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How do Organisms Reproduce? — CBSE Class 10 Science Chapter Test

FREE CHAPTER TEST · CLASS X · SCIENCE (086) · PATTERN OF THE CBSE SAMPLE QUESTION PAPER 2026-27

TIME ALLOWED	MAXIMUM MARKS	QUESTIONS	NAME / ROLL NO.
1½ hours	40	20 (A 10 · B 4 · C 3 · D 1 · E 2)	

GENERAL INSTRUCTIONS

Read the following instructions very carefully and strictly follow them:

1. This question paper contains 20 questions. All questions are compulsory.
2. This question paper is divided into five sections: A, B, C, D and E.
3. In Section A, Questions 1 to 8 are multiple choice questions (MCQs) and Questions 9 and 10 are assertion-reason based questions of 1 mark each.
4. In Section B, Q11–14 are very short answer (VSA) type questions, carrying 2 marks each.
5. In Section C, Q15–17 are short answer (SA) type questions, carrying 3 marks each.
6. In Section D, Q18 is a long answer (LA) type question, carrying 5 marks.
7. In Section E, Q19–20 are case study based questions, carrying 4 marks each, with sub-parts of the values of 1, 1 and 2 marks.
8. There is no overall choice. However, an internal choice has been provided in 1 question of Section B, 1 question of Section C, 1 question of Section D and in the 2-mark sub-part of each question of Section E.
9. Use of calculators is not allowed.
10. This chapter test follows the section structure, question types and marks per question of the CBSE Class X Science (086) Sample Question Paper 2026-27, at about half the length of the 80-mark board paper: 40 marks in 1½ hours.
11. The answer key and the marking scheme are at the end of this booklet. Attempt the paper in 1½ hours before you look at them.

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Chapter: How do Organisms Reproduce? · **Topics:** DNA copying and variation · Fission, fragmentation, regeneration and budding · Vegetative propagation and spores · Sexual reproduction in flowering plants · Human reproductive systems · Reproductive health and contraception · Sexually transmitted diseases

SECTION A

This section comprises 10 questions of 1 mark each: 8 multiple choice questions (MCQs) and 2 assertion-reason based questions.

1. Multiple fission, in which one cell divides into many daughter cells at the same time, occurs in 1

(A) Amoeba (B) Plasmodium

(C) Hydra (D) Spirogyra

2. After fertilisation, which part of a flower develops into the fruit? 1

(A) Ovule (B) Stigma

(C) Anther (D) Ovary

3. Human body cells have 46 chromosomes. The number of chromosomes in a human sperm cell is 1

(A) 46 (B) 92

(C) 23 (D) 22

4. Which of the following plants has unisexual flowers? 1

(A) Papaya (B) Hibiscus

(C) Mustard (D) Rose

5. In human females, the egg is normally fertilised in the 1

(A) oviduct (fallopian tube) (B) uterus

(C) ovary (D) vagina

6. Which organism can be cut into many pieces, each of which grows into a complete organism, using specialised cells? 1

(A) Plasmodium (B) Planaria

(C) Rhizopus (D) Leishmania

7. Bread mould (Rhizopus) reproduces by 1

(A) budding (B) binary fission

(C) fragmentation (D) spore formation

8. Which method of contraception also helps to prevent the transmission of sexually transmitted diseases? 1

(A) Oral pills (B) Copper-T

(C) Condom (D) Vasectomy

9. **Assertion (A):** The testes are located outside the abdominal cavity, in the scrotum. 1
Reason (R): The formation of sperms requires a lower temperature than the normal body temperature.

(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).

(C) Assertion (A) is true, but Reason (R) is false.

(D) Assertion (A) is false, but Reason (R) is true.

10. **Assertion (A):** Variations produced during reproduction are useful for the survival of a species over time. 1

Reason (R): The copying of DNA during reproduction is always perfectly accurate.

(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).

(C) Assertion (A) is true, but Reason (R) is false.

(D) Assertion (A) is false, but Reason (R) is true.

