

PREVIEW QUESTION BANK

Module Name : Veterinary Biotechnology - 33-ENG
Exam Date : 29-Jun-2024 Batch : 14:30-16:30

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	201	Movement of DNA from one bacterium to another through a tubular bridge or pilus: 1. Conjugation 2. Transposition 3. Transfection 4. Transduction A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	202	Which of the following is responsible for eliminating toxic oxygen by-products from cells? 1. Mitochondria 2. Golgi complex 3. Peroxisomes 4. Chloroplasts A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	203	A form of multiple parasitism in which a parasite preferentially attacks a host that is already parasitized by another species is known as 1. Cleptoparasitism 2. Ectoparasitoid 3. Obligate parasitism 4. Superparasitism A1 : 1	4.0	1.00

		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

4	204	For mass multiplication of DD-136 nematode, the common host used is 1. Silk moth 2. Fruit sucking moth 3. Codling moth 4. Lesser wax moth A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
---	-----	---	-----	------

Objective Question

5	205	Chlorpyrifos methyl is effective against stored product insects except 1. <i>Rhizopertha dominica</i> 2. <i>Tribolium castaneum</i> 3. <i>Caryedon serratus</i> 4. <i>Oryzaephilus surinamensis</i> A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
---	-----	---	-----	------

Objective Question

6	206	Which of the following insects often cause inhalational allergies in human following large emergence of adult insects. 1. Stick insects 2. May flies 3. Ear wigs 4. Preying mantis A1 : 1 A2 : 2	4.0	1.00
---	-----	--	-----	------

A3 : 3

A4 : 4

Objective Question

7 207

4.0 1.00

Given below are two statements:

Statement (I): Climate is a weather condition related to smaller areas at a given place and at a given time,

Statement (II): Weather is a condition of atmosphere at a given place and at a given time

In light of the above statements, choose the *most appropriate* answer from the options given below.

1. Both Statement (I) and Statement (II) are correct.
2. Both Statement (I) and Statement (II) are incorrect.
3. Statement (I) is correct but Statement (II) is incorrect.
4. Statement (I) is incorrect but Statement (II) is correct.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

8 208

4.0 1.00

The local name of cyclone in Philippines is

1. Hurricane
2. Cyclone
3. Baquio
4. Typhoon

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

9 209

4.0 1.00

Which one of the following are secondary tillage implements?

- (A) Subsoiler
- (B) Cultivator
- (C) Disc harrow
- (D) Wetland plough

Choose the **correct** answer from the options given below:

- 1. (A), (B) and (D) only.
- 2. (B) and (C) only.
- 3. (B), (C) and (D).
- 4. (B) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

10 210

_____ is the most suitable, drought resistant and persistent grass?

- 1. *Alyosia* sp.
- 2. *Cenchrus ciliaris*
- 3. *Stylosanthes hamata*
- 4. *Sorghum bicolor*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

11 211

The rainfed area in India is approximately

- 1. 30 mha
- 2. 40 mha
- 3. 57 mha
- 4. 70 mha

A1 : 1

A2 : 2

4.0 1.00

		A3 : 3		
		A4 : 4		
Objective Question				
12	212	Which nutrient is often a limiting factor in agricultural production? 1. Nitrogen 2. Carbon 3. Oxygen 4. Hydrogen A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
13	213	What is a potential disadvantage of agroforestry systems? 1. Increased soil erosion 2. Decreased carbon sequestration 3. Reduced biodiversity 4. Enhanced susceptibility to pests A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
14	214	Pungency in mustard oil is due to 1. Amino acid 2. Allyl isothiocyanate 3. Erusic acid 4. Oxalic acid A1 : 1 A2 : 2	4.0	1.00

		A3 : 3		
		A4 : 4		
Objective Question				
15	215	Sesamum belongs to the family 1. Chenopodiaceae 2. Papilionaceae 3. Leguminosae 4. Pedaliaceae A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
16	216	Dark period is critical in which type of plant? 1. Short day plant 2. Long day plant 3. Day neutral plant 4. All the options A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
17	217	Which of the following is NOT a significant contributor to greenhouse gas emissions from livestock farming? 1. Carbon dioxide 2. Methane 3. Nitrous oxide 4. Ammonia A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

