

PREVIEW QUESTION BANK

Module Name : Fish Physiology and Biochemistry-ENG
Exam Date : 14-Jul-2023 Batch : 14:30-16:30

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	2001	Choose the incorrect statement regarding the composition of election commission. 1. Appointment of the chief election commissioner and other election commissioners shall be made by the president. 2. President can also appoint regional commissioners after consultation with the election commission. 3. Conditions of service and tenure of office of the election commissioners and regional commissioners shall not be determined by the president. 4. Article 324 under constitution of India is dealing with the composition of election commission. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	2002	Which one of the following amendment acts is referred to as the 'mini constitution'? 1. 42nd 2. 44th 3. 46th 4. 48th A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	2003		4.0	1.00

With regard to the jurisdiction and powers of high court, disputes relating to the election of members of parliament and state legislatures, comes under the ambit of which one of the following jurisdictions?

1. Original
2. Writ
3. Appellate
4. Supervisory

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

4 2004

Which of the following is formed when the moisture is deposited in the form of water droplets on cooler surfaces of solid objects?

1. Frost
2. Fog
3. Mist
4. Dew

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

5 2005

Which of the following is the correct reason for the occurrence of best fishing grounds in the mixing zones (the mixing of warm and cold currents)?

1. It has the moderate temperature
2. It has the slowest sea waves
3. It has the high growth of planktons.
4. It has the sunrays perpendicular to the sea level.

A1 : 1

A2 : 2

4.0 1.00

A3 : 3

A4 : 4

Objective Question

6	2006	Eisenhower Cup is associated with which among the following sports? 1. Tennis 2. Chess 3. Football 4. Golf A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

7	2007	Who was the first woman President of the Indian National Congress? 1. Kasturba Gandhi 2. Sarojini Naidu 3. Annie Besant 4. Aruna Ali A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

8	2008	The dockyard was found in which of the following sites in Indus Valley Civilization? 1. Chanhudaro 2. Lothal 3. Kalibangan 4. Banawali A1 : 1	4.0	1.00
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		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
9	2009	Who built the famous Charminar of Hyderabad? 1. Krishndev Rai 2. Muhammad Quli Qutb Shah 3. Nadir Shah 4. Aurangzeb A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
10	2010	Who discovered the right triangle? 1. Pythagoras 2. Ancient Egyptians 3. Archimedes 4. Michelangelo A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
11	2011	Citrus canker is caused by 1. Virus 2. Viriod 3. Bacteria 4. Fungus	4.0	1.00

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

12	2012	DBM is a specific insect of 1. Brinjal 2. Tomato 3. Cabbage 4. Bottle gourd A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

13	2013	What is the scientific name of mulberry silkworm? 1. Bombyx mori 2. Antherea paphia 3. Antheraea assama 4. Attacus Ricinii A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

14	2014		4.0	1.00
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Subject matter of economics are want, effort and

1. Wealth
2. Growth
3. Satisfaction
4. Income

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

15 2015

The National Bureau of Animal Genetic Resources (NBAGR) is located in

1. Karnal
2. Bengaluru
3. Hisar
4. Jind

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

16 2016

The oldest known agroforestry systems is

1. Alley cropping
2. Taungya systems
3. Home Gardening
4. Shifting cultivation

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

17	2017	The effect or requirement of the relative length of day and night on flowering is called 1. Photomechanics 2. Transpiration 3. Photoperiodism 4. Phytoperiodism A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

18	2018	Which of the following statements are true? (A) Small pores in epidermis of leaves is called stomata. (B) Guard cells present in the stomata are helpful in exchange of gases with atmosphere (C) Transpiration takes place through stomata 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

19	2019		4.0	1.00
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Water holding capacity is highest in which of the following soils?

