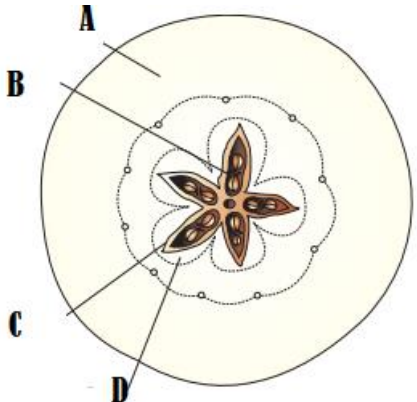

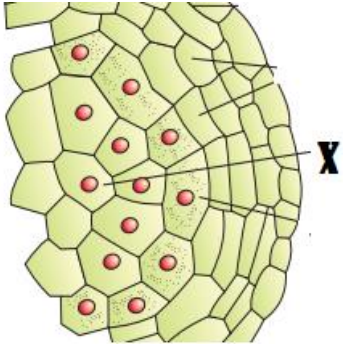
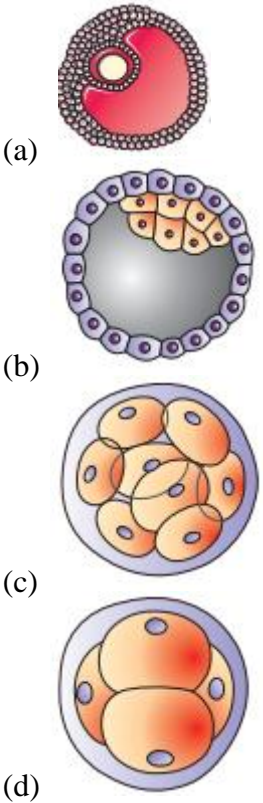


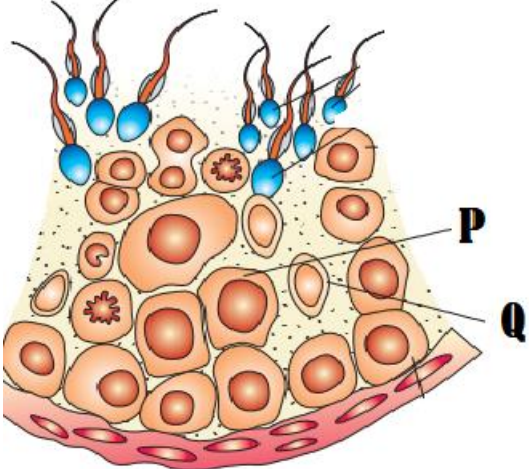
**BIOLOGY (044)****CLASS: XII**
DATE: 30.05.2021**Max. Marks: 30**
Time: 1 Hour

SECTION A		
Sl. No.	CASE STUDY BASED	MARKS
	<p>The chemical messengers in our body called hormones, released by various endocrine glands are responsible for many changes in human body. Menstruation is a slave to certain hormones. Every phase of the menstrual cycle is influenced by hormones namely estrogen, progesterone, FSH and LH. The variation in the level of each of these hormones decides the phase which a girl undergoes. Each cycle occurs in phases based on events in the ovary (ovarian cycle) or the uterus (uterine cycle). The ovarian cycle consists of the follicular phase, ovulation and the luteal phase; the uterine cycle consists of the menstrual, proliferative and secretory phases. Day one of the menstrual cycle is the first day of the period, which lasts for about five days. Around day fourteen, an egg is usually released from the ovary. Menarche (the onset of the first period) usually occurs around the age of twelve years. Although generally health-producing, the menstrual cycle can cause some women to experience problems that disrupt daily lives. These can include cramps, tender breasts, tiredness etc. More severe problems such as premenstrual dysphoric disorders are experienced by 3 to 8% of women. Before puberty GnRH is released in low steady quantities and at a steady rate. After puberty GnRH is released in large pulses and the frequency and magnitude of these determine how much FSH and LH are produced by the pituitary.</p>	
1(i)	<p>The uterine event that happens immediately after ovulation is</p> <ul style="list-style-type: none">(a) Formation of corpus luteum(b) Maintenance of endometrium(c) Degeneration of endometrium(d) Development of follicles	1
1(ii)	<p>Identify the hypothalamic hormone involved in menstrual cycle</p> <ul style="list-style-type: none">(a) GnRH(b) LH and FSH(c) Progesterone(d) Estrogen	1
1(iii)	<p>Menstruation lasts for</p> <ul style="list-style-type: none">(a) 27 - 28 days(b) 4 – 5 days(c) Between menarche and menopause(d) Up to 50 years	1
1(iv)	<p>LH surge occurs in day</p> <ul style="list-style-type: none">(a) 5	1

