



OSDAV PUBLIC SCHOOL, KAITHAL

UNIT TEST- JULY (2024)

CLASS- XII

SUBJECT- BIOLOGY

Set- A

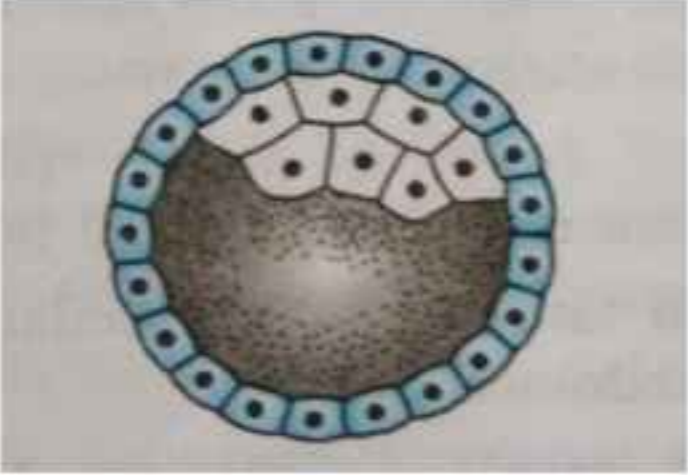
Time: 1 hr 30 min.

