

9. What are plant hormones? Name the plant hormones responsible for the following.
- Growth of stem
 - Promotion of cell division
 - Inhibition of growth
 - Elongation of cells
- [2019] ...[3M]
10. A squirrel is in a scary situation. Its body has to prepare for either fighting or running away. State the immediate changes that take place in its body so that the squirrel is able to either fight or run.
- [2020] ...[3M]

OR

Why is chemical communication better than electrical impulses as a means of communication between cells in a multi-cellular organism?

[2020] ...[3M]

11. (a) Draw the structure of a neuron and label the following on it :
Nucleus, Dendrite, Cell body and Axon
- (b) Name the part of neuron:
- Where information is acquired.
 - Through which information travels as an electrical impulse.
- [2008] ...[5M]
12. (a) What is
- Phototropism and
 - Geotropism?
- With labelled diagrams describe an activity to show that light and gravity change the direction that plant parts grow in.
- (b) Mention the role of each of the following plant hormones:
- Auxin
 - Abscisic acid
- [2008] ...[5M]

3 : How do Organisms Reproduce?

1. What is the effect of DNA copying which is not perfectly accurate on the reproduction process?
- [2008] ...[1M]
2. After observing the prepared slides of binary fission in *Amoeba* and budding in yeast, the following observations were reported :
- Single cells of *Amoeba* and Yeast were undergoing binary fission and budding respectively.
 - Cytokinesis was observed in the Yeast cell.
 - Elongated nucleus was dividing to form two daughter nuclei in *Amoeba*.
 - A chain of buds were observed due to reproduction in *Amoeba*.

The correct observation(s) is/are:

[2012] ...[1M]

- (D), (A) and (C)
- (C) and (D)
- (B) only
- (A) and (C)

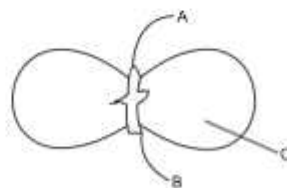
3. A student after observing a slide showing different stages of binary fission in *Amoeba* draws the following diagrams. However these diagrams are not in proper sequence.



The correct sequence is: [2011, 2013] ...[1M]

- I, V, IV, III, II
- I, V, III, IV, II
- I, III, IV, V, II
- None of these

4. In the figure, the parts marked A, B and C are sequentially
- [2013, 2014] ...[1M]



- Plumule, Cotyledon and Radicle
- Radicle, Cotyledon and Plumule
- Radicle, Plumule and Cotyledon
- Plumule, Radicle and Cotyledon

5. Select the correct statements for the process of budding in yeast:

- I. A bud arises from a particular region on a parent body.
- II. A parent cell divides into two daughter cells; here the parental identity is lost.
- III. Before detaching from the parent body a bud may form another bud.
- IV. A bud when detached from the parent body grows into a new individual. **[2013] ...[1M]**

- (a) II, III and IV
- (b) I, II and III
- (c) III, IV and I
- (d) None of the above

OR

When you study a slide showing different stages of budding in yeast, you observe the following stages:

- I. The bud may get separated from the parent body and develop into a new individual.
- II. The body of the bud develops and gives rise to another baby bud.
- III. A bud comes out in any direction from the body of the parent cell.
- IV. Thus they may form a colony.

The proper sequence of the above stages is

[2014] ...[1M]

- (a) II, I, III, IV
- (b) II, III, I, IV
- (c) III, II, I, IV
- (d) III, I, II, IV

6. Name two simple organisms having the ability of regeneration. **[2015] ...[1M]**

7. Students were asked to observe the permanent slides showing different stages of budding in yeast under high power of a microscope.

[2015] ...[1M]

- (a) Which adjustment screw (coarse/fine) were you asked to move to focus the slides?
- (b) Draw three diagrams in correct sequence showing budding in yeast.

8. A student was asked to observe and identify the various parts of an embryo of a red kidney bean seed. He identified the parts and listed them as under :

- I. Tegmen
- II. Testa
- III. Cotyledon
- IV. Radicle
- V. Plumule

The correctly identified parts among these are :

[2015] ...[1M]

- (a) I, II and III
- (b) II, III and IV
- (c) III, IV and V
- (d) I, III, IV and V

9. List two functions of ovary of human female reproductive system. **[2016] ...[1M]**

10. A student while observing an embryo of a pea seed in the laboratory listed various parts of the embryo as given below:

Testa, Tegmen, Radicle, Plumule, Micropyle, Cotyledon.

On examining the list the teacher remarked that only three parts are correct.