18	218	Fe deficiency is mostly seen in crops growing on 1. Calcareous or alkaline soils 2. Salt affected soils 3. Acidic soils 4. Neutral soils A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	-----	--	-----	------

Objective Question

19	219	EDV (Essentially Derived Varieties) are those which are derived from 1. crossing two commercially known varieties 2. hybrid introduced from other countries 3. existing variety through genetic engineering or mutation 4. crossing commercially known variety with its wild relative A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	-----	---	-----	------

Objective Question

20	220	What is the role of "companion planting" in agriculture? 1. Enhancing soil fertility through crop rotation 2. Growing different crop species together to deter pests 3. Cultivating plants in hydroponic system 4. Increasing soil compaction through cover cropping A1 : 1 A2 : 2 A3 : 3	4.0	1.00
----	-----	--	-----	------

		A4 : 4		
Objective Question				
21	1801	Which one is not true about nucleolus 1. Cell may have 1 to 3 nucleoli 2. Makes ribosomes 3. Takes part in cell division 4. Is simply an accumulation of large amount of RNA and proteins found in ribosomes A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
22	1802	What is the main role of carbohydrates in cell membrane? 1. Transportation 2. Adhesion 3. Recognition 4. Signal transduction A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
23	1803	Erythropoiesis occurs in following organs (A). Liver (B). Spleen (C). Bone Marrow Choose the correct answer from the options given below: 1. (A), (B) and (C). 2. (A), and (B) only 3. (A), and (C) only. 4. (B), and (C) only. A1 : 1	4.0	1.00

		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
24	1804	Edema may occur due to following except 1. Increased capillary pressure 2. Increased capillary permeability 3. Increased concentration of plasma proteins 4. Obstruction of lymphatics A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
25	1805	Venous blood generally has pO₂ of about 1. 40 mmHg 2. 100 mmHg 3. 110 mmHg 4. < 30mm Hg A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
26	1806	A layer of epithelial cells surrounding the outer surface of the capillary basement membrane in a nephron 1. Mesangial cells 2. Podocytes 3. Endothelial cells 4. JG cells A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

27	1807	Maximum absorption of short-chain fatty acids produced by bacteria occurs in the 1. Stomach 2. Duodenum 3. Jejunum 4. Colon A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	------	---	-----	------

Objective Question

28	1808	Hypsodont teeth are present in 1. Dog 2. Cat 3. Horse 4. Human A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	------	--	-----	------

Objective Question

29	1809	Efficiency of muscle contraction is 1. 10% 2. 20% 3. 30% 4. 40% A1 : 1 A2 : 2 A3 : 3	4.0	1.00
----	------	---	-----	------

A4 : 4

Objective Question

30 1810

4.0

1.00

Match List-I with List-II

List-I	List-II
(A) Protanope	(I). loss of green cones
(B) Deuteranope	(II). acute and detailed vision
(C) Fovea	(III). normal vision
(D). Emmetropia	(IV). loss of red cones

Choose the **correct** answer from the options given below:

- (A) - (IV), (B) - (III), (C) - (II), (D) - (I)
- (A) - (III), (B) - (II), (C) - (I), (D) - (IV)
- (A) - (II), (B) - (III), (C) - (IV), (D) - (I)
- (A) - (IV), (B) - (I), (C) - (II), (D) - (III)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

31 1811

4.0

1.00

Active form of vitamin D is released from

- Liver
- Skin
- Intestine
- Kidney

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

32 1812

4.0

1.00

		What is the correct sequence of ejaculatory volume 1. Boar > dog > horse > bull 2. Dog > boar > horse > bull 3. Boar > horse > dog > bull 4. Boar > dog > bull > horse A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
33	1813	Which one of the following animal is not a reflex ovulator? 1. Cat 2. Dog 3. Rabbit 4. Camel A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
34	1814	Which one is not a clone of sheep? 1. Megan 2. Xena 3. Dolly 4. Polly A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
35	1815		4.0	1.00

		Among the following animals, Upper Critical Temperature (UCT) is highest in which of the following 1. Holstein Friesian (HF) 2. Haryana 3. Crossbred cattle 4. Jersey A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
36	1816	Inhibitor of Cysteine protease is 1. EDTA 2. PMSF 3. Cystatin C 4. N-acetyl cysteine A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
37	1817	Which isoenzyme of LDH is present in heart 1. MMMM 2. MMMH 3. HHHH 4. MMHH A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
38	1818		4.0	1.00

