QUARTERLY EXAMINATION – 2023
PUDUKKOTTAI – DISTRICT – SCORING KEY
HIGHER SECONDARY SECOND

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SUBJECT: BIO - ZOOLOGY **CLASS: 12**

Section - I **8 x 1 = 8**

Q.NO	A - TYPE		Q.NO	B - TYPE	
1	c	Conjugation	1		
2	b	Meiosis II	2		
3	d	Capacitation	3		
4	b	$I^A I^O$ and $I^B I^O$	4		
5	a	Multiple allelism	5		
6	a	si RNA	6		
7	b	UAC	7		
8	a	Charles Darwin	8		

Section – II

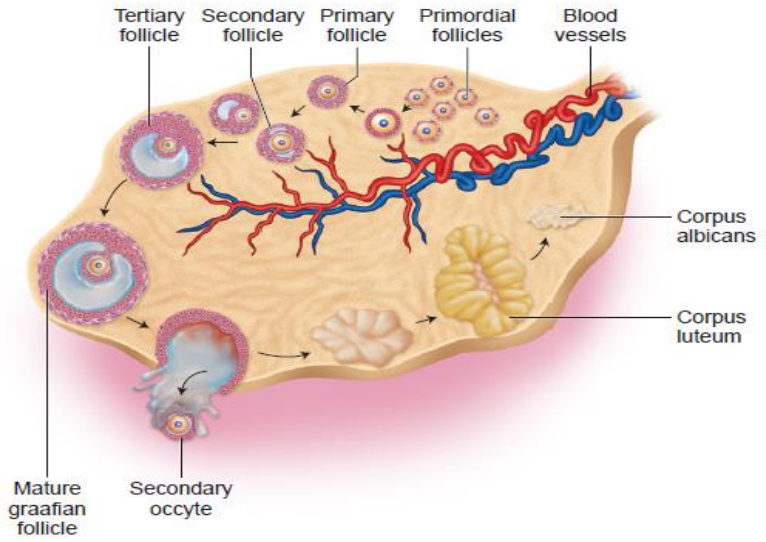
Answer any four questions: **4 x 2 = 8**

9	**Why is the offspring formed by asexual reproduction referred to as a clone?** 1. These offspring are genetically and morphologically similar to one another and also similar to their parent. 2. Thus the offsprings produced by asexual reproduction are called clones.	1 ½ ½ 2 Mark
10	1. **The middle piece** of human spermatozoa possesses mitochondria. 2. And spirally twisted around the axial filament called mitochondrial spiral or nebenkern	1 1 2 MARK
11	1. In the absence of fertilisation, the corpusluteum degenerates completely and leaves a scar tissue called Corpus albicans.	2 2 MARK
12	1. **Female foeticide:** Aborting the female in the mother's womb. 2. **Female infanticide:** killing the female child after her birth	1 1 2 MARK
13	1. The nitrogenous base and sugar forming a nucleoside.	2 2 Mark
14	1. Ammonia, 2. Methane, 3. Hydrogen and 4. Water vapour.	4 X ½ 2 MARK

Section – III

Answer any three questions. Question No – 19. Is Compulsory **3 X 3 = 9**

15	**Incomplete parthenogenesis** **1.** Both sexual reproduction and parthenogenesis occurs. **2.** E.g. In honeybees; **3.** fertilized eggs (zygotes) develop into queen and workers, **4.** Unfertilized eggs develop into drones (male).	1 ½ 1 ½ 3 MARK

16	 **Diagram – 2 Marks** **Parts – 1 Mark**	**3 MARK**
17	**Vasectomy:** 1. This is the surgical procedure for male sterilisation. 2. Both vas deferens are cut and tied. 3. It prevents the entry of sperm into the urethra. 4. Vasectomy prevents sperm from heading off to penis as the discharge has no sperms in it.	**1** **½** **½** **1** **3 MARK**
18	**Histone octamere:** 1. Nucleosome, made up of 2 molecules of the four histone proteins H2A, H2B, H3 and H4 2. And they are organized to form a unit of eight molecules called histone octamere.	**1 ½** **1 ½** **3 MARK**
19	**Symptoms of HIV.** 1. Enlarged lymph nodes. 2. Prolonged fever. 3. Prolonged diarrhoea. 4. Weight reduction. 5. Night sweating.	**Any three** **3 MARK**
	Section – IV **Answer all the questions:**	**5 x 2 = 10**
20 .A	**Explain the various phases of menstrual cycle.** **Menstrual cycle: - - 1 Mark** ➢ It occurs in every 28/29 days. It is from puberty to menopause (except during pregnancy). **The cycle contains 4 phases.** **Menstrual phase. (3-5 days) - - 1 Mark** ➢ Progesterone, oestrogen level decreases. ➢ So uterine endometrial lining and the blood vessels break. ➢ It results in menstrual flow for 3 - 5 days. ➢ It occurs only if the ovum is not fertilised.	

