

REPRODUCTION IN ORGANISMS

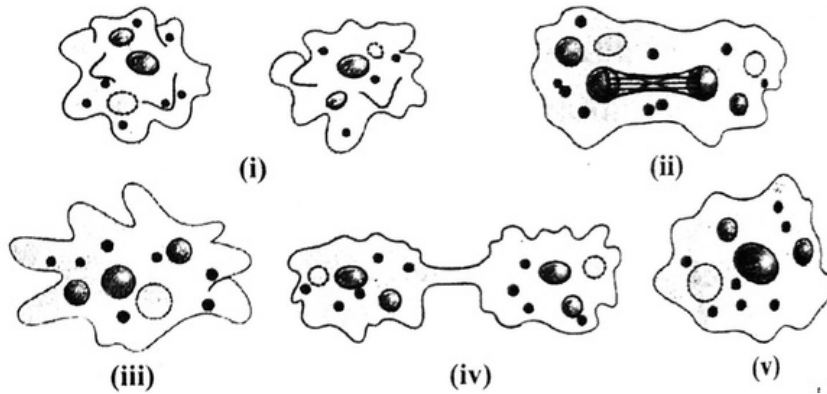
1. Select the option which arranges the given organisms in ascending order of their life span.

- (A) Parrot < Crow < Butterfly < Banyan tree
- (B) Butterfly < Crow < Parrot < Crocodile
- (C) Fruit fly < Crocodile < Parrot < Banyan tree
- (D) Parrot < Tortoise < Dog < Crow

2. Refer the given figures and select the correct option.



- (A) It is a type of parthenogenesis.
 - (B) It is a type of asexual reproduction.
 - (C) The offsprings can also be called as clones.
 - (D) Both B and C.
3. Identify which part of the flower is diploid.
- (A) Ovary
 - (B) Anther
 - (C) Pollen
 - (D) Egg
4. Study the given figures representing the process of binary fission in *Amoeba*.



Arrange the figures in the correct sequence and select the correct answer.

- (A) (iv) → (iii) → (i) → (ii) → (v)
- (B) (iii) → (iv) → (i) → (ii) → (v)
- (C) (iii) → (v) → (ii) → (iv) → (i)
- (D) (iv) → (iii) → (ii) → (v) → (i)

5. Read the following statements about asexual reproduction and select the correct ones.

- (i) It involves a single parent.
- (ii) It is slower than sexual reproduction.
- (iii) It produces progeny that are genetically identical with the parent but not with one another.
- (iv) The progeny of asexual reproduction can be termed as clones.

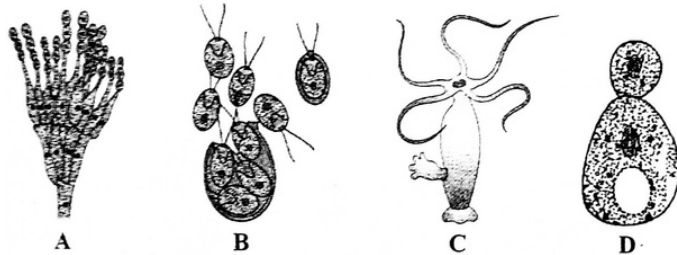
- (A) (i) and (ii)
- (B) (ii) and (iii)
- (C) (i) and (iv)
- (D) (i), (iii) and (iv)

6. Match Column-I with Column-II and select the correct option from the codes given below.

Column I	Column II
A. Sponge	(i) Tuber
B. Yeast	(ii) Offset
C. Potato	(iii) Gemmules
D. Water hyacinth	(iv) Budding

- (A) A-(iv), B-(i), C-(ii), D-(iii)
 (B) A-(iii), B-(i), C-(iv), D-(ii)
 (C) A-(iii), B-(iv), C-(i), D-(ii)
 (D) A-(iv), B-(ii), C-(i), D-(iii)

7. Refer the given figures and select the correct option



- (A) C and D reproduce by budding that includes nuclear division only.
 (B) All of these reproduce by the asexual mode of reproduction.
 (C) B represents multiple fission in an alga.
 (D) A shows spore formation in a monera.
8. Identify the special reproductive structures through which sponges reproduce:

- (A) Zoospores (B) Gemmules (C) Conidia
(D) Buds

9. Read the following statements about 'Terror of Bengal' and select the correct ones.

(i) 'Terror of Bengal' is the name given to water hyacinth (*Eichhornia*), an algae.

