

**MONTHLY TEST JULY – 2024, SIVAGANGAI DISTRICT
SCORING KEY**

CLASS: 12

SUBJECT: BIO - ZOOLOGY

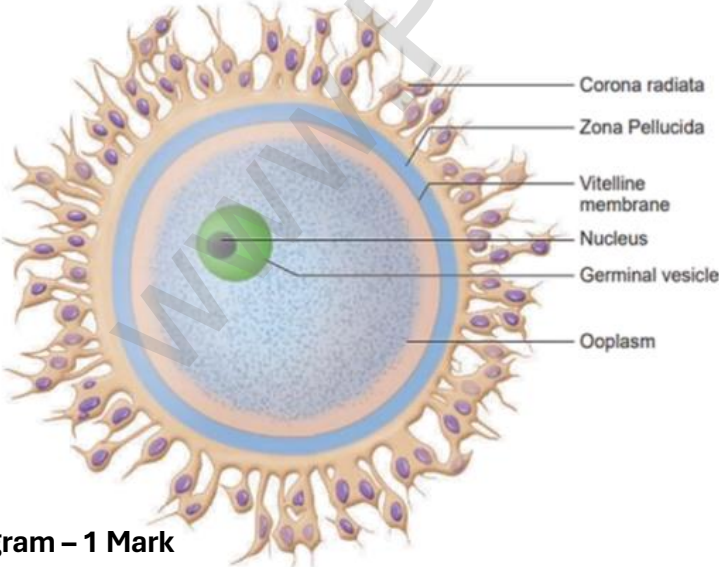
Q. NO		MARK
1	a) Thelytoky	1
2	a) July 11	1
3	c) 28 th Week	1
4	b) Leydig cells	1
5	b) inhibit the secretion of FSH and LH	1

SECTION - 2

NOTE: Answer any three of the following

(3 x 2 = 6)

2 Marks

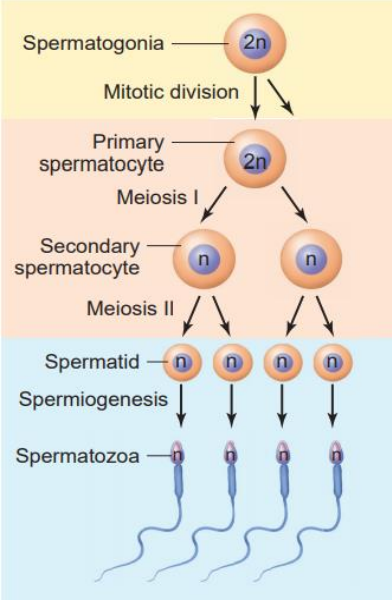
Q.NO	ANSWERS	MARKS
6	<p>What is parthenogenesis? Give two examples from animals.</p> <ol style="list-style-type: none"> 1. Development of an egg into a complete individual without fertilization is known as parthenogenesis. 2. Ex: Incomplete parthenogenesis – Honey bees. 3. Paedogenetic parthenogenesis – Sporocyst and Redia larvae of Liver fluke. 4. Artificial parthenogenesis - Annelid and sea urchin eggs 	<p>1</p> <p>½</p> <p>½</p> <p>(Total- 2)</p>
7	<p>Write short notes on plasmotomy.</p> <ol style="list-style-type: none"> 1. Plasmotomy is the division of multinucleated parent into many multinucleated daughter individuals with the division of nuclei. 2. Ex: Opalina and Pelomyxa (Giant Amoeba) 	<p>1 ½</p> <p>½</p> <p>(Total- 2)</p>
8	 <p>Diagram – 1 Mark Parts – 1 Mark</p>	<p>1</p> <p>1</p> <p>(Total- 2)</p>

9	Differentiate vasectomy and tubectomy:		1 1 (Total- 2)
	Vasectomy	Tubectomy	
	This is the surgical procedure for male sterilisation.	This is the surgical sterilisation done in women.	
	Both vas deferens are cut and tied through a small incision on the scrotum to prevent the entry of sperm into the urethra.	A small portion of both fallopian tubes are cut and tied up through a small incision in the abdomen or through vagina.	
10	Cervical cancer and Symptoms <ol style="list-style-type: none"> 1. Cervical cancer is a sexually transmitted virus disease. 2. Causative agent: Human Papilloma virus (HPV). 3. HPV may cause abnormal growth of cervical cells or cervical dysplasia. Symptoms and signs: <ol style="list-style-type: none"> 4. Pelvic pain, increased vaginal discharge and abnormal vaginal bleeding 		$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ (Total -2)

