

GOVERNMENT PUBLIC EXAMINATION - HIGHER SECONDARY SECOND YEAR
MARCH - 2024

STD: XII

SUB: BIO – ZOOLOGY

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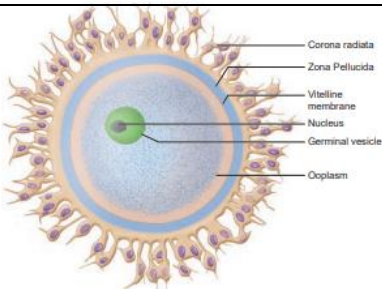
(THIS KEY IS MEANT FOR STUDENTS REFERENCE ONLY)

SECTION – 1						8 x 1 = 8
Q. NO	A - TYPE	MARK	Q. NO	B - TYPE	MARK	
1	A. Sertoli cells	1	1	C. Liver	1	
2	A. Commensalism	1	2	B. Uttarakhand	1	
3	C. Gall fly	1	3	D. Henry Bastian	1	
4	D. 21	1	4	C. Gall fly	1	
5	C. Liver	1	5	A. Sertoli cells	1	
6	D. Henry Bastian	1	6	A. Commensalism	1	
7	B. Uttarakhand	1	7	A. SCID	1	
8	A. SCID	1	8	D. 21	1	

SECTION - 2

NOTE: Answer any four questions.

2 Marks

Q.NO	ANSWERS	MARKS
9	<p>Any two goals of HGP:</p> <ol style="list-style-type: none"> 1. Identify all the genes (approximately 30000) in human DNA. 2. Determine the sequence of the three billion chemical base pairs that makeup the human DNA. 3. To store this information in databases. 4. Improve tools for data analysis. 5. Transfer related technologies to other sectors, such as industries. 6. Address the ethical, legal and social issues (ELSI) that may arise from the project. 	<p>Any Two</p> <p>1</p> <p>1</p> <p>(Total- 2)</p>
10	<p>Oligopotency:</p> <ol style="list-style-type: none"> 1. A stem cells that can differentiate into few cell types. 2. Example: lymphoid or myeloid stem cells can differentiate into B and T cells. 	<p>1</p> <p>1</p> <p>(Total- 2)</p>
11	<p>Structure of a Human ovum:</p> 	<p>Diagram</p> <p>1</p> <p>Any 4</p> <p>Parts</p> <p>1</p> <p>(Total- 2)</p>

MARCH – 2024 – PLUS TWO BIO – ZOOLOGY SCORING KEY

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12	<p>Ethanol is referred to as industrial alcohol.</p> <ol style="list-style-type: none"> 1. Ethanol (C₂H₅OH) is referred to as industrial alcohol. 2. It is used for industrial, laboratory and fuel purposes. 	<p>1 1 (Total - 2)</p>
13	<p>Sameer:</p> <ol style="list-style-type: none"> 1. It is an App. 2. It provides hourly updates on the National Air Quality Index (AQI) published by CPCB. 	<p>½ 1 ½ (Total - 2)</p>
14	<p>The risk factors of cervical cancer:</p> <ol style="list-style-type: none"> 1. Having multiple sexual partners. 2. Prolonged use of contraceptive pills. 	<p>1 1 (Total - 2)</p>

SECTION - 3

NOTE: Answer any three questions. Question No. 19 is Compulsory

3 MARKS

Q.NO	ANSWERS	MARKS
15	<p>Coprolities:</p> <ol style="list-style-type: none"> 1. Hardened faecal matter termed as coprolites occur as tiny pellets. 2. Analysis of the coprolities enables us to understand the nature of diet the pre historic animals thrived on. 	<p>1 ½ 1 ½ (Total -3)</p>
16	<p>Placenta is an endocrine Tissue:</p> <ol style="list-style-type: none"> 1. During pregnancy, the placenta acts as a temporary endocrine gland. 2. It produces the following hormones. 3. hCG - human Chorionic Gonadotropin, --- 1 4. Human chorionic somatomammotropin (hCS) (or) human placental Lactogen (hPL) – that support foetal growth. --- 1 5. Relaxin - Relax pelvic ligaments during parturition. --- 1 6. Due to the secretion of these hormones, the placenta acts as an endocrine gland 	<p>(Total -3)</p>
17	<p>Solution for E - Waste:</p> <ol style="list-style-type: none"> 1. Recycling and disposal of e-waste may involve significant risk to the health of workers and communities in developed countries. 2. And great care must be taken to avoid unsafe exposure in recycling operations. 3. leaking of materials such as heavy metals from landfills and incinerator ashes. 	<p>1 1 1 (Total-3)</p>

