PRACTICE PAPER (2026–27)

Chapter 08: How Do Organisms Reproduce?

CLASS: X **SUBJECT: SCIENCE** **DURATION: 1½ hrs** **MAX. MARKS: 40**

General Instructions:

1. All questions are compulsory.
2. This question paper contains 20 questions divided into five Sections: **A**, **B**, **C**, **D**, and **E**.
3. **Section A** comprises 10 Multiple Choice Questions (including Assertion-Reason) of 1 mark each.
4. **Section B** comprises 4 questions of 2 marks each.
5. **Section C** comprises 3 questions of 3 marks each.
6. **Section D** comprises 1 question of 5 marks (with internal choice).
7. **Section E** comprises 2 Case Study Based Questions of 4 marks each.
8. Use of calculators is strictly prohibited.

SECTION – A

Questions 1 to 10 carry 1 mark each.

1. Amoeba reproduces by binary fission. In which orientation does the fission occur relative to its body axis?

(a) Transversely only (b) Longitudinally only

(c) In any plane (d) Obliquely only

2. Which of the following organisms reproduces by multiple fission?

(a) Hydra (b) Plasmodium

(c) Planaria (d) Spirogyra

3. Vegetative propagation refers to the formation of new plants from:

(a) Stem, roots, and flowers (b) Stem, roots, and leaves

(c) Stem, flowers, and fruits (d) Roots, leaves, and seeds

4. In human males, the testes lie outside the abdominal cavity in a sac called the scrotum because it:

(a) Provides easy passage for sperm (b) Maintains a temperature 2 to 2.5°C lower than body temperature

(c) Protects the testes from mechanical shock (d) Stores mature sperm cells

5. The correct sequence of reproductive stages seen in flowering plants is:

(a) Gametes, zygote, embryo, seedling (b) Zygote, gametes, embryo, seedling

(c) Seedling, embryo, zygote, gametes (d) Gametes, embryo, zygote, seedling

6. Which of the following is a contraceptive method that also protects against sexually transmitted diseases (STDs)?

(a) Copper-T (b) Oral contraceptive pills

(c) Condom (d) Tubectomy

7. Which part of the flower develops into a fruit after fertilisation?

(a) Ovule (b) Style

(c) Stigma (d) Ovary

8. In human females, the fertilisation of an ovum by a sperm normally takes place in the:

(a) Uterus (b) Fallopian tube (oviduct)

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(c) Ovary (d) Vagina

Directions for Q9 and Q10: In each question, a statement of **Assertion (A)** is followed by a statement of **Reason (R)**. Mark the correct choice as:
(a) Both (A) and (R) are true and (R) is the correct explanation of (A).
(b) Both (A) and (R) are true but (R) is NOT the correct explanation of (A).
(c) (A) is true but (R) is false.
(d) (A) is false but (R) is true.

9. **Assertion (A):** Variations arising during asexual reproduction are significantly fewer than those arising during sexual reproduction.
   Reason (R): Asexual reproduction involves only a single parent and DNA copying takes place without the fusion of gametes.

10. **Assertion (A):** Surgical methods of contraception are considered irreversible and highly effective.
    Reason (R): In vasectomy, the fallopian tubes are blocked so that eggs cannot reach the uterus.

SECTION – B

Questions 11 to 14 carry 2 marks each.

11. Why is DNA copying an essential part of the process of reproduction? What is the consequence if the copied DNA does not match the original cell apparatus?

12. Distinguish between fragmentation and regeneration with one suitable example for each.

13. What are the secondary sexual characteristics that develop in human males and females during puberty? State any two changes observed in each.

14. What is pollination? Distinguish between self-pollination and cross-pollination.

SECTION – C

Questions 15 to 17 carry 3 marks each.

15. Answer the following regarding vegetative propagation:
    a. Name two plants that are propagated commercially using vegetative methods.
    b. State two major advantages of growing plants through vegetative propagation over seeds.
    c. How does *Bryophyllum* propagate vegetatively in nature?

16. Trace the events that occur in a flower from the moment a pollen grain lands on a compatible stigma until a seed is formed.

17. Explain the role of the following in the human male reproductive system:
    a. Testes
    b. Vas deferens
    c. Prostate gland and seminal vesicles

SECTION – D

Question 18 carries 5 marks.

18. a. Draw a neat labelled diagram of the human female reproductive system.
    b. Identify and state the functions of:
    (i) Ovary (ii) Oviduct (Fallopian tube) (iii) Uterus.

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c. What happens to the uterine lining if the released ovum is not fertilised? Explain the biological phenomenon.

OR

a. What is contraception? Why is family planning through contraceptive methods important for society?

b. Classify contraceptive methods into four categories and explain the mechanism of each:
   (i) Barrier methods
   (ii) Chemical methods (Oral pills)
   (iii) Intrauterine contraceptive devices (IUCDs)
   (iv) Surgical methods.

c. Name two bacterial and two viral sexually transmitted infections (STIs).

SECTION – E (Case Study Based Questions)

Questions 19 and 20 carry 4 marks each.

19. **Read the passage given below and answer the questions that follow:**

> *Spore formation is a common asexual reproductive mechanism observed in simple multicellular organisms such as the bread mould Rhizopus. On a moist slice of bread, fine thread-like structures called hyphae develop across the surface. These hyphae are not reproductive units. Instead, tiny knob-like structures called sporangia develop on erect stalks. Inside each sporangium, hundreds of reproductive cells called spores are produced. The spores are covered by thick protective walls that enable them to survive adverse environmental conditions like drought and extreme temperatures until they land on another moist, nutrient-rich substrate to germinate.*

a. Name the non-reproductive thread-like structures that form the vegetative body of *Rhizopus*. **[1 Mark]**

b. What feature of spores enables them to survive unfavourable environmental conditions? **[1 Mark]**

c. Why does bread mould grow profusely on a moist slice of bread kept in a warm, dark cupboard, but fails to grow on a dry slice kept in a refrigerator? **[2 Marks]**

OR

c. Describe the process of budding in *Hydra* with the help of suitable sequential stages. **[2 Marks]**

20. **Read the passage given below and answer the questions that follow:**

> *During human reproduction, fertilisation results in a single-celled zygote which divides repeatedly as it moves towards the uterus to form an embryo. The embryo implants into the thickened, highly vascularised lining of the uterine wall. To support the developing embryo, a specialized disc-like vascular tissue called the placenta develops between the uterine wall and the embryo. The placenta contains chorionic villi on the embryo's side surrounded by blood spaces on the mother's side. This architectural arrangement provides a massive surface area for the physiological exchange of nutrients, oxygen, and metabolic wastes between maternal and foetal circulation.*

a. What is implantation in human reproduction? **[1 Mark]**

b. State the normal gestation period in humans from fertilisation to parturition. **[1 Mark]**

c. Explain two vital physiological functions performed by the placenta during pregnancy. **[2 Marks]**

OR

c. How does the developing foetus eliminate nitrogenous waste products generated by its metabolism? **[2 Marks]**

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