1. Silt soil
2. Clayey soil
3. Chalk soil
4. Peat soil

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

20 2020

Certified seed is the progeny of

1. Nucleus seed
2. Foundation seed
3. Breeder's seed
4. Registered seed

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

21 141001

For a particular trait, the phenotypic variance is 10, and genetic variance is 2. The broad sense heritability is :

1. 20
2. 12
3. 0.2
4. 100

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question			
22	141002	The phenotypic variance for a particular trait is 10 and the environmental deviation is 2. The genotypic variance is : 1. 20 2. 8 3. 5 4. 12 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
23	141003	The additive genetic value for a trait is 2, dominance deviation is 4 and genotypic value is 10. The interaction deviation is : 1. 16 2. 18 3. 4 4. 12 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00
Objective Question			
24	141004	The heritability for a particular trait is 0.4 and the phenotypic variance is 20. The additive genetic variance is : 1. 8 2. 20.4 3. 19.6 4. 20.16 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0 1.00

Objective Question

25	141005	In a hatchery, the effective population size of Rohu population is 50. The likely rate of inbreeding is : 1. 0.02 2. 0.01 3. 0.2 4. 0.1 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

26	141006	The fast-growing common carp strain popular in India is : 1. Jayanthi 2. Champa 1 3. Champa 2 4. Amur A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

27	141007	The CZeBraG- Centre for Zebrafish Breeding and Genetics Research has been developed at : 1. ICAR-NBFGR 2. ICAR-CMFRI 3. ICAR-CIFA 4. ICAR-CIFE A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

28	141008	The genetic improvement programme of <i>Penaeus indicus</i> under PMMSY scheme is conducted at : 1. ICAR-CIBA 2. ICAR-NBFGR 3. ICAR-CIFA 4. ICAR-CMFRI A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

29	141009	The genetic improvement program for the development of suitable saline-tolerant common carp under PMMSY scheme is conducted by : 1. ICAR-CIFE 2. ICAR-CMFRI 3. ICAR-CIBA 4. ICAR-NBFGR A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

30	141010	The genetic improvement program for harvest bodyweight of catfish, <i>Clarias magur</i> is undergoing at: 1. ICAR-NBFGR 2. ICAR-CIFE 3. ICAR-CIFA 4. ICAR-CMFRI A1 : 1 A2 : 2 A3 : 3	4.0	1.00
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		A4 : 4		
Objective Question				
31	141011	ICAR-CIFA is conducting genetic improvement program of the following species : 1. Rohu, Catla and Freshwater prawn 2. Rohu, Catla and Common carp 3. Rohu, Mrigal and Freshwater prawn 4. Mrigal, Catla and Freshwater prawn A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
32	141012	GIFT strain stands for : 1. Genetically Identical Farmed Tilapia 2. Genetically Improved Farmed Tilapia 3. Genetically Improved Fancy Tilapia 4. Genetically Improved Food Tilapia A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
33	141013	The following is a genetically modified fish : 1. GMT tilapia 2. GIFT tilapia 3. Jayanthi rohu 4. Aqua Advantage salmon A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

34	141014	Hybrid vigour is a result of : 1. Directional selection 2. Cross Breeding 3. Inbreeding 4. Random mating A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

35	141015	The age at maturity in Indian Major Carps is : 1. Two plus years 2. One plus year 3. Three plus years 4. Six months A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

36	141016	The quantitative traits do not display this property : 1. Mendelian inheritance 2. Governed by infinite number of genes 3. Normally distributed 4. Discrete classes A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

37	141017	For a population to be in Hardy Weinberg Equilibrium, the following is an assumption : 1. Genetic selection 2. Random drift 3. Migration 4. Large population A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

38	141018	The traits to exhibit high heritability must have values greater than : 1. 0.2 2. 0.1 3. 0.4 4. 0.05 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

39	141019	The widely used marker for marker-assisted selection is : 1. Microsatellite 2. Allozyme 3. AFLP 4. SNP 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 theory of Natural Selection was proposed by :

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

41 141021

Which of the following properties make DNA the ideal genetic material for all known living organisms ?

1. DNA is highly reactive and can interact with a wide range of molecules.
2. DNA is an unstable molecule that can easily mutate, allowing for genetic diversity
3. DNA is a stable molecule that can protect genetic information from damage and degradation.
4. DNA is a simple molecule that cannot encode much genetic information.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

42 141022

Which of the following is a fundamental phenomenon for interacting biological molecules ?