		HHHH form of LDH catalyzes the reaction towards 1. Lactate to pyruvate 2. Pyruvate to Lactate 3. Glucose to Glucose-6-phosphate 4. Pyruvate to acetyl-CoA A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
39	1819	During the purification process, total activity of enzyme 1. Increases 2. Decreases 3. Remains constant 4. Increases or decreases A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
40	1820	Identify Nickel containing enzyme? 1. Urease 2. Carbonic anhydrase 3. Lactate dehydrogenase 4. Lysozyme A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
41	1821		4.0	1.00

		In allosteric enzymes, the location of catalytic and regulatory sites are _____. 1. Same 2. Different 3. Can be same or different 4. Mostly same A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
42	1822	Which vitamin is usually absent in the food from plant sources? 1. Thiamine 2. Riboflavin 3. Vitamin B12 4. Vitamin C A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
43	1823	In gel filtration chromatography mobile phase is _____. 1. Solid 2. Liquid 3. Gel 4. Gaseous A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
44	1824		4.0	1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A) : The LDH isoenzyme M4 functions optimally in the anaerobic environment of skeletal muscles.

Reason(R): The Skeletal muscles are designed to work anaerobically so as M4. M4 converts pyruvate to lactate, so glycolysis can be operated continuously.

In light of the above statements, choose the *most appropriate* answer from the options given below .

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

45 1825

4.0 1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A): Gel filtration chromatography can be used to isolate proteins on the basis of their molecular weight.

Reason(R): Smaller proteins enter into the beads, so spend additional time in column and elute at a later stage.

In light of the above statements, choose the *most appropriate* answer from the options given below .

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

46 1826

4.0 1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

A: A trans-fatty acids is structurally similar to a saturated fatty acid.

R: The kinks in the fatty acid molecules determine whether the material is solid or liquid at room temperature.

In light of the above statements, choose the *most appropriate* answer from the options given below.

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

47 1827

4.0 1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

A: Under aerobic conditions, TCA cycle is the primary source of energy.

R: TCA cycle is followed by electron flow through the respiratory chain generates more ATPs.

In light of the above statements, choose the *most appropriate* answer from the options given below.

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

48 1828

4.0 1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

A : The increase in concentration of substrate can alleviate inhibition of competitive enzymes.

R: Allosteric proteins have similar regulatory and substrate binding functional sites.

In light of the above statements, choose the *most appropriate* answer from the options given below .

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

49 1829

Amino acids which contain hydroxyl group are

- (A) Serine
- (B) Threonine
- (C) Methionine
- (D) Cysteine

Choose the **correct** answer from the options given below:

1. (A), (B) and (D) only.
2. (A), (B) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

50 1830

4.0 1.00

Aromatic amino acids are

- (A) Aspartic acid
- (B) Glutamic acid
- (C) Tyrosine
- (D) Tryptophan

Choose the **correct** answer from the options given below:

- 1. (A), (B) and (C) only.
- 2. (A), (B) and (D) only.
- 3. (A), (B), (C) and (D).
- 4. (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51	1831	Hydrophobic amino acids are (A) Isoleucine (B) Leucine (C) Arginine (D) Aspartic acid Choose the correct answer from the options given below: 1. (A), (B) and (C) only. 2. (A) and (B) only. 3. (A), (B), (C) and (D). 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	------	---	-----	------

Objective Question

52	1832		4.0	1.00
----	------	--	-----	------

Identify coenzymes

(A) NAD

(B) FAD

(C) LDH

(D) Proline

Choose the **correct** answer from the options given below:

1. (A), (B) and (C) only.
2. (A) and (B) only.
3. (A), (B), (C) and (D).
4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

53 1833

4.0 1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

A : Vitamin E serves as an antioxidant.

R: Vitamin E can quench free radicals.

In light of the above statements, choose the *most appropriate* answer from the options given below .

