

PREVIEW QUESTION BANK

Module Name : Fish Biotechnology-ENG
Exam Date : 09-Jul-2023 Batch : 14:30-16:30

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	2001	Which one of the following is not one of the features of parliamentary form of government? 1. Majority party rule 2. Collective Responsibility 3. Integrated and Independent Judiciary 4. Dissolution of the lower house A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	2002	Which of the following term implies that 'India is a neither a dependency nor a dominion of any other nation'? 1. Socialist 2. Sovereign 3. Secular 4. Democratic A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	2003	Which of the following form the maximum water composition on the earth's surface? 1. Oceans 2. Ice caps 3. Glaciers 4. Lakes A1 : 1 A2 : 2	4.0	1.00

		A3 : 3		
		A4 : 4		
Objective Question				
4	2004	Which one of the following does not fall under the category of 'biomes? 1. Forest 2. Sky 3. Desert 4. Grassland A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
5	2005	IUCN publishes information about which of the following species as Red List of threatened species? 1. Endangered Species 2. Vulnerable Species 3. Extinct Species 4. Rare Species A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
6	2006	Who was the first Indian to win an individual medal in Olympics? 1. Milkha Singh 2. Karnam Malleshwari 3. P. T. Usha 4. K. D. Jadhav A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
7	2007	Who among the following reformers founded "Arya Samaj"? 1. Raja Ram Mohan Roy 2. Swami Dayananda Saraswati 3. Atmaram Pandurang 4. Ishwarchandra Vidyasagar A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
8	2008	What does "Triratna" mean in Buddhism? 1. Tripitaka 2. Buddha, Dhamma (dharma), Sangha 3. Satya, Ahimsa, Karuna 4. Sheel, Samadhi, Sangha A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
9	2009	Who started the Indian Reforms Association? 1. Narayan Guru 2. Swami Vivekananda 3. Krishna swami Aiyar 4. Keshav Chandra Sen A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

10	2010	Consider the following statements (A). UN General Assembly has declared 2023 as the international year of millets (B). Odisha govt. ropes in FICCI to promote millets globally (C). Odisha Millets Mission is a flagship programme of the Odisha government to revive millets in farms and on plates Choose the correct answer from the options given below: 1. (A) and (B) only. 2. (B) and (C) only. 3. (A) and (C) only. 4. (A), (B) and (C). A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

11	2011	Phomopsis blight occurs in which of the following crops? 1. Brinjal 2. Bajra 3. Sugarcane 4. Potato A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

12	2012	Endemic pests can be described as? 1. Pest occurs in a few specific area. 2. Pest occurs in same area, year after year. 3. Pest occurs frequently in current season in abundance. 4. Pest occurs in severe form. A1 : 1 A2 : 2 A3 : 3	4.0	1.00
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A4 : 4

Objective Question

13	2013	Which country is the largest producer of raw silk? 1. Japan 2. India 3. China 4. South Korea A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

14	2014	Transfer of Ownership is the example of which utility..... 1. Time utility 2. Place utility 3. Possession utility 4. Form utility A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

15	2015	What happens to the total number of chromosomes during mitotic cell division? 1. gets doubled 2. gets halved 3. remains the same 4. divides into four A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

16	2016	What is the minimum forest cover to be maintained as per the National Forest Policy, 1988? 1. One-half 2. One-third 3. One-fourth 4. Two-third A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

17	2017	Who among the following is known as the "Father of Agronomy"? 1. Stephen Hales 2. Gregor Johann Mendel 3. Peter Decresenzi 4. D N Walia A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

18	2018	Which of the following plant hormones helps in shoot elongation? 1. Auxin 2. Gibberellic acid 3. Absciscic acid 4. Cytokinin A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

19	2019		4.0	1.00
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Select from the following the chemical property of soil.....

1. Colour
2. pH
3. Texture
4. Structure

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

20 2020

The process of separating quality grains from chaff is called as.....