1. Complementarity
2. Vander Waals force
3. Hydrophobic forces
4. Hydrophilic forces

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

43	141023	The charge of biological molecules plays an essential role in executing their biological functions by enabling specific interactions with other molecules. In this context, what is the net charge of DNA at neutral pH and which molecules are responsible for this charge ? 1. Positive charge due to histone proteins 2. Net charge is zero 3. Negative charge due to phosphate groups 4. Positive charge due to nitrogen bases A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

44	141024	Given below are two statements; one is labelled as Assertion (A), and the other one is labelled as Reason (R). Assertion (A) : In a broad sense, aquaculture can be considered as biotechnology. Reason (R) : Biotechnology is defined as the application of biological entities to produce products or 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 true, and (R) is the correct explanation of (A). 2. (A) is true but (R) is false. 3. (A) is false, but (R) is true. 4. Both (A) and (R) are false. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

45	141025		4.0	1.00
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Which of the following statements is true ?

1. Animal cells have a single type of genetic material - nuclear DNA inherited from both parents.
2. Animal cells have a single type of genetic material - mitochondrial DNA inherited solely from the mother
3. Animal cells have two types of genetic material - nuclear DNA inherited from both parents and mitochondrial DNA inherited from both parents.
4. All animal cells have two types of genetic material - nuclear DNA inherited from both parents and mitochondrial DNA inherited from the mother.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

46 141026

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

Objective Question

47 141027

The PCR technology has revolutionized research in different fields of molecular biology. The annealing temperature is very important for the specific amplification of a region. Which of the following influences the annealing temperature ?

1. Length and composition of primers
2. GC content of the template DNA
3. AT content of the template DNA
4. Repeat regions of the DNA

A1 : 1

A2 : 2

4.0 1.00

A3 : 3

A4 : 4

Objective Question

48 141028

4.0

1.00

Which of the following is NOT a cloning of DNA?

1. Cell division
2. PCR
3. e-PCR
4. Recombinant Plasmid in a host

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

49 141029

4.0

1.00

If the absorbance of a DNA sample at 260 nm is 1.0, what is the approximate DNA concentration ?

1. 10 µg/ml
2. 50 µg/ml
3. 50 ng/ml
4. 50 µg/µl

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

50 141030

4.0

1.00

What is the typical A_{260}/A_{280} ratio for pure DNA ?

1. 0.8
2. 1.0
3. 1.8
4. 2.0

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51	141031	In agarose gel electrophoresis, the relationship between the size of DNA molecules and the agarose concentration during separation is : 1. Directly proportional 2. Inversely proportional 3. No relation 4. Randomly proportional A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

52	141032	Where do DNA replication, transcription, and translation take place in eukaryotic cells ? 1. DNA replication, transcription, and translation all occur within the same cellular compartment 2. DNA replication, transcription, and translation all occur outside of the nucleus 3. DNA replication occurs outside of the nucleus, while transcription and translation occur within the nucleus 4. DNA replication and transcription occur within the nucleus, while translation occurs outside of the nucleus in the cytoplasm A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

53	141033	Which of the following is a precipitation agent in the DNA isolation procedure ? 1. Isopropanol 2. Chloroform 3. Phenol 4. Isoamyl alcohol A1 : 1 A2 : 2	4.0	1.00
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A3 : 3

A4 : 4

Objective Question

54	141034	Genetic diversity is essential for life to adapt to the environment. Do you think life has an internal mechanism to create diversity in the genes ? 1. No, the mechanism is governed by external forces 2. Yes, the mechanism is meiosis 3. Yes, the mechanism is mitosis 4. Yes, the mechanism is DNA replication A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

55	141035	What is the full form of NCBI ? 1. National Centre for Biotechnology Information 2. National Centre for Bioinformatics Information 3. National Council for Biotechnology Information 4. National Council for Bioinformatics Information A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

56	141036	Which of the following blood vessel transports blood from gills to systemic circulation ? 1. Ventral aorta 2. Dorsal aorta 3. Peribranchial artery 4. Epibranchial artery A1 : 1 A2 : 2	4.0	1.00
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A3 : 3

A4 : 4

Objective Question

57 141037

4.0 1.00

What is the counter-current principle in fish gills ?

1. The movement of blood in the opposite direction of water flow to maximize oxygen uptake
2. The movement of arterial and venous blood in opposite direction to maximise oxygen uptake
3. The movement of blood and water in the same direction to maximize oxygen uptake
4. The movement of arterial and venous blood in in the same direction to maximize oxygen uptake

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

58 141038

4.0 1.00

What is the main function of haemoglobin in fish ?

