

Telangana State Council Higher Education

Notations :

- Options shown in **green** color and with  icon are correct.
- Options shown in **red** color and with  icon are incorrect.

Question Paper Name :	Bio Technology 29th May 2026 Shift 1
Subject Name :	Bio Technology
Creation Date :	2026-05-29 12:45:13
Duration :	120
Total Marks :	120
Display Marks:	Yes
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Bio Technology

Group Number :	1
Group Id :	10513138
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	120

Mathematics

Section Id :	10513186
Section Number :	1
Section type :	Online

Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	10
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	10513186
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 1051314921 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The matrix $\begin{bmatrix} 1 & 1+i & 2i \\ 1-i & 3 & 4 \\ -2i & 4 & 5 \end{bmatrix}$ has

Options :

1. ✓ only real eigen values
2. ✗ eigen values of the form $a+ib$, $a \neq 0$, $b \neq 0$
3. ✗ eigen values of the form $x+iy$, $x = 0$
4. ✗ no inverse

Question Number : 2 Question Id : 1051314922 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

An eigen vector of the matrix $\begin{bmatrix} 3 & 2 \\ 1 & 2 \end{bmatrix}$ is

Options :

1. ✗ $\begin{bmatrix} 7 \\ 2 \end{bmatrix}$
2. ✗ $\begin{bmatrix} -2 \\ 1 \end{bmatrix}$

3. ✖ $\begin{bmatrix} -1 \\ 2 \end{bmatrix}$

4. ✔ $\begin{bmatrix} 5 \\ -5 \end{bmatrix}$

Question Number : 3 Question Id : 1051314923 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A convergent series from the given series is

Options :

1. ✖ $\sum_{n=1}^{\infty} \frac{1}{\sqrt{n}}$

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

3. ✖ $\sum_{n=1}^{\infty} \frac{3n^4 + 5}{n^2(n^2 + 4n + 5)}$

4. ✖ $\sum_{n=3}^{\infty} \frac{\log n}{n}$

Question Number : 4 Question Id : 1051314924 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the Fourier series of $f(x) = x^2$, $0 < x < 2$ is

$$f(x) = \frac{a_0}{2} + \sum_{n=1}^{\infty} a_n \cos(n\pi x) + \sum_{n=2}^{\infty} b_n \sin(n\pi x), \text{ then } b_2 =$$

Options :

1. ✖ zero since x^2 is an even function

2. ✖ $\int_0^2 x^2 \sin 2x dx$

3. ✖ $\int_0^2 x^2 \cos 2\pi x dx = -\frac{2}{\pi}$

4. ✔ $\int_0^2 x^2 \sin 2\pi x dx = -\frac{2}{\pi}$

Question Number : 5 Question Id : 1051314925 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If y_1, y_2 are two dependent solutions of a second order linear homogeneous differential equation then $y_1 y_2' - y_2 y_1'$ is

Options :

- 1. ✖ positive
- 2. ✖ negative
- 3. ✖ non zero
- 4. ✔ zero

Question Number : 6 Question Id : 1051314926 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The general solution of one dimensional wave equation $\frac{\partial^2 v}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$ is $u(x, t) =$

Options :

- 1. ✖ $f(x+ct)g(x-ct)$
- 2. ✔ $f(x+ct)+g(x-ct)$

3. ✖ $f(x-ct) + g(x-ct)$

4. ✖ $f(x+ct) \div g(x+ct)$

Question Number : 7 Question Id : 1051314927 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $F(x) = \begin{cases} 0, & x < -7 \\ \left(\frac{x}{a} + 1\right), & -7 < x < 7 \\ 1, & x > 7 \end{cases}$ represents probability distribution function of a

continuous random variable, then $a =$

Options :

1. ✖ -7

2. ✖ 21

3. ✖ 7

4. ✔ 14

Question Number : 8 Question Id : 1051314928 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Mean, Variance pair is given below. A pair representing the data of a binomial distribution is

Options :

1. ✖ $(7, 4)$

2. ✖ $(12, 5)$

3. ✔ $(15, 6)$

4. ✖

(18,10)

Question Number : 9 Question Id : 1051314929 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $x_0 = 1.2$ is the initial guess of the solution of $x^3 + 2x - 1 = 0$, then 1st iteration solution $x_1 =$

Options :

1. ✓ 0.705

2. ✗ 0.675

3. ✗ 0.815

4. ✗ 0.795

Question Number : 10 Question Id : 1051314930 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A multistep method used to solve differential equations is

Options :

1. ✗ Runge-Kutta 4th order differential method

2. ✗ Euler's modified method

3. ✓ Adams-Bashforth method

4. ✗ Successive approximation method

Bio Technology

Section Id :

10513187

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 :	10513187
Question Shuffling Allowed :	Yes

Question Number : 11 Question Id : 1051314931 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Origin of replication usually contains

Options :

1. ✖ GC Rich Sequences
2. ✖ GCG-Rich Sequences
3. ✖ No particular stretch of Sequences
4. ✔ AT-Rich Sequences

Question Number : 12 Question Id : 1051314932 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following cellular components is present in eukaryotic cells but absent in prokaryotic cells?