1. Winnowing
2. Threshing
3. Harvesting
4. Tilling

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

21 141001

For a particular trait, the phenotypic variance is 20, and genetic variance is 4. The broad sense heritability is

1. 80
2. 5
3. 0.2
4. 24

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

22 141002

4.0 1.00

The phenotypic variance for a particular trait is 20 and the environmental deviation is 4. The genotypic variance is

1. 5
2. 16
3. 24
4. 80

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

23	141003	The additive genetic value for a trait is 4, dominance deviation is 8 and genotypic value is 20. The interaction deviation is 1. 32 2. 52 3. 8 4. 10 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

24	141004	The heritability for a particular trait is 0.4 and the phenotypic variance is 10. The additive genetic variance is 1. 4 2. 10.4 3. 9.6 4. 10.16 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

25	141005		4.0	1.00
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In a hatchery, the effective population size of Rohu population is 25. The likely rate of inbreeding is

1. 0.01
2. 0.02
3. 0.1
4. 0.04

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

26	141006	The Amur carp, popular in India is a fast-growing strain of 1. Rohu 2. Catla 3. Silver carp 4. Common carp A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

27	141007	The zebrafish research centre developed at ICAR-CIFE is called as 1. ZIRC 2. EZRC 3. CZRC 4. CZeBraG A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

28	141008		4.0	1.00
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		ICAR-CIBA is conducting the genetic improvement program of which shrimp species? 1. <i>Penaeus indicus</i> 2. <i>Penaeus monodon</i> 3. <i>Penaeus merguensis</i> 4. <i>Penaeus vannamei</i> A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
29	141009	The genetic improvement program in India to develop a suitable saline-tolerant species for inland saline states of India is targeted towards which species? 1. Common carp 2. Grass carp 3. Silver carp 4. Rohu A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
30	141010	The catfish species wherein the genetic improvement program being conducted for harvest bodyweight in India is 1. <i>Clarias gariepinus</i> 2. <i>Clarias magur</i> 3. <i>Clarias batrachus</i> 4. <i>Channa striata</i> A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
31	141011		4.0	1.00

		The genetic improvement program of freshwater prawn <i>Macrobrachium rosenbergii</i> is conducted at 1. ICAR-CIFA 2. ICAR-CIFE 3. ICAR-NBFGR 4. ICAR-CIBA A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
32	141012	GMT strain stands for 1. Genetically Modified Tilapia 2. Genetically Male Tilapia 3. Genetically Mature Tilapia 4. Georgia Male Tilapia A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
33	141013	Aqua Advantage Salmon is a 1. Selectively bred strain of salmon 2. Monosex strain of salmon 3. All female strain of salmon 4. Genetically modified salmon A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
34	141014		4.0	1.00

		Cross-breeding of two divergent strain may result in 1. Inbreeding depression 2. Hybrid vigour 3. Sterile progeny 4. Triploid progeny A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
35	141015	The sex determination system in Indian major carps is 1. ZZ-ZW 2. XX-XY 3. ZZ-ZO 4. XX-XO A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
36	141016	The following is true with respect to quantitative traits 1. Non normal distribution 2. Monogenic traits 3. Exhibit discrete classes 4. Display continous variation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
37	141017		4.0	1.00

For a population to be in Hardy Weinberg Equilibrium, the following is not an assumption

1. Absence of mutation
2. Absence of migration
3. Absence of genetic selection
4. Absence of random mating

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

38	141018	The following trait usually exhibits high heritability 1. Survival 2. Fecundity 3. Growth 4. Age at maturity A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

39	141019	The following marker exhibits higher rate of polymorphism 1. SNP 2. RAPD 3. CytB 4. Microsatellite A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

40	141020		4.0	1.00
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The following is known as Father of Animal Breeding

1. Ronald Fisher
2. Gregor Mendel
3. Charles Darwin
4. Jay Lush

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

41	141021	Which of the following is NOT a type of point mutation?	4.0	1.00
		1. Silent mutation 2. Missense mutation 3. Nonsense mutation 4. Frameshift mutation		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

42	141022	What is the ideal A_{260}/A_{280} ratio for pure RNA?	4.0	1.00
		1. 1.0 2. 1.5 3. 1.8 4. 2.0		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

43	141023		4.0	1.00
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What is the function of isoamyl alcohol in DNA isolation?