18	Differentiate r selected and k selected species.		Any 3 (Total-3)	
	S.NO	r selected species		k selected species
	1	Smaller sized organisms		Larger sized organisms
	2	Produce many offspring		Produce few offspring
	3	Mature early		Late maturity with extended parental care
	4	Short life expectancy		Long life expectancy
	5	Each individual reproduces only once or few times in their life time		Can reproduce more than once in lifetime
	6	Only few reaches adulthood		Most individuals reach maximum life span
7	Unstable environment, density independent	Stable environment, density dependent		
19	Event in PCR that help for RNA Replication: 1. Reverse transcription PCR (RT-PCR). Chemical reaction: 2. In this process the RNA molecules (mRNA) must be converted to complementary DNA by the enzyme reverse transcriptase. 3. The cDNA then serves as the template for PCR.		1 1 1 (Total-3)	

SECTION - 4

Note: Answer all the questions.

5 MARKS

Q.NO	ANSWERS	MARKS
20. (a)	To promote the biodiversity conservation: 1. Identify and protect all threatened species. 2. Identify and conserve in protected areas the wild relatives of all the economically important organisms. 3. Identify and protect critical habitats for feeding, breeding, nursing, resting of each species. 4. Resting, feeding and breeding places of the organisms should be identified and protected. 5. Air, water and soil should be conserved on priority basis. 6. Wildlife Protection Act should be implemented	Any 5 1 1 1 1 1 1 Total-5
20. (b)	Hardy Weinberg's assumptions: 1. No mutation: No new alleles are generated by mutation nor the genes get duplicated or deleted. 2. Random mating: Every organism gets a chance to mate and the mating is random with each other with no preferences for a particular genotype. 3. No gene flow: Neither individuals nor their gametes enter (immigration) or exit (emigration) the population. 4. Very large population size: The population should be infinite in size. 5. No natural selection: All alleles are fit to survive and reproduce.	1 1 1 1 1 (Total-5)

Classification of drugs		Effects		
				Group
21. (a)	Stimulants	Amphetamines, cocaine, nicotine and tobacco	Accelerates the activity of the brain	1
	Depressants	Alcohol, Barbiturates, Tranquilizers	Slows down the activity of the brain	1
	Narcotic/ Analgesics	Opium, Morphine	Act as depressants on the Central Nervous System	1
	Hallucinogens	Lysergic acid diethylamide (LSD), Phencyclidine	Distorts the way one sees, hears and feels	1
	Stimulants, Depressants, Hallucinogens	Bhang (Marijuana), Ganja, Charas	Stimulating action on the CNS and affects the cardiovascular system	1
				(Total-5)
21. (b)	Types of Syngamy:			Any 5 Types 5 X 1 = 5
	Autogamy:			
	1. Male and female gametes are produced by the same cell or same organism.			
	2. Both the gametes fuse together to form a zygote.			
	3. Ex. Actinosphaerium and Paramecium.			
	Exogamy:			
	1. The male and female gametes are produced by different parents.			
	2. They fuse to form a zygote. it is biparental.			
	3. Ex. Human - dioecious or unisexual animal.			
	Hologamy:			
1. In lower organisms, organisms themselves behave as gametes				
2. The fusion of such mature individuals is known as hologamy				
3. Ex. Trichonympha.				
Paedogamy:				
1. Union of young individuals produced immediately after the division of the adult parent cell by mitosis.				
Merogamy:				
1. The fusion of small sized and morphologically different gametes. Merogametes.				
Isogamy:				
1. the fusion of morphologically and physiologically identical gametes				
2. Isogametes – Ex: Monocystis.				
Anisogamy:				
1. It is the fusion of dissimilar gametes.				
2. Ex. higher invertebrate and all vertebrate.				
			(Total-5)	

BHARATHIRAJA A,
M.Sc., M.Phil., M.Ed., DOA,
PG ASSISTANT IN ZOOLOGY,
DE BRITTO HSS. DEVAKOTTAI,
Cell: 9944277623