Options :

1. ✖ Plasma membrane
2. ✖ Ribosomes
3. ✔ Mitochondria
4. ✖ Cell wall

Question Number : 13 Question Id : 1051314933 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A bacterium has a generation time of 30 minutes. Starting with 1×10^4 (10000) cells, how many cells will be present after 2 hours?

Options :

1. ✖ 4×10^4
2. ✖ 8×10^4
3. ✔ 1.6×10^5
4. ✖ 6.4×10^5

Question Number : 14 Question Id : 1051314934 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following correctly matches a virus with its type of nucleic acid?

Options :

1. ✖ Poliovirus – double-stranded DNA
2. ✔ Influenza virus – negative-sense single-stranded RNA
3. ✖ Adenovirus – single-stranded RNA
4. ✖ HIV – single-stranded DNA

Question Number : 15 Question Id : 1051314935 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Viruses are considered as living organisms because they perform

Options :

1. ✖ Metabolism
2. ✖ Respiration

3. ✓ Replication

4. ✗ Multiply outside the host cell

Question Number : 16 Question Id : 1051314936 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

Genetic element / process		Characteristic	
A	F plasmid	I	Uptake of naked DNA
B	Transformation	II	Sex pilus formation
C	Generalized transduction	III	Random bacterial DNA transfer
D	Hfr strain	IV	High-frequency chromosomal gene transfer

Options :

1. ✓ A – II, B – I, C – III, D – IV

2. ✗ A – I, B – II, C – IV, D – III

3. ✗ A – III, B – IV, C – I, D – II

4. ✗ A – II, B – III, C – I, D – IV

Question Number : 17 Question Id : 1051314937 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The site of light reactions of photosynthesis occurs on

Options :

1. ✗ Stroma

2. ✗ Cytosol

3. ✓ Thylakoid membrane

4. ✗ Inner mitochondrial membrane

Question Number : 18 Question Id : 1051314938 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following yields the maximum ATP?

Options :

1. ✖ Glycolysis
2. ✖ Fermentation
3. ✔ Aerobic respiration
4. ✖ Anaerobic respiration

Question Number : 19 Question Id : 1051314939 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: Aerobic respiration is more efficient than anaerobic respiration.

Reason [R]: Oxygen allows complete oxidation of glucose.

The correct answer is

Options :

1. ✔ Both [A] and [R] are true and [R] is the correct explanation of [A]
2. ✖ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✖ [A] is true, but [R] is false
4. ✖ [A] is false, but [R] is true

Question Number : 20 Question Id : 1051314940 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What are the products of the light reaction utilized during the Calvin cycle?

Options :

1. ✖ Oxygen
2. ✖ NADH
3. ✔ ATP and NADPH
4. ✖ CO₂

Question Number : 21 Question Id : 1051314941 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the following organism which is a symbiotic nitrogen fixer?

Options :

1. ✖ Azotobacter
2. ✔ Rhizobium
3. ✖ Clostridium
4. ✖ Nitrosomonas

Question Number : 22 Question Id : 1051314942 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1		List-2	
A	<i>Azotobacter</i>	I	Anaerobic nitrogen fixer
B	<i>Clostridium</i>	II	Symbiotic nitrogen fixer
C	<i>Rhizobium</i>	III	Free-living aerobic fixer
D	Leghemoglobin	IV	Oxygen buffering protein

Options :

1. ✔ A – III, B – I, C – II, D – IV
2. ✖ A – I, B – III, C – IV, D – II

3. ✖ A – I, B – IV, C – II, D – III

4. ✖ A – IV, B – II, C – III, D – I

Question Number : 23 Question Id : 1051314943 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Select the enzyme complex responsible for biological nitrogen fixation?

Options :

1. ✖ Nitrate reductase

2. ✔ Nitrogenase

3. ✖ Nitrite reductase

4. ✖ Glutamine synthetase

Question Number : 24 Question Id : 1051314944 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: Tautomeric shifts in DNA bases are a source of spontaneous mutations.

Reason [R]: Rare tautomeric forms have altered hydrogen-bonding patterns.

The correct answer is

Options :

1. ✔ Both [A] and [R] are true and [R] is the correct explanation of [A]

2. ✖ Both [A] and [R] are true and [R] is not correct explanation of [A]

3. ✖ [A] is true, but [R] is false

4. ✖ [A] is false, but [R] is true

Question Number : 25 Question Id : 1051314945 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the obligatory intracellular microorganism?

