 Question Id : 3838235280 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Cells signalling between distant cells mediated by hormones released from specific cells that travel to target cells, producing a slower, long-lasting response is known as

Options :

1. ✘ Paracrine signalling
2. ✔ Endocrine signalling
3. ✘ Autocrine signalling
4. ✘ Direct signalling