BCM School, Basant Avenue, Dugri Road, Ludhiana
Assignment
Class XII
Subject - Biology
(Sexual Reproduction in Flowering Plants)

Q1	Double fertilization results in zygote and endosperm. What is the ploidy of the endosperm? A. Haploid B. Diploid C. Triploid D. Tetraploid	1
Q2	"Cells of the tapetum of a microsporangium are usually multinucleate". Which of the following can be a reason for the tapetal cells to become multinucleate? A. They fuse with the polar cells of the megasporangium. B. They do not undergo karyokinesis. C. They do not undergo cytokinesis. D. They do not undergo mitosis.	1
	Choose the correct option for question no. 3 and 4: 1. **A.** Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion. 2. **B.** Both Assertion and Reason are true, but the Reason is *not* the correct explanation of the Assertion. 3. **C.** Assertion is true, but the Reason is false. 4. **D.** Assertion is false, but the Reason is true.	
Q3	**Assertion:** The functional megaspore develops into the female gametophyte. **Reason:** The megaspore divides mitotically to form the embryo sac.	1
Q4	**Assertion:** Cleistogamous flowers ensure cross-pollination. **Reason:** Cleistogamous flowers remain closed and self-pollinate without external agents.	1
Q5	Observe the flow chart given below and answer the questions that follow: Pollen grain lands on stigma ↓ Pollen tube grows through style ↓ Pollen tube enters ovule via micropyle ↓ Two male gametes released into embryo sac ↓ **(?)** ↓ Formation of zygote and primary endospermic nucleus a) Fill in the blank step marked (?). b) Identify the ploidy of the two products formed at the end?	2
Q6	If the zygote starts dividing immediately after fertilisation, what potential problem might occur in angiosperms?	2
Q7	A farmer observes that despite abundant flowering in his mustard crop; seed formation is poor. Suggest reasons based on reproductive biology and provide solutions.	3

Q8	**Q8. Read the following passage and answer the questions that follow:** A plant breeder is developing hybrid varieties of crop plants for high yield. However, the hybrid seeds produced each year are expensive, and farmers must purchase them every season. The breeder is exploring apomixis as a potential solution to this problem. He notices that in some plants like *Hieracium*, seeds are formed without fertilisation, and the traits of the parent plant are retained in the next generation. A. Apomixis is beneficial in hybrid seed production because: **A.** It increases pollination efficiency **B.** It allows hybrid vigour to be maintained in progeny **C.** It increases genetic recombination	4
	D. It avoids the need for flowering B. Which of the following statements is **incorrect** about apomixis? **A.** It bypasses both syngamy and meiosis **B.** Offspring are genetically identical to the parent **C.** It reduces the cost of hybrid seed production **D.** It promotes genetic variation in progeny C. Which of the following statements is true about apomictic seeds? **A.** They are genetically variable **B.** They are always sterile **C.** They do not require pollination **D.** They require double fertilisation D. Suggest one challenge plant breeders might face while using apomixis in crops. OR Write any two advantages of Apomixis.	
Q9	A student observes an ovule under a microscope and finds the micropyle, chalaza and funicle aligned in such a way that the ovule appears inverted. Identify the type of ovule and explain how the embryo sac is oriented in it with the help of diagram. F. Recognise the contents of egg apparatus. A student says that the micropyle is essential for double fertilisation. Justify this statement.	5