M.M. 35

General Instructions:-

I. All questions are compulsory.

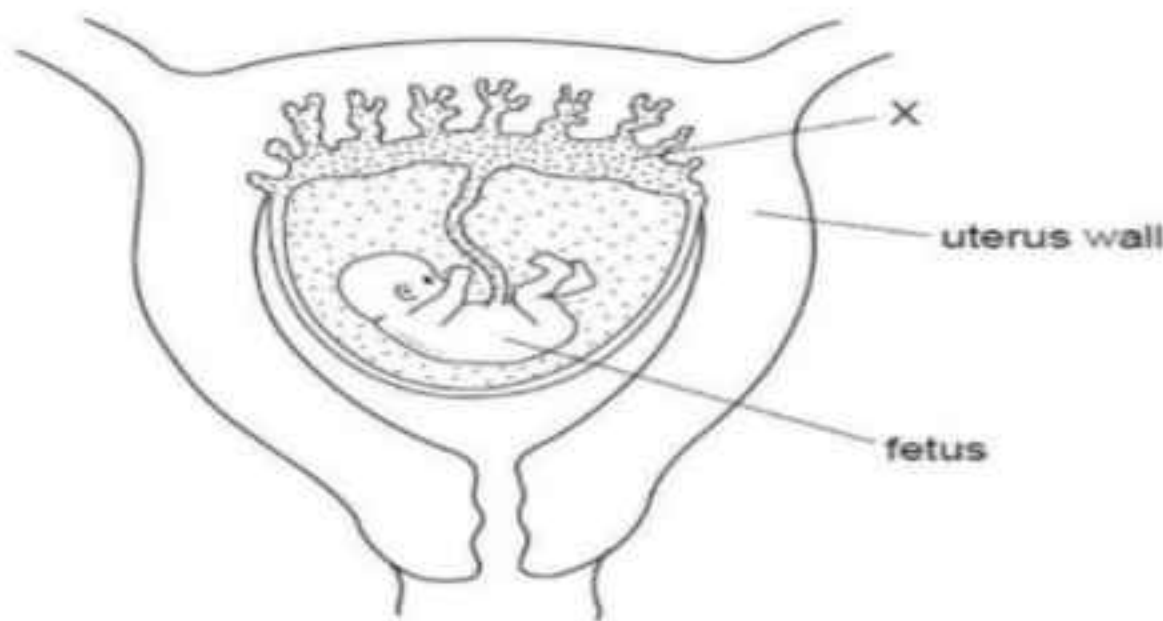
SECTION- A

Q.1	A botanist studying <i>Viola</i> (common pansy) noticed that one of the two flower types withered and developed no further due to some unfavourable condition, but the other flower type on the same plant survived and it resulted in an assured seed set. Which of the following will be correct? A. The flower type which survived is Cleistogamous and it always exhibits autogamy B. The flower type which survived is Chasmogamous and it always exhibits geitonogamy. C. The flower type which survived is Cleistogamous and it exhibits both autogamy and geitonogamy. D. The flower type which survived is Chasmogamous and it never exhibits autogam	1
Q.2	A disease caused by an autosomal primary nondisjunction is; A) Down's syndrome B) Klinefelter syndrome C) Turner's syndrome D) Sickle Cell anaemia	1
Q.3	From the sexually transmitted diseases mentioned below, identify the one which does not specifically affect the sex organs; A) Syphilis B) Gonorrhoea C) Genital warts D) AIDS	1
Q.4	Which of the following statements indicates parallelism in genes and chromosomes? (i) They occur in pairs (ii) They segregate during gamete formation (iii) They show linkage (iv) Independent pairs segregate independently A. (i) and (iii) B. (ii) and (iii) C. (i), (ii) and (iii) D. (i), (ii) and (iv)	1
Q.5	Identify the Human Development stage as well as its place of occurrence and select the right option of the two; A) late morula--middle part of fallopian tube B) 8 celled morula--starting point of fallopian tube C) blastula--end part of fallopian tube D) blastocyst--uterine wall 	1
Q.6	Which of the following hormones is not secreted by the human placenta ? (a) Progesterone (b) Oestrogen (c) Human Chorionic Gonadotropin (HCG) (d) Relaxin	1
Q.7	Assertion and reason based questions A) both assertion and reason are true and reason is the correct explanation of assertion B) both assertion and reason are true and reason is not the correct explanation of assertion C) assertion is true but reason is false D) assertion is false and reason is true	

	Assertion: Primary endosperm nucleus is diploid. Reason: It is the product of double fertilisation	1
Q.8	Assertion: When the two genes in a dihybrid cross are situated on the same chromosome, the proportion of parental gene combinations is much higher than non parental type. Reason: Higher parental gene combinations can be attributed to crossing over between two genes.	1

SECTION-B

Q.9	Explain the process of hormonal regulation of spermatogenesis	2
Q.10	Study the details given below on two genetic disorders and recognize the diseases A & B. <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>A</p> <p>The gene is present on X chromosome It appears more in males than in females Blood clotting is impaired Which among A&B is a sex linked disease?Justify.</p> </div> <div style="text-align: center;"> <p>B</p> <p>The gene is present on the chromosome 11 or 16 It occurs both in males and females Suffers with chronic anaemia</p> </div> </div>	2
Q 11	Given below is the diagram of the human foetus in the uterus. (a) Identify the part labelled as 'X'. (b)Name two hormones released from this tissue during pregnancy.	2



SECTION-C

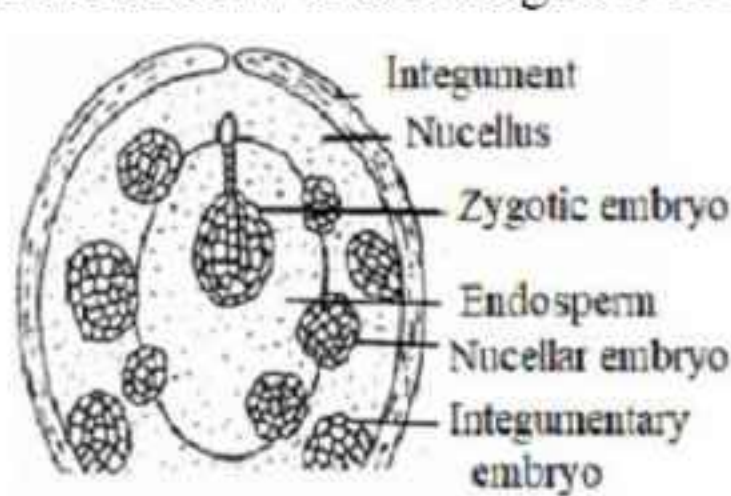
Q.12	Study the pedigree chart of a family given below and answer the questions that follow : <p>(a) Is the disease in this pedigree chart a recessive or dominant disorder ? Give a reason. (b) Identify the female individual in this family, who for sure is homozygous. (c) Genotype of which one individual cannot be identified in this pedigree chart ? (d) Identify a male who is definitely heterozygous. (e) Is this disease a sex-linked or an autosomal disorder ?Give example.</p>	3
Q.13	A true breeding tall pea plant with round seeds is crossed with a recessive dwarf pea plant having wrinkled seeds. Work out the cross up to F ₂ generation giving the phenotypic ratios of F ₁ and F ₂ generation respectively.	3
Q.14	Explain the role of pituitary gonadotropins during the follicular and ovulatory phases of the menstrual	3

