


HIGHER SECONDARY EXAMINATION MARCH-2019

Zoology

Qn. NO.	Answer	Score								
1	Zoological Park	1								
2	Colostrum	1								
3	<div></div> <div><p>replication</p><p>DNA → transcription → mRNA → translation → protein</p><p>Central dogma</p></div>	1								
4	<i>Dryopithecus</i> – <i>Ramapithecus</i> - <i>Australopithecines</i> - <i>Homo habilis</i> - <i>Homo erectus</i> -Neanderthal man- <i>Homo sapiens</i>	2								
5	a)Nucleosome b)8 c) <table><tr><th>Euchromatin</th><th>Heterochromatin</th></tr><tr><td>Loosely packed chromatin</td><td>Densely packed chromatin</td></tr><tr><td>It is light when it stains</td><td>It stains dark color</td></tr><tr><td>Transcriptionally active chromatin</td><td>Transcriptionally inactive chromatin</td></tr></table>	Euchromatin	Heterochromatin	Loosely packed chromatin	Densely packed chromatin	It is light when it stains	It stains dark color	Transcriptionally active chromatin	Transcriptionally inactive chromatin	2
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7	Yes , Human Males are heterozygous (XY) and produce 2 types of gametes (Sperms) containing only X Or Y chromosomes besides Autosomes. Females are homozygous (XX) and produce only one type of gamete (egg/ovum) containing only X chromosomes besides Autosomes. Sex of the baby is determined by the type of Sperm entering into the egg. If the sperm containing X chromosome enters into egg female baby is produced. If the sperm containing Y chromosome enters into egg, male baby is produced. So sex of the baby is determined by the father not the mother in XX-XY mechanism	2								
8	Phenylketonuria, it is a Mendelian disorder while all others are chromosomal disorders	2								
9	A-Endometrium B-Ovary C-Isthmus D-Ampulla	2								
10	a) <i>Saccharomyces cerevisiae</i> b) Lactic acid bacteria (LAB) c) <i>Rhizobium</i> , <i>Azospirillum</i> and <i>Azobacter</i> , Cyanobacteria (Eg; <i>Anabaena</i> , <i>Nostoc</i> , <i>Oscillatoria</i>) (any one)	2								
11	a) Acquired immunity/Specific Immunity/Adaptive Immunity b) Physiological Barrier c) Cytokine Barrier d) Cell mediated Immunity (CMI)	2								

12	a) Natural Method Of contraception b) Surgical method or sterilization method or tubectomy c) nausea, abdominal pain, breakthrough bleeding, irregular menstrual bleeding or even breast cancer.				2
13	(i) <u>Habitat loss and fragmentation:</u> (ii) <u>Over-exploitation:</u> iii) <u>Alien species invasions:</u> iv) <u>Co-extinctions:</u>				2
14	<u>Bacteria</u> Typhoid Pneumonia	<u>Fungus</u> Ringworm	<u>Virus</u> Common cold	<u>Protozoan</u> Malaria Amoebiasis	2
15	a) B Chain is abnormal b) Sickle cell anaemia c) This is due to the single base substitution at the sixth codon of the beta globin gene from GAG to GUG d) The mutant haemoglobin molecule undergoes polymerisation under low oxygen tension causing the change in the shape of the RBC from biconcave disc to elongated sickle like structure				3
16	a) DNA fingerprint from Crime scene matches with Suspected person II b) Variable Number Tandem repeats c) Alec Jeffreys.				3
17	a) Sexually Transmitted Disease b) Gonorrhoea ,Syphilis ,genital herpes ,chlamydia ,genital warts ,trichomoniasis ,hepatitis-B (any 2) c) <u>STD can be prevented by</u> <ol style="list-style-type: none"> 1. Avoid sex with unknown partners/multiple partners 2. Always use condoms during coitus. 3. In case of doubt, one should go to a qualified doctor for early detection and get complete treatment if diagnosed with disease. 				3
18	a) Transcription in prokaryotes b) DNA dependent RNA polymerase c) Initiation, elongation, termination <u>i) Initiation</u> <ul style="list-style-type: none"> ▪ The sigma factor (σ factor/initiation factor) bind with RNA polymerase. ▪ This RNA polymerase bind to the promoter of Transcription unit and initiate transcription <u>ii) Elongation</u> <ul style="list-style-type: none"> ▪ The DNA dependent RNA polymerase, polymerase nucleotides in a template dependent manner in 5'-3' direction. <u>iii) Termination</u> <ul style="list-style-type: none"> ▪ Terminator is located towards the 3' end of coding strand, it usually defines the end process of transcription. ▪ The Rho factor (termination factor) terminates the process of transcription. ▪ The RNA Produces as a result of transcription in prokaryote is called mRNA (Messenger RNA). 				3