(ii) *Eichhornia* was introduced in India due to its aesthetic value.

(iii) *Eichhornia* drains oxygen from the water which leads to death of fishes.

(A) (i) and (ii)

(B) (i) and (iii)

(C) (ii) and (iii)

(D) (i), (ii) and (iii)

10. In which one pair, both the plants can be vegetatively propagated by leaf pieces?

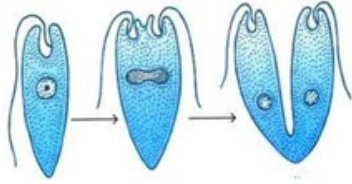
(A) *Bryophyllum* and *Kalanchoe*

(B) *Chrysanthemum* and *Agave*

(C) *Agave* and *Dioscorea*

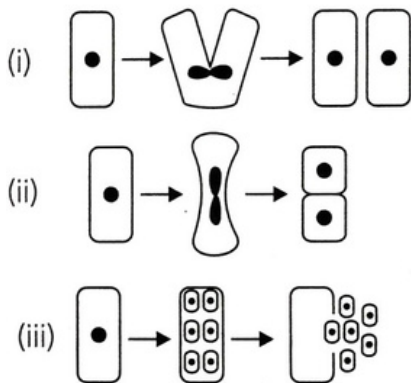
(D) *Bryophyllum* and *Asparagus*

11. Identify the organism that reproduces by the given type of fission.



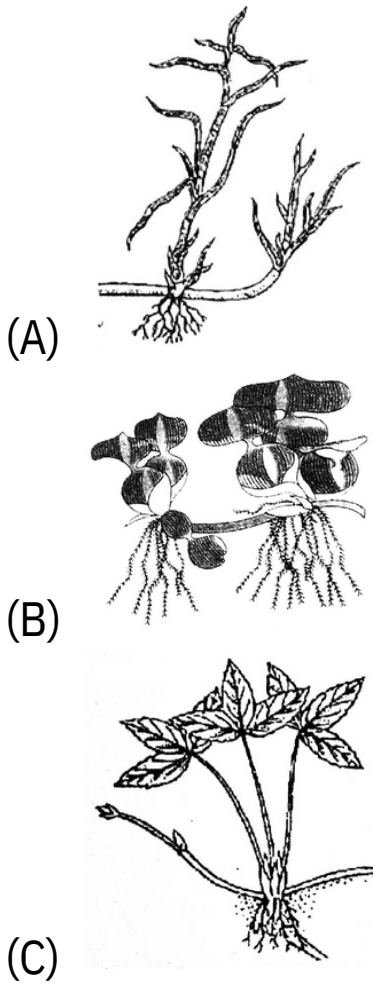
- (A) Longitudinal binary fission in Euglena
- (B) Transverse binary fission in Euglena
- (C) Multiple fission in Amoeba
- (D) None of these

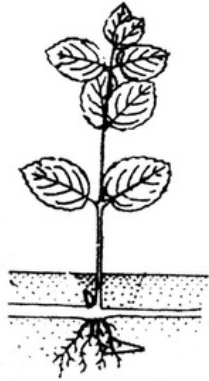
Refer the given figures which show three different types of fission. Select the option which correctly matches them with the organism in which they occur.