1. To transport oxygen from gills to tissues
2. To transport carbon dioxide from tissues to gills
3. To transport oxygen from tissues to gills
4. To transport carbon dioxide from gills to tissues

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

59 141039

4.0 1.00

Which of the following is not an accessory respiratory organ in fish ?

1. Swim bladder
2. Skin
3. Mouth
4. Intestine

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

60	141040	Which of the following is not a part of the excretory and osmoregulatory organs in fish ? 1. Kidneys 2. Gills 3. Liver 4. Swim bladder A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

61	141041	What is the main function of the leptin in fish ? 1. To regulate appetite and energy stores 2. To reduce body temperature 3. To enhance growth 4. To induce sexual maturation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

62	141042	What are some of the adaptive responses of fish during hypoxia ? 1. Increased heart rate and respiratory rate 2. Decreased heart rate and blood pressure 3. Increased production of anti-freeze proteins 4. Decreased production of C-reactive proteins A1 : 1	4.0	1.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

63	141043	What is hematocrit (Hct) ? 1. The percentage of the column of blood occupied by plasma 2. The percentage of the column of blood occupied by WBCs 3. The term used for the relative heights of the packed layers of RBCs, WBCs, and plasma 4. The term used for the percentage of the column of blood occupied by RBCs A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

64	141044	Which of the following hormone is MIH (maturation inducing hormone) in sciaenids ? 1. 17α, 20β Dihydroxy-4-pregnen-3-one 2. 17α, 20β, 21-trihydroxy-4-pregnen-3-one 3. 20β-hydroxysteroid dehydrogenase 4. GTH-II A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

65	141045	Which protein is significantly up-regulated in the hepatopancreas of shrimp under cold-stress ? 1. GRP78 2. BIP 3. ATF6 4. PERK-eIF2α A1 : 1	4.0	1.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

66	141046	Which signalling pathway is a part of tyrosine kinase receptor signalling ? 1. ATF6 pathway 2. IRE1-XBP1 pathway 3. PKR-ERK-eIF2 α pathway 4. MAPK pathway A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

67	141047	Which biogenic amine is involved in the regulation of Crustacean Hyperglycaemic Hormone (CHH) release in response to environmental stress ? 1. Dopamine 2. Serotonin 3. Epinephrine 4. Norepinephrine A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

68	141048	Which of the following hormones is commonly upregulated with restriction of feed ration ? 1. Ghrelin 2. Gastrin 3. Secretin 4. Leptin	4.0	1.00
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		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
69	141049	Given below are two statements : Statement (I) : Pyruvate dehydrogenase is found in the cytoplasm of cells. Statement (II) : Pyruvate dehydrogenase requires coenzymes such as thiamine pyrophosphate (TPP) and lipoic acid for its activity. 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
Objective Question				
70	141050	Given below are two statements : Statement (I) : Pyruvate carboxylase can be allosterically activated by acetyl-CoA. Statement (II) : Pyruvate carboxylase can be allosterically inhibited by ATP. 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

Objective Question

71	1002951	Which of the following gene is an inhibitor of FSH secretion ? 1. P450-17 2. Amh 3. Dmrt-1 4. Gsdf A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

72	1002952	What is the biochemical process of converting food molecules into energy in the form of ATP called? 1. Breathing 2. Respiration 3. Digestion 4. Fermentation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

73	1002953	Given below are two statements : Statement (I) : Cystein residue at beta chain is involved in primary nitrosohemoglobin formation. Statement (II) : Fish hemoglobins with serine substitution will not have a primary place for NO regulation. 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 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	4.0	1.00
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		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

74	1002954	The Rhesus protein, Rhcg1 is expressed in particular cells of zebrafish : (A) MRCs rich in Na⁺-K⁺-ATPase (NaK-MRC) (B) MRCs rich in vacuolar-type H⁺-ATPase (C) Cells in the renal distal tubule and intercalated cell-like cells in the collecting duct of the kidney (D) Cells in glomeruli Choose the correct answer from the options given below: (A), (B) and (D) only. (A), (B) and (C) only. (B) and (C) only (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

75	1002955	How are WBCs distinguished from RBCs in terms of their cellular density ? - WBCs have lower cellular density compared to RBCs - WBCs have higher cellular density compared to RBCs - WBCs have the same cellular density as RBCs - WBCs have hemoglobin, while RBCs do not A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

76	1002956		4.0	1.00
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Which of the following statements is true regarding the Antarctic Nototheniids ?

