

SECOND YEAR HIGHER SECONDARY MODEL EXAMINATION MARCH-2022
Part-III
ZOOLOGY

Qn. No	Scoring Key	Score								
A-Answer any three questions from 1 to 4. Each carries 1 score										
1.	i) Gene migration or gene flow, ii) Genetic drift, iii) Mutation, iv) Genetic recombination and v) Natural selection(Any one)	1								
2	Morula	1								
3	single nucleotide polymorphism	1								
4	menopause	1								
B-Answer all questions from 5 to 6. Each carries 1 score										
5	Johannesburg	1								
6	Penicillin	1								
A-Answer any two questions from 7 to 9. Each carries 2 score										
7	<ul style="list-style-type: none"> • Presence of an additional copy of the chromosome number 21 (trisomy of 21). • Short statured • Small round head, • Furrowed tongue • Partially open mouth • Palm is broad with characteristic palm crease. • Physical, psychomotor and mental development is retarded. (Any four characteristic feature)	0.5×4=2								
8	This associations helps <ul style="list-style-type: none"> • to absorbs phosphorus from soil and passes it to the plant. • Resistance to root-borne pathogens, • Tolerance to salinity and drought, • Overall increase in plant growth and development 	0.5×4=2								
9	A- <i>Salmonella typhi</i> B-Malaria C-Fungi D-Ascaris/Round worm	0.5×4=2								
B-Answer any two questions from 10 to 13. Each carries 2 score										
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	organisms gaining access into body during natural infection induce active immunity.	lactation has abundant antibodies (IgA) to protect the infant. 02-The foetus also receives some antibodies from their mother, through the placenta during pregnancy							
11	a)Chemical evolution b) S.L. Miller		1 1						
12	a)Mammary tubule b)Mammary duct		1 1						
13	a) It is the crossing of a progeny with its recessive parent . b)It is used to find unknown genotype of an individual.		1 1						
A- Answer any three questions from 14 to 17. Each carries 3 score									
14	(i) Avoid undue peer pressure (ii)Education and counselling (iii)Seeking help from parents and peers (iv)Looking for danger signs (v)Seeking professional and medical help (Any three measures)		1 1 1						
15	Pedigree analysis. It is the analysis of trait in a several generations of a family is called pedigree analysis. i)Mating between relatives (consanguineous mating) ii)Sex unspecified iii)Female iv)Mating		1 0.5 0.5 0.5 0.5						
16	a)Z = slope of the line (regression coefficient) C = Y-intercept b)Within a region species richness increased with increasing explored area, but only up to a limit c) 0.1 to 0.2		0.5 0.5 1 1						
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B-Answer The following question. Carries 3 Scores									
18	The Heterogenous nuclear RNA (HnRNA) contain both the exons and the introns and are non-functional. Hence, it is								

	<p>subjected to a processing</p> <p>Splicing Here the introns are removed and exons are joined in a defined order.</p> <p>capping In capping an unusual nucleotide (methyl guanosine triphosphate) is added to the 5'-end of hnRNA.</p> <p>Tailing In tailing, adenylate residues (200-300) are added at 3'-end in a template independent manner.</p>	<p>1</p> <p>1</p> <p>1</p>
Answer any one question from 19 to 20. Carries 5 scores		
19	<p>a) central Dogma in molecular biology is the unidirectional flow of information from DNA-RNA-Protein/ or/ the genetic information flows from DNA-->RNA-->Protein.</p> <p>Processes in central Dogma in molecular biology DNA Replication DNA Transcription DNA Translation (Any two processes)</p> <p>b)Regulation of gene expression in Eukaryotes i) Transcriptional level (formation of primary transcript), ii) Processing level (regulation of splicing), iii) Transport of mRNA from nucleus to the cytoplasm, iv) Translational level</p>	<p>1</p> <p>2</p> <p>0.5 0.5 0.5 0.5</p>
20	<p>(a) A-Ampulla B-Ovary C-Fimbriae D-Cervical canal</p> <p>b) Surgical contraceptive method in male : Vasectomy Surgical contraceptive method in male : Tubectomy</p> <ul style="list-style-type: none"> • The part which is cut or tied up in Vasectomy: Vas deferens • The part which is cut or tied up in Tubectomy: oviduct/fallopian tube 	<p>0.5 0.5 0.5 0.5</p> <p>1 1 0.5 0.5</p>