	cycle. Describe the shifts in steroidal secretions.	
Q.15	A) A woman with O blood group marries a man with AB blood group (i) work out all the possible phenotypes and genotypes of the progeny. (ii) Discuss the kind of dominance in the parents and the progeny in this case. B) Identify the sex of organism as male or female in which the sex chromosome are found as (i) ZW in bird (ii) XY in Drosophila	3

SECTION-D

Q.1 6	CASE STUDY BASED QUESTION				4
	Given below are certain situations. Analyse the situation and suggest the name of suitable contraceptive device along with mode of action:				
	Situation	Requirement of contraceptive for -	Name of contraceptive device	Mode of action	
	1	blocking the entry of sperms through cervix			
	2	spacing between children			
	3	effective emergency contraceptive			
	4	terminal method to prevent any more pregnancy in female			
	5	sterilization in male			

SECTION-E

Q 17	Given below is the diagram of the cross section of a Citrus seed. It contains many embryos.	5
		
	<p>[A] What is the term used for such a phenomenon?</p> <p>[B] How is the zygotic embryo different from the Nucellar embryo?</p> <p>[C] What is the term used for development of diploid egg cells into seeds without fertilisation?</p> <p>[D] Production of hybrid seeds is costly and hence it becomes too expensive for the farmers. Suggest one method to reduce the cost and to avoid segregation of characters in the hybrid progeny</p> <p>[E] Comment upon the mode of pollination in Vallisneria and Eichhornia which have emergent flowers.</p> <p>[F] How many pollen grains and ovules are likely to be formed in the anther and the ovary of an angiosperm bearing 25 microspore mother cells and 25 megaspore mother cells respectively?</p>	



General Instructions:-

I. All questions are compulsory.

SECTION- A

Q.1	A	1
Q.2	A	1
Q.3	D	1
Q.4	D	1
Q.5	D	1
Q.6	D	1
Q.7	D	1
Q.8	C	1

SECTION-B

Q.9	Spermatogenesis starts at the age of puberty due to significant increase in the secretion of gonadotropin releasing hormone (GnRH). This is a hypothalamic hormone. The increased levels of GnRH then act at the anterior pituitary gland and stimulate secretion of two gonadotropins – luteinising hormone (LH) and follicle stimulating hormone (FSH). LH acts at the Leydig cells and stimulates synthesis and secretion of androgens. Androgens, in turn, stimulate the process of spermatogenesis. FSH acts on the Sertoli cells and stimulates secretion of some factors which help in the process of spermiogenesis.	1/2 1/2 1/2 1/2
Q.10	A.Haemophilia B.Thalassemia (b)A because genes for sex linked diseases present on X chromosome and male has only one x chromosome so one gene is sufficient to develop disease	1 1
Q.11	a.Placenta b.hCG,hPL,oestrogen,progestogen (any two)	1 1

SECTION-C

Q.12	(a) recessive ,one generation is skipped (b) 3 (c) 7,8 (d)2,5 (e)Autosomal, Sickle cell Anaemia	1/2+ 1/2+ 1/2+ 1/2+1
Q.13	Parent Generation, P : TTRR x ttrr F1 Generation : TtRr (tall plant, round seed)	1