1. They have a high concentration of hemoglobin in their blood
2. Their blood contains RBCs but lacks hemoglobin
3. Their blood lacks both RBCs and hemoglobin
4. They have a low plasma volume in their circulatory system

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

77 1002957

4.0 1.00

Given below are two statements :

Statement (I) : The sarcoplasmic reticulum is a specialised ER rich in ribosomes.

Statement (II) : They are involved in controlling calcium concentration inside cardiomyocytes.

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

78 1002958

4.0 1.00

Identify the category of fish that can thrive in an environment where the environmental osmolality is 1.0-1.25 if its serum osmolality of the fish is 1.0-1.3 ?

1. Osmoconformer, Marine water
2. Hyposmoregulator Marine water
3. Stenohaline, freshwater
4. Euryhaline, freshwater

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

79 1002959

4.0 1.00

What is the function of SERCA in fish heart myocytes ?

1. It is an enzyme that catalyzes the hydrolysis of ATP to release energy.
2. It is a transporter that imports Ca^{2+} into the cytosol from the extracellular space.
3. It is a transporter that imports Ca^{2+} into the sarcoplasmic reticulum from the cytosol and an ATPase that hydrolyzes ATP to transport Ca^{2+} ions.
4. It is an enzyme that phosphorylates Ca^{2+} ions to store energy.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

80 1002960

4.0 1.00

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

Assertion (A) : Elasmobranchs do not ingest appreciable volumes of seawater.

Reason (R) : Elasmobranchs are hypo-osmotic to seawater.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

81 1002961

4.0 1.00

Which of the following statement is incorrect about the fish kidneys ?

1. Number of marine species possess aglomerular kidneys and thus produce urine exclusively by tubular secretion
2. Fishes with aglomerular kidney also do not possess distal tubules in the kidneys
3. Aglomerular kidney has a limited capacity to accommodate fluid load
4. Aglomerular kidneys possess a collecting duct system

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

82 1002962

What is the primary function of the aquaporin (AQP) family of proteins ?

1. Enhancing the stability of cell membranes
2. Transporting unconventional permeants, excluding water and glycerol
3. Facilitating selective passage of water and glycerol
4. Facilitating selective passage of water

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

83 1002963

The enzyme which is not involved in deamination :

1. Asparaginase
2. Glutaminase
3. Glutamate dehydrogenase
4. Aspartate aminotransferase

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0

1.00

Objective Question

84 1002964

4.0

1.00

Given below are two statements :

Statement (I) : Phosphoenol pyruvate carboxykinase is downregulated by cortisol signalling.

Statement (II) : Tyrosine amino transferase activity is down regulated by cortisol signalling.

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

85 1002965

What is the term used to describe the ability of an organism to respond to external stimuli ?

1. Adaptability
2. Evolution
3. Irritability
4. Homeostasis

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

86 1002966

Glucocorticoid receptors (GR) of fish are mainly found in :

1. Membrane
2. Nucleus
3. Cytosol
4. Mitochondria

A1 : 1

A2 : 2

4.0 1.00

A3 : 3

A4 : 4

Objective Question

87	1002967	Which of the following is the maturation-inducing steroid in fish ? 1. Estradiol-17β 2. Testosterone 3. Progesterone 4. 17α, 20β-dihydroxy-4-pregnen-3-one A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

88	1002968	Given below are two statements : Statement (I) : Dramatic shift in steroidogenesis pathway from 17 B estradiol to 17 alpha 20 beta hydroxyl progesterone is stimulated by FSH surge. Statement (II) : There is a downregulation of P450 aromatase gene is stimulated by the LH surge. 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 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	4.0	1.00
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Objective Question

89	1002969		4.0	1.00
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Given below are two statements, one is labelled as **Assertion (A)** and other one labelled as **Reason (R)**.

Assertion (A) : In the fish testes, the interstitial compartment contain sertoli cells and leydig cells.

Reason (R) : The Sertoli cells provide structural support to the interstitial compartment.