- | | | |
|-----------------------|-------------------|--------------------|
| (i) | (ii) | (iii) |
| (A) <i>Euglena</i> | <i>Plasmodium</i> | <i>Amoeba</i> |
| (B) <i>Plasmodium</i> | <i>Paramecium</i> | <i>Euglena</i> |
| (C) <i>Euglena</i> | <i>Paramecium</i> | <i>Escherichia</i> |
| (D) <i>Euglena</i> | <i>Paramecium</i> | <i>Amoeba</i> |

12. This plant was introduced in India because of its beautiful flowers and shape of leaves but it became a notorious weed in India water bodies. Identify this plant.





(D)

13. Which of the following options correctly identifies artificial and natural methods of vegetative propagation?

Artificial methods	Natural methods
(A) Grafting	Cutting
(B) Layering	Bulbils
(C) Offset	Tissue culture
(D) Tubers	Rhizomes

14. Select the mismatched pair of organism and its mode of multiplication.

Organism	Mode of multiplication
(A) <i>Agave, Oxalis</i>	Bulbils
(B) <i>Amoeba,</i> <i>Paramecium</i>	Binary fission

(C) *Chlamydomonas*, Sporangiospores

Ulothrix

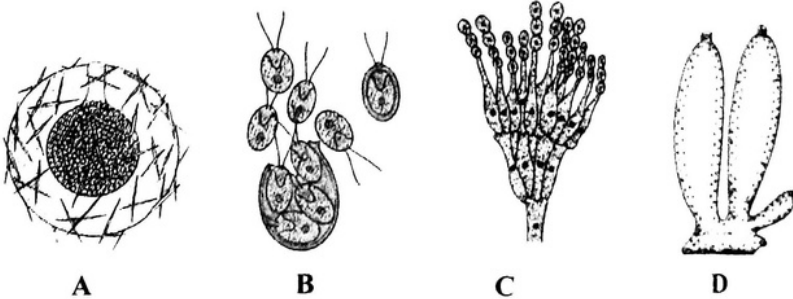
(D) *Adiantum*

caudatum

Adventitious buds

present at leaf tips

15. Study the following figures and select the correct statements regarding these.



- (i) A shows mode of asexual reproduction in sponges through internal buds.
- (ii) B shows sexual reproduction through zoospores in *Chlamydomonas*.
- (iii) C shows asexual reproduction through conidiospores in *Penicillium*.
- (iv) D shows external budding in *Sycon*.

(A) (i) and (ii)

(B) (i) and (iii)

(C) (ii), (iii), and (iv)

(D) (i), (iii) and (iv)

16. Following table summarizes the differences between self-fertilization and cross-fertilization. Pick out the wrong difference.

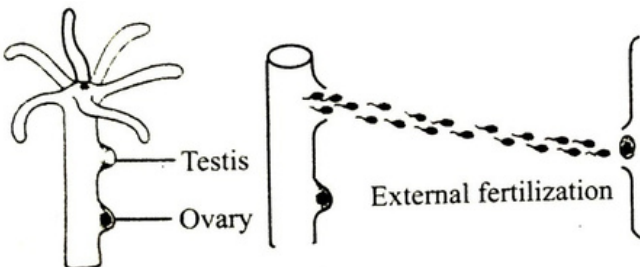
Self-fertilization

Cross-fertilization

- | | |
|--|--|
| (A) It is uniparental | It is biparental |
| (B) It involves the fusion of male and female gametes of the same parent | It involves the fusion of two gametes produced by different parents. |
| (C) Examples: <i>Pheretima</i> , <i>Periplaneta</i> | Examples: <i>Taenia</i> , <i>Rana tigrina</i> |
| (D) None of the above | |

17. What is the site of origin of the new plantlet in ginger?
 (A) Eyes (B) Buds (C) Nodes (D) Axillary bud

18. Given figure of Hydra shows its reproductive structures and manner of fertilization



Observe and answer that why is it not showing self-fertilization?