	generation : TtRr x TtRr Punnett square Phenotypic ratio 9:3:3:1	2
Q.14	The menstrual flow is due to the breakdown of the lining of the uterine endometrium and blood vessels which forms the liquid discharged from the vagina. The menstrual cycle is controlled through the pituitary gland by the hypothalamus. Changes in the ovary and uterus during the menstrual cycle is due to the fluctuation in the levels of ovarian and pituitary hormones. Towards the end of the menstrual phase, the pituitary FSH eventually increases which causes the development of the follicles inside the ovaries. Both the FSH and LH attain a peak level during the mid of the cycle. This speedy secretion of LH leads to LH surge which induces rupture of the Graafian follicle and hence the ovulation. During the maturation of follicles, more of oestrogen is secreted causing a surge in FSH and LH from the anterior pituitary. The LH surge causes ovulation. The LH also induces luteinisation. The LH hormone causes the conversion of the empty follicle into the corpus luteum. The Corpus luteum produces steroid hormones – progesterone and oestrogen. These hormones govern the growth and maintenance of the uterine endometrium for probable implantation	1 1 1
Q.15	A)(i) Blood group AB has alleles as IA, IB and O group has ii which on cross gives the both blood groups A and B while the genotype of progeny will be IAi and IBi. (ii) IA and IB are equally dominant (co-dominant). In multiple allelism, the gene I exists in 3 allelic forms, IA, IB and i. B)(i) Female; (ii) Male	1 1 1

SECTION-D

Q.16	<table border="1"> <tr> <td>1</td> <td>blocking the entry of sperms through cervix</td> <td>Diaphragm/ cervical caps/ vaults</td> <td>Cover the cervix during coitus</td> </tr> <tr> <td>2</td> <td>spacing between children</td> <td>Cu or hormone releasing IUDs such as Cu T/Cu7/ Multiload 375/ Progestasert/LNG 20</td> <td>Cu ions from Cu containing IUDs increase phagocytosis of sperms within uterus, suppress sperm motility and fertilizing capacity/ hormone releasing IUDs make uterus unsuitable for implantation</td> </tr> <tr> <td>3</td> <td>effective emergency contraceptive.</td> <td>Pills containing Progesterone or progestogen-estrogen combination or IUDs within 72 hours of coitus</td> <td>Pills inhibit ovulation and implantation as well as alter the quality of cervical mucus to prevent the entry of sperms/IUDs - Cu ions increase phagocytosis of sperms within uterus, suppress sperm motility and fertilizing capacity/ hormone releasing IUDs make uterus unsuitable for implantation</td> </tr> <tr> <td>4</td> <td>barrier method to prevent any more pregnancy in female</td> <td>Tubectomy</td> <td>Block gametes transport and prevent conception.</td> </tr> <tr> <td>5</td> <td>sterilization in male</td> <td>Vasectomy</td> <td>Blocks sperm transport.</td> </tr> </table> <p>Any four</p>	1	blocking the entry of sperms through cervix	Diaphragm/ cervical caps/ vaults	Cover the cervix during coitus	2	spacing between children	Cu or hormone releasing IUDs such as Cu T/Cu7/ Multiload 375/ Progestasert/LNG 20	Cu ions from Cu containing IUDs increase phagocytosis of sperms within uterus, suppress sperm motility and fertilizing capacity/ hormone releasing IUDs make uterus unsuitable for implantation	3	effective emergency contraceptive.	Pills containing Progesterone or progestogen-estrogen combination or IUDs within 72 hours of coitus	Pills inhibit ovulation and implantation as well as alter the quality of cervical mucus to prevent the entry of sperms/IUDs - Cu ions increase phagocytosis of sperms within uterus, suppress sperm motility and fertilizing capacity/ hormone releasing IUDs make uterus unsuitable for implantation	4	barrier method to prevent any more pregnancy in female	Tubectomy	Block gametes transport and prevent conception.	5	sterilization in male	Vasectomy	Blocks sperm transport.	4
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4	barrier method to prevent any more pregnancy in female	Tubectomy	Block gametes transport and prevent conception.																			
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SECTION-E

Q.17	A.Polyembryony B.Zygotic embryo develops after fertilization but nucellar embryo develops without fertilization C.Apomixis D.Apomictic plants E In Eichhornia the flowers emerge above the level of water and are pollinated by insects or wind. In Vallisneria, the female flower reaches the surface of water by the long stalk and the male flowers or pollen grains are released onto the surface of water. They are carried passively by water currents; some of them eventually reach the female flowers and the stigma. F Microspore mother cells $25 \times 4 = 100$ pollen grains and from megaspore mother cells 25 ovules respectively.	1/2 1 1/2 2 1/2
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OSDAV PUBLIC SCHOOL, KAITHAL
UNIT TEST- JULY (2024)
CLASS- XII
SUBJECT- BIOLOGY

Set- B

Time: 1 hr 30 min.