Options :

1. ✖ *Mycoplasma*
2. ✔ *Chlamydia*
3. ✖ *Escherichia coli*
4. ✖ *Bacillus subtilis*

Question Number : 26 Question Id : 1051314946 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which among the following is not a key component of signal transduction process?

Options :

1. ✖ G protein coupled receptors
2. ✔ Reverse transcriptase
3. ✖ Second messengers
4. ✖ Phosphorylation cascade

Question Number : 27 Question Id : 1051314947 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: B-DNA is the most stable and predominant form of DNA under physiological conditions.

Reason [R]: B-DNA possesses major and minor grooves

The correct answer is

Options :

1. ✖ Both [A] and [R] are true and [R] is the correct explanation of [A]

2. ✓ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✗ [A] is true, but [R] is false
4. ✗ [A] is false, but [R] is true

Question Number : 28 Question Id : 1051314948 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the pH of 0.01 M HCl?

Options :

1. ✗ 1
2. ✓ 2
3. ✗ 3
4. ✗ 12

Question Number : 29 Question Id : 1051314949 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which buffer resists changes in pH most effectively?

Options :

1. ✓ pH = 2, pKa = 2
2. ✗ pH = 4, pKa = 5
3. ✗ pH = 7, pKa = 3
4. ✗ pH = 9, pKa = 5

Question Number : 30 Question Id : 1051314950 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1		List-2	
A	Apoenzyme	I	Non-protein part
B	Coenzyme	II	Protein part
C	Holoenzyme	III	Enzyme + cofactor
D	Active site	IV	Substrate-binding region

Options :

- ✓ A – II, B – I, C – III, D – IV
- ✗ A – I, B – II, C – IV, D – III
- ✗ A – III, B – IV, C – I, D – II
- ✗ A – IV, B – III, C – II, D – I

Question Number : 31 Question Id : 1051314951 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the checkpoint that controls entry into DNA replication

Options :

- ✗ G₂/M checkpoint
- ✗ Spindle checkpoint
- ✓ G₁/S checkpoint
- ✗ Metaphase checkpoint

Question Number : 32 Question Id : 1051314952 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If a mammalian cell completes one cell cycle in 24 hours and the S phase lasts 8 hours, what fraction of the cell cycle is spent in S phase?

Options :

1. ✖ $\frac{1}{2}$

2. ✔ $\frac{1}{3}$

3. ✖ $\frac{1}{4}$

4. ✖ $\frac{1}{8}$

Question Number : 33 Question Id : 1051314953 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Determine the second messenger involved in mobilizing Ca^{2+} from the endoplasmic reticulum?

Options :

1. ✖ cAMP

2. ✖ DAG

3. ✔ IP_3

4. ✖ GMP

Question Number : 34 Question Id : 1051314954 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which electron transport chain complex does not pump protons across the mitochondrial inner membrane?

Options :

1. ✖ Complex I

2. ✔ Complex II

3. ✖ Complex III

4. ✖ Complex IV

Question Number : 35 Question Id : 1051314955 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In what ratio does the Na^+ / K^+ pump transport sodium and potassium ions?

Options :

1. ✖ 2 Na^+ out : 2 K^+ in

2. ✔ 3 Na^+ out : 2 K^+ in

3. ✖ 2 Na^+ in : 3 K^+ out

4. ✖ 1 Na^+ out : 1 K^+ in

Question Number : 36 Question Id : 1051314956 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a population, the frequency of a recessive allele (q) is 0.4. Calculate the frequency of homozygous dominant individuals?

Options :

1. ✖ 0.16

2. ✔ 0.36

3. ✖ 0.48

4. ✖ 0.64

Question Number : 37 Question Id : 1051314957 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: DNA replication is semiconservative in nature

Reason [R]: Each daughter DNA molecule contains one parental strand and one newly synthesized strand

Options :

1. ✓ Both [A] and [R] are true and [R] is the correct explanation of [A]
2. ✗ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✗ [A] is true, but [R] is false
4. ✗ [A] is false, but [R] is true

Question Number : 38 Question Id : 1051314958 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Enzyme responsible for transcription in prokaryotes?

Options :

1. ✗ DNA polymerase
2. ✓ RNA polymerase
3. ✗ Reverse transcriptase
4. ✗ Primase

Question Number : 39 Question Id : 1051314959 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: Peptide bond formation occurs at the P site of the ribosome

Reason [R]: Peptidyl transferase activity is an intrinsic property of rRNA

Options :

1. ✗ Both [A] and [R] are true and [R] is the correct explanation of [A]

2. ✖ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✖ [A] is true, but [R] is false
4. ✔ [A] is false, but [R] is true

Question Number : 40 Question Id : 1051314960 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a dihybrid cross ($AaBb \times AaBb$), what is the probability of obtaining an individual heterozygous for both traits ($AaBb$)?

