

DIRECTORATE OF GOVERNMENT EXAMINATIONS, CHENNAI - 600 006.
HIGHER SECONDARY SECOND YEAR – MAY 2022
ZOOLOGY ANSWER KEY

NOTE:

TOTAL MARKS :70

1. Use blue or Black ink to write and underline and pencil to draw diagrams
2. Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer in Section -1
3. Put zero (0) mark provided in case of either option code or corresponding answer wrong.

Part –I

15 x 1 = 15

Answer all the questions.

	A TYPE		B TYPE	
1.	d	A deep geological repository	b	Multiple alleles
2.	c	Sexual	b	Individuals mate selectively
3.	a	Amphibians	b	LH →Leydig cells→Testosterone→Spermatogenesis
4.	c	Intersex	b	Reduce BOD
5.	c	3.1 Billion	c	Antigen
6.	d	Inhibiting release of FSH and LH	a	Molasses
7.	d	Eurytherms	a	A toxin from plasmodium species
8.	c	Antigen	c	Sexual
9.	a	Molasses	d	A deep geological repository
10.	b	LH →Leydig cells →Testosterone→Spermatogenesis	c	3.1 Billion
11.	b	Individuals mate selectively	a	Amphibians
12.	b	Multiple alleles	d	Inhibiting release of FSH and LH
13.	a	A toxin from plasmodium species	c	Intersex
14.	c	Migration	d	Eurytherms
15.	b	Reduce BOD	c	Migration

Part – II

Answer any 6 questions. Question No. 24 is compulsory.

6 x 2 = 12

16.	Senescent phase begins at the end of reproductive phase when degeneration sets in the structure and functioning of the body.	2
17.	Sperms , Seminal plasma, Fructose Ascorbic acid, Prostaglandins Vesiculase enzyme (ANY FOUR)	2

18.	Prevention of children from sexual offences. Sexual harassment at work place prevention prohibition and redressal Creating a safe and secure environment for both females and males. (ANY TWO)	2
19.	Process of copying genetic information from one strand of DNA into RNA.	2
20.	Ammonia Methane Hydrogen Water vapour.	2
21.	Trophozoite , penetrates the walls of the host intestine (colon) and secretes histolytic enzymes causing ulceration, bleeding, abdominal pain and stools with excess mucus.	2
22.	Zymology is an applied science which deals with the biochemical process of fermentation and its practical uses.	2
23.	A mass extinction occurred about 225 Millions years ago during the Permian as where 90% of shallow water marine invertebrates disappeared	2
24.	Corona virus can be detected by Reverse transcription PCR (RT-PCR).	2
Part – III		
Answer any 6 questions. Question No. 33 is compulsory.		6x3 = 18
25.	Foeticide	Infanticide
	Aborting the female in the mother's womb	Killing the female child after her birth.
26.	<ul style="list-style-type: none"> Anti D antibodies should be administered to the mother at 28th and 34th week of gestation as a prophylactic measure. If the Rh negative mother delivers Rh positive child then anti D antibodies should be administered to the mother soon after delivery 	1 ½
		1 ½
27.	Yes, Malaria vaccine is used to prevent malaria. The only approved vaccine as of 2015 is RTS,S (Mosquirix).	1 2
28.	Diagram Labelling the parts	2 1
29.	A microbial fuel cell is a bio-electrochemical system that drives an electric current by using bacteria and mimicking bacterial interaction found in nature	1 ½
	Microbial fuel cells work by allowing bacteria to oxidize and reduce organic molecules.	1 ½

	Eurytherms	Stenotherms	
30.	Organisms which can survive a wide range of temperature. (cat, dog, tiger, human)	Organisms which can tolerate only a narrow range of temperature (Fish, Frogs, Lizards and Snakes).	1 ½ + 1 ½
31.	i. Alpha diversity: It is measured by counting the number of taxa (usually species) within a particular area, community or ecosystem.		1
	ii. Beta diversity: It is species diversity between two adjacent ecosystems and is obtained by comparing the number of species unique to each of the ecosystems.		1
	iii. Gamma diversity: refers to the diversity of the habitats over the total landscape or geographical area.		1
32.	Run-off from land containing nutrients reaches water bodies like lakes should be avoided		3
	Multipotency	Oligopotency	
33.	It refers to the stem cells that can differentiate into various types of cells that are related. For example blood stem cells can differentiate into lymphocytes, monocytes, neutrophils etc.,	It refers to stem cells that can differentiate into few cell types. For example lymphoid or myeloid stem cells can differentiate into B and T cells but not RBC	1 ½ + 1 ½
Part – IV			
Answer all the questions.			5 x 5 = 25
34(a)	Diagram		1
	Labelling the parts		1
	Explanation		3
(OR)			
34(b)	• Creating awareness and providing medical assistance to build a healthy society.		1
	• Introducing sex education in schools to provide information about adolescence and adolescence related changes.		1
	• Educating couples and those in the marriageable age groups about the available birth control methods and family planning norms.		1
	• Creating awareness about care for pregnant women, post-natal care of mother and child and the importance of breast feeding.		1
	• Encouraging and supporting governmental and non-governmental agencies to identify new methods and/or to improve upon the existing methods of birth control.		1

35(a)	Explanation of the role of translation components during Initiation, Elongation and Termination	5
(OR)		
35(b)	The salient features of genetic code (ANY FIVE)	5 x 1
36(a)	Explanation	3
	<ul style="list-style-type: none"> • Absence of gene flow • Genetic drift • Mutation • Recombination • Natural selection (any four) 	2
(OR)		
36(b)	Bacterial diseases (ANY FIVE)	5x1
37(a)	Any five barriers of innate immunity and its mechanism	5x1
(OR)		
37(b)	Explanation for Denaturation	1 ½
	Explanation for renaturation or primer annealing	1 ½
	Explanation for synthesis or primer extension	1
	Diagram	1
38(a)	Essential properties of water (ANY FIVE)	5x1
(OR)		
38(b)	Management of medical waste and its explanation	3
	Management of e-waste and its explanation	2