M.M. 35

General Instructions:-

I. All questions are compulsory.

SECTION- A

Q.1	<p>The male gametes of the rice plant have 12 chromosomes in their nucleus. The chromosome number in the female gamete ,zygote and the cells of the Seedling will be respectively;</p> <p>A) 12,24,12 B)24,12,12 C)12,24,24 D)24,12,24</p>	1															
Q.2	<p>What should be the genotype of the indicated member?</p> <div style="text-align: center;"> </div> <p>A) AA B) Aa C) XY D) aa</p>	1															
Q.3	<p>Choose the option that gives the correct number of pollen grains that will be formed after 325 microspore mother cells undergo microsporogenesis.</p> <p>(a) 325 (b) 650 (c) 1300 (d) 975</p>	1															
Q.4	<p>Rajesh and Mahesh have defective haemoglobin due to genetic disorders. Rajesh Has too few globin molecules while Mahesh has incorrectly functioning globinmolecules. Identify the disorder they are suffering from.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 5%;"></th> <th style="width: 40%;">Rajesh</th> <th style="width: 40%;">Mahesh</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">A</td> <td>Sickle cell anaemia- an autosomal resistive disease</td> <td>Thalassemia- an autosomal recessive disease</td> </tr> <tr> <td style="text-align: center;">B</td> <td>Thalassemia -an autosomal recessive blood disorder</td> <td>Sickle cell anaemia -an autosomal recessive disorder</td> </tr> <tr> <td style="text-align: center;">C.</td> <td>Sickle Cell anaemia- an autosomal dominant blood disorder</td> <td>Thalassemia- an autosomal recessive disorder</td> </tr> <tr> <td style="text-align: center;">D</td> <td>Thalassemia- an autosomal dominant blood disorder</td> <td>Sickle Cell anaemia- an autosomal recessive blood</td> </tr> </tbody> </table>		Rajesh	Mahesh	A	Sickle cell anaemia- an autosomal resistive disease	Thalassemia- an autosomal recessive disease	B	Thalassemia -an autosomal recessive blood disorder	Sickle cell anaemia -an autosomal recessive disorder	C.	Sickle Cell anaemia- an autosomal dominant blood disorder	Thalassemia- an autosomal recessive disorder	D	Thalassemia- an autosomal dominant blood disorder	Sickle Cell anaemia- an autosomal recessive blood	1
	Rajesh	Mahesh															
A	Sickle cell anaemia- an autosomal resistive disease	Thalassemia- an autosomal recessive disease															
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C.	Sickle Cell anaemia- an autosomal dominant blood disorder	Thalassemia- an autosomal recessive disorder															
D	Thalassemia- an autosomal dominant blood disorder	Sickle Cell anaemia- an autosomal recessive blood															
Q.5	<p>Which of the following sexually transmitted diseases is not caused by a virus ?</p> <p>(a) Genital herpes (b) Gonorrhoea (c) Genital warts (d) Hepatitis-B</p>	1															

Q.6	Remnants of nucellus are persistent during seed development in: a) pea b) groundnut c) wheat d) black pepper	1
Q.7	Assertion and reason based questions A) both assertion and reason are true and reason is the correct explanation of assertion B) both assertion and reason are true and reason is not the correct explanation of assertion C) assertion is true but reason is false D) assertion is false and reason is true Assertion : Apomixis and parthenocarpy are both asexual modes of reproduction. Reason: Seeds are not produced in both apomixis and parthenocarpy.	1
Q.8	Assertion: When white eyed, yellow bodied Drosophila females were hybridised with red eyed, brown-bodied males; and F1 progeny was intercrossed, F2 ratio deviated from 9 : 3 : 3 : 1. Reason: When two genes in a dihybrid are on the same chromosome, The proportion of parental gene combinations is much higher than the non-parental type.	1