Options :

1. ✖ $\frac{1}{16}$
2. ✖ $\frac{1}{8}$
3. ✔ $\frac{1}{4}$
4. ✖ $\frac{1}{2}$

Question Number : 41 Question Id : 1051314961 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A phenotypic ratio of 12:3:1 is produced due to

Options :

1. ✖ Recessive epistasis
2. ✔ Dominant epistasis
3. ✖ Duplicate recessive epistasis

4. ✖ Complementation

Question Number : 42 Question Id : 1051314962 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The following crosses can never result in a recessive phenotype?

Options :

1. ✖ Tt Pp X Tt Pp

2. ✖ TT Pp X tt pp

3. ✔ tt pp X TT PP

4. ✖ tt pp X Tt Pp

Question Number : 43 Question Id : 1051314963 Question Type : MCQ Option Shuffling : Yes

Display Question Number : 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 : 44 Question Id : 1051314964 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Extra-chromosomal inheritance is often called maternal inheritance because

Options :

1. ✖ Genes are inherited from both parents equally
2. ✔ Cytoplasm of the zygote is mainly contributed by the mother
3. ✖ Organellar genes show dominance
4. ✖ Only females show the trait

Question Number : 45 Question Id : 1051314965 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The following is a classic example of extra-chromosomal inheritance?

Options :

1. ✖ Sickle cell anemia
2. ✖ Color blindness
3. ✔ Variegation in *Mirabilis jalapa*
4. ✖ Hemophilia

Question Number : 46 Question Id : 1051314966 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the organism with polyploidy?

Options :

1. ✖ Humans
2. ✖ Drosophila
3. ✔ Wheat
4. ✖ Frog

Question Number : 47 Question Id : 1051314967 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider a population of sheep to be in Hardy-Weinberg equilibrium. The allele for black wool(w) has an allele frequency of 0.81 while the allele for white wool(W) has an allele frequency of 0.19. Then the percentage of heterozygous individuals in the population is

Options :

1. ✖ 4%
2. ✖ 15%
3. ✔ 31%
4. ✖ 66%

Question Number : 48 Question Id : 1051314968 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Choose the transposable elements which moves via an RNA intermediate?

Options :

1. ✖ Insertion sequence
2. ✖ Composite transposon
3. ✔ Retrotransposon
4. ✖ DNA transposon

Question Number : 49 Question Id : 1051314969 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which application is used to detect genetic disorders at the DNA level?

Options :

1. ✖ Western blotting

2. ✖ ELISA

3. ✔ PCR

4. ✖ Chromatography

Question Number : 50 Question Id : 1051314970 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

Disease / Application		Molecular basis / Use	
A	Sickle cell anemia	I	Frameshift mutation
B	Thalassemia	II	Missense point mutation
C	Duchenne muscular dystrophy	III	β -globin gene defect
D	PCR	IV	DNA amplification technique

Options :

1. ✔ A – II, B – III, C – I, D – IV

2. ✖ A – III, B – II, C – I, D – IV

3. ✖ A – II, B – I, C – III, D – IV

4. ✖ A – I, B – III, C – II, D – IV

Question Number : 51 Question Id : 1051314971 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Following process is primarily employed for the aerobic stabilization of liquid waste

Options :

1. ✖ Anaerobic digester

2. ✔ Activated sludge process

3. ✖ Septic tank

4. ✖ Methanogenesis**Question Number : 52 Question Id : 1051314972 Question Type : MCQ Option Shuffling : Yes****Display Question Number : Yes****Correct Marks : 1 Wrong Marks : 0****Final stage of anaerobic digestion is****Options :**

1. ✖ Hydrolysis
2. ✖ Acidogenesis
3. ✖ Acetogenesis
4. ✔ Methanogenesis

Question Number : 53 Question Id : 1051314973 Question Type : MCQ Option Shuffling : Yes**Display Question Number : Yes****Correct Marks : 1 Wrong Marks : 0****Match the following**

List-1		List-2	
A	Bioaugmentation	I	Nutrient addition
B	Biostimulation	II	Addition of specific microbes
C	Phytoremediation	III	Use of plants
D	Composting	IV	Solid waste aerobic treatment

Options :

1. ✔ A – II, B – I, C – III, D – IV
2. ✖ A – I, B – II, C – IV, D – III
3. ✖ A – III, B – IV, C – II, D – I
4. ✖ A – IV, B – III, C – I, D – II

Question Number : 54 Question Id : 1051314974 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: Bioremediation is an environmental friendly technology

Reason [R]: Bioremediation removes pollutants mainly by converting them into highly toxic intermediate compounds that persist in the environment

Options :

1. ✖ Both [A] and [R] are true and [R] is the correct explanation of [A]
2. ✖ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✔ [A] is true, but [R] is false
4. ✖ [A] is false, but [R] is true

Question Number : 55 Question Id : 1051314975 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the microorganism that is industrially used for baker's yeast production?

