

**+2 HIGHER SECONDARY EXAMINATIONS AUG 2021****ZOOLOGY****PART – 1**

1. Answer all the Questions.
2. Choose the most appropriate answer from the given **four** alternatives and write the option code and the corresponding answer.

Q.No	Option	Answer	Q.No	Option	Answer
1	B	Mesozoic era	9	A	Male heterogamety
2	B	More than 8	10	D	August Weismann
3	C	Replication, Transcription, Translation	11	C	Statins
4	C	Capacitation	12	D	Recycle and Reuse
5	C	Slope of the line	13	B	Subunit recombinant vaccines
6	A	Catadromous	14	A	Oocysts
7	B	IgE	15	B	Diploid female
8	A	Conjugation			

**PART – II**

Answer any Six of the following. Q.No. 24 is Compulsory.

Q.No.	Content	Mark
16	<u>Zymology:</u> An applied science which deals with the Biochemical process of fermentation and its practical uses	2
17	<u>Inhibin:</u> 1. Sertoli cells secrete inhibin 2. Hormone which is involved in the negative feed back control of sperm production	1 1
18	<u>Hotspots in India:</u> 1. Himalayas 2. Westernghats 3. Indo – Burma 4. Sundalands	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
19	<u>Chorionic villus Sampling (CVS)</u> CVS is a prenatal test that involves taking a sample of the placental tissue to test for chromosomal abnormalities	2
20	<u>Holandric Genes:</u> The genes present in the differential region of Y chromosomes are called Y-linked (or) holandric genes	2

21	<u>Tubectomy/ Vasectomy:</u> i. Surgical Sterilisation in women ii. A small portion of both fallopian tubes are cut and tied up through a small incision. <u>Vasectomy:</u> i. Surgical procedure for male ii. Both vas deferens are cut and tied through a small incision on the scrotum to prevent the entry of sperm.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
22	<u>Kala – Azar:</u> i. It is a protozoan disease ii. It is caused by Leishmaniadonovani	1 1
23	<u>Haplodiploidy:</u> The males have half the number of chromosomes and females have double the number, hence the name haplodiploidy	2
24	<u>Causative agent for the diseases:</u> i. Cholera - Vibrio – cholerae ii. Common cold - Rhino Viruses iii. Chikungunya - Alpha Virus (Toga virus) iv. Bubonic - Yersinia pestis	2

## PART – III

Answer any Six of the following. Q.No. 33 is Compulsory.

Q.No.	Content		Mark
25	<u>Coacervates:</u> Organic compounds could have undergone a series of reaction leading to more complex molecules		3
26	<u>Industrial alcohol and uses:</u> 1. Ethanol 2. Uses: Industrial, laboratory, fuel purposes		1 2
27	<u>Diagram of Spermatozoan:</u> Diagram Parts		2 1
28	RNA	DNA	1  1 1
	Single Stranded Presence of oxygen in the ribose sugar Uracil is present	Double Stranded Absence of oxygen in the ribose sugar Thymine is present	
29	<u>Stem Cells:</u> i. Undifferentiated cells found in most of the multicellular animals. ii. <u>Role in the field of medicine:</u> Stem cell research has the potential to revolutionize the future of medicine with the ability to regenerate damages and diseased organs.		1 ½  1 ½

30	<u>Fertilization Types</u> 1. External Fertilization 2. Internal Fertilization	1 ½ 1 ½
31	<u>Applications of Karyotyping:</u> Any three applications	3
32	<u>Amniocentesis:</u> yes banned in our country Statutory Ban 1. It is being often misused to determine the sex of the foetus. 2. Once the sex of the foetus is known there may be a chance of female foeticide	3
33	<u>Acclimatize to higher altitudes:</u> 1. As altitude increases, temperature and density of oxygen decreases. 2. People who have moved from the plains to higher altitudes, show enhanced RBC count with in a few days of settling in their new habitat.	1 ½ 1 ½

## PART – IV

Answer All the Questions.

Q.No.	Content	Mark
34	Structure of Human Ovum diagram	2
a	Explanation	3
b	(or) <u>Technique used in Identification of Criminals:</u> 1. DNA finger printing technique 2. <u>Application of DNA Finger printing:</u> 1. Forensic analysis 2. Pedigree analysis 3. Conservation of wild life 4. Anthropological studies	1 1 1 1 1
35 a	<u>Objections to Darwinism:</u> 5 points	5
b	(or) Various causes for Bio-diversity losses: 10 points	10*1/2=5
36 a	<u>Filariasis:</u> 1. Wuchereria bancroffi 2. <u>Symptoms:</u> Inflammation of the lymph nodes obstruction of lymph vessels causes elephantiasis of limbs, scrotum and mammary glands 3. The life cycle is completed in 2 hosts, man and the female culex mosquito . The female filarial worm gives rise to juveniles called micro filariae larvae In the lymph glands, the juveniles develop in to adults.	1 2 2

b	<p>(or)</p> <p><u>Pollutants:</u></p> <ol style="list-style-type: none"> <li>Pollution due to natural causes and human activities</li> <li>Change in physical, chemical, Biological Characteristics</li> <li>Undesirable change</li> <li>Affecting Air, water and soil pollution</li> </ol> <p><u>Classification of Pollutants:</u></p> <p><u>Explanation to:</u></p> <ol style="list-style-type: none"> <li>Rapidly degradable</li> <li>Slowly degradable</li> <li>Non-degradable</li> </ol>	<p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p>1</p> <p>1</p> <p>1</p>
37 a	<p><u>Human Genome Project:</u></p> <p>Salient features of Human Genome project</p>	<p><math>10 \times \frac{1}{2} = 5</math></p>
b	<p>(or)</p> <p><u>Population Interaction:</u></p> <ol style="list-style-type: none"> <li>Amensalism</li> <li>Mutualism</li> <li>Commensalism</li> <li>Competition</li> <li>Parasitism</li> <li>Predation</li> </ol> <p>(Explain any 5 of the tabulate column)</p>	<p>5</p>
38 a	<p><u>Structure of lymph node:</u></p> <p>Diagram and parts</p> <p><u>Explanation:</u></p> <ol style="list-style-type: none"> <li>Trapped by the phagocytic cells</li> <li>Three zones- cortex, paracortex and medulla</li> <li>T lymphocytes, dendritic cells, B-lymphocytes, plasma cells</li> </ol>	<p>1</p> <p><math>\frac{1}{2}</math></p> <p>1 <math>\frac{1}{2}</math></p> <p>2</p>
b	<p><u>Recombinant Insulin:</u></p> <ol style="list-style-type: none"> <li>Beta cells</li> <li>A,B polypeptide chains</li> <li>Disulphide bonds</li> <li>Diabetes mellitus</li> <li>Pancreas of pig, cows, allergic reactions</li> <li>1970-DNA Technology</li> <li>Third – A,B and C Chains</li> <li>1986 – Humulin</li> </ol>	<p><math>\frac{1}{2}</math></p> <p>1</p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p>1</p> <p><math>\frac{1}{2}</math></p>