SECTION-B

Q.9	Explain the functions of the following structures in the human male reproductive system. (a) Scrotum (b) Leydig cells	2																																						
Q.10	<p>The diagram below shows the sequence of amino acids in part of a haemoglobin molecule.</p> <table border="0"> <tr> <td align="center">Val</td> <td align="center">His</td> <td align="center">Leu</td> <td align="center">Thr</td> <td align="center">Pro</td> <td align="center">Glu</td> <td align="center">Glu</td> <td align="right">haemoglobin chain</td> </tr> <tr> <td colspan="7"><hr/></td> </tr> <tr> <td align="center">TTT</td> <td align="center">TTT</td> <td align="center">TTT</td> <td align="center">TTT</td> <td align="center">TTT</td> <td align="center">TTT</td> <td align="center">TTT</td> <td align="right">mRNA</td> </tr> <tr> <td colspan="7"><hr/></td> </tr> <tr> <td align="center">CAT</td> <td align="center">GTA</td> <td align="center">AAT</td> <td align="center">TGA</td> <td align="center">GGA</td> <td align="center">CTT</td> <td align="center">CTC</td> <td align="right">DNA</td> </tr> </table> <p>Key: Val = valine Thr = threonine His = histidine Pro = proline Leu = leucine Glu = glutamic acid</p> <p>a) If the base T* was substituted with A, how would it affect the haemoglobin chain? b) Name the condition and the effects associated with the above substitution.</p>	Val	His	Leu	Thr	Pro	Glu	Glu	haemoglobin chain	<hr/>							TTT	TTT	TTT	TTT	TTT	TTT	TTT	mRNA	<hr/>							CAT	GTA	AAT	TGA	GGA	CTT	CTC	DNA	2
Val	His	Leu	Thr	Pro	Glu	Glu	haemoglobin chain																																	
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Q.11	A pregnant human female was advised to undergo MTP. It was diagnosed that the foetus she was carrying had developed from a zygote having 45 chromosomes with only one X chromosome. a) What is this condition called and how does it arise? b) Why was she advised to undergo MTP?	2																																						

SECTION-C

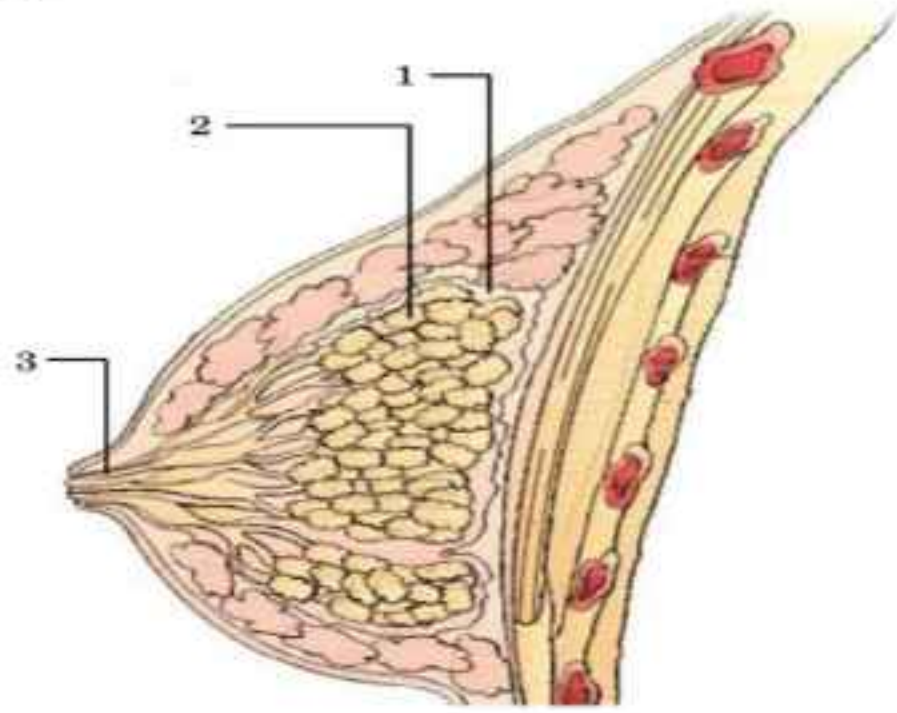
Q.12	In maize, the trait for the purple kernel (P) is dominant over the yellow kernel (p). A plant with purple kernels is crossed with another plant with yellow kernels and produces 3 offspring with purple kernels and 1 offspring with yellow kernels. (a) What is the genotype of the parental maize plants? (b) Draw a Punnett square to depict the cross between the two offspring with purple kernels. (c) Identify the genotypic and phenotypic ratios obtained from the cross in (b)	3
Q.13	Differentiate between the following : (i) Perisperm and Pericarp (ii) Syncarpous pistil and Apocarpous pistil (iii) Plumule and Radicle	3
Q.14	Explain the role of pituitary gonadotropins during the follicular and ovulatory phases of the menstrual	3