Options :

1. ✖ *Aspergillus niger*
2. ✔ *Saccharomyces cerevisiae*
3. ✖ *Penicillium chrysogenum*
4. ✖ *Lactobacillus*

Question Number : 56 Question Id : 1051314976 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Exopolysaccharides are best described as

Options :

1. ✖ Intracellular storage polymers

2. ✖ Cell wall components
3. ✔ Polymers secreted outside the cell
4. ✖ Secondary metabolites only

Question Number : 57 Question Id : 1051314977 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which amino acid is produced industrially using *Corynebacterium glutamicum*?

Options :

1. ✖ Tryptophan
2. ✔ Lysine
3. ✖ Methionine
4. ✖ Histidine

Question Number : 58 Question Id : 1051314978 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1		List-2	
A	Amylase	I	Protein hydrolysis
B	Protease	II	Starch hydrolysis
C	Cellulase	III	Fat hydrolysis
D	Lipase	IV	Cellulose degradation

Options :

1. ✖ A – I, B – II, C – IV, D – III
2. ✖ A – III, B – IV, C – I, D – II
3. ✖ A – IV, B – III, C – II, D – I

4. ✓ A – II, B – I, C – IV, D – III

Question Number : 59 Question Id : 1051314979 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: Downstream processing significantly increases the cost of enzyme production.

Reason [R]: Enzymes are usually produced in very pure form during fermentation

Options :

1. ✗ Both [A] and [R] are true and [R] is the correct explanation of [A]
2. ✗ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✓ [A] is true, but [R] is false
4. ✗ [A] is false, but [R] is true

Question Number : 60 Question Id : 1051314980 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Why are extracellular enzymes preferred in industrial production?

Options :

1. ✗ Higher molecular weight
2. ✗ Require cell disruption
3. ✓ Easier purification
4. ✗ Low stability

Question Number : 61 Question Id : 1051314981 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which bioreactor type is most commonly used for large-scale recombinant protein production?

Options :

1. ✖ Packed bed reactor
2. ✔ Stirred-tank bioreactor
3. ✖ Airlift reactor
4. ✖ Trickling filter

Question Number : 62 Question Id : 1051314982 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which purification method is commonly used when recombinant proteins carry a His-tag?

Options :

1. ✖ Ion exchange chromatography
2. ✖ Gel filtration chromatography
3. ✔ Affinity chromatography
4. ✖ Ultracentrifugation

Question Number : 63 Question Id : 1051314983 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In gel filtration chromatography, which molecules elute first?

Options :

1. ✖ Small molecules
2. ✖ Highly charged molecules
3. ✖ Hydrophobic molecules

4. ✓ Large molecules

Question Number : 64 Question Id : 1051314984 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1		List-2	
A	Microfiltration	I	Removal of salts
B	Ultrafiltration	II	Protein concentration
C	Reverse osmosis	III	Suspended solids bacteria
D	Dialysis	IV	Small solute diffusion

Options :

1. ✓ A – III, B – II, C – I, D – IV

2. ✗ A – II, B – III, C – IV, D – I

3. ✗ A – I, B – IV, C – III, D – II

4. ✗ A – IV, B – I, C – II, D – III

Question Number : 65 Question Id : 1051314985 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Most commonly used method for enzyme immobilisation is

Options :

1. ✓ Adsorption

2. ✗ Denaturation

3. ✗ Fermentation

4. ✗ Dialysis

Question Number : 66 Question Id : 1051314986 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

An enzyme-based biosensor primarily consists of

Options :

1. ✖ A catalyst and substrate
2. ✖ A signal amplifier and detector
3. ✖ A membrane and power source
4. ✔ A bioreceptor and transducer

Question Number : 67 Question Id : 1051314987 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is a characteristic of diauxic growth?

Options :

1. ✖ A single exponential growth phase
2. ✔ Two distinct exponential growth phases
3. ✖ A prolonged lag phase
4. ✖ A rapid death phase

Question Number : 68 Question Id : 1051314988 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The rate at which substrate is consumed by microorganisms is directly related to

Options :

1. ✖ Only substrate concentration
2. ✖ Only product concentration
3. ✔ Cell concentration

4. ✖ Temperature only

Question Number : 69 Question Id : 1051314989 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How does fed-batch fermentation help in overcoming substrate inhibition?

Options :

1. ✖ By maintaining a high substrate concentration
2. ✔ By maintaining a low substrate concentration
3. ✖ By adding substrate in a single batch
4. ✖ By not adding substrate at all

Question Number : 70 Question Id : 1051314990 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Simple structured models are most useful for studying

Options :

1. ✖ Heat transfer in fermenters
2. ✖ Mixing and aeration
3. ✖ Mechanical agitation effects
4. ✔ Metabolic regulation during growth

Question Number : 71 Question Id : 1051314991 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which method is the most commonly used for sterilization of culture media?