1. To denature proteins
2. To extract hydrophobic lipids
3. To prevent foaming during extraction
4. To dissolve DNA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

44	141024	Which statements about the leading and lagging strands during DNA replication are correct?	4.0	1.00
1. Both strands are synthesized in the same direction. 2. The leading strand is synthesized in the 3' to 5' direction. 3. The lagging strand is synthesized in the 5' to 3' direction. 4. Both strands are synthesized continuously.				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

45	141025	Which of the following is not a component of a eukaryotic gene?	4.0	1.00
1. Operon 2. Exon 3. Intron 4. Promoter				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

46	141026		4.0	1.00
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What type of bond connects nucleotides together to form a DNA strand?

1. Hydrogen bond
2. Ionic bond
3. Phosphodiester bond
4. Covalent bond

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

47	141027	Which of the following is NOT a step in the PCR process?	4.0	1.00
1. Denaturation 2. Annealing 3. Ligation 4. Extension				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

48	141028	Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A) : Fermentation can be considered as biotechnology. Reason (R): Biotechnology is defined as the application of biological entities to produce products and services. 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.	4.0	1.00
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

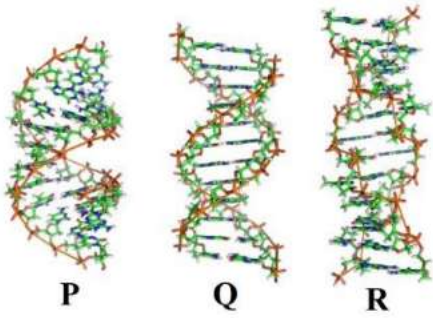
49	141029	Which of the following organelles is responsible for detoxifying harmful substances in a eukaryotic cell? 1. Lysosome 2. Golgi apparatus 3. Endoplasmic reticulum 4. Peroxisome A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

50	141030	Given below are two statements: Statement (I): Ribosomes are not cell organelles Statement (II): Ribosomes don't have a membrane In light of the above statements,choose the <i>most appropriate</i> answer from the options given below. 1. Both Statement (I) and Statement (II) are true. 2. Both Statement (I) and Statement (II) are false. 3. Statement (I) is true but Statement (II) is false. 4. Statement (I) is false but Statement (II) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

51	141031		4.0	1.00
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In the above image, P, Q, R represents

1. P: Z-DNA; Q: A-DNA; R: B-DNA
2. P: A-DNA; Q: Z-DNA; R: B-DNA
3. P: A-DNA; Q: B-DNA; R: Z-DNA
4. P: Z-DNA; Q: B-DNA; R: A-DNA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52	141032	Which of the following macromolecule has peptidyl transferase activity during translation?	4.0	1.00
1. tRNA synthetase 2. Ribosomal RNA 3. Elongation factor Tu 4. Elongation factor G				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

53	141033	What is the function of primase in DNA replication?	4.0	1.00
1. Primase synthesizes RNA primers that serve as starting points for DNA synthesis. 2. Primase adds nucleotides to the growing DNA strand. 3. Primase unwinds the double helix of DNA. 4. Primase proofreads the newly synthesized DNA strand.				
A1 : 1				

		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
54	141034	In eukaryotic cells, transcription occurs in 1. The cytoplasm 2. The nucleus 3. The mitochondria 4. Both the nucleus and cytoplasm. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
55	141035	Most living organisms have DNA as their genetic material. Why is RNA not selected as the genetic material for life on Earth? 1. RNA is double-stranded and less chemically stable than DNA 2. RNA contains the unstable base thymine instead of uracil found in DNA 3. RNA is more prone to spontaneous hydrolysis than DNA 4. RNA is a catalytic molecule that is not suited for storage of genetic information A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
56	141036	Which is the final donor of methyl group in biological system? 1. Methyl cobalamine 2. S-adenosyl Methionine 3. Lecithin 4. Choline A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

57	141037	Most widely used masculinising agent for fishes 1. 11-keto testosterone 2. 17 α-methyl testosterone 3. Dihydroxyprogesterone 4. Corticosterone A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