Select three correct parts from the above list:

[2016] ...[1M]

- (a) Testa, Radicle, Cotyledon
- (b) Tegmen, Radicle, Micropyle
- (c) Cotyledon, Plumule, Testa
- (d) Radicle, Cotyledon, Plumule

11. **Answer question numbers (a) to (d) on the basis of your understanding of the following paragraphs and the related studied concepts.**

The growing size of the human population is a cause of concern for all people. The rate of birth and death in a given population will determine its size. Reproduction is the process by which organisms increase their population. The process of sexual maturation for reproduction is gradual and takes place while general body growth is still going on. Some degree of sexual maturation does not necessarily mean that the mind or body is ready for sexual acts or for having and

bringing up children. Various contraceptive devices are being used by human beings to control the size of population.

- (a) List two common signs of sexual maturation in boys and girls. **[2020] ...[1M]**
 - (b) What is the result of reckless female foeticide? **[2020] ...[1M]**
 - (c) Which contraceptive method changes the hormonal balance of the body? **[2020] ...[1M]**
 - (d) Write two factors that determine the size of a population. **[2020] ...[1M]**
12. The number of chromosomes in parents and offsprings of a particular species undergoing sexual reproduction remain constant due to: **[2023] ...[1M]**
- (a) doubling of chromosomes after zygote formation
 - (b) halving of chromosomes after zygote formation
 - (c) doubling of chromosomes before gamete formation
 - (d) halving of chromosomes at the time of gamete formation
13. With the help of diagrams show the different stages of binary fission in *Amoeba*. **[2010, 2017, 2018] ...[2M]**
14. List any four reasons for vegetative propagation being practised in the growth of some type of plants. **[2011] ...[2M]**
15. State the role of
- i. Seminal vesicle
 - ii. Prostate gland in the human body.
- [2011] ...[2M]**
16. Define the term puberty. List two changes observed in girls at the time of puberty. **[2012] ...[2M]**
17. What is meant by asexual reproduction? List any two of its different forms. **[2012] ...[2M]**
18. A student is observing a permanent slide showing sequentially the different stages of asexual reproduction taking place in yeast. Name this process and draw diagrams, of what he observes, in a proper sequence. **[2012, 2016] ...[2M]**

19. Mention two functions of the human testis. **[2013] ...[2M]**

20. Draw labelled diagrams to illustrate budding in *Hydra*. **[2014] ...[2M]**

OR

Draw a labelled diagram in proper sequence to show budding in *Hydra*. **[2019] ...[2M]**

21. Give reasons:
- (i) Placenta is extremely essential for foetal development. **[2022] ...[2M]**
 - (ii) Uterine lining becomes thick and spongy after fertilisation. **[2022] ...[2M]**
22. (a) Name the reproductive and non-reproductive parts of bread mould (*Rhizopus*). **[2022] ...[2M]**
- (b) List any two advantages of vegetative propagation. **[2022] ...[2M]**
23. Name the reproductive parts of an angiosperm. Where are these parts located? Explain the structure of its male reproductive part. **[2022] ...[2M]**

OR

What is puberty? Mention any two changes that are common to both boys and girls in early teenage years.

24. (a) Explain the terms :
- (i) Implantation
 - (ii) Placenta
- (b) What is the average duration of human pregnancy? **[2009] ...[3M]**
25. Write the full form of DNA. Name the part of the cell where it is located. Explain its role in the process of reproduction of the cell. **[2010] ...[3M]**
26. What does HIV stand for? Is AIDS an infectious disease? List any four modes of spreading AIDS. **[2011] ...[3M]**
27. Explain the meaning of sexually transmitted diseases (STD's). Give two examples of STD's each, caused due to
- i. bacterial infection
 - ii. viral infection.
- State in brief how the spread of such diseases may be prevented. **[2008, 2012, 2013] ...[3M]**

28. (a) Explain the process of regeneration in *Planaria*.
(b) How is regeneration different from reproduction? [2013] ...[3M]
29. Write one difference between asexual and sexual mode of reproduction. Which species is likely to have better chances of survival - the one reproducing asexually or the one reproducing sexually? Justify your answer. [2014] ...[3M]
30. What is the effect of DNA copying, which is not perfectly accurate, on the reproduction process? How does the amount of DNA remain constant though each new generation is a combination of DNA copies of two individuals?
[2014, 2018] ...[3M]
31. List any four methods of contraception used by humans. State in brief two advantages of adopting such preventive methods. [2015]...[3M]
32. (a) List two reasons for the appearance of variations among the progeny formed by sexual reproduction.



- (i) Name the part marked 'A' in the diagram.
(ii) How does 'A' reaches part 'B'?
(iii) State the importance of the part 'C'
(iv) What happens to the part marked 'D' after fertilization is over? [2016] ...[3M]
33. Define reproduction. How does it help in providing stability to the population of species?
[2016] ...[3M]
34. Explain the term "Regeneration" as used in relation to reproduction of organisms. Describe briefly how regeneration is carried out in multicellular organisms like *Hydra*.
[2016]...[3M]

35. List the two types of reproduction. Which one of the two is responsible for bringing in more variations in its progeny and how?
[2017]...[3M]
36. List three techniques that have been developed to prevent pregnancy. Which one of these techniques is not meant for males? How does the use of these techniques have a direct impact on the health and prosperity of a family?
[2017] ...[3M]
37. What is vegetative propagation? State two advantages and two disadvantages of this method.
[2017] ...[3M]
38. (a) List in tabular form two differences between binary fission and multiple fission.
(b) What happens when a mature *Spirogyra* filament attains considerable length?
[2020]...[3M]
39. With the help of suitable diagrams, explain the various steps of budding in *Hydra*.

OR

What is binary fission in organisms? With the help of suitable diagrams, describe the mode of reproduction in *Amoeba*.
[2011] ...[5M]

40. Define the terms pollination and fertilisation. Draw a diagram of a pistil showing pollen tube growth into the ovule and label the following: pollen grain, male gamete, female gamete and ovary.

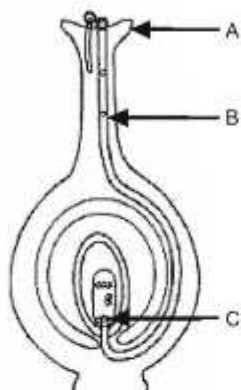
OR

Describe in brief the role of :

- (i) Testis, (ii) Seminal vesicle, (iii) Vas deferens,
(iv) Ureter, (v) Prostate gland in human male reproductive system. [2012] ...[5M]
41. (a) Write the function of placenta in females.
(b) List four ways of preventing pregnancy. State two advantages of using such preventive methods.
[2013] ...[5M]

42. (a) Identify A, B and C in the given diagram and write their functions.
 (b) Mention the role of gamete and zygote in sexually reproducing organisms.

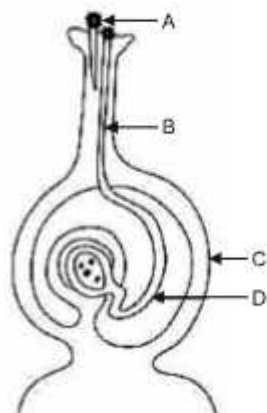
[2013, 2015] ...[5M]



43. (a) Draw a sectional view of human female reproductive system and label the part where
 (i) eggs develop.
 (ii) fertilisation takes place.
 (iii) fertilised egg gets implanted.
 (b) Describe, in brief, the changes the uterus undergoes
 (i) to receive the zygote.
 (ii) if zygote is not formed.

[2014] ...[5M]

44. (a) Name the parts labelled as A, B, C and D in the diagram given below:



- (b) What is pollination? State its significance.
 (c) How does fertilisation occur in flowers? Name the parts of the flower that develop into (i) seed, and (ii) fruit after fertilisation.

[2014] ...[5M]

45. (a) Name the human male reproductive organ that produces sperm and also secretes a hormone. Write the functions of the secreted hormone.
 (b) Name the parts of the human female reproductive system where
 (i) Fertilization takes place
 (ii) Implantation of the fertilized egg occurs.
 Explain how the embryo gets nourishment inside the mother's body.

[2015] ...[5M]

46. What is placenta? Describe its structure. State its functions in case of a pregnant human female.

[2016] ...[5M]

47. (a) Write the functions of each of the following parts in a human female reproductive system:
 (i) Ovary
 (ii) Uterus
 (iii) Fallopian tube
 (b) Write the structure and functions of placenta in a human female.

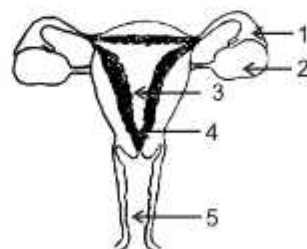
[2017, 2018] ...[5M]

48. Define pollination. Explain the different types of pollination. List two agents of pollination? How does suitable pollination lead to fertilization?

[2019] ...[5M]

OR

- (a) Identify the given diagram. Name the parts 1 to 5.



- (b) What is contraception? List three advantages of adopting contraceptive measures.

[2019] ...[5M]

49. (i) Name and explain the two modes of asexual reproduction observed in hydra.
 (ii) What is vegetative propagation? List two advantages of using this technique.

[2023] ...[5M]