

CLASS X (HOW DO ORGANISM REPRODUCE) IMPORTANT QUESTIONS

MCQs

1. The table lists some changes that occur inside the female body after fertilisation of egg with sperm.

- (A) Rhythmic contractions of uterus muscle for child birth.**
- (B) Formation of placenta.**
- (C) Implantation of embryo.**
- (D) Development of organs in foetus.**
- (E) Cell division of zygote.**

Which option correctly sequences these events?

- (a) C→B→E→A→D (b) E→C→D→B→A**
- (c) E→C→B→D→A (d) C→E→A→B→D**

Ans1. (c) E→C→B→D→A

2. The image shows the production of a new sugarcane from an existing sugarcane plant. The method is called vegetative propagation. Which option supports the name of this process?

- (a) It is a sexual method of producing new plants.**
- (b) It is an asexual method of producing new plants.**
- (c) It does not require a parent plant for reproduction.**
- (d) It involves fusion of two parts of a single parent for reproduction.**

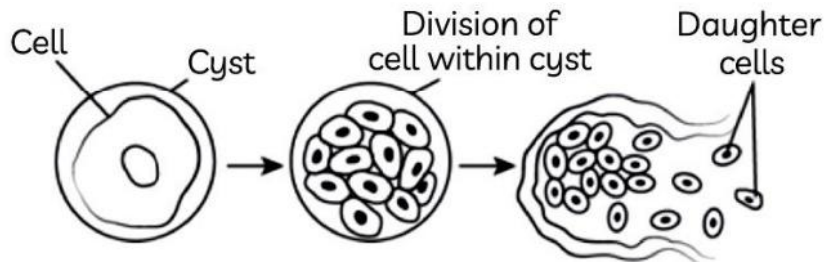
Ans2. (b) It is an asexual method of producing new plants.

3. A farmer wants to grow banana plants genetically similar enough to the plants already available in his field. Which one of the following methods would you suggest for this purpose?

- (a) Regeneration (b) Budding (c) Vegetative propagation. (d) Sexual reproduction**

Ans3. (c) Vegetative propagation

4. The image shows the process of division in Plasmodium.

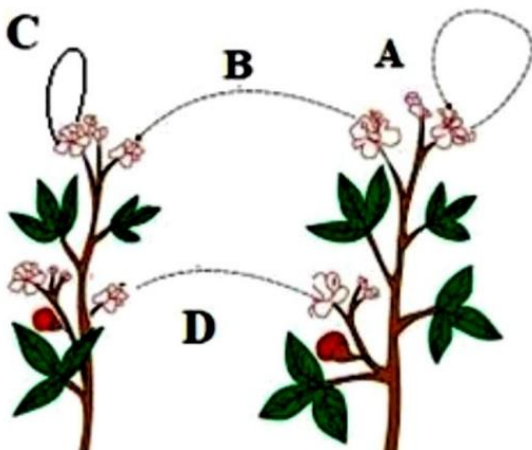


What can be concluded about the division in Plasmodium?

- (a) The cyst divides repeatedly to form many daughter cells.
- (b) The cell divides multiple times giving rise to many daughter cells.
- (c) The nucleus divides repeatedly inside the cell to form new daughter cells.
- (d) The cyst enlarges in size and then bursts producing many new daughter cells.

Ans4. (b) The cell divides multiple times giving rise to many daughter cells.

5. The diagram shown below depicts pollination. Choose the options that will show a maximum variation in the offspring.



- (a) A, B and C.
- (b) B and D.
- (c) B, C and D.
- (d) A and C

Ans5. (b) B and D

6. Offspring formed by asexual reproduction are genetically identical to the:

- A) Grandparents
- B) Siblings
- C) Parent
- D) Both parents

Answer6: C) Parent

7. Fruits are formed from the:

- A) Stamen**
- B) Stigma**
- C) Ovary**
- D) Ovule**

Answer:7 C) Ovary

8. The reproductive parts of a flower, the stamens, are collectively known as:

- A) Androecium**
- B) Filament**
- C) Anther**
- D) Gynoecium**

Answer: 8A) Androecium

10. A feature of reproduction common to Amoeba, Yeast, and Spirogyra is that they reproduce:

- A) Sexually only**
- B) Asexually**
- C) Both sexually and asexually**
- D) By budding only**

Answer:10 B) Asexually

11. The process of shedding of the uterine lining along with the unfertilized egg is called:

- A) Ovulation**
- B) Menstruation**
- C) Fertilization**
- D) Implantation**

Answer: 11B) Menstruation

12. In human beings, fertilization occurs in the:

- A) Uterus**
- B) Ovaries**
- C) Fallopian tubes**
- D) Vagina**

Answer:12 C) Fallopian tubes

13. Vegetative propagation refers to formation of new plants from:

- A) Stem, flowers, and fruits**
- B) Stem, leaves, and flowers**
- C) Stem, roots, and flowers**
- D) Stem, roots, and leaves**

Answer: 13. D) Stem, roots, and leaves

Q14. Which hormone regulates the menstrual cycle in females?