58	141038	Which of the following are the position of double bonds in arachidonic acid? 1. 2,5,8,11 2. 3,6,9,12 3. 4,7,10,13 4. 5,8,11,14 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

59	141039	Which of the following is a potent vasodilator? 1. Nitric oxide 2. Endothelin 3. Angiotensin 2 4. Vasotocin A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

60	141040	Which of the following is an epigenetic mechanism by which gene expression can be downregulated?	4.0	1.00
		1. Phosphorylation 2. Acidification 3. Methylation 4. Acetylation		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

61	141041	Which statement is true about MPC (mitochondrial pyruvate carrier)?	4.0	1.00
		1. MPC is responsible for the conversion of pyruvate to acetyl-CoA. 2. MPC is located in the cytoplasm of cells. 3. MPC consists of three subunits: MPC1, MPC2, and MPC3. 4. MPC facilitates the transport of pyruvate across the mitochondrial membrane.		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

62	141042	Which enzyme is the most important ion transport enzyme in crustaceans that maintains and regulates haemolymph osmotic pressure?	4.0	1.00
		1. Na⁺/K⁺-ATPase pump 2. Protein kinase A 3. Ca Mg ATPase 4. FXYD2 phosphorylase		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

63	141043	Given below are two statements: Statement (I): Iodine number is used as a measure of unsaturation of oils. Statement (II): Acid number values are similar to the free fatty acid value. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are correct. - Both Statement (I) and Statement (II) are incorrect. - Statement (I) is correct but Statement (II) is incorrect. - Statement (I) is incorrect but Statement (II) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

64	141044	Which of the following wave of ECG represent ventricular repolarisation? - P wave - QRS wave - AV wave - T wave A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

65	141045	Anodic, but temperature-insensitive haemoglobin is present in - Salmon - Tuna - Carp - Tench A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

66	141046	Which of the following has a transmembrane receptor? 1. Testosterone 2. Cortisol 3. Thyroid-stimulating hormone 4. Thyroxine A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

67	141047	Which of the following enzyme is involved in the conversion of EPA to DHA? 1. Δ -4 desaturase 2. Δ -5 desaturase 3. Δ -6 desaturase 4. Δ -9 desaturase A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

68	141048	Which is the vitamin involved in the synthesis of corticosteroid hormone? 1. A 2. C 3. E 4. K A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

69	141049		4.0	1.00
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The main chemical messenger secreted by neuroepithelial (NEC) of teleosts

1. Serotonin
2. Acetyl choline
3. GABA
4. Epinephrine

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

70	141050	Which of the following vitellogenin lack phosvitin?	4.0	1.00
		1. VtgA 2. VtgB 3. VtgC 4. VtgD		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

71	1002901	Given below are two statements: Statement (I): G protein-coupled receptor is an example of single-pass transmembrane protein. Statement (II): Glycophorin-A is an example of multi-pass transmembrane protein. In light of the above statements,choose the <i>most appropriate</i> answer from the options given below. 1. Both Statement (I) and Statement (II) are true. 2. Both Statement (I) and Statement (II) are false. 3. Statement (I) is true but Statement (II) is false. 4. Statement (I) is false but Statement (II) is true.	4.0	1.00
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question			
72	1002902	The enzyme 'catalase' is abundantly present in which of the following cell organelles? 1. Peroxisomes 2. Lysosomes 3. Golgi complex 4. Endosomes A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
73	1002903	A researcher is studying the effect of nutrients on energy production at the cellular level. Which organelle should he focus on? 1. Golgi complex 2. Peroxisomes 3. Smooth Endoplasmic Reticulum 4. Mitochondria A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
74	1002904	The following are the different stages in cell division (A). M-Stage (B). S-Stage (C). G₁-Stage (D). G₂-Stage Which of the following option depicts the accurate sequence of the cell cycle 1. (A), (B), (C), (D). 2. (B), (A), (C), (D). 3. (B), (A), (D), (C). 4. (C), (B), (D), (A). A1 : 1 A2 : 2	4.0 1.00

