

## SET- II

SESSION: 2024-25

CLASS: XII

MAXIMUM MARKS: 40

SUBJECT: BIOLOGY

TIME: 1:30 HR

Q.No	Questions	Marks
SECTION A		
1	The egg apparatus is composed of one egg cell and a- One synergid b- Two polar nuclei c- Two synergid d- One polar nuclei	1
2	The developing pollen grain derives its nutrition by- a- Tapetum b- Endothecium c- Pollen mother cell d- Pollen tetrad	1
3	The seminiferous tubule inside the testes is lined by- a- Sertoli cell b- Spermatogonia c- Primary spermatocyte d- Both b and c	1
4	Assertion: Amniocentesis is the process by which amniotic fluid is studied. Reason: It is meant for determining the genetic disorders in the fetus. a- If both Assertion and Reason are true and Reason is the correct explanation of Assertion. b- If both Assertion and Reason are true but Reason is not the correct explanation of Assertion. c- If Assertion is true but Reason is false. d- If both Assertion and Reason are false.	1
5	Assertion: Periodic abstinence is a natural method of contraception. Reason: It is a very effective method and 100% sure of birth control. a- If both Assertion and Reason are true and Reason is the correct explanation of Assertion. b- If both Assertion and Reason are true but Reason is not the correct explanation of Assertion. c- If Assertion is true but Reason is false. d- If both Assertion and Reason are false.	1
SECTION B		
6	In flowering plants mostly, one male gamete fuses to form a zygote through the process of syngamy while the other male gamete fuses with polar nuclei to form a nutritive tissue. This process is known as double fertilization. List any two advantages of such reproduction.	2
7	The outer layer of the pollen grain is exine. The exine is made up of sporopollenin, one of the most resistant organic substances. It helps the pollen grains resist high temperatures, strong acids, and alkalis and also protects them from enzyme degradation. In spite of exine, we can see pollen tubes emerging from the outer layer of the pollen grain. Does it happen?	2
8	The menstrual cycle is a cyclic process in human females. In which condition it remains suspended and why?  OR The rupture of graffian follicles is associated with two key events. Mention these events.	2
9	Differentiate between- a- Spermiogenesis and Spermiation	2

	b- Blastocyst and morula	
10	A leaf cell of a diploid plant contains 12 chromosomes. Calculate the number of chromosomes in the endosperm of that plant.	2

**SECTION C**

11	<p>Complete the flow chart and answer the questions:</p> <p>a. Label A and B</p> <p>b. Write the chromosome number of products formed from A</p> <p>c. By which process B develops into spermatozoa?</p>		3
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12	<p>Explain the events that cause the change in the chromosome number of oogonia from <math>2n</math> to <math>n</math>.</p> <p style="text-align: center;">OR</p> <p>Describe oogenesis only by giving flow chart.</p>	3
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**SECTION D (Case Study)**

13	<p>A class XII student of biology was surprised to know that fruits may be classified into true and false fruit. He argued with his friend about the concept. His biology teacher explained the concept of true and false fruit.</p> <p>i- True fruit is developed from-</p> <p>a- Ovary                      b- Thalamus                      c- Petals and sepals                      d- Endosperms</p> <p>ii- Apple is a false fruit as it develops from –</p> <p>a- Ovary                      b- Thalamus                      c- Petals and sepals                      d- Endosperms</p> <p>iii- Any fruit is a product of</p> <p>a- Pre-fertilization event</p> <p>b- Post-fertilization even</p> <p>c- Parthenocarpy</p> <p>d- None of these</p> <p>iv- The false fruit may develop from-</p> <p>a- Perianth</p> <p>b- Peduncle</p> <p>c- Thalamus</p> <p>d- All of these</p>	4
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**SECTION D**

14	<p>a. Draw a labeled diagrammatic view of the human male reproductive system,</p> <p>b. Differentiate between vas deferens and vasa efferentia</p> <p style="text-align: center;">OR</p> <p>a. Mention the fate of the corpus luteum and its effect on the uterus in the absence of fertilization of the ovum in human females.</p> <p>b. Write the effect of high concentrations of LH on a mature Graafian follicle.</p>	5
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15	<p>Draw the graphical representation of the menstrual cycle in a human female and answer the following questions-</p> <p>i- How the release of progesterone and LH is associated?</p> <p>ii- Mention the condition when menses starts and stops in puberty age.</p> <p style="text-align: center;">OR</p> <p>Explain the formation of the placenta and umbilical cord during pregnancy.</p>	5
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16	<p>Explain the following processes-</p> <p>a- Formation of zygote and role of egg apparatus in the flowering plant</p> <p>b- Development of endosperm in endospermic plant</p> <p style="text-align: center;">OR</p> <p>i- Illustrate the development of embryo in flowering plant only with the help of labelled diagram.</p> <p>ii- Compare anatomy of monocotyledons and dicotyledons seeds .</p>	5
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