cycle. Describe the shifts in steroidal secretions.

Q.15

- (i) When and how does the foetal ejection reflex begin ?
- (ii) Pituitary gland and uterine muscles play an important role during parturition. Explain.
- (iii) A functional mammary gland is a characteristic of all female mammals. Given below is a diagrammatic sectional view of a mammary gland. Identify the parts 1, 2 and 3,

3



SECTION-D

Q.16

CASE STUDY BASED QUESTION

Given below are certain situations. Analyse the situation and suggest the name of suitable contraceptive device along with mode of action:

4

Situation	Requirement of contraceptive for -	Name of contraceptive device	Mode of action
1	blocking the entry of sperms through cervix		
2	spacing between children		
3	effective emergency contraceptive		
4	terminal method to prevent any more pregnancy in female		
5	sterilization in male		

SECTION-E

Q 17

- A)When the pollen is transferred from anther to the stigma of the same flower, the pollination is called autogamy.
- a) Cleistogamous flowers are invariably autogamous. Explain.
- b) Geitonogamy is functionally cross pollination, but genetically similar to autogamy. Justify the statement.
- B)Nature has mechanisms to promote outbreeding in plants. Explain any two mechanisms existing in plants to promote outbreeding.
- C) The thick protective covering of the seed is known as _____.

5



OSDAV Public School, Kaithal

Unit Test (July,2024) Answer Key
SET- B

Class : XII

Subject : Biology

Time: 1 hr 30 min.

M.M. 35

General Instructions:-

I. All questions are compulsory.

SECTION- A

Q.1	C	1
Q.2	D	1
Q.3	C	1
Q.4	B	1
Q.5	B	1
Q.6	D	1
Q.7	C	1
Q.8	A	1

SECTION-B

Q.9	a) Scrotum: The testes are situated outside the abdominal cavity within a pouch called scrotum. The scrotum helps in maintaining the low temperature of the testes (2–2.5 degree celsius lower than the normal internal body temperature) necessary for spermatogenesis.	1
	(b) Leydig cells: The regions outside the seminiferous tubules called interstitial spaces, contain small blood vessels and interstitial cells or Leydig cells. Leydig cells synthesize and secrete testicular hormones called androgens.	1
Q.10	a) CTT would become CAT which codes for valine. Thus, valine would replace glutamic acid at that point.	½
	b) Sickle cell anaemia , the mutant haemoglobin molecule undergoes polymerization	1
	leading to the change in the shape of the RBC from biconcave disc to elongated sickle like structure.	½
Q.11	a)The embryo has Turner’s Syndrome due to aneuploidy of the sex chromosome. Such a disorder is caused due to the absence of one of the X	1

	<p>chromosomes, i.e., 45 with XO.</p> <p>b) She was advised MTP as the child will have the following problems:</p> <ul style="list-style-type: none"> · rudimentary ovaries · poorly developed breasts · lack of other secondary sexual characters · delayed or no onset of the menstrual cycle and infertile.(Any twi) 	1
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SECTION-C