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

54 1834

4.0 1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

A : Hormones binds to receptors present on cell surface or inside the cells

R: All hormones are protein in nature

Read the statements and choose the correct answer

In light of the above statements, choose the *most appropriate* answer from the options given below :

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

55	1835	According to the current classification these are the included in enzyme classes (A) Hydrolases (B) Transferases (C) Isomerases (D) Ligases Choose the correct answer from the options given below: 1. (A), (B) and (C) only. 2. (A), (B) and (D) only. 3. (A), (B), (C) and (D). 4. (B), (C) and (D) only.	4.0	1.00
		A1 : 1 A2 : 2 A3 : 3 A4 : 4		

Objective Question

56	1836		4.0	1.00

The classification of genes based on protein domains revealed that _____

1. human genome contains no protein domains that are unique to humans.
2. human genome contains a small number of protein domains that are unique to vertebrates.
3. human genome contains many protein domains that are unique to humans.
4. protein domains for the human genome are unique to humans and not present in other organisms.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

57 1837

Proteins can bind to DNA at specific sequences by _____

1. interacting with the sugar-phosphate backbone.
2. opening up the double helix and forming bonds with the bases.
3. interacting with the bases through the histone proteins.
4. interacting with the bases in the major and minor grooves of the double helix.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

58 1838

Which of the following statements is incorrect?

1. Glycogen is formed from units that include glucose.
2. Cellulose is formed from units that include glucose.
3. Lactose is formed from units that include ribose.
4. Adenosine is formed from units that include ribose.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

59 1839

4.0

1.00

		Differentiation refers to _____ 1. alterations in genome expression that do not change the proteome of the cell. 2. transient changes in the genome activity of a cell in response to extracellular factors. 3. a coordinated series of changes that occurs during the life cycle of a cell. 4. adoption of a specialized physiological role by a cell.		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

60	1840	The main phospholipids in most animal cell membranes are the _____ 1. Phosphoglycerides. 2. Phosphosphingolipids. 3. Ceramide phosphorylipids. 4. Sphingomyelins.	4.0	1.00
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

61	1841	What does an open reading frame (ORF) refer to? 1. All of the nucleotides of a gene that are transcribed into mRNA. 2. The nucleotides of a gene that make up the codons specifying amino acids. 3. The nucleotides of an mRNA molecule before the introns have been removed. 4. The amino acid sequence of a polypeptide.	4.0	1.00
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

62	1842		4.0	1.00
----	------	--	-----	------

		Which type of amino acid can get acetylated within the N-terminal regions of histone proteins? 1. Arginine. 2. Lysine. 3. Serine. 4. Tyrosine. A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
63	1843	DNA mutation can arise from _____. 1. Okasaki Fragments. 2. Insertion or deletion of one or a few nucleotides. 3. Nick translation. 4. Binding of DNA polymerase at the site of promoter of a non-specific gene. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
64	1844	Which of the following is not a DNA repair system? 1. Excision repair. 2. Mismatch repair. 3. Nonhomologous end-joining. 4. Branch migration. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
65	1845		4.0	1.00

Why is actin used as a control for transcriptome studies in vertebrates?

1. It is used as a negative control as the gene is not expressed in vertebrates.
2. It is used as a negative control as the mRNA for actin is rapidly degraded.
3. It is used as a positive control as actin expression is fairly constant in different cell types.
4. It is used as a positive control as it is the most highly expressed gene in all cell types.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

66 1846

Homopolymers can be added to DNA strands by using _____.

1. DNA polymerase.
2. Terminal deoxynucleotidyltransferase.
3. Vaccinia DNA topoisomerase.
4. Phosphodiesterase.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

67 1847

Lymphocytes in whole blood can be stimulated with _____.

1. Saponin.
2. Phytohemagglutinin.
3. Mitomycin C.
4. Cytochalasin B.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

68 1848

4.0 1.00

		Somatic cells can be synchronized to the G1 stage of the cell cycle by treatment with _____ 1. Nocodazole. 2. Colchicine. 3. Lovastatin. 4. Mimosine. A1 : 1 A2 : 2 A3 : 3 A4 : 4		
--	--	---	--	--

Objective Question

69	1849	DNA microinjection into embryos for generation of transgenic animals can best be done at _____ 1. One-cell-stage. 2. Two-cell-stage. 3. Blastocyst-stage. 4. MII-stage. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	------	---	-----	------

Objective Question

70	1850	Induced Pluripotent Stem cells (iPSCs) can be produced by transfection of somatic cells with _____ genes. 1. Pou5f1, Sox2, Nanog, Lin28. 2. Oct4, Sox2, Klf1, nMyc. 3. Oct4, Sox9, Nanog, Lim1. 4. Pou5f1, Sox9, Klf1, cMyc. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	------	--	-----	------

Objective Question

71	1001701		4.0	1.00
----	---------	--	-----	------

		Which of the following statements about telomerase is TRUE? 1. Telomerase is an RNA-dependent DNA polymerase. 2. Telomerase is an RNA-dependent RNA polymerase. 3. Telomerase is a DNA-dependent DNA polymerase. 4. Telomerase is a DNA-dependent RNA polymerase. A1 : 1 A2 : 2 A3 : 3 A4 : 4		
--	--	---	--	--

Objective Question

72	1001702	The base hypoxanthine in the nucleotide inosine can hydrogen bond with _____ 1. G, U, and C. 2. G, U, and A. 3. G, A, and C. 4. U, C, and A. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	---------	--	-----	------

Objective Question

73	1001703	Which of the following statements about enzymes is FALSE? 1. They bind their substrate. 2. They lower the activation energy for the reaction they catalyze. 3. They alter the equilibrium constant for the reaction they catalyze. 4. They stabilize intermediates along the pathway of the reaction they catalyze. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	---------	---	-----	------

Objective Question

74	1001704		4.0	1.00
----	---------	--	-----	------

		_____ is a filamentous cytoskeletal protein whose deficiency leads to spherical and fragile RBCs.		
		1. Alpha actin. 2. Beta actin. 3. Spectrin. 4. Desmosin.		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

75	1001705	Nuclear lamina, located on the nuclear side of the inner nuclear membrane, is a meshwork of interconnected protein subunits called? 1. Nuclear Lamins. 2. Nuclear Desmins. 3. Nuclear Actins. 4. Nuclear Microtubules.	4.0	1.00
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

76	1001706	In most animal cells, cyclic AMP exerts its effects mainly by activating _____.? 1. CREB. 2. PKA. 3. PKC. 4. PLC.	4.0	1.00
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

77	1001707		4.0	1.00
----	---------	--	-----	------

		Which of the following is not a DNA recombination event? 1. Homologous Recombination. 2. Transposition. 3. Binary Fission. 4. Mating-type switching. A1 : 1 A2 : 2 A3 : 3 A4 : 4		
--	--	--	--	--

Objective Question

78	1001708	Which type of bond is synthesized by DNA ligases? 1. Hydrogen bonds between bases. 2. Phosphodiester bonds between nucleotides. 3. Bonds between the bases and deoxyribose sugars. 4. Peptide bonds between amino acids. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	---------	--	-----	------

Objective Question

79	1001709	What are cryptic splice sites? 1. These are splice sites that are used in some cells but not in others. 2. These are splice sites that are always used. 3. These are sites that are involved in alternative splicing, resulting in the removal of exons from some mRNA molecules. 4. These are sequences within exons or introns that resemble consensus splicing signals but are not true splice sites. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	---------	--	-----	------

Objective Question

80	1001710		4.0	1.00
----	---------	--	-----	------

		Which of the following sequence modules is NOT a basal promoter element?		
		1. CAAT box. 2. GC box. 3. Octamer module. 4. TATA box.		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

81	1001711	Which of the following is a common cause of errors in genome replication?	4.0	1.00
		1. Formation of G-U base pairs at the replication fork. 2. Replication of regions of the genome that are being transcribed. 3. A tautomeric shift within a nucleotide in the template DNA. 4. The presence of nucleosomes attached to the DNA being replicated.		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

82	1001712	Chemicals such as _____ add alkyl groups to nucleotides in DNA molecules to cause mutation.	4.0	1.00
		1. Ethidium bromide. 2. Ethylmethane sulfonate. 3. Deaminating agents. 4. 5-Bromouracil.		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

83	1001713		4.0	1.00
----	---------	--	-----	------

Which of the following statements is FALSE?