		A3 : 3		
		A4 : 4		

Objective Question

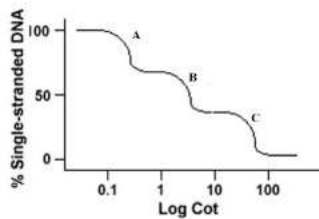
75	1002905	A researcher is studying the effect of a chemical compound on a fish. After a few days, he observed DNA fragmentation /DNA laddering in some of the cells. What does it mean? 1. The cells are undergoing necrosis 2. The compound is toxic to DNA 3. The cells are dividing 4. The cells are undergoing apoptosis A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

76	1002906	A researcher has discovered a novel virus. The nucleotide composition of the virus is as follows: 16% adenine, 24% guanine, 32% thymine and 28% cytosine. The genetic material present in the virus is 1. Double-stranded DNA 2. DNA- RNA hybrid 3. Single-stranded DNA 4. Single-stranded RNA A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

77	1002907		4.0	1.00
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In the above Cot curve, A, B, C represents...

1. A: Single copy DNA sequences; B: Highly repetitive DNA sequences; C: Moderately repetitive sequences
2. A: Highly repetitive DNA sequences; B: Single copy DNA sequences; C: Moderately repetitive sequences
3. A: Highly repetitive DNA sequences; B: Moderately repetitive DNA sequences; C: Single copy sequences
4. A: Moderately repetitive DNA sequences; B: Highly repetitive DNA sequences; C: Single copy sequences

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

78 1002908

A researcher has exposed a bacterium to several mutagens. Later, he observed that the mutagens negatively affected the translation initiation. Which of the following regions would have mutations to prevent translation initiation?

1. 16S ribosomal DNA
2. Shine-Dalgarno sequences
3. Both 16S ribosomal DNA & Shine-Dalgarno Sequences
4. Promoter region

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

79 1002909

Which of the following is true regarding the Tryptophan operon?

1. It is an example of negative regulation of gene expression.
2. It is an example of positive regulation of gene expression.
3. It is an example of both positive and negative regulation of gene expression.
4. It is an example of the regulation of gene expression by RNA interference.

A1 : 1

A2 : 2

A3 : 3

4.0 1.00

A4 : 4

Objective Question

80	1002910	Catalytically active RNA molecules are known as 1. Ribozyme 2. RNase 3. Ribase 4. RNA exonuclease-III A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

81	1002911	In translation, the initiator tRNA occupies which of the following site of the ribosome? 1. Z-Site 2. P-Site 3. E-Site 4. A-Site A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

82	1002912	What is the function of the Cas9 enzyme in the CRISPR system? 1. To recognize the target DNA sequence 2. To cut the target DNA sequence 3. To insert a new DNA sequence 4. To amplify the target DNA sequence A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question			
83	1002913	Which of the following fish is the first transgenic fish approved for human consumption? 1. 'AquAdvantage' Rainbow trout 2. 'AquAdvantage' Salmon 3. 'AquAdvantage' Herring 4. 'AquAdvantage' Pollack A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
84	1002914	Which of the following statements is true about transgenic organisms? 1. Transgenic organisms are always genetically identical to their wild-type counterparts. 2. The expression of transgenes in transgenic organisms is always stable and predictable. 3. Transgenic organisms can be created through various methods, including CRISPR-Cas9 gene editing. 4. Transgenic organisms are always sterile and unable to reproduce. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
85	1002915	The optimum concentration of CO₂ for cell culture is 1. 2% 2. 3% 3. 4% 4. 5% A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
86	1002916		4.0 1.00

A researcher wanted to estimate the number of live, healthy cells in a cell culture sample. Which of the following dyes should he use to stain the cells to observe the live cells?

1. Coomassie Blue
2. Giemsa
3. Ethidium Bromide
4. Trypan Blue

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

87	1002917	Which of the following is NOT used to characterize cell lines?	4.0	1.00
		1. Morphology 2. Immunophenotyping 3. Cytogenetic analysis 4. Magnetic resonance imaging (MRI)		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

88	1002918	Which of the following is NOT a characteristic of stem cells?	4.0	1.00
		1. Differentiation 2. Proliferation 3. Lack of genetic variability 4. Self-renewal		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

89	1002919		4.0	1.00
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What are induced pluripotent stem cells (iPSCs)?

