12TH BIO – ZOOLOGY

UNIT:1, CHAPTER:1 – REPRODUCTION IN ORGANISMS

Important book inside questions:

One marks

1. Asexual reproduction is also known as **Ans:** Somatogenic / Blastogenic reproduction
2. Uniparental inheritance seen in **Ans:** Asexual reproduction
3. Transverse binary fission seen in **Ans:** Paramecium and planaria
4. Oblique binary fission seen in **Ans:** Ceratium
5. In Plasmodium fission occurs in the schizont and in the _____ stage. **Ans:** Oocytes
6. Amoeba encystment formation during **Ans:** Unfavorable conditions
7. Strobilation is the special type of **Ans:** Transverse fission
8. Internal buds in sponge is called **Ans:** Gemmules
9. Regeneration was first studied in hydra by **Ans:** Abraham Trembley in 1970
10. External fertilization seen in **Ans:** Sponges, fishes, and amphibians.
11. Internal fertilization seen in **Ans:** Reptiles, aves, and mammals.
12. The male and female gametes are produced by a same cell or organism is **Ans:** Autogamy
13. The male and female gametes are produced by different parents are called **Ans:** Exogamy
14. The sexual union of young individuals produced immediately is called **Ans:** Paedogamy
15. The small sized and morphologically different gametes are called **Ans:** merogametes
16. _____ begins at the end of reproductive phase **Ans:** Senescent
17. Parthenogenesis was first discovered by **Ans:** Charles Bonnet in 1745
18. The reptiles and birds egg shell covered with **Ans:** Calcareous shells
19. Animals give rise young ones are called **Ans:** viviparous
20. Ovoviviparous is seen in **Ans:** