# Indian School Al Wadi Al Kabir

## Unit Test (2026-2027)

Class: XII | Subject: Biology (044) | Max. Marks: 30

Date: 20.05.2026 | Set - I | Time: 1 Hour

**General Instructions:**

**Read the following instructions carefully.**

(i) All questions are compulsory.

(ii) The question paper has five sections and 14 questions.

(iii) Section–A has 8 questions of 1 mark each; Section–B has 2 questions of 2 marks each; Section–C has 3 questions of 3 marks each; Section– D has 1 case-based question of 4 marks, and Section–E has 1 question of 5 marks.

(iv) There is no overall choice. However, internal choices have been provided in some questions. A student must attempt only one of the alternatives in such questions.

(v) Wherever necessary, neat and properly labelled diagrams should be drawn.

| Q. No. | Questions | Marks |
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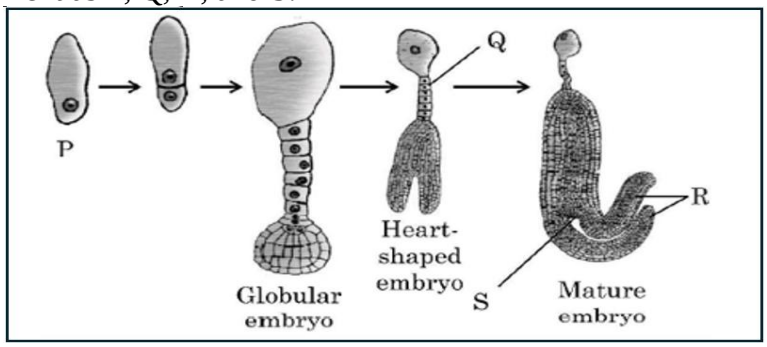
| | **SECTION A** | |
| 1. | The diagram given below shows the labelling of four parts of a dicot during its development as P, Q, R, and S.<br>  <br><br>Choose the option that indicates correct labelling of P, Q, R and S of the embryo in different stages of its development:<br>A. P - Egg Q - Suspensor R - Radicle S - Cotyledon<br>B. P - Zygote Q - Suspensor R - Cotyledon S - Plumule<br>C. P - Egg Q - Radicle R - Suspensor S - Cotyledon<br>D. P - Zygote Q - Suspensor R - Cotyledon S - Radicle | 1 |
| 2. | How many pollen grains and ovules are likely to be formed in the anther and the ovary of an angiosperm bearing 50 microspore mother cells and 50 megaspore mother cells, respectively?<br>A. 100, 25<br>B. 200, 50<br>C. 50, 50<br>D. 200, 100 | 1 |

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| 3. | The undifferentiated sheet that encloses the radical and root cap in a monocot (cereal /maize) embryo is called<br>A. coleoptile<br>B. coleorhiza<br>C. epiblast<br>D. scutellum | 1 |
| 4. | Match the following items of Column I with those of Column II:<br><br>Column I: (a) Trophoblast; (b) Implantation; (c) Inner cell mass; (d) Morula<br>Column II: (i) Embedding of blastocyst in the endometrium; (ii) A group of cells that would differentiate into an embryo; (iii) Embryo with 8-16 blastomeres; (iv) Outer layer of blastocyst.<br>Choose the option that correctly matches Column I with Column II.<br><br>A. (a) - (iv) (b) - (i) (c) - (ii) (d) - (iii)<br>B. (a) - (i) (b) - (ii) (c) - (iii) (d) - (iv)<br>C. (a) - (ii) (b) - (i) (c) - (iv) (d) - (iii)<br>D. (a) - (ii) (b) - (iv) (c) - (iii) (d) - (i) | 1 |
| 5. | The role of FSH in the process of spermatogenesis in humans is to<br>A. Stimulate the secretion of certain factors from Sertoli cells<br>B. Inhibit the secretion of testosterone from interstitial cells<br>C. Stimulate the action of testosterone on the Sertoli cells<br>D. Stimulate the secretion of LH from the pituitary cell | 1 |
| 6. | Human females possess 44 + XX chromosome number. The chromosome number of the secondary oocyte is:<br>A. 44+X<br>B. 22+X<br>C. 44+XX<br>D. 22+XX | 1 |
| Question No. 7 to 8 consist of two statements – **Assertion (A) and Reason (R)**.<br>Answer these questions by selecting the appropriate option given below:<br>(a) Both A and R are true, and R is the correct explanation of A.<br>(b) Both A and R are true, and R is not the correct explanation of A.<br>(c) A is true, but R is false.<br>(d) A is false, but R is true. | | |
| 7. | **Assertion (A):** The placenta is the structural and functional unit between the foetus and the mother's body.<br>**Reason (R):** The placenta is connected to the foetus through the umbilical cord. | 1 |
| 8. | **Assertion (A):** The corpus luteum is not found during the pre-ovulatory phase in the ovary of a normal human female.<br>**Reason (R):** The corpus luteum is formed from the Graafian follicle after ovulation. | 1 |