SECTION - 3

NOTE: Answer any three of the following. Question number 15 is compulsory. 3 x3 = 9 (3 MARKS)

Q.NO	ANSWERS	MARKS
11	Monozygotic (Identical) twins: <ol style="list-style-type: none"> 1. They are produced, when a single fertilised egg splits into two during the first cleavage. 2. They are of the same sex, look alike and share the same genes. Dizygotic (Fraternal) twins: <ol style="list-style-type: none"> 3. They are produced, when two separate eggs are fertilised by two separate sperms. 4. The twins may be of the same sex or different sex and are non-identical. 	1 $\frac{1}{2}$ 1 $\frac{1}{2}$ (Total -3)
12	Placenta is an endocrine Tissue - Justify? <ol style="list-style-type: none"> 1. During pregnancy, the placenta acts as a temporary endocrine gland. 2. It produces hormones. Any two hormones: <ol style="list-style-type: none"> 3. hCG - human Chorionic Gonadotropin, 4. Human chorionic somatomammotropin (hCS) (or) human placental Lactogen (hPL) – that support foetal growth. 5. Relaxin - Relax pelvic ligaments during parturition. 6. Due to the secretion of these hormones, the placenta acts as an endocrine gland. 	2 1 (Total -3)

13	<p>Types of Syngamy (Any three):</p> <table border="1" data-bbox="204 181 1308 465"> <thead> <tr> <th>Autogamy</th> <th>Exogamy</th> </tr> </thead> <tbody> <tr> <td>Male and female gametes are produced by the same cell or same organism.</td> <td>The male and female gametes are produced by different parents.</td> </tr> <tr> <td>Both the gametes fuse together to form a zygote.</td> <td>They fuse to form a zygote. it is biparental.</td> </tr> <tr> <td>Ex. Actinosphaerium and Paramecium.</td> <td>Ex. Human - dioecious or unisexual animal.</td> </tr> </tbody> </table> <table border="1" data-bbox="204 472 1308 763"> <thead> <tr> <th>Hologamy</th> <th>Paedogamy</th> </tr> </thead> <tbody> <tr> <td>In lower organisms, organisms themselves behave as gametes</td> <td>Union of young individuals produced immediately after the division of the adult parent cell by mitosis.</td> </tr> <tr> <td>The fusion of such mature individuals is known as hologamy</td> <td></td> </tr> <tr> <td>Ex. Trichonympha.</td> <td></td> </tr> </tbody> </table> <table border="1" data-bbox="204 797 1308 1016"> <thead> <tr> <th>Merogamy</th> <th>Isogamy</th> </tr> </thead> <tbody> <tr> <td>The fusion of small sized and morphologically different gametes</td> <td>the fusion of morphologically and physiologically identical gametes</td> </tr> <tr> <td>Merogametes.</td> <td>Isogametes – Ex: Monocystis.</td> </tr> </tbody> </table> <p>7. Anisogamy – It is the fusion of dissimilar gametes. Ex. higher invertebrate and all vertebrate.</p>	Autogamy	Exogamy	Male and female gametes are produced by the same cell or same organism.	The male and female gametes are produced by different parents.	Both the gametes fuse together to form a zygote.	They fuse to form a zygote. it is biparental.	Ex. Actinosphaerium and Paramecium.	Ex. Human - dioecious or unisexual animal.	Hologamy	Paedogamy	In lower organisms, organisms themselves behave as gametes	Union of young individuals produced immediately after the division of the adult parent cell by mitosis.	The fusion of such mature individuals is known as hologamy		Ex. Trichonympha.		Merogamy	Isogamy	The fusion of small sized and morphologically different gametes	the fusion of morphologically and physiologically identical gametes	Merogametes.	Isogametes – Ex: Monocystis.	<p>Any 3 (Total -3)</p>
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14	<p>Amniocentesis:</p> <ol style="list-style-type: none"> Amniocentesis is a prenatal technique used to detect any chromosomal abnormalities in the foetus. 	<p>2 1 (Total-3)</p>																						
15	<p>Spermatogenesis:</p> <ol style="list-style-type: none"> Spermatogonia enlarged to form primary spermatocytes. (46 chromosomes). Some of the primary spermatocytes undergo first meiotic division to form two secondary spermatocytes which are haploid with 23 chromosomes each. The secondary spermatocytes undergo second meiotic division to produce four haploid spermatids. Spermiogenesis: The spermatids are transformed into mature spermatozoa (sperms). 	<p>Spermatogenesis</p>  <p>Explanation 2 Diagram 1 (Total-3)</p>																						