	(b) 1 (c) 28 (d) 14	
1(v)	Find the correct statement related to estrogen and progesterone level during menstrual cycle (a) Progesterone level is high during follicular phase (b) Estrogen level is low during luteal phase as corpus luteum degenerates (c) Estrogen level is higher than progesterone level during the first 14 days of menstrual cycle (d) Corpus luteum secretes large quantities of estrogen which is necessary for the maintenance of pregnancy	1
SECTION B		
ASSERTION REASON TYPE		
2	Assertion: Pollen banks and seed banks are important in crop breeding programmes Reason: It is possible to store pollen grains for years in liquid nitrogen (a) Both assertion and reason are true, and reason is the correct explanation of assertion. (b) Both assertion and reason are true, but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Both assertion and reason are false	1
3	Assertion: Dehydration and dormancy of mature seeds are crucial for storage of seeds Reason: Since reproductive processes like pollination and fertilisation are independent of water, seed formation is reliable (a) Both assertion and reason are true, and reason is the correct explanation of assertion. (b) Both assertion and reason are true, but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Both assertion and reason are false	1
4	Assertion: Common garden pea is the experimental material of Mendel. Reason: Pea is having well defined differentiating characters, bisexual flowers and is predominantly self – fertilised (a) Both assertion and reason are true, and reason is the correct explanation of assertion. (b) Both assertion and reason are true, but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Both assertion and reason are false	1
5	Assertion: Crossover frequencies are used in formation of linkage maps. Reason: Recombinant frequencies are indirectly proportional to distance between genes.	1

	<p>(a) Both assertion and reason are true, and reason is the correct explanation of assertion.</p> <p>(b) Both assertion and reason are true, but reason is not the correct explanation of assertion.</p> <p>(c) Assertion is true but reason is false.</p> <p>(d) Both assertion and reason are false</p>	
6	<p>Assertion: A combination of progestogens and estrogens can be used by males as implants under the skin as a contraceptive method</p> <p>Reason: Their mode of action is similar to that of oral pills but the effective periods are lesser.</p> <p>(a) Both assertion and reason are true, and reason is the correct explanation of assertion.</p> <p>(b) Both assertion and reason are true, but reason is not the correct explanation of assertion.</p> <p>(c) Assertion is true but reason is false.</p> <p>(d) Both assertion and reason are false</p>	1
SECTION C		
PICTURE BASED		
7	<p>Select the correct labelling of the given diagram from the following options</p>  <p>(a) A – mesocarp, B - Seed, C – endocarp, D - thalamus</p> <p>(b) A – thalamus, B - Seed, C – endocarp, D - mesocarp</p> <p>(c) A – epicarp, B - Seed, C – endocarp, D - mesocarp</p> <p>(d) A – thalamus, B - embryo, C – endosperm, D - nucellus</p>	1
8	<p>The below given diagram represents a stage in the life cycle of angiosperms, identify it.</p>  <p>(a) Zygote</p>	1

	(b) Globular embryo (c) Heart shaped embryo (d) Proembryo	
9	 <p>Give the function of the part labelled as 'X'</p> (a) Protection (b) Nutrition (c) Production of microspores (d) Production of megaspores	1
10	<p>Identify the stage which gets implanted in the endometrial lining of uterus</p>  <p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p>	1