1. An increase in cytosolic calcium concentration can activate a protein kinase.
2. Dimerization of growth factor receptors can activate a protein kinase.
3. The appearance of PIP3 at the plasma membrane can activate a protein kinase.
4. Hydrolysis of GTP by Ras can activate a protein kinase.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

84	1001714	Which of the following represents a replication-deficient adenoviral vector based on the simian adenovirus type Y25 that has been used for producing several vaccines, including COVID-19? 1. ChAdOx1. 2. CoVax9. 3. BrAvaTO. 4. CEPI2019. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	---------	--	-----	------

Objective Question

85	1001715	Interphase chromosomes are useful for fine-scale mapping by fluorescent in situ hybridization because they _____ 1. are the least condensed type of chromosome. 2. are easily distinguished from each other by their structures. 3. have transcriptionally active regions of chromatin that are required for this technique. 4. allow for physical mapping of genomes to 1 kb resolution. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	---------	---	-----	------

Objective Question

86	1001716		4.0	1.00
----	---------	--	-----	------

		Which of the following is a limitation with chain termination sequencing? 1. The sequence reads are less than 100 bp. 2. The sequences often contain errors. 3. Intrastrand base pairing can block the progress of the DNA polymerase and may also affect the migration of the molecules during electrophoresis. 4. It is not possible to sequence both strands of a DNA molecule. A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
87	1001717	What is the advantage of probing a transcriptome with mRNAs bound to ribosomes? 1. Eukaryotic mRNA molecules are difficult to isolate unless complexed to a ribosome. 2. mRNA molecules isolated from ribosomes represent those that are actively being translated into proteins. 3. mRNA molecules isolated from ribosomes are more stable than other mRNA molecules. 4. mRNA molecules that are not being translated by ribosomes still contain their intron sequences. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
88	1001718	Which of the following is useful in understanding protein structure and conformation? 1. Fourier Transform Infrared Spectroscopy. 2. X-ray Diffraction. 3. Circular Dichroism Spectroscopy. 4. High-Resolution Mass Spectrometry. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
89	1001719		4.0	1.00

CAR-T cell therapy is recently approved in India for treatment of _____.

1. COVID-19.
2. Refractory B-cell lymphomas and leukemia.
3. Cardiovascular disease.
4. Autoimmune disorders.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

90 1001720

HAT selection can be used when cell hybrids are made between mutant cell lines deficient in _____.

1. Thymidine kinase and Hypoxanthine guanosine phosphoribosyl transferase.
2. Aminopterin kinase and Hypoxanthine guanosine phosphoribosyl transferase.
3. Thymidine kinase and Hypoxanthine adenine phosphotransferase.
4. Aminopterin kinase and Hypoxanthine adenine phosphotransferase.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

91 1001721

Which of the following is a method for selective culture of tumor cells?

1. Monolayer culture on agar plates.
2. Suspension culture on microbeads.
3. Suspension Cloning.
4. Hollow fiber culture.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

92 1001722

4.0 1.00

Pig liver transplantation for ten days in a 50-year-old clinically dead human was recently reported in the Year 2024 from:

1. Maryland, USA
2. Massachusetts, USA
3. Chengdu, China
4. Assam, India

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

93	1001723	The first success of somatic cell cloning in mice was achieved by _____ of cumulus cells into enucleated oocytes. 1. Direct intra-cytoplasmic injection of the nucleus. 2. Electrofusion method. 3. Handmade cloning method. 4. Serial nuclear transfer method.	4.0	1.00
		A1 : 1 A2 : 2 A3 : 3 A4 : 4		

Objective Question

94	1001724	Which of the following criteria can be used as evidence for fertilization in stained oocytes? 1. Evidence of Germinal Vesicle Breakdown (GVBD) 2. Swelling of Lysosomes in the ooplasm. 3. Thinning of Zona Pellucida and exocytosis of cortical granules. 4. Evidence of sperm tail in the ooplasm.	4.0	1.00
		A1 : 1 A2 : 2 A3 : 3 A4 : 4		

Objective Question

95	1001725		4.0	1.00
----	---------	--	-----	------

Which of the following hormones are commonly used for superovulation in mice?

1. PMSG and hCG.
2. FSH and LH.
3. GnRH and LH.
4. GnRH and FSH.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

96 1001726

Which of the following is the basic unit of carbohydrates?

1. Fatty Acid
2. Monosaccharide
3. Disaccharide
4. Oligosaccharide

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

97 1001727

The alpha carbon atoms of all amino acids are asymmetric except

1. Alanine
2. Serine
3. Glycin
4. Valine

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

98 1001728

4.0

1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A) : A chemical reaction with a negative ΔG° is spontaneous under standard conditions.

Reason (R) : A negative ΔG° indicates the reaction releases energy and proceeds towards completion.

In light of the above statements, choose the *most appropriate* answer from the options given below .