Options :

1. ✖ Dry heat sterilization
2. ✔ Autoclaving
3. ✖ UV radiation
4. ✖ Filtration

Question Number : 72 Question Id : 1051314992 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1		List-2	
A	Batch	I	Steady-state operation
B	Fed-batch	II	Substrate feeding without outflow
C	Continuous	III	No input or output
D	Chemostat	IV	Constant dilution rate

Options :

1. ✔ A – III, B – II, C – I, D – IV
2. ✖ A – I, B – III, C – II, D – IV
3. ✖ A – II, B – IV, C – I, D – III
4. ✖ A – IV, B – II, C – III, D – I

Question Number : 73 Question Id : 1051314993 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The primary purpose of aeration in aerobic fermentation is to

Options :

1. ✖ Control temperature
2. ✔ Provide oxygen for microbial metabolism

3. ✖ Prevent foaming

4. ✖ Increase pH

Question Number : 74 Question Id : 1051314994 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The term $k_L a$ represents

Options :

1. ✖ Oxygen solubility

2. ✖ Interfacial area only

3. ✖ Oxygen uptake rate

4. ✔ Overall gas–liquid mass transfer coefficient

Question Number : 75 Question Id : 1051314995 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1		List-2	
A	Carbon source	I	Enzyme cofactor
B	Nitrogen source	II	Energy and cell material
C	Trace elements	III	Protein and nucleic acid synthesis
D	Buffer	IV	pH maintenance

Options :

1. ✔ A – II, B – III, C – I, D – IV

2. ✖ A – III, B – II, C – IV, D – I

3. ✖ A – IV, B – I, C – II, D – III

4. ✖ A – I, B – IV, C – III, D – II

Question Number : 76 Question Id : 1051314996 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: Ethylene is a gaseous plant hormone

Reason [R]: Ethylene inhibits fruit ripening

Options :

1. ✖ Both [A] and [R] are true and [R] is the correct explanation of [A]
2. ✖ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✔ [A] is true, but [R] is false
4. ✖ [A] is false, but [R] is true

Question Number : 77 Question Id : 1051314997 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The genes responsible for hairy root formation are located on

Options :

1. ✖ Ti plasmid
2. ✔ Ri plasmid
3. ✖ F plasmid
4. ✖ R plasmid

Question Number : 78 Question Id : 1051314998 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Secondary metabolite production in plant suspension cultures generally occurs during

Options :

1. ✖ Lag phase
2. ✖ Exponential phase
3. ✔ Stationary phase
4. ✖ Death phase

Question Number : 79 Question Id : 1051314999 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which core genes are present in the T-DNA region of the Ti plasmid of *Agrobacterium tumefaciens*?

Options :

1. ✖ Vir genes
2. ✔ Opine, Auxin and Cytokinin synthesis
3. ✖ Antibiotic resistance genes
4. ✖ Replication origin genes

Question Number : 80 Question Id : 1051315000 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

Technique		Description / Application	
A	Agrobacterium-mediated transformation	I	Gene transfer using particle bombardment
B	Microinjection	II	Direct injection of DNA into nucleus
C	Biolistic method	III	Ti plasmid-based gene transfer
D	Electroporation	IV	DNA uptake through membrane pores

Options :

1. ✔ A – III, B – II, C – I, D – IV

2. ✖ A – II, B – I, C – III, D – IV

3. ✖ A – IV, B – III, C – II, D – I

4. ✖ A – I, B – IV, C – III, D – II

Question Number : 81 Question Id : 1051315001 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Animal cloning is commonly achieved by

Options :

1. ✖ Embryo splitting

2. ✔ Somatic Cell Nuclear Transfer

3. ✖ Parthenogenesis

4. ✖ In vitro fertilization

Question Number : 82 Question Id : 1051315002 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which chemical is commonly used to fuse B cells and myeloma cells?

Options :

1. ✖ Trypsin

2. ✖ Calcium chloride

3. ✔ Polyethylene glycol

4. ✖ EDTA

Question Number : 83 Question Id : 1051315003 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Animal cell lines are typically preserved long-term in liquid Nitrogen at

Options :

1. ✖ 0 °C
2. ✖ -20 °C
3. ✖ -80 °C
4. ✔ -196 °C

Question Number : 84 Question Id : 1051315004 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: Product inhibition can reduce overall process productivity.

Reason [R]: Accumulated products may interfere with enzyme activity or cell viability.

Options :

1. ✔ Both [A] and [R] are true and [R] is the correct explanation of [A]
2. ✖ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✖ [A] is true, but [R] is false
4. ✖ [A] is false, but [R] is true

Question Number : 85 Question Id : 1051315005 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A low K_m value of an enzyme indicates

Options :

1. ✖ Low affinity for substrate
2. ✔ High affinity for substrate

3. ✖ No enzyme–substrate complex formation
4. ✖ Enzyme inhibition

Question Number : 86 Question Id : 1051315006 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is a component of innate immunity?