1. Stem cells derived from the inner cell mass of a blastocyst
2. Stem cells found in adult tissues, such as bone marrow or adipose tissue
3. Stem cells generated by reprogramming somatic cells back to a pluripotent state
4. Stem cells found in the umbilical cord blood of newborns

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

90	1002920	Which of the following is NOT a common cryoprotectant used in cryopreservation?	4.0	1.00
		1. Sodium Chloride 2. DMSO 3. Glycerol 4. Ethylene Glycol		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

91	1002921	What is the typical size range of nanoparticles?	4.0	1.00
		1. 0.1 nm to 1 nm 2. 1 nm to 100 nm 3. 100 nm to 1,000 nm 4. 1,000 nm to 10,000 nm		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

92	1002922		4.0	1.00
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Which of the following PCR technique does not require a thermocycler?

1. LAMP
2. RT-PCR
3. Realtime PCR
4. Droplet Digital PCR

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

93	1002923	What is the mechanism of action of a DNA vaccine? 1. It stimulates the immune system to produce antibodies against the pathogen. 2. It introduces genetic material encoding an antigen into cells, which then produce the antigen. 3. It directly kills the pathogen in the body. 4. It blocks the pathogen from entering the host cells. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

94	1002924	Which hormone is responsible for sperm production in male fish? 1. Follicle-stimulating Hormone (FSH) 2. Luteinizing Hormone (LH) 3. Gonadotropin-releasing Hormone (GnRH) 4. Testosterone A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

95	1002925		4.0	1.00
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Fish species 'A' is adapted to two different ecosystems. A researcher wishes to study the adaptive diversity of this species between the populations from two different ecosystems. Which of the following markers should he select?

1. RAPD
2. SNP
3. PCR-RFLP
4. SCAR

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

96	1002926	In a population of 100 individuals, DNA marker 'B' showed three alleles, B1, B2, and B3, in 20, 30, and 50 individuals, respectively. What is the PIC value of marker B? 1. 0.18 2. 0.38 3. 0.56 4. 0.62 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

97	1002927	A polymorphism is 1. Any change in the DNA sequence 2. A variation of a gene or marker sequence present in >1% of the population 3. The most common variation of a gene or marker sequence 4. The least common variation of a gene or marker sequence A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

98	1002928		4.0	1.00
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Which of the following genetic markers is most likely to have a higher PIC value?

1. RAPD
2. SNPs
3. Microsatellites
4. All markers have similar PIC values

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

99	1002929	Which of the following is a disadvantage of microsatellite markers? 1. Private Alleles 2. Null Alleles 3. Multiple Alleles 4. Single Allele A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

100	1002930	A researcher wishes to identify the species of fish larvae using molecular markers. Which of the following regions is the most suitable for the identification of species? 1. Cytochrome c oxidase subunit -I 2. Cytochrome c oxidase subunit -II 3. Cytochrome c oxidase subunit -III 4. Cytochrome c oxidase subunit -IV A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

101	1002931		4.0	1.00
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		Which of the following Next Generation Sequencing Technology is based on reversible dye technology? 1. Ion torrent 2. illumina 3. Nanopore 4. Pac Bio A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

102	1002932	Which of the following is a nutrient commonly found in fish that has been linked to nutrigenomic effects on human health? 1. Vitamin C 2. Iron 3. Omega 3-fatty acids 4. Clacium A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

103	1002933	Which of the following statements best describes metagenomics? 1. A field of research that studies the genetic material of individual organisms. 2. The study of genetic variation within a population of organisms. 3. An approach that uses DNA sequencing to analyze the collective genomes of microbial communities. 4. The study of the physical and chemical properties of biological systems. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

104	1002934		4.0	1.00
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		Size of mitochondria/DNA in fish is 1. 4-7 Kbp 2. 8-12 Kbp 3. 16-18 Kbp 4. 20-24 Kbp A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
105	1002935	What is the Protein Data Bank (PDB)? 1. A database of protein sequences and annotations 2. A tool for predicting protein-protein interactions 3. A platform for analyzing gene expression data 4. A database of protein structures and related information A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
106	1002936	Which of the following database has high-quality, manually annotated and non-redundant protein sequence data? 1. UniProtKB/TrEMBL 2. NCBI 3. UniProtKB/Swiss-Prot 4. Ensembl A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
107	1002937		4.0	1.00

Which of the following is the apex body regulating the GMOs in India?