- (A) Distance between testis and ovary is more
 (B) Sperms do not swim downwards
 (C) Ovary matures earlier than testis
 (D) Testis matures earlier than ovary

19. Which of the following organism has the shortest life span?
(A) Tortoise (B) May fly (C) Elephant (D) Monkey

20. Match the organisms given in Column-I with their mode of reproduction in Column-II and select the correct answer from the codes given below.

Column I	Column II
A. Potato	(i) Conjugation
B. <i>Spirogyra</i>	(ii) Stem cuttings
C. Rose	(iii) Conidiospores
D. <i>Penicillium</i>	(iv) Stem tubers

(A) A-(i), B-(iii), C-(ii), D-(iv) (B) A-(iv), B-(i), C-(ii), D-(iii) (C) A-(iv), B-(i), C-(iii), D-(ii) (D) A-(ii), B-(i), C-(iv), D-(iii)

21. Read the following statements and select the correct option.

Statement 1: In gymnosperms, endosperm is formed before fertilization and is haploid.

Statement 2: In angiosperms, endosperm is formed after fertilization and is diploid.

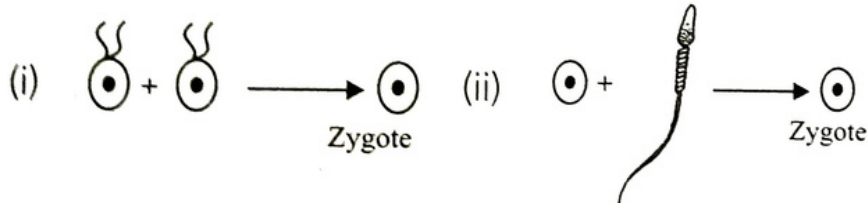
(A) Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.

(B) Both statements 1 and 2 are correct but statement 2 is not the correct explanation of statement 1.

- (C) Statement 1 is correct and Statement 2 is incorrect.
 (D) Both statements 1 and 2 are incorrect.

22. Identify the INCORRECT statement regarding menstrual cycle? (A) Menstrual cycle occurs in primate mammals. (B) Menstrual cycle permits copulation. (C) Menstrual flow occurs at the end of the cycle. (D) The sloughed off endometrium is reabsorbed.

23. Refer the given diagrams showing different types of syngamy and select the option that gives correct example of each of these.



	(i)	(ii)
(A)	<i>Fucus</i>	<i>Chlamydomonas</i>
(B)	<i>Homo sapiens</i>	<i>Fucus</i> <i>Cladophora</i>
(C)	<i>Ficus</i>	
(D)	<i>Cladophora</i>	<i>Homo sapiens</i>

24. Read the following statements and select the correct option.

Statement 1: Unisexual flowers are either staminate flowers or pistillate flowers.

Statement 2: Both monoecious and dioecious plants have unisexual flowers.

Statement 2: In angiosperms, endosperm is formed after fertilization and is diploid.

(A) Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.

(B) Both statements 1 and 2 are correct but statement 2 is not the correct explanation of statement 1.

(C) Statement 1 is correct and Statement 2 is incorrect.

(D) Both statements 1 and 2 are incorrect.

25. Read the following statements and select the correct option.

Statement 1: Honey bees often pollinate red coloured flowers.

Statement 2: Honey bees visit flowers for pollen grains only.

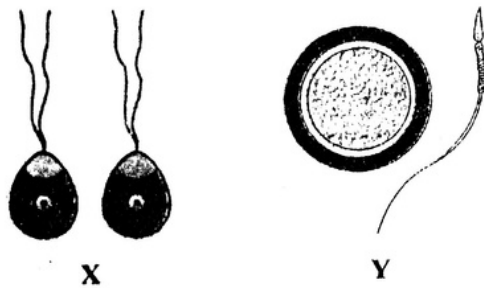
(A) Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.

(B) Both statements 1 and 2 are correct but statement 2 is not the correct explanation of statement 1.