SECTION B

This section comprises 4 very short answer (VSA) type questions of 2 marks each.

11. (a) An Amoeba divides by binary fission, and each daughter cell divides again after the same time. Starting from one Amoeba, how many are there after 6 rounds of division? How is binary fission in Leishmania different from that in Amoeba? 2

OR

(b) Describe how Hydra reproduces by budding. How is regeneration different from budding?

12. Give two changes that take place in girls and two that take place in boys at puberty. 2

13. What is the placenta? How does the embryo get nourishment from the mother's blood through it? 2

14. Why is prenatal sex determination prohibited by law in India? 2

SECTION C

This section comprises 3 short answer (SA) type questions of 3 marks each.

15. (a) (i) Distinguish between self-pollination and cross-pollination. (ii) Describe how fertilisation takes place after pollen lands on the stigma. (iii) What changes take place in the flower after fertilisation? 3

OR

(b) (i) What does a seed contain, and what is germination? (ii) Name the parts of the embryo that develop into the shoot and the root. (iii) What is the function of the cotyledons?

16. Name the organ of the human male reproductive system that (i) produces sperms and the hormone testosterone, (ii) carries sperms towards the urethra, and (iii) adds fluid to the sperms. Give one function of the fluid. 3

17. Describe the three categories of contraceptive methods, with one example of each. 3

SECTION D

This section comprises 1 long answer (LA) type questions of 5 marks each.

18. (a) (i) Name the parts of the human female reproductive system and give the function of each: ovaries, oviducts, uterus. 5

(ii) How often is an egg released, and where is it fertilised?

(iii) What happens to the zygote after fertilisation?

(iv) How long does the child take to develop inside the mother's body?

(v) What happens if the egg is not fertilised?

OR

(b) Name one organism that reproduces by each of the following methods, and describe the method briefly where asked:

(i) binary fission and multiple fission;

(ii) fragmentation (describe it);

(iii) budding and spore formation;

(iv) regeneration.

(v) Why can complex multicellular organisms not reproduce by fragmentation or regeneration?

SECTION E

This section comprises 2 case study based questions of 4 marks each, with sub-parts of 1, 1 and 2 marks.

19. A farmer grows roses, grapes and sugarcane. Instead of sowing seeds, he grows new plants from parts of the stems of older plants, using layering and grafting. His neighbour grows new Bryophyllum plants from its leaves.

(i) Name this kind of reproduction. [1]

(ii) Name one plant that is grown this way because it no longer produces seeds. [1]

(iii) Give two advantages of this method to the farmer. [2]

OR

(iii) How does a Bryophyllum leaf give rise to new plants? Why are the new plants exactly like the parent? [2]

20. A school health club put up a poster saying that some diseases are passed on during sexual contact, and that family planning and good health care help to protect the health of women and children.

(i) Name one sexually transmitted disease caused by bacteria and one caused by a virus. [1]

(ii) How does the use of a condom help to prevent such diseases? [1]

(iii) Why does the health of a woman suffer if she has too many pregnancies too close together? [2]

OR

(iii) Name the surgical methods of contraception used for males and for females, and explain what each does. [2]

END OF THE QUESTION PAPER

ANSWER KEY — SECTION A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
(B)	(D)	(C)	(A)	(A)	(B)	(D)	(C)	(A)	(C)

MARKING SCHEME AND WORKED SOLUTIONS

Marks for each step are shown in brackets, as in the CBSE marking scheme. Any correct alternative method earns full marks.

Q1. Answer (B). The malaria parasite Plasmodium divides into many daughter cells at once. Amoeba shows binary fission, Hydra budding and Spirogyra fragmentation.

Q2. Answer (D). The ovary grows and ripens into the fruit; the ovules become seeds.

Q3. Answer (C). Germ cells have half the number of chromosomes of body cells (23), so that the zygote formed at fertilisation has the normal 46.

Q4. Answer (A). Papaya (like watermelon) has flowers with either stamens or a pistil; Hibiscus and mustard flowers have both.