Options :

1. ✖ Antibodies
2. ✖ Memory cells
3. ✖ T lymphocytes
4. ✔ Phagocytes

Question Number : 87 Question Id : 1051315007 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1		List-2	
A	Thymus	I	B-cell maturation
B	Bone marrow	II	T-cell maturation
C	Spleen	III	Blood filtration
D	Lymph node	IV	Lymph filtration

Options :

1. ✔ A – II, B – I, C – III, D – IV
2. ✖ A – II, B – I, C – IV, D – III
3. ✖ A – III, B – IV, C – I, D – II
4. ✖ A – IV, B – III, C – II, D – I

Question Number : 88 Question Id : 1051315008 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which immunoglobulin is produced first during a primary immune response?

Options :

1. ✖ IgG
2. ✖ IgA
3. ✔ IgM
4. ✖ IgE

Question Number : 89 Question Id : 1051315009 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which cells constitutively express MHC class I molecules?

Options :

1. ✖ Only antigen-presenting cells
2. ✖ Only T lymphocytes
3. ✔ All nucleated cells
4. ✖ Red blood cells

Question Number : 90 Question Id : 1051315010 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: MHC class I presents endogenous antigens to CD8⁺ T cells.

Reason [R]: Endogenous peptides are generated in lysosomes.

Options :

1. ✖ Both [A] and [R] are true and [R] is the correct explanation of [A]

- 2. ✖ Both [A] and [R] are true and [R] is not correct explanation of [A]
- 3. ✔ [A] is true, but [R] is false
- 4. ✖ [A] is false, but [R] is true

Question Number : 91 Question Id : 1051315011 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Antibodies are synthesized by

Options :

- 1. ✖ T lymphocytes
- 2. ✖ Macrophages
- 3. ✖ NK cells
- 4. ✔ Plasma cells

Question Number : 92 Question Id : 1051315012 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Somatic hypermutation mainly contributes to

Options :

- 1. ✖ Antibody class change
- 2. ✔ Increased affinity of antibodies
- 3. ✖ T-cell activation
- 4. ✖ Isotype switching

Question Number : 93 Question Id : 1051315013 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: Monoclonal antibodies have higher specificity than polyclonal antibodies

Reason [R]: They recognize only one epitope on an antigen

Options :

1. ✓ Both [A] and [R] are true and [R] is the correct explanation of [A]
2. ✗ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✗ [A] is true, but [R] is false
4. ✗ [A] is false, but [R] is true

Question Number : 94 Question Id : 1051315014 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify cytokine which is primarily immunosuppressive?

Options :

1. ✗ IL-2
2. ✗ IFN- γ
3. ✓ IL-10
4. ✗ TNF- α

Question Number : 95 Question Id : 1051315015 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Anaphylaxis is an example of

Options :

1. ✓ Type I hypersensitivity
2. ✗ Type II hypersensitivity

- 3. ✖ Type III hypersensitivity
- 4. ✖ Type IV hypersensitivity

Question Number : 96 Question Id : 1051315016 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which enzyme protects host DNA from restriction digestion?

Options :

- 1. ✖ DNA ligase
- 2. ✖ Restriction endonuclease
- 3. ✔ DNA methyltransferase
- 4. ✖ DNA polymerase

Question Number : 97 Question Id : 1051315017 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Bacteriophage λ vectors can accommodate foreign DNA of about

Options :

- 1. ✖ 2–5 kb
- 2. ✔ 15–20 kb
- 3. ✖ 50 kb
- 4. ✖ 300 kb

Question Number : 98 Question Id : 1051315018 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which vector can carry the largest DNA inserts?

Options :

1. ✖ Plasmid
2. ✖ Cosmid
3. ✖ BAC
4. ✔ YAC

Question Number : 99 Question Id : 1051315019 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the following and choose the correct answer

Assertion [A]: Type II restriction enzymes are preferred in recombinant DNA technology

Reason [R]: They cleave DNA at random sites far away from their recognition sequences

Options :

1. ✖ Both [A] and [R] are true and [R] is the correct explanation of [A]
2. ✖ Both [A] and [R] are true and [R] is not correct explanation of [A]
3. ✔ [A] is true, but [R] is false
4. ✖ [A] is false, but [R] is true

Question Number : 100 Question Id : 1051315020 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A major advantage of a cDNA library over a genomic library is that cDNA

Options :

1. ✖ Contains introns
2. ✖ Represents non-coding regions
3. ✔ Contains only expressed genes
4. ✖ Is identical in all tissues

Question Number : 101 Question Id : 1051315021 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Insertional inactivation is commonly used for screening recombinants in

Options :

1. ✖ YAC vectors
2. ✖ BAC vectors
3. ✖ Cosmid vectors
4. ✔ pBR322 plasmid

Question Number : 102 Question Id : 1051315022 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which promoter is commonly used for high-level expression in *E. coli*?