(C) Statement 1 is correct and Statement 2 is incorrect.

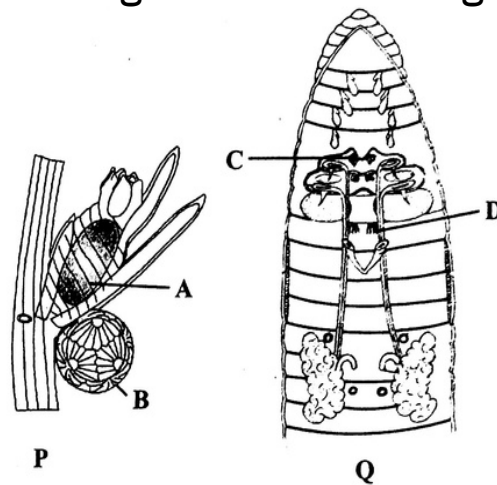
(D) Both statements 1 and 2 are incorrect.

26. Which of the following options is correct for the given figures?



	(i)	(ii)
(A)	Homogamy	Isogamy
(B)	Anisogamy	Isogamy
(C)	Heterogamy	Anisogamy
(D)	Isogamy	Oogamy

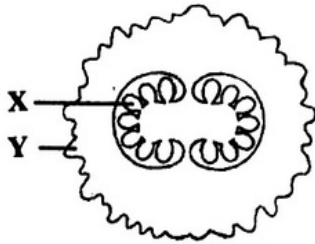
27. Figure P represents the reproductive organs of plant *Chara* and figure Q represents the reproductive organs of animal earthworm. Select the option which correctly identifies male reproductive organs of the two organisms.



- (A) A and D
(C) A and C

- (B) B and C
(D) B and D

28. Which of the labeled parts in the transverse section of tomato fruit, is/are diploid?



(A) X

(B) Y

(C) Both X and Y

(D) None of these

29. Read the following statements and select the correct option.

Statement 1: Viviparous animals give better protection to their offsprings.

Statement 2: In viviparous animals, young ones, after attaining a certain stage of growth, are delivered out of the body of female organism.

(A) Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.

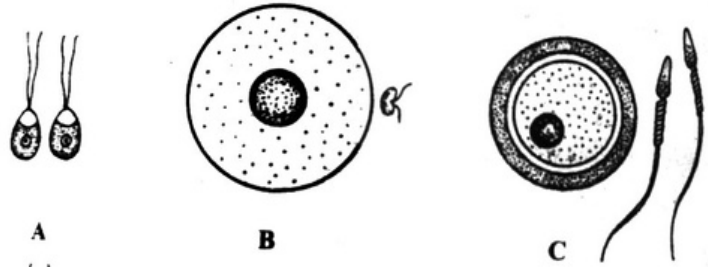
(B) Both statements 1 and 2 are correct but statement 2 is not the correct explanation of statement 1.

(C) Statement 1 is correct and Statement 2 is incorrect.

(D) Both statements 1 and 2 are incorrect.

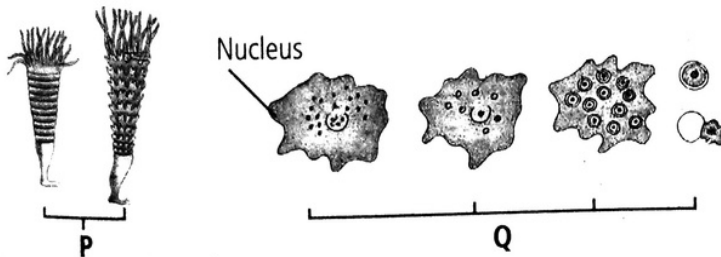
30. Refer the following figures and identify the type of gametes

(A, B and C) respectively.



- (A) Heterogametes, isogametes, homogametes.
 (B) Isogametes, homogametes, heterogametes.
 (C) Homogametes, isogametes, heterogametes.
 (D) Homo/Isogametes, heterogametes, heterogametes.