11	 <p>Identify the part marked as 'P' and give the function of 'Q'</p> <p>(a) Spermatocytes, production of sperms (b) Sertoli cells, nutrition (c) Sertoli cells, production of sperms (d) Spermatocytes, nutrition</p>	1
SECTION D		
MULTIPLE CHOICE QUESTIONS		
12	<p>Which of the following statement is correct?</p> <p>(a) Corpus luteum changes into corpus albicans (b) Corpus luteum degenerates after fertilisation (c) Corpus luteum persists throughout the pregnancy (d) Corpus luteum is not formed during pregnancy</p>	1
13	<p>Spermiogenesis is the transformation of:</p> <p>(a) Spermatogonium into primary spermatocyte (b) Spermatogonium into functional spermatozoa (c) Primary spermatocytes into secondary spermatocytes (d) Spermatids into spermatozoa</p>	1
14	<p>In F₂ progeny of dihybrid cross, the expected genotypic proportions of individuals homozygous for both dominant characters are</p> <p>(a) 3/16 (b) 9/16 (c) 12/16 (d) 1/16</p>	1
15	<p>Which of the following conditions represents a case of co-dominant genes?</p> <p>(a) A gene express itself, suppressing the phenotypic effects of its alleles (b) Genes that are similar in phenotypic effect when present separately but when together interact to produce a different trait (c) Alleles, both of which interact to produce a trait, which may or may not resemble either of the parental types (d) Alleles, each of which produces an independent effect in a heterozygous condition</p>	1

16	From a cross AABb X aaBb, the genotypes AaBB: AaBb: Aabb: aabb will be obtained in the following ratio: (a) 1:1:1:1 (b) 1:2:1:0 (c) 1:3:1:0 (d) 1:1:1:0	1
17	There are three genes a, b, c; percentage of crossing over between 'a' and 'b' is 20%, 'b' and 'c' is 28% and 'a' and 'c' is 8%. What is the sequence of genes on the chromosome? (a) b, a, c (b) a, b, c (c) a, c, b (d) None of these	1
18	A man with blood group 'B' marries a woman with blood group 'A' and their first child is having blood group B. What is the genotype of the child? (a) $I^A I^B$ (b) $I^A i$ (c) $I^B i$ (d) $I^B I^B$	1
19	How many meiotic divisions are necessary for formation of 400 grains in wheat? (a) 125 (b) 250 (c) 500 (d) 400	1
20	Which is the most logical sequence with reference to life cycle of angiosperms? (a) Germination, endosperm formation, seed dispersal, double fertilisation (b) Cleavage, fertilisation, grafting, fruit formation (c) Pollination, fertilisation, seed formation, germination (d) Maturation, mitosis, differentiation, fertilisation	1
21	Which of the following pairs represent haploid cells? (a) Nucellus and antipodal cells (b) Antipodal cells and megaspore mother cells (c) Nucellus and primary endosperm nucleus (d) Antipodal cell and egg nucleus	1
22	In anatropous ovule, the micropyle is: (a) In straight line with funicle (b) At right angle with funicle (c) Side by side with funicle (d) At 45° with funicle	1
23	Which among the following is not a preferred character for an ideal contraceptive method? (a) Easily available (b) Irreversible (c) Least side effects (d) User friendly	1

24	Identify the STD which can also be transmitted by sharing of injection needles, surgical instruments etc. (a) Hepatitis B (b) Trichomoniasis (c) Gonorrhoea (d) syphilis	1
25	In ----- the embryos with more than 8 blastomeres are transferred into the uterus (a) ZIFT (b) GIFT (c) IUT (d) ICSI	1
26	Diaphragms and vaults are (a) Barrier methods used in males (b) Barrier methods used in females (c) Hormone releasing IUDs (d) Copper releasing IUDs	1

ANSWER KEY

Question number	Correct option	Question number	Correct option
1 (i)	(b)	12	(c)
1(ii)	(a)	13	(d)
1(iii)	(b)	14	(d)
1(iv)	(d)	15	(d)
1(v)	(c)	16	(b)
2	(a)	17	(a)
3	(b)	18	(c)
4	(a)	19	(c)
5	(c)	20	(c)
6	(d)	21	(d)
7	(b)	22	(c)
8	(d)	23	(b)
9	(c)	24	(a)
10	(b)	25	(c)
11	(d)	26	(b)