Q5. Answer (A). The egg is carried from the ovary to the uterus through the oviduct, where it may be fertilised by a sperm; the zygote then gets implanted in the lining of the uterus.

Q6. Answer (B). Planaria (like Hydra) shows regeneration: specialised cells multiply and form the different cells and tissues of a new organism.

Q7. Answer (D). Rhizopus forms blob-like sporangia on its hyphae; the spores in them develop into new Rhizopus individuals.

Q8. Answer (C). A condom is a mechanical barrier, so it also helps to prevent the transmission of infections; the other methods do not.

Q9. Answer (A). Both true, and R explains A. Answer (A).

Q10. Answer (C). A is true: if the environment changes, some variants may survive. R is false: no copying process is perfectly accurate, and these slight inaccuracies are the source of variation. Answer (C).

Q11. (2 marks) Answer: (a) 64; Leishmania divides in a definite plane related to its whip-like structure; (b) budding in Hydra; regeneration by specialised cells.
(a) Each round doubles the number: $2^6 = 64$. [1]
In Amoeba the split can take place in any plane; in Leishmania, which has a whip-like structure at one end, binary fission occurs in a definite plane with respect to this structure. [1]
OR (b) In Hydra a bud develops as an outgrowth because of repeated cell division at one site; when mature it detaches and becomes a new individual. [1]
Regeneration (as in Planaria) is the formation of a whole organism from a cut piece, by specialised cells; most complex organisms cannot regenerate because their many specialised cells cannot re-form the whole body. [1]

Q12. (2 marks) Answer: Girls: breasts enlarge, menstruation starts; boys: facial hair, voice cracks.
Girls: the breasts begin to enlarge and menstruation starts (thick hair also grows in the armpits and genital area). [1]
Boys: new hair grows on the face (moustache and beard) and the voice begins to crack (the skin may also become oily, with pimples). [1]

Q13. (2 marks) Answer: Disc-like tissue in the uterine wall; villi give large surface for food and oxygen in, wastes out.
The placenta is a special disc-like tissue embedded in the uterine wall, connecting the embryo with the mother. [1]
It has villi on the embryo's side and blood spaces on the mother's side that surround them; this gives a large surface area for glucose and oxygen to pass from the mother to the embryo, and for wastes from the embryo to pass to the mother's blood. [1]

Q14. (2 marks) Answer: To stop female foeticide, which is making the child sex ratio decline.
Some people use it to identify the sex of the unborn child and carry out female foeticide, killing the unborn girl child. [1]
This is reducing the number of girl children and the child sex ratio is declining alarmingly, so the law prohibits it for a healthy society. [1]

Q15. (3 marks) Answer: (a) same flower vs another flower; pollen tube to ovule, gametes fuse; ovule → seed, ovary → fruit, other parts fall; (b) embryo grows into seedling; plumule → shoot, radicle → root; cotyledons store food.
(a) (i) Self-pollination: pollen is transferred to the stigma of the same flower; cross-pollination: from one flower to the stigma of another, by agents such as wind, water or animals. [1]
(ii) A pollen tube grows out of the pollen grain, through the style, to reach the ovule in the ovary; the male germ cell fuses with the female germ cell to form the zygote. [1]
(iii) The zygote divides to form an embryo inside the ovule, which develops a tough coat and becomes a seed; the ovary grows and ripens into a fruit; the petals, sepals, stamens, style and stigma may shrivel and fall off. [1]
OR (b) (i) The seed contains the future plant, or embryo, which develops into a seedling under suitable conditions (germination). [1]
(ii) The plumule develops into the shoot; the radicle develops into the root. [1]
(iii) The cotyledons store food for the developing embryo. [1]

Q16. (3 marks) Answer: (i) testes; (ii) vas deferens; (iii) seminal vesicles and prostate, nourish and help transport sperms.
(i) Testes; testosterone also brings about changes in appearance in boys at puberty. [1]
(ii) The vas deferens, which unites with a tube coming from the urinary bladder; the urethra is a common passage for sperms and urine. [1]
(iii) The seminal vesicles and the prostate gland; their secretions provide nutrition to the sperms and make their transport easier. [1]

Q17. (3 marks) Answer: Barrier: condom; hormonal: oral pills; surgical: vasectomy or tubectomy.
Mechanical barriers, which stop the sperm reaching the egg: condoms. [1]
Hormonal methods, which change the hormonal balance of the body so that eggs are not released: oral pills (drugs). [1]
Surgical methods: blocking the vas deferens in the male (vasectomy) or the fallopian tube in the female (tubectomy). (Devices such as the loop or copper-T placed in the uterus also prevent pregnancy.) [1]

Q18. (5 marks) Answer: (a) ovaries make eggs, oviducts carry them, uterus holds the embryo; one egg a month, fertilised in the oviduct; implantation, placenta; nine months; menstruation; (b) modes with examples; complex organisms need sexual reproduction.
(a) (i) Ovaries produce eggs (and some hormones); oviducts (fallopian tubes) carry the egg from the ovary to the uterus; the uterus is where the embryo develops. [1]
(ii) One egg is produced every month by one of the ovaries; it is fertilised in the oviduct. [1]
(iii) The zygote is implanted in the thickened lining of the uterus and starts dividing; the embryo gets nutrition from the mother's blood through the placenta. [1]
(iv) About nine months. [1]
(v) If the egg is not fertilised, it lives for about one day; the thick, spongy lining of the uterus, no longer needed, breaks and comes out through the vagina as blood and mucus — menstruation, which occurs every month and lasts about two to eight days. [1]
OR (b) (i) Binary fission: Amoeba (or Leishmania). Multiple fission: Plasmodium. [1]
(ii) Fragmentation: Spirogyra, which breaks into smaller pieces, each growing into a new individual. [1]
(iii) Budding: Hydra. Spore formation: Rhizopus. [1]
(iv) Regeneration: Planaria. [1]
(v) Complex organisms are made of many specialised tissues and organs; they cannot simply be cut to give new individuals, so they reproduce sexually. [1]

Q19. (4 marks) Answer: (i) vegetative propagation; (ii) banana; (iii)(a) earlier flowers and fruits, plants like the parent; (b) buds in leaf notches; same DNA as parent.
(i) Vegetative propagation (a form of asexual reproduction). [1]
(ii) Banana, orange, rose or jasmine. [1]
(iii)(a) The plants bear flowers and fruits earlier than plants grown from seed. [1]
All the new plants are genetically similar to the parent, so they keep its useful characteristics. [1]
OR (iii)(b) Buds produced in the notches along the leaf margin fall on the soil and develop into new plants. [1]
Only one parent is involved and no germ cells fuse, so the new plants have the same DNA as the parent. [1]

Q20. (4 marks) Answer: (i) gonorrhoea or syphilis; warts or HIV-AIDS; (ii) barrier; (iii)(a) major demands on her body, spacing births protects health; (b) vasectomy, tubectomy.
(i) Bacterial: gonorrhoea or syphilis. Viral: warts or HIV-AIDS. [1]
(ii) It is a mechanical barrier, so infections are not passed from one partner to the other. [1]
(iii)(a) Each pregnancy makes major demands on the body and mind of the woman. [1]
If she is not ready for it, or pregnancies come too close together, her health is adversely affected; contraception helps her to space births. [1]
OR (iii)(b) Vasectomy in males: the vas deferens is blocked, so sperms are not transferred. [1]
Tubectomy in females: the fallopian tube is blocked, so the egg does not reach the uterus. [1]

All questions are original and © Master Testing Agency. Free to download and use for personal practice; not for resale. Every answer in this paper was checked against the NCERT Class 10 Science textbook, and by computer where possible: chromosome numbers and fission counts computed, and each multiple-choice key matched against tables of modes of reproduction and flower parts.