1. Institutional Biosafety Committee (IBSC)
2. Genetic Engineering Approval Committee (GEAC)
3. Review Committee on Genetic Manipulation (RCGM)
4. Recombinant DNA Advisory Committee (RDAC)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

108 1002938

4.0 1.00

Which phosphate group of a nucleotide is typically labelled with the radioactive isotope P^{32} during DNA or RNA labelling?

1. Alpha phosphate group
2. Beta phosphate group
3. Gamma phosphate group
4. Omega phosphate group

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

109 1002939

4.0 1.00

Match **List-I** with **List-II**

List-I	List-II
Blotting Technique	Detecting Molecule
(A). Southern Hybridization	(I). DNA or RNA
(B). Northern Hybridization	(II). DNA
(C). Western Hybridization	(III). RNA
(D). Dot blot	(IV). Protein

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

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

A1 : 1

		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

110	1002940	Which of the following enzyme is used for nick translation? 1. T4 DNA polymerase 2. T7 DNA Polymerase 3. <i>E. coli</i> DNA Polymerase II 4. <i>E. coli</i> DNA Polymerase I A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

111	1002941	What is the purpose of inverse PCR? 1. To amplify a known DNA sequence with flanking regions 2. To identify unknown DNA sequences adjacent to a known DNA region 3. To amplify circular DNA molecules 4. To amplify RNA sequences A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

112	1002942	Which of the following is a commonly used promoter for protein expression in mammalian cells? 1. T7 promoter 2. Lac Promoter 3. CMV Promoter 4. Trc Promoter A1 : 1 A2 : 2 A3 : 3	4.0	1.00
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A4 : 4

Objective Question

113	1002943	Which of the following is NOT true for DNA linkers from adaptors? 1. DNA linkers are blunt-ended, whereas adaptors have overhangs 2. Both linker and adaptor are double-stranded short oligonucleotide sequences 3. Both linker and adaptor can link two DNA molecules together 4. DNA linkers have overhangs, whereas adaptors are blunt-ended A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

114	1002944	What is the purpose of normalization in gene expression analysis? 1. To increase the dynamic range of gene expression measurements 2. To improve the sensitivity of gene expression measurements 3. To identify differentially expressed genes 4. To remove technical variation between samples A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

115	1002945	Which of the following is a disadvantage of using a prokaryotic expression system? 1. Limited host cell compatibility 2. High cost of expression vectors 3. Limited post-translational modification capability 4. Inefficient transcription and translation processes A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question			
116	1002946	Which of the following is NOT a method of DNA delivery to prokaryotic cells? 1. Electroporation 2. Microinjection 3. Transduction 4. Sonification A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
117	1002947	What is the typical pH of the phenol-chloroform mixture used in RNA isolation? 1. Neutral 2. Slightly basic 3. Slightly acidic 4. Highly acidic A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
118	1002948	Monoclonal antibodies are produced by 1. Fusion of B-memory cells with myeloma cells 2. Fusion of T-helper cells with myeloma cells 3. Fusion of B-lymphocytes with myeloma cells 4. Fusion of T-killer cells with myeloma cells A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
119	1002949		4.0 1.00

Which of the following is a commonly used reagent for RNA isolation?

1. Tris-EDTA buffer
2. Tris-HCl buffer
3. TRIzol reagent
4. NaCl solution

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

120 1002950

Which of the following statements about telomeres is not true?

1. They are repetitive DNA sequences at the ends of chromosomes.
2. They protect the ends of chromosomes from degradation and fusion.
3. They shorten with each round of DNA replication.
4. They are only found in prokaryotic cells.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00