- a) Insulin**
- b) Testosterone**
- c) Estrogen and Progesterone**
- d) Thyroxine**

Answer: c) Estrogen and Progesterone

assertion (A) /reason (R). Mark the correct choice as:

- (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.**

1. Assertion (A): Pollen grains are produced by all flowers.

Reason (R): Stamen is the male reproductive part of a flower and produces pollen grains.

2. Assertion(A) : Colonies of yeast multiply in sugar solution.

Reason (R) : Sugar is made of sucrose which provides energy for sustaining all life activities.

3. Assertion(A) : Growth hormone stimulates the growth of different body parts.

Reason (R) : Gonadotropins stimulate the production of sex hormones.

4. Assertion (A): Characteristics of parental plants can be preserved through asexual reproduction.

Reason (R): Vegetative reproduction involves only mitosis.

5. Assertion (A): At puberty, in boys, voice begins to crack and thick hair grows on face.

Reason (R): At puberty, there is decreased secretion of testosterone in boys.

6. Assertion (A): Sexual reproduction increases genetic diversities and plays a role in origin of new species.

Reason (R): Sexual reproduction involves formation of gametes and fusion of gametes.

7. Assertion: Fertilization results in formation of zygote.

Reason: Zygote divides several times to form an embryo.

Ans. 1. (d) 2- (a). 3- (b). 4- a. 5. c. 6 . A. 7. B

8. Assertion (A): DNA copying is necessary during reproduction.

Reason (R): DNA copying leads to the transmission of characters from parents to offspring.

9. ASSERTION: Gonorrhoea is a sexually transmitted disease.

REASON: It is caused by virus.

10. ASSERTION: Ovary releases one egg every month.

REASON: The lining of uterus is always thick and spongy.

11. ASSERTION: In male reproductive system, transport of sperm takes place in a fluid which also provides nutrition.

REASON: The secretions of prostate glands and seminal vesicles constitute the semen.

12. ASSERTION: Amoeba reproduces by binary fission.

REASON: All unicellular organisms reproduce by asexual method.

13.Assertion (A): Binary fission is a method of asexual reproduction.

Reason (R): It involves the fusion of gametes.

14 .Assertion (A): Fertilization restores the diploid number of chromosomes in zygote.

Reason (R): Both sperm and egg are haploid.

Q15 .Assertion (A): Contraceptive methods help in population control.

Reason (R): They prevent fertilization and implantation.

Q16.Assertion (A): Vegetative propagation produces genetically identical offspring.

Reason (R): It involves only mitotic divisions.

Q17.Assertion (A): Testes are located outside the abdominal cavity in scrotum.

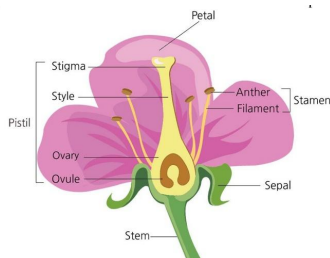
Reason (R): Production of sperm requires a slightly lower temperature than body temperature.

- a) Both A and R are true, R explains A
- b) Both A and R are true, R does not explain A
- c) A true, R false
- d) A false, R true

8. A. 9 . C. 10. c. 11. A. 12. C. 13: c) 14: a) 15 : a) 16 - a) 17- a)

SECTION – C (Case Study Based Questions)

1. Read the given passage and answer the questions based on passage and related studied concepts.



The reproductive parts of angiosperms are located in the flower. The different parts of a flower are sepals, petals, stamens and carpels. Stamens and carpels are the reproductive parts of a flower which contain the germ cells. The flower may be unisexual (papaya, watermelon) when it contains either stamens or carpels or bisexual (Hibiscus, mustard) when it contains both stamens and carpels. Stamen is the male reproductive part and it produces pollen grains that are yellowish in colour. Carpel is present in the centre of a flower and is the female reproductive part.

- (a) (i) Where are the plant's sex organs located? (1)
(ii) What is the function of a flower? (1)
(b) Where are the male and female gametes formed in flowering plants? (1)
(c) What changes take place in the flower after fertilisation which lead to the formation of seeds and fruit? (1)

Ans. (a) (i) Plant's sex organs are located in the flower.

(ii) The function of a flower is to produce male and female gametes and to ensure that fertilisation takes place to make new seeds for the reproduction of plant.

(b) The male gamete is formed in the anther of the flower and female gamete is formed in ovary of the flower.

(c) The fertilised egg divides several times to form an embryo within the ovule which develops a tough coat around it and is gradually converted into a seed. The ovary of the flower develops and becomes a fruit with seeds inside it.

2. An all India lockdown was announced throughout the country in March 2020 to control the spread of Corona virus. During the lockdown period, Megha developed an interest in gardening and successfully propagated several money plants through cutting.



(a) Which part of money plant did Megha use to propagate money plant? What name is given to such type of methods?

(b) Can you grow Peepal or Neem by the method which is used by Megha?