SECTION - 4

Note: Answer any one of the following questions:

(1 x 5 = 5) 5 MARKS

Q.NO	ANSWERS	MARKS
16	<p>ART (Title: ½ Mark – Explanation: ½ Mark)</p> <p>IUI – Intra Uterine Insemination:</p> <ol style="list-style-type: none"> 1. This method to treat infertile men with low sperm count. 2. The semen is collected either from the husband or from a healthy donor. 3. And it is introduced into the uterus through the vagina by a catheter. 4. After stimulating the ovaries to produce more ova. 5. The sperms swim towards the fallopian tubes to fertilize the egg, resulting in normal pregnancy. <p>Intra-cytoplasmic sperm injection (ICSI)</p> <ol style="list-style-type: none"> 1. In this method only one sperm is injected into the focal point of the egg to fertilize. 2. The sperm is carefully injected into the cytoplasm of the egg. 3. Fertilization occurs in 75 - 85% of eggs injected with the sperms. 4. The zygote is allowed to divide to form an 8 celled blastomere and then transferred to the uterus to develop a protective pregnancy. <p>Zygote intra-fallopian transfer (ZIFT)</p> <ol style="list-style-type: none"> 1. As in IVF, the zygote upto 8 blastomere stage is transferred to the fallopian tube by laparoscopy. 2. The zygote continues its natural divisions and migrates towards the uterus where it gets implanted. <p>Intra uterine transfer (IUT)</p> <ol style="list-style-type: none"> 1. Embryo with more than 8 blastomeres is inserted into uterus to complete its further development <p>Intra-cytoplasmic sperm injection (ICSI)</p> <ol style="list-style-type: none"> 1. In this method only one sperm is injected into the focal point of the egg to fertilize. 2. The sperm is carefully injected into the cytoplasm of the egg. 3. Fertilization occurs in 75 - 85% of eggs injected with the sperms. 4. The zygote is allowed to divide to form an 8 celled blastomere and then transferred to the uterus to develop a protective pregnancy. <p>Surrogacy.</p> <ol style="list-style-type: none"> 1. Surrogacy is a method of assisted reproduction or an agreement. 2. A woman agrees to carry a pregnancy for another person, who will become the newborn child's parent after birth. 3. Through <i>in vitro</i> fertilization (IVF), embryos are created in a lab. 4. And the embryo transferred into the surrogate mother's uterus. 	<p>Any 5</p> <p>Total-5</p>

17	Explain the various phases of menstrual cycle.	
	Menstrual cycle:	
	1. It occurs in every 28/29 days. It is from puberty to menopause (except during pregnancy).	1
	The cycle contains 4 phases.	½
	1. Menstrual phase. (3-5 days)	
	2. Follicular Phase (5 -14 days)	
	3. Ovulatory Phase (about 14 th day)	
	4. Luteal or Secretary Phase.	
	Menstrual phase. (3-5 days)	1
	1. Progesterone, oestrogen level decreases.	
2. So uterine endometrial lining and the blood vessels break.		
3. It results in menstrual flow for 3 - 5 days.		
4. It occurs only if the ovum is not fertilised.		
Follicular Phase (5 -14 days)	1	
1. Secretion of FSH and LH induces the following changes.		
2. Primary follicle of ovary becomes the mature graafian follicle.		
3. Endometrium regenerates. Follicular development is stimulated.		
4. Oestrogen is secreted by the follicle cells.		
Ovulatory Phase (about 14th day)	½	
1. LH and FSH attain peak level.		
2. LH induces the rupture of graafian follicle ovum (secondary oocyte) is released from the ovary wall into peritoneal cavity. This process is called ovulation.		
Luteal or Secretary Phase.	1	
1. The remaining part of the graafian follicle becomes a transitory endocrine gland called corpus luteum.		
2. Corpus luteum secretes progesterone. It is needed for the maintenance of endometrium.		
3. After fertilisation the progesterone helps in implantation of fertilised ovum.		
4. Uterine wall secretes nutritive fluid for the foetus. So, this phase is called secretory phase.		
5. During pregnancy all events of menstrual cycle stop and there is no menstruation.		
6. In the absence of fertilisation, the corpus luteum degenerates completely and leaves a scar tissue called Corpus albicans.		
7. It also initiates the disintegration of the endometrium leading to menstruation, making the next cycle.		
	(Total-5)	

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