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. Both (A) and (R) are wrong.
4. (A) is not correct but (R) is correct.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

90 1002970

In which of the following fish, the active spermatogenesis occurs in summer ?

1. Tench
2. Rainbow Trout
3. Seabream
4. Whiting

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0	1.00
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Objective Question

91	1002971
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4.0	1.00
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In the context of spermatogenesis, which statement regarding the loss of developing germ cells via apoptosis is correct ?

1. Cystic spermatogenesis in fish leads to a higher percentage of germ cell loss compared to noncystic spermatogenesis in mammals.
2. Cystic spermatogenesis in fish leads to a higher percentage of sertoli cell loss compared to noncystic spermatogenesis in mammals.
3. Both Cystic spermatogenesis in fish and noncystic spermatogenesis in mammals exhibit similar percentages of germ cell loss.
4. Cystic spermatogenesis in fish results in a lower percentage of germ cell loss compared to noncystic spermatogenesis in mammals.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

92 1002972

Which glycoprotein hormone undergoes most extensive glycosylation ?

1. FSH
2. LH
3. TSH
4. HCG

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

93 1002973

What do you call a germ cell in the testis that has completed meiosis I ?

1. Spermatogonia B
2. Primary spermatocyte
3. Secondary spermatocyte
4. Spermatid

A1 : 1

A2 : 2

A3 : 3

4.0 1.00

A4 : 4

Objective Question

94 1002974

4.0 1.00

Given below are two statements :

Statement (I) : Hormone-receptor binding is irreversible.

Statement (II) : Receptors can undergo down regulation and up regulation.

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

95 1002975

4.0 1.00

Which enzyme is responsible for the inactivation of cAMP ?

1. Phosphodiesterase
2. Adenylate cyclase
3. Kinase
4. Dehydrogenase

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

96 1002976

4.0 1.00

How do growth factors inhibit cell division ?

1. Inducing DNA replication errors
2. Increasing the expression of cell cycle-promoting genes
3. Activating cell cycle checkpoints to halt progression
4. Enhancing the stability of microtubules

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

97	1002977	How do crustacean ecdysteroids, such as 20-OH-ecdysone, enter cells ? 1. Simple diffusion 2. Energy-dependent process 3. Carrier-mediated process 4. Simple or Carrier mediated diffusion A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

98	1002978	Which is the type of sex determination system in <i>Macrobrachium rosenbergii</i> ? 1. Homozygous females, XY ♂/XX ♀ 2. Homozygous males, ZZ ♂/ZW ♀ 3. Multiple sex chromosomes, X1X1X2X2♀/X1X2Y♂ 4. Single sex chromosome, XX ♀/X0 ♂ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

99	1002979	Given below are two statements : Statement (I) : MIH inhibits ecdysteroid secretion by Y organ. Statement (II) : Serotonin inhibits ecdysteroid secretion by Y organ. 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.	4.0	1.00
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		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

100	1002980	Which of the following hormone is secreted by mandibular organ, which is a positive regulator of ovarian growth ? 1. Permanent ovarian hormone 2. Temporary ovarian hormone 3. Vitellogenin stimulating ovarian hormone 4. Methyl farnasoate A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

101	1002981	What are the most abundant biomolecules found in nature ? 1. Carbohydrates 2. Lipids 3. Proteins 4. Nucleic acids A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

102	1002982	Which of the following amino acids contains a guanidine group ? 1. Asparagine 2. Glutamine 3. Arginine 4. Lysine A1 : 1	4.0	1.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

103 1002983

4.0

1.00

What is the anomeric pair among the following options ?

1. D-glucose and D-galactose
2. D-glucose and L-glucose
3. α -D-glucose and β -D-glucose
4. D-glucose and D-mannose

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

104 1002984

4.0

1.00

Test used to detect fructose from glucose is :

1. Iodine test
2. Osazone test
3. Barfoed test
4. Seliwanoff's test

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

105 1002985

4.0

1.00

Which of the following statements about starch and glycogen is true ?