(c) Which part of the plant you would use to grow the following plants?

Bryophyllum, Potato, Dahlia, Onion, Sweet-potato, Mint

Is there any disadvantage of growing the above mentioned plants by this method?

Ans. (a) Megha can use the stem of money plant containing nodes and internodes to propagate

money plant. Plants like rose and sugarcane grow by stem cutting. This type of asexual reproduction is known as vegetative propagation.

(b) No, because Neem or Peepal produce seeds and grow sexually by seeds.

Vegetative propagation is possible only in those plants which have lost the capacity to produce

seeds or produce non viable seeds.

(c) A new plant develops from the vegetative parts of a plant in the given plants:

Plant Part of Plant used for Vegetative Propagation

Bryophyllum Leaf

Potato Stem

Dahlia Root

Onion Stem

Sweet potato Root

Mint Stem

Disadvantages: Plants grown by vegetative propagation have less vigour than the plants grown by seeds. Undesirable characters or disease contracted by the parent plant is also transmitted to new plants.

Case 3: Asexual Reproduction in Organisms

A student observed different modes of asexual reproduction in the laboratory. He saw budding in Hydra, binary fission in Amoeba, and spore formation in Rhizopus.

Questions:

a) Name one organism that reproduces by fragmentation.

b) Why is asexual reproduction considered faster than sexual reproduction?

OR

Which advantage does sexual reproduction have over asexual reproduction?

c) Which of these organisms shows multiple fission?

ANSWER

a) An organism that reproduces by fragmentation is Spirogyra.

b) Asexual reproduction is considered faster than sexual reproduction because it involves only one parent, no gamete formation, and no fertilization, so new individuals are produced rapidly in a shorter time.

OR

Advantage of sexual reproduction over asexual reproduction:

Sexual reproduction introduces genetic variation, which helps species adapt to changing environments and ensures evolution and survival.

c) The organism that shows multiple fission is Plasmodium.

Case 4: Reproduction in Human Beings

A couple is planning for family planning. The doctor explained different contraceptive methods such as barrier methods (condoms), intrauterine devices (Copper-T), oral pills, and surgical methods.

Questions:

a) Which method prevents both fertilization and spread of STDs?

b) How does Copper-T act as a contraceptive?

c) Which contraceptive method is permanent?

OR

Why are surgical methods considered highly effective?

ANSWER

a) The method that prevents both fertilization and spread of STDs is the barrier method (condoms).

b) Copper-T acts as a contraceptive by:

- Releasing copper ions, which suppress sperm motility and their fertilizing capacity.**
- Preventing implantation of the zygote in the uterus.**

c) The contraceptive method that is permanent is surgical methods (vasectomy in males and tubectomy in females).

OR

Surgical methods are considered highly effective because they block gamete transport permanently, thus preventing fertilization, and have a very low failure rate compared to other methods.

Q. (a) What is contraception? List three advantages of adopting contraceptive measure.

Ans. (a) Contraception: These are the techniques which have been developed to prevent and manage unwanted pregnancies and to prevent the spread of sexually transmitted diseases (STDs).

Advantages of adopting contraceptive methods:

- (i) Avoiding frequent and unwanted pregnancy.**
- (ii) Keeping birth rate and hence population under control.**
- (iii) Helps in keeping proper gap between two pregnancies.**
- (iv) Helps in preventing the transfer of sexually transmitted diseases (STDs).**

Q1. In vegetative propagation, new plants are produced from:

- a) Seeds**
- b) Spores**
- c) Vegetative parts like stem, root, leaves**
- d) Flowers**

Answer: c) Vegetative parts like stem, root, leaves

Q2. Which of the following organisms reproduces by binary fission?

- a) Hydra**
- b) Amoeba**
- c) Spirogyra**
- d) Rhizopus**

Answer: b) Amoeba

Q3. The process of development of a new organism from a bud is called:

- a) Binary fission**
- b) Fragmentation**
- c) Budding**
- d) Regeneration**

Answer: c) Budding

Q4. Which of the following is a unisexual flower?

- a) Mustard
- b) Hibiscus
- c) Papaya
- d) Rose

Answer: c) Papaya

Q5. Which part of the flower develops into fruit after fertilization?

- a) Ovary. b) Ovule. c) Stigma. d) Anther

Answer: a) Ovary

Q6. Which method is commonly used for propagating rose plants?

- a) Grafting
- b) Spore formation
- c) Fragmentation
- d) Budding

Answer: a) Grafting

Q7. The contraceptive method that prevents fertilization is:

- a) Oral pills
- b) Condom
- c) Copper-T
- d) Both b and c

Answer: d) Both b and c

Q8. Which of the following is not an asexual mode of reproduction?

- a) Fission. b) Budding
- c) Regeneration. d) Fertilization

Answer: d) Fertilization

Q9. The transfer of pollen grains from anther to stigma of the same flower is called:

- a) Cross-pollination. b) Self-pollination
- c) Fertilization. d) Vegetative propagation

Answer: b) Self-pollination