31. Given figures illustrate.

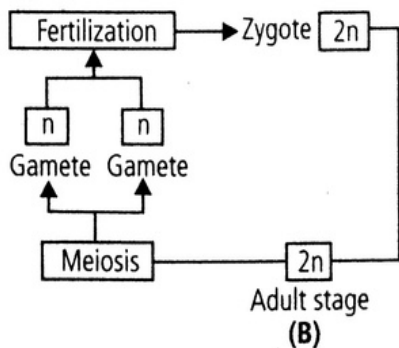
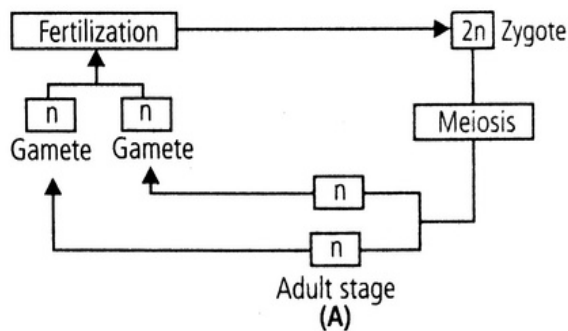


	P	Q
(A)	Metamerism by a cnidarians	Multiple fission by a protist
(B)	Strobilation by a cnidarians	Multiple fission by a protist
(C)	Fragmentation by a platyhelminth	Internal budding by a sponge
(D)	Strobilation by a platyhelminth	Sporulation by a protist

32. Parthenogenesis does not occur in:

- (A) Human beings
- (B) Aphids
- (C) Turkeys
- (D) Drone honeybees

33. In these figures, two life-cycles are described. Mark the correct option.



- (A) A represents primitive life forms and B represents more advanced life forms.
- (B) A represents terrestrial life forms and B represents aquatic life forms.
- (C) A represents asexual reproduction and B represents sexual reproduction.
- (D) Both flowcharts basically represent the same life-cycle.

34. A few statements describing certain features of reproduction are given below. (i) Gametic fusion takes place. (ii) Transfer of genetic material takes place. (iii) Reduction division takes place. (v) Progeny have some resemblance with parents. Select the options that are true for both asexual and sexual reproduction from the options given below.

(A) (i) and (ii)

(B) (ii) and (iii)

(C) (ii) and (iv)

(D) (i) and (iii)

35. Asexual method of reproduction by binary fission is common to which of the following?

(i) Some eukaryotes

(ii) All eukaryotes

(iii) Some prokaryotes

(iv) All prokaryotes

(A) (i) and (ii)

(B) (ii) and (iii)

(C) (i) and (iii)

(D) (iii) and (iv)

36. A few statements with regard to sexual reproduction are given below.

(i) Sexual reproduction does not always require two individuals.

(ii) Sexual reproduction generally involves gametic fusion.

(iii) Meiosis never occurs during sexual reproduction.

(iv) External fertilization is a rule during sexual reproduction.

Choose the correct statements from the options below.

(A) (i) and (iv)

(B) (i) and (ii)

(C) (ii) and (iii)

(D) (i) and (iv)

37. Given below are a few statements related to external fertilization. Choose the correct statements.

(i) The male and female gametes are formed and released simultaneously.

(ii) Only a few gametes are released into the medium.

(iii) Water is the medium in a majority of organisms exhibiting external fertilization.

(iv) Offspring formed as a result of external fertilization have better chance of survival than those formed inside an organism.

(A) (iii) and (iv)

(B) (i) and (iii)

(C) (ii) and (iv)

(D) (i) and (iv)

38. Which of the following is a monoecious plant?

(A) Coconut (B) Papaya

(C) Date palm

(D) All of these

39. Which of the following is a seasonal breeder?

(A) Dogs

- (B) Humans
- (C) Monkeys
- (D) None of these

40. Which of the following statements, support the view that elaborate sexual reproductive process appeared much later in the organic evolution?