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

99	1001729	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) : Sucrose is a non-reducing sugar. Reason (R) : The glycosidic bond in sucrose links the reducing ends of the two monosaccharides. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below . 1. Both (A) and (R) are correct and (R) is the correct explanation of (A). 2. Both (A) and (R) are correct but (R) is NOT the correct explanation of (A). 3. (A) is correct but (R) is not correct. 4. (A) is not correct but (R) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
----	---------	---	-----	------

Objective Question

100	1001730		4.0	1.00
-----	---------	--	-----	------

Which of the following disaccharides is reducing sugar?

- (A) Sucrose
- (B) Maltose
- (C) Lactose
- (D) Trehalose

Choose the **correct** answer from the options given below:

- 1. (A), and (B) only.
- 2. (B) and (C) only.
- 3. (A), (B), and (D) only.
- 4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

101 1001731

4.0 1.00

Peroxisomes differ from mitochondria and chloroplasts. Which of the statements about peroxisomes is true?

- (A) Surrounded by only a single membrane
- (B) Lack of DNA or ribosomes
- (C) Contains oxidative enzymes like catalase and urate oxidase
- (D) Involves in carbon utilization

Choose the **correct** answer from the options given below:

- 1. (A), and (B) only.
- 2. (A), and (C) only.
- 3. (A), (B), and (C) only.
- 4. (B), (C) and (D) only.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

102 1001732

4.0 1.00

Match the following major cyclins (**List-I**) with cyclin dependant kinases (CDKs) of vertebrates (**List-II**)

List-I	List-II
Cyclin-CDKs	Cyclin
(A). G-CDK	(I). Cyclin A
(B). G1/S-CDK	(II). Cyclin E
(C). S-CDK	(III). Cyclin B
(D). M-CDK	(IV). Cyclin D

Choose the **correct** answer from the options given below:

1. (A) - (IV), (B) - (II), (C) - (I), (D) - (III)
2. (A) - (I), (B) - (II), (C) - (IV), (D) - (III)
3. (A) - (IV), (B) - (I), (C) - (III), (D) - (II)
4. (A) - (I), (B) - (II), (C) - (III), (D) - (IV)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

103 1001733

4.0 1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A) : Anaerobic bacteria derive their electron transport chain from alternative electron acceptors other than oxygen.

Reason (R) : Anaerobic bacteria lack oxygen as the terminal electron acceptor in their electron transport chain, thus they utilize alternative molecules such as nitrate, sulfate, or carbon dioxide.

In light of the above statements, choose the *most appropriate* answer from the options given below :

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

104	1001734	Which of the following statements accurately describes riboswitches in transcriptional gene control? 1. Riboswitches are DNA sequences that regulate gene expression by binding to specific proteins involved in transcription. 2. Riboswitches are small RNA molecules that bind to mRNA and regulate gene expression at the post-transcriptional level. 3. Riboswitches are RNA elements located within the 5' untranslated region (UTR) of mRNA that regulate transcription initiation. 4. Riboswitches are DNA sequences that undergo conformational changes upon binding to specific metabolites, thereby influencing the transcription of downstream genes. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
-----	---------	---	-----	------

Objective Question

105	1001735	Which of the following statements accurately describes how different base pairs in DNA can be recognized from their edges without opening the double helix, based on the DNA recognition code? 1. The DNA recognition code relies solely on the sequence of nucleotides within the double helix. 2. Different base pairs can be recognized from their edges through hydrogen bonding patterns and shape complementarity. 3. Recognition of base pairs occurs only when the double helix is fully unwound. 4. The DNA recognition code is independent of the chemical properties of the bases. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
-----	---------	---	-----	------

Objective Question

106	1001736	Which of the following techniques can be used to identify sequence-specific DNA binding proteins? 1. Southern blotting 2. Western blotting 3. Electrophoretic mobility shift assay (EMSA) 4. Polymerase chain reaction (PCR) A1 : 1 A2 : 2 A3 : 3	4.0	1.00
-----	---------	--	-----	------

