



ISLAMIAH MAT HR SEC SCHOOL,  
KILAKARAI, RAMANATHAPURAM DT.

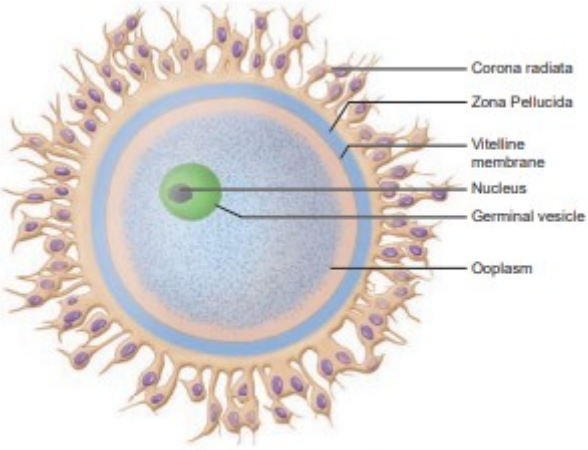
XII COMMON PUBLIC EXAMINATION, MAY -2024 (22-03-2024)

TENTATIVE ANSWER KEY  
Question type B

SUB: BIO-ZOOLOGY

MARKS: 35

Q.NO	CONTENT	MARKS	MODE OF QUESTION
I.	<b>PART - I</b> CHOOSE THE CORRECT ANSWER	8 X 1 = 8	BOOK BACK / BOOK INSIDE/ CREATIVE
1	<b>C,LIVER</b>	1	BOOK BACK
2	<b>B,UTTARKHAND</b>	1	BOOK INSIDE
3	<b>D, HENRY BASTIN</b>	1	BOOK INSIDE
4	<b>C, GALL FLY</b>	1	BOOK INSIDE
5	<b>A, SERTOLI CELLS</b>	1	BOOK BACK
6	<b>A , COMMENSALISM</b>	1	BOOK BACK
7	<b>A, SCID</b>	1	BOOK BACK
8	<b>D, 21</b>	1	BOOK INSIDE
Q.NO	CONTENT	MARKS	MODE OF QUESTION

II.	<b>PART -II</b> <b>ANSWER ANY FOUR OF THE FOLLOWING</b>	4 X 2 = 8	<b>BOOK BACK /</b> <b>BOOK INSIDE/</b> <b>CREATIVE</b>
9	Identify all the genes (approximately 30000) in human DNA. <ul style="list-style-type: none"> <li>• Determine the sequence of the three billion chemical base pairs that makeup the human DNA.</li> <li>• To store this information in databases. • Improve tools for data analysis.</li> <li>• Transfer related technologies to other sectors, such as industries.</li> <li>• Address the ethical, legal and social issues (ELSI) that may arise from the project ( Any Two )</li> </ul>	2	<b>BOOK BACK</b>
10	<ul style="list-style-type: none"> <li>➤ Oligopotency (Oligo-Few) refers to stem cells that can differentiate into few cell types.</li> <li>➤ For example lymphoid or myeloid stem cells can differentiate into B and T cells but not RBC</li> </ul>	2	<b>BOOK INSIDE</b>
11	 <p style="text-align: center;"><b>Fig. 2.8 (b) Diagrammatic view of the human ovum</b></p>	2	<b>BOOK BACK</b>
12	Ethanol (C <sub>2</sub> H <sub>5</sub> OH). It is used for industrial, laboratory and fuel purposes. So ethanol is referred to as industrial alcohol.	2	<b>BOOK INSIDE</b>
13	Sameer, an App provides hourly updates on the National Air Quality Index (AQI) published by CPCB	2	<b>BOOK INSIDE</b>
14	The risk factors for cervical cancer include 1. Having multiple sexual partners	2	<b>BOOK BACK</b>

	2. Prolonged use of contraceptive pills		
•	•	•	•

Q.NO	CONTENT	MARKS	MODE OF QUESTION
III.	<b>PART -III</b> ANSWER ANY THREE OF THE FOLLOWING	3 X 3 = 9	BOOK BACK / BOOK INSIDE/ CREATIVE
15	<ul style="list-style-type: none"> <li>❖ The cavities of the moulds may get filled up by hard minerals and get fossilized, which are called casts. Hardened faecal matter termed as coprolites occur as tiny pellets.</li> <li>❖ Analysis of the coprolites enables us to understand the nature of diet the pre-historic animals thrived on.</li> </ul>	3	BOOK INSIDE
16	<ul style="list-style-type: none"> <li>➤ Placenta is a temporary endocrine organ formed during pregnancy and it connects the foetus to the uterine wall through the umbilical cord.</li> <li>➤ It is the organ by which the nutritive, respiratory and excretory functions are fulfilled.</li> <li>➤ The embryo's heart develops during the fourth week of pregnancy and circulates blood through the umbilical cord and placenta as well as through its own tissues</li> </ul>	3	BOOK BACK
17	<ul style="list-style-type: none"> <li>➤ Used electronics which are destined for reuse, resale, salvage, recycling, or disposal are also considered e-waste.</li> <li>➤ Unauthorised processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution.</li> <li>➤ Recycling and disposal of e-waste may involve significant risk to the health of workers and communities in developed countries and great care must be taken to</li> </ul>	3	BOOK BACK

avoid unsafe exposure in recycling operations and leaking of materials such as heavy metals from landfills and incinerator ashes.