- (i) Lower groups of organisms have simpler body design.
- (ii) Asexual reproduction is common in lower groups.
- (iii) Asexual reproduction is common in higher groups of organisms.
- (iv) The high incidence of sexual reproduction in angiosperms and vertebrates.

Choose the correct answer from the options given below.

- (A) (i), (ii) and (iii) (B) (i), (iii) and (iv)
- (i), (ii) and (iv) (D) (ii), (iii) and (iv)

Directions: In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as:

- (A) If both assertion and reason are true and reason is the correct explanation of assertion.
- (B) If both assertion and reason are true but reason is not the correct explanation of assertion.
- (C) If assertion is true but reason is false.
- (D) If both assertion and reason are false.

41. Assertion: Reproduction enables the continuity of the species generation after generation.

Reason: Reproduction is a biological process in which an organism gives rise to young ones similar to itself.

42. Assertion: Asexual reproduction involves formation of clones of an organism.

Reason: Clones are morphologically and genetically similar individuals.

43. Assertion: Water hyacinth is an invasive aquatic plant which spreads all over the water in a short period of time.

Reason: Water hyacinth can reproduce vegetatively.

44. Assertion: Algae and fungi switch to asexual method of reproduction before the onset of adverse conditions.

Reason: Asexual reproduction may introduce variations and leads to the formation of many clones.

45. Assertion: In perennial plant species, it is difficult to define vegetative, reproductive and senescent phases.

Reason: Perennial plants have very short life span.

ANSWERS

1. C 2. D 3. A 4. C 5. C 6. C 7. B 8. B 9. C 10. A
11. A 12. B 13. B 14. C 15. D 16. C 17. D 18. D 19. B 20. B
21. C 22. D 23. D 24. B 25. D 26. D 27. B 28. C 29. A 30. D
31. B 32. A 33. A 34. C 35. C 36. B 37. B 38. A 39. D 40. C
41. A 42. B 43. A 44. D 45. C

SOLUTIONS

3. Solution: Ovary is diploid whereas anther, pollen and egg are haploid.
8. Sponges reproduce through special reproductive structures called gemmules.
11. Longitudinal binary fission occurs in Euglena. Transverse binary fission occurs in Paramecium and multiple fission takes place in uncysted Amoeba during asexual reproduction.
16. Self-fertilization occurs in Taenia, while cross-fertilization occurs in Pheretima, Periplaneta and Rana tigrine.
17. The site of origin of the new plantlets in ginger is axillary bud at the node of rhizome.
19. May fly has the longest life span of one day.
22. Menstrual cycle occur in primates such as humans, apes, etc. It permits copulation at any time during sexual cycle. Menstrual flow occurs at the end of the cycle. The sloughed off endometrium is passed out with menstrual flow.

31. Figure P shows strobilation in Aurelia (a coelenterate/cnidarian). Strobilation refers to repeated formation of similar segments by the process of budding. Figure Q shows multiple fission in Amoeba (a protozoan protist), during which many daughter nuclei are produced by the repeated divisions of the parent nucleus.
32. Parthenogenesis does not occur in human beings. Internal fertilization occurs in human beings. The process of parthenogenesis occurs in aphids, turkeys and drones honeybees.
36. Meiosis is required for the production of haploid gametes during sexual reproduction. External fertilization is not a rule during sexual reproduction, it can occur internally also.
37. A large number of gametes are released into the medium to increase the chance of fertilization. The chances of survival of offsprings from external fertilization are lesser than those of internal fertilization as they face more risk from predators.
38. Coconut is monoecious bearing both male and female flowers.
39. Dogs are seasonal breeders as they exhibit oestrous cycle only during favourable seasons in their reproductive phase.
45. Perennial plants live for many years i.e., they have a very long life span. Hence, it becomes very difficult to define and study their vegetative, reproductive and senescent phases.