Q.12	<p>a)- parent with purple kernel - Pp - parent with yellow kernel – pp (b) Complete answer: $\begin{array}{cc} P & p \\ P & Pp \\ P & Pp \\ p & Pp \\ p & pp \end{array}$ (c) - genotypic ratio: 1:2:1 OR 1PP:2Pp:1pp - phenotypic ratio: 3:1 OR 3 plants with purple kernel: 1 plant with yellow kernel</p>	<p>1</p> <p>1</p> <p>1</p>
Q 13	<p>perisperm is nutritive tissue in seed whereas pericarp is the fruit's structure enclosing the seed, syncarpous pistil is fused carpels while apocarpous pistil is when carpels are free, and plumule develops into the plant's shoot while radicle is the embryonic root.</p>	<p>1</p> <p>1</p> <p>1</p>
Q.14	<p>The menstrual flow is due to the breakdown of the lining of the uterine endometrium and blood vessels which forms the liquid discharged from the vagina. The menstrual cycle is controlled through the pituitary gland by the hypothalamus. Changes in the ovary and uterus during the menstrual cycle is due to the fluctuation in the levels of ovarian and pituitary hormones. Towards the end of the menstrual phase, the pituitary FSH eventually increases which causes the development of the follicles inside the ovaries. Both the FSH and LH attain a peak level during the mid of the cycle. This speedy secretion of LH leads to LH surge which induces rupture of the Graafian follicle and hence the ovulation. During the maturation of follicles, more of oestrogen is secreted causing a surge in FSH and LH from the anterior pituitary. The LH surge causes ovulation. The LH also induces luteinisation. The LH hormone causes the conversion of the empty follicle into the corpus luteum. The Corpus luteum produces steroid hormones – progesterone and oestrogen. These hormones govern the growth and maintenance of the uterine endometrium for probable implantation</p>	<p>1</p> <p>1</p> <p>1</p>
Q.15	<p>i)Parturition is the process of delivery of the foetus. It is also called childbirth. Foetal ejection reflex are the mild uterine contractions generated by placenta when the foetus is fully developed. ii)This reflex is seen during the time of parturition. The parturition gives signals and the placenta induces mild uterine contractions. This triggers release of oxytocin from the maternal pituitary gland.</p>	<p>1/2</p> <p>1</p>

	iii) 1 Mammary lobes 2 Alveoli 3 Laticiferous duct	1/2+ 1/2+ 1/2
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SECTION-D

Q.1 6	1	blocking the entry of sperms through cervix	Diaphragms/ cervical caps/ vaults	Cover the cervix during coitus	4
	2	spacing between children	Cu or hormone releasing IUDs such as Cu T/Cu7/ Multiload 375/ Progestasert/LNG 20	Cu ions from Cu containing IUDs increase phagocytosis of sperms within uterus, suppress sperm motility and fertilizing capacity/ hormone releasing IUDs make uterus unsuitable for implantation	
	3	effective emergency contraceptive	Pills containing Progestogens or progestogen-estrogen combination or IUDs within 72 hours of coitus	Pills inhibit ovulation and implantation as well as alter the quality of cervical mucus to prevent the entry of sperms/IUDs - Cu ions increase phagocytosis of sperms within uterus, suppress sperm motility and fertilizing capacity/ hormone releasing IUDs make uterus unsuitable for implantation	
	4	terminal method to prevent any more pregnancy in female	Tubectomy	Block gamete transport and prevent conception.	
	5	sterilization in male	Vasectomy	Blocks sperm transport.	
	Any four				

SECTION-E

Q 17	A)a) In this, flowers are not open, pollen falls to the stigma of the same flower and seed setting takes place without the influence of external agency.	1
	b) In geitonogamy transfer of pollen grains from the anther to the stigma of another flower of the same plant. Functionally geitonogamy is a type of cross pollination but it is genetically similar to autogamy since the pollen grains come from the same plant	1
	B)1. Anther and stigma are placed at different positions so that the pollen cannot come in contact with the stigma of the same flower.	1
	2) Self-incompatibility is the genetic mechanism in which pollen cannot germinate on the stigma of the same flower or other flowers of the same plant by inhibiting pollen germination or pollen tube growth in the pistil.	1
	C) Testa	1