1. Amylose is unbranched; amylopectin and glycogen contain many (α 1- 6) branches.
2. Amylose is unbranched; amylopectin and glycogen contain many (β 1- 6) branches.
3. Amylose is branched; amylopectin and glycogen contain many (α 1- 6) branches.
4. Amylose is branched; amylopectin and glycogen contain many (β 1- 6) branches.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

106 1002986

4.0 1.00

Match List-I with List-II

List-I	List-II
Mucopolysaccharide	Composition
(A) Heparin	(I) D-Glucuronic acid, N-acetylgalactosamine 4-sulfate
(B) Chondroitin sulfate	(II) D-Glucuronate 2-sulfate, N – Sulfoglucosamine 6-sulfate
(C) Keratan sulfate	(III) L-Iduronic acid, N-acetyl-galactosamine 4-sulfate
(D) Dermatan sulfate	(IV) D-Galactose, N-acetyl-glucosamine 6-sulfate

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

107 1002987

4.0 1.00

An example of sulphur containing amino acid is :

- 2-Amino-3-mercaptopropanoic acid
- 2-Amino-3-methylbutanoic acid
- 2-Amino-3-hydroxypropanoic acid
- Amino acetic acid

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

108	1002988	Given below are two statements : Statement (I) : Purines absorb more light at 260 nm than pyrimidines. Statement (II) : Tryptophan absorbs more light at 280 nm than tyrosine. 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. Statement (I) is correct but Statement (II) is incorrect. Statement (I) is incorrect but Statement (II) is correct. - Both Statement (I) and Statement (II) are incorrect. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

109	1002989	What are the most commonly applied methods for pre-separation of metabolites in MS-based metabolomic approaches ? (A) Gas chromatography (GC) (B) Capillary electrophoresis (CE) (C) High-performance liquid chromatography (HPLC) (D) Mass spectrometry (MS), NMR Choose the <i>correct</i> answer from the options given below: (A) and (B) only. (A), (B) and (C) only. (A), (B), (C) and (D). (B), (C) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

110	1002990		4.0	1.00
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Given below are two statements :

In enzyme kinetics

Statement (I) : Zero order reaction – The velocity of reaction is almost proportional to substrate concentration

Statement (II) : First order reaction – When substrate concentration is greater than K_m , the ratio of reaction is independent of substrate concentration

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

111 1002991

An example of a coenzyme that acts as a group-transferring agent ?

1. NAD⁺
2. NADP⁺
3. FAD
4. CoA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

112 1002992

The kinetic effect of purely competitive inhibitor of an enzyme :

1. Increases K_m without affecting V_{max}
2. Decreases K_m without affecting V_{max}
3. Increases V_{max} without affecting K_m
4. Decreases V_{max} without affecting K_m

A1 : 1

A2 : 2

4.0 1.00

A3 : 3

A4 : 4

Objective Question

113	1002993	The active site of an enzyme is formed by : 1. R group of amino acids 2. NH₂ group of amino acids 3. COOH group of amino acids 4. Sulphur bonds which are exposed A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

114	1002994	Which of the following proteins is an example of an uncoupling protein ? 1. Cytochrome P450 2. Pepsin 3. Thermogenin 4. Myoglobin A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

115	1002995	The pentose phosphate pathway produces which important molecule ? 1. ATP 2. NADPH 3. FADH₂ 4. Pyruvate A1 : 1 A2 : 2	4.0	1.00
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A3 : 3

A4 : 4

Objective Question

116 1002996

4.0

1.00

Which enzyme is responsible for the synthesis of ketone bodies ?

1. HMG-CoA synthase
2. Acyl-CoA dehydrogenase
3. Fatty acid synthase
4. Lipase

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

117 1002997

4.0

1.00

Given below are two statements :

Statement (I) : Fish produce ketone bodies only under hypoxic conditions.

Statement (II) : Some fishes such as freshwater eel, can use ketone bodies as a metabolic fuel for the brain.

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

118 1002998

4.0

1.00

Carboxypeptidase, an enzyme of pancreatic juice, contains :

1. Molybdenum
2. Zinc
3. Magnesium
4. Manganese

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
119	1002999	β-Oxidation of fatty acids requires all the following coenzymes, EXCEPT : 1. CoA 2. FAD 3. NAD 4. NADP A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
120	1003000	Given below are two statements : Statement (I) : In competitive inhibition, V_{max} remains same and K_m increases. Statement (II) : In competitive inhibition, inhibitor can bind with E_s complex. 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 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	4.0	1.00