	Follicular Phase (5 -14 days) **- - 1 Mark** ➢ Secretion of FSH and LH induces the following changes. ➢ Primary follicle of ovary becomes the mature graafian follicle. ➢ Endometrium regenerates. Follicular development is stimulated. ➢ Oestrogen is secreted by the follicle cells. **Ovulatory Phase (about 14th day)** **- - 1 Mark** ➢ LH and FSH attain peak level. ➢ LH induces the rupture of graffianfollicle Ovum (secondary Oocyte) is released from the ovary wall into peritoneal cavity. This process is called Ovulation. **Luteal or Secretory Phase.** ➢ The remaining part of the graafianfollicle becomes a transitory endocrine gland called corpus luteum. ➢ Corpus luteum secretes progesterone. It is needed for the maintenance of endometrium. ➢ After fertilisation the progesterone helps in implantation of fertilised ovum. ➢ Uterine wall secretes nutritive fluid for the foetus. So this phase is called secretory phase. **- - ½ Mark** ➢ During pregnancy all events of menstrual cycle stop and there is no menstruation. ➢ In the absence of fertilisation, the corpusluteum degenerates completely and leaves a scar tissue called Corpus albicans. ➢ It also initiates the disintegration of the endometrium leading to menstruation, making the next cycle. **- - ½ Mark**	**5 Mark**
	OR	
20. B	**What are the applications of Karyotyping?** 1. It helps in gender (male and female) identification. 2. It is used to detect the chromosomal aberrations like deletion, duplication, translocation, nondisjunction of chromosomes. 3. It helps to identify the abnormalities of chromosomes like aneuploidy. 4. It is also used in predicting the evolutionary relationships between species. 5. Genetic diseases in human beings can be detected by this technique	**5 X 1 = 5** **5 Mark**
21. A	**Write the salient features of genetic code.** **1.** The genetic codon is a triplet code and 61 codons code for amino acids and **2.** 3 codons are stop codon (Termination). **3.** **The genetic code is universal:** All living systems use the same three base codons (triplet codon) direct the synthesis of protein from amino acids. For example, the mRNA (UUU) codon codes for phenylalanine in all cells of all organisms. **4.** A non-overlapping codon means that the same letter is not used for two different codons. For instance, the nucleotide sequence GUU and GUC represents only two codons. **5.** It is comma less, which means that the message would be read directly from one end to the other i.e., no punctuation are needed between two codes. **6.** A degenerate code means that more than one triplet codon could code for a specific amino acid. For example, codons GUU, GUC, GUA, and GUG code for valine. **7.** Non-ambiguous code means that one codon will code for one amino acid. **8.** The code is always read in a fixed direction i.e. from 5'→3' direction called polarity. **9.** AUG has dual functions. It acts as an initiator codon and also codes for the	**Any 5** **5 X 1 = 5** **5 Mark**

amino acid methionine.

10. UAA, UAG (tyrosine) and UGA (tryptophan) codons are designated as termination (stop) codons and also are known as "non-sense" codons.

OR

21. B

Write short notes on the types of Syngamy.

S.No	Autogamy	Exogamy
1	Male and female gametes are produced by the same cell or same organism.	The male and female gametes are produced by different parents.
2	E.g. Actinosphaerium and Paramecium.	E.g. Human – dioecious or unisexual animal.

S.No	Hologamy	Paedogamy
1	In lower organisms, organisms themselves behave as gametes	Union of young individuals produced immediately after the division of the adult parent cell by mitosis.
3	**E.g. Trichonympha.**	

No	Merogamy	Isogamy
1	The fusion of small sized and morphologically different gametes	the fusion of morphologically and physiologically identical gametes
2	Merogametes.	Isogametes – Ex : Monocystis.

Anisogamy – It is the fusion of dissimilar gametes. **E.g. higher invertebrate and all vertebrate**

Any 5 Types **5 X 1 = 5**

5 Mark

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