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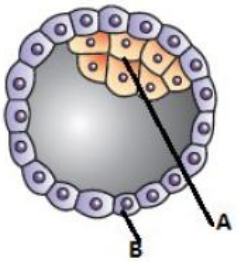
| | **SECTION-B** | |
| 9. | *Attempt either option A or B.*<br>A. Given below is the diagrammatic representation of a human blastocyst. Observe the diagram and answer the following questions.<br>  <br><br>i. Identify A and B.<br>ii. Write the functions of A and B.<br>**OR**<br>B. The wall of the uterus has three layers of tissue.<br>i. Name the three layers of the uterine wall.<br>ii. Among these three layers, which layer is glandular and undergoes cyclic changes during the menstrual cycle? | 2 |
| 10. | Draw a labelled schematic diagram of the transverse section of a mature anther of an angiosperm plant**.** | 2 |
| | **SECTION-C** | |
| 11. | Give reasons for the following statements.<br>i. Most zygotes in angiosperms divide only after a certain amount of endosperm is formed.<br>ii. Groundnut seeds are non- albuminous, and castor seeds are albuminous.<br>iii. Micropyle remains as a small pore in the seed coat of a seed. | 3 |
| 12. | *Attempt either option A or B.*<br>A. i) Parthenocarpy and apomixis have been observed in some plants. Give an example of each.<br>ii) State a similarity and a difference observed between the two processes.<br>**OR**<br>B. Differentiate between<br>a) Hypocotyl and epicotyl<br>b) Pericarp and perisperm<br>c) Integument and Testa | 3 |
| 13. | A. Draw a neat labelled diagram of a sperm.<br>B. What are the major components of seminal plasma? | 3 |
| | **SECTION-D** | |
| 14. | The reproductive cycle in females of primate mammals is called the menstrual cycle. Menstrual cycles occur during the reproductive phase, which is between menarche and menopause in human females. The cycle starts with menstruation and extends for about 28 days till the onset of the | 4 |

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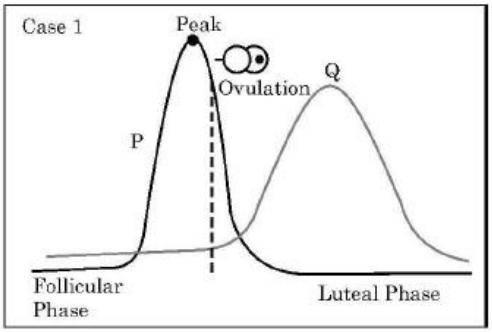
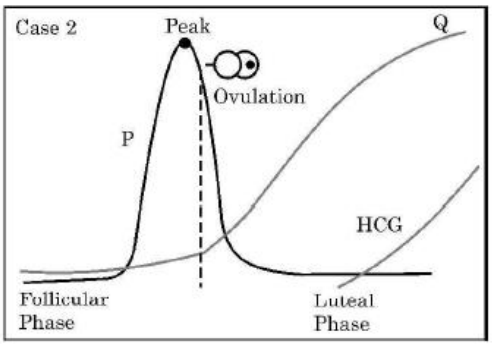
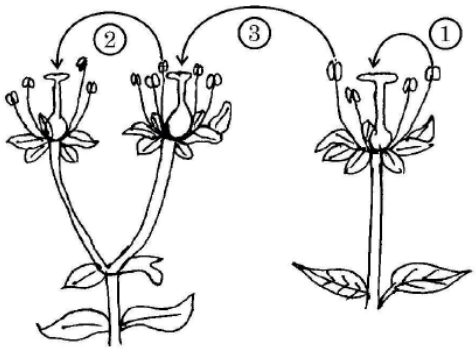
| | next menstruation. It includes 4 phases.<br>Study the graph given below based on the menstrual cycle and answer the questions that follow:<br>  <br><br>  <br><br>A. Which hormone is responsible for the peak observed in Case 1 and Case 2? Write one function of that hormone.<br>B. Write changes that take place in the ovary and uterus during the follicular phase.<br><br>*Attempt either C or D.*<br>C. Name the hormone Q of Case 2. Write one function of hormone Q.<br>**OR**<br>D. Which structure in the ovary will remain functional in Case 2? How is it formed? | |
| | **SECTION-E** | |
| 15. | *Attempt either option A or B.*<br>A. (a) Distinguish between the two cells enclosed in a mature male gametophyte of an angiosperm.<br><br>(b) Study the diagram given below showing the modes of pollination. Answer the questions that follow. | 5 |



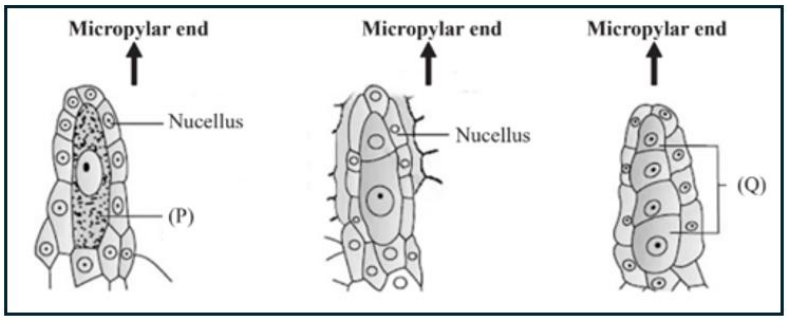

i) The given diagram shows three methods of pollen transfer in plants. Examine them carefully and write the technical terms used for pollen transfer methods '1', '2', and '3'.

ii) How do the following plants achieve pollination successfully?
   (a) Water Lily
   (b) Vallisneria

iii) Write the advantages of pollen transfer in method '3'.

**OR**

B. Study the figures given below showing the initial stages in the formation of the female gametophyte and answer the questions that follow.




i) What kind of division does cell (P) undergo to form cell (Q)?

ii) How many (Q) cells form the embryo sac? What is the name given to such a kind of development?

iii) How many free nuclear mitotic divisions will the functional megaspore undergo to form the embryo sac?

iv) Describe the structure of a mature female gametophyte (embryo sac) with a neat labelled diagram.

***All the best***