		A4 : 4		
Objective Question				
107	1001737	Eukaryotic tRNAs are synthesized by _____ 1. RNA polymerase I 2. RNA polymerase II 3. RNA polymerase III 4. RNA polymerase IV A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
108	1001738	What happens to the expression of the lac operon when both glucose and lactose are present in the environment? 1. The lac operon is activated, and lactose metabolism occurs while glucose metabolism is repressed. 2. The lac operon is repressed due to glucose presence, and lactose metabolism occurs only when glucose is depleted. 3. The lac operon is repressed, and neither lactose nor glucose is metabolized. 4. The lac operon is constitutively active, leading to simultaneous metabolism of lactose and glucose. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
109	1001739	Which enzyme catalyzes the deamination of arginine to produce nitric oxide (NO), a remarkable signaling molecule in both plants and animals? 1. Nitric oxide synthase (NOS) 2. Guanylyl Cyclase 3. Nitrate reductase 4. Nitric oxide dehydrogenase A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

110	1001740	Which checkpoint in the cell cycle ensures that DNA is undamaged and ready for replication? 1. G1 checkpoint 2. S checkpoint 3. G2 checkpoint 4. M checkpoint A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
-----	---------	--	-----	------

Objective Question

111	1001741	Which statements regarding Nitric Oxide (NO) and Guanylyl Cyclase (GC) are correct? (A) NO is synthesized by GC. (B) GC converts NO into cyclic guanosine monophosphate (cGMP). (C) NO acts as a signaling molecule and activates GC. (D) GC acts as both an intracellular receptor for NO and intracellular signaling protein. Choose the correct answer from the options given below: 1. (A), and (B) only. 2. (A), and (C) only. 3. (A), (B), and (C) only. 4. (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
-----	---------	---	-----	------

Objective Question

112	1001742		4.0	1.00
-----	---------	--	-----	------

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A) : BrdU labeling is used to identify proliferating cells.

Reason (R) : BrdU is a thymidine analog that stops cell division of inactive cells and promotes cell division of proliferating cells.

In light of the above statements, choose the *most appropriate* answer from the options given below :

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

113	1001743	Which of the following steps is NOT an essential process during cell cryopreservation? 1. Addition of cryoprotectants to prevent ice crystal formation. 2. Gradual cooling of cells to from freezing to ultra low temperature 3. Rapid thawing of cells at 37 °C 4. Counting of cells before filling into cryovials A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
-----	---------	---	-----	------

Objective Question

114	1001744	Identify the the correct sequential steps in the process of metastasis. (A) Cells grow as a benign tumor (B) Cells become invasive and enter capillary (C) Cells adhere to blood vessels and escape from the blood vessel to distant locations. (D) Colonize to full blown metastasis Choose the correct answer from the options given below: 1. (A), (B), (C), (D). 2. (B), (A), (D), (C). 3. (C), (D), (B), (A). 4. (A), (C), (B), (D).	4.0	1.00
-----	---------	---	-----	------

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
115	1001745	Which process is genetically determined and involves several different genes, leading to a progressive shortening of telomeres until cells are unable to divide further? 1. Mutation 2. Apoptosis 3. Senescence 4. Differentiation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
116	1001746	Which sequencing technology uses fluorescently labeled nucleotides with reversible terminators? 1. Illumina sequencing 2. Ion Torrent sequencing 3. PacBio sequencing 4. Nanopore sequencing A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
117	1001747	The enzyme deficiency that makes the myeloma cell unable to survive in HAT selection medium is _____ 1. DNA polymerase 2. Hypoxanthine-guanine phosphoribosyl transferase (HGPRT) or thymidine kinase (TK) 3. Ribonuclease 4. DNA ligase	4.0	1.00

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
118	1001748	Which technique relies on the detection of DNA content in individual cells for the determination of stages of cell cycle? 1. Immunohistochemistry 2. Western blotting 3. ELISA (Enzyme-Linked Immunosorbent Assay) 4. Flow cytometry A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
119	1001749	Which of the following methods is NOT commonly used for cell cycle analysis? 1. Flow cytometry 2. Western blotting 3. Immunofluorescence 4. BrdU incorporation assay A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
120	1001750	Which of the following is NOT a reason for the utilization of embryo sexing techniques in bovine reproduction? 1. To increase the efficiency of breeding programs by selecting desired sexes for specific traits. 2. To enhance genetic progress by selectively breeding for desired traits in specific genders. 3. To diagnose and prevent sex-linked genetic disorders in offspring. 4. To control the population growth of specific genders within the bovine population. A1 : 1	4.0	1.00

		A2 : 2			
		A3 : 3			
		A4 : 4			