Options :

1. ✖ Lac promoter
2. ✔ T7 promoter
3. ✖ SV40 promoter
4. ✖ CMV promoter

Question Number : 103 Question Id : 1051315023 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which nucleotide lacks a 3'-OH group?

Options :

1. ✔ ddTTP
2. ✖ dATP

3. ✖ dGTP

4. ✖ dCTP

Question Number : 104 Question Id : 1051315024 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which isotope is commonly used for radioactive DNA labelling?

Options :

1. ✖ ^{12}C

2. ✔ ^{32}P

3. ✖ ^{14}N

4. ✖ ^{16}O

Question Number : 105 Question Id : 1051315025 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Southern blotting is used to detect

Options :

1. ✖ RNA sequences

2. ✖ Protein molecules

3. ✔ Specific DNA sequences

4. ✖ Lipids

Question Number : 106 Question Id : 1051315026 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A key difference between Southern and Northern blotting is that Northern blotting

Options :

1. ✖ Uses antibodies
2. ✔ Does not involve restriction digestion
3. ✖ Uses protein probes
4. ✖ Transfers proteins

Question Number : 107 Question Id : 1051315027 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A major limitation of RAPD is

Options :

1. ✖ Low sensitivity
2. ✔ Poor reproducibility
3. ✖ Requirement of radioactive probes
4. ✖ High cost

Question Number : 108 Question Id : 1051315028 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1		List-2	
A	RAPD	I	Plant gene transfer
B	RFLP	II	Specific base change
C	Site-directed mutagenesis	III	Restriction-based polymorphism
D	Agrobacterium-mediated transfer	IV	Random PCR markers

Options :

1. ✖ A – IV, B – II, C – III, D – I
2. ✖ A – II, B – I, C – IV, D – III

3. ✖ A – III, B – IV, C – I, D – II

4. ✔ A – IV, B – III, C – II, D – I

Question Number : 109 Question Id : 1051315029 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is NOT a challenge in gene therapy?

Options :

1. ✖ Immune response

2. ✖ Targeted delivery

3. ✖ Ethical concerns

4. ✔ PCR amplification

Question Number : 110 Question Id : 1051315030 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What does a genomic DNA library represent?

Options :

1. ✖ Only expressed genes

2. ✖ Only protein-coding sequences

3. ✔ The entire genome of an organism

4. ✖ Only mRNA sequences

Question Number : 111 Question Id : 1051315031 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which resource is NOT primarily used for protein analysis?

Options :

1. ✖ ExPASy
2. ✖ UniProt
3. ✖ InterPro
4. ✔ GenBank

Question Number : 112 Question Id : 1051315032 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which database stores 3D structures of biomolecules?

Options :

1. ✖ GenBank
2. ✖ UniProt
3. ✔ PDB
4. ✖ KEGG

Question Number : 113 Question Id : 1051315033 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which database provides non-redundant protein sequences?

Options :

1. ✖ GenBank
2. ✔ UniProt
3. ✖ PDB
4. ✖ KEGG

Question Number : 114 Question Id : 1051315034 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

FASTA format contains

Options :

1. ✖ Only sequence
2. ✖ Only annotation
3. ✔ Header line and sequence
4. ✖ Alignment scores

Question Number : 115 Question Id : 1051315035 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which technique is used in proteomics?

Options :

1. ✖ DNA sequencing
2. ✖ PCR
3. ✔ Mass spectrometry
4. ✖ Southern blot

Question Number : 116 Question Id : 1051315036 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which is NOT a force field?

Options :

1. ✖ CHARMM
2. ✖ AMBER
3. ✖ GROMOS

4. ✓ BLAST

Question Number : 117 Question Id : 1051315037 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0
Incorrectly matched pair?

Options :

1. ✗ NCBI – GenBank
2. ✗ EBI – EMBL
3. ✗ ExPASy – Swiss-Prot
4. ✓ PDB – NCBI

Question Number : 118 Question Id : 1051315038 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Match the following

List-1		List-2	
A	Microarray	I	Whole genome study
B	RNA-Seq	II	Protein expression
C	Proteomics	III	Sequencing-based
D	Genomics	IV	Hybridization-based

Options :

1. ✗ A – I, B – II, C – III, D – IV
2. ✗ A – II, B – I, C – IV, D – III
3. ✗ A – III, B – IV, C – I, D – II
4. ✓ A – IV, B – III, C – II, D – I

Question Number : 119 Question Id : 1051315039 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Select the technique used to predict ligand binding orientation?

Options :

1. ✓ Molecular docking
2. ✗ Energy minimisation
3. ✗ Molecular dynamics
4. ✗ Homology modelling

Question Number : 120 Question Id : 1051315040 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A gene consists of 900 nucleotide bases. How many amino acids will it code?

Options :

1. ✗ 150
2. ✓ 300
3. ✗ 450
4. ✗ 900