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**Table 11.2 Differences between r- selected and K selected species**

r selected species	K selected species
Smaller sized organisms	Larger sized organisms
Produce many offspring	Produce few offspring
Mature early	Late maturity with extended parental care
Short life expectancy	Long life expectancy
Each individual reproduces only once or few times in their life time	Can reproduce more than once in lifetime
Only few reach adulthood	Most individuals reach maximum life span
Unstable environment, density independent	Stable environment, density dependent

3

BOOK INSIDE

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- The PCR technique can also be used for amplifications of RNA in which case it is referred to as reverse transcription PCR (RT-PCR).
- In this process the RNA molecules (mRNA) must be converted to complementary DNA by the enzyme reverse transcriptase. The cDNA then serves as the template for PCR

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BOOK INSIDE

Q.NO	CONTENT	MARKS	MODE OF QUESTION
IV.	<p style="text-align: center;"><b>PART –IV</b></p> <p style="text-align: center;">ANSWER ALL THE QUESTION</p>	2 X 5 = 10	<p style="text-align: center;">BOOK BACK / BOOK INSIDE/ CREATIVE</p>
20 (a)	<p>General strategies in conservation</p> <ul style="list-style-type: none"> <li>• identify and protect all threatened species</li> <li>• identify and conserve in protected areas the wild relatives of all the economically important organisms</li> <li>• identify and protect critical habitats for feeding, breeding, nursing, resting of each species</li> <li>• resting, feeding and breeding places of the organisms should be identified and protected</li> <li>• Air, water and soil should be conserved on priority basis</li> <li>• Wildlife Protection Act should be implemented</li> </ul>	5	BOOK BACK
20 (b)	<ul style="list-style-type: none"> <li>• Hardy Weinberg's assumptions include No mutation - No new alleles are generated by mutation nor the genes get duplicated or deleted.</li> <li>• Random mating - Every organism gets a chance to mate and the mating is random with each other with no preferences for a particular genotype.</li> <li>• No gene flow - Neither individuals nor their gametes enter (immigration) or exit (emigration) the population.</li> <li>• Very large population size - The population should be infinite in size.</li> <li>• No natural selection- All alleles are fit to survive and reproduce.</li> </ul>	5	BOOK INSIDE

21 (a)

Table 7.4 classification of drugs

Group	Drugs	Effects
Stimulants	Amphetamines, cocaine, nicotine and tobacco	Accelerates the activity of the brain
Depressants	Alcohol, Barbiturates, Tranquilizers	Slows down the activity of the brain
Narcotic/ Analgesics	Opium, Morphine	Act as depressants on the Central Nervous System
Cannabis	Bhang (Marijuana), Ganja, Charas	Affects the cardiovascular system
Hallucinogens	Lysergic acid diethylamide (LSD), Phencyclidine	Distorts the way one sees, hears and feels

5

BOOK INSIDE

21 (b)

- Different kinds of syngamy (fertilization) are prevalent among living organisms.
- In autogamy, the male and female gametes are produced by the same cell or same organism and both the gametes fuse together to form a zygote e.g. Actinosphaerium and Paramecium.

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BOOK INSIDE

- In exogamy, the male and female gametes are produced by different parents and they fuse to form a zygote. So it is biparental. e.g. Human - dioecious or unisexual animal.
- In lower organisms, sometimes the entire mature organisms do not form gametes but they themselves behave as gametes and the fusion of such mature individuals is known as hologamy e.g. Trichonympha. Paedogamy is the sexual union of young individuals produced immediately after the division of the adult parent cell by mitosis.
- In merogamy, the fusion of small sized and morphologically different gametes (merogametes) takes place.
- The fusion of morphological and physiological identical gametes (isogametes) is called isogamy. e.g. Monocystis, whereas the fusion of dissimilar gametes is called anisogamy (Gr. An-without; iso-equal; gam-marriage).
- Anisogamy occurs in higher animals but it is customary to use the term fertilization instead of anisogamy or syngamy. e.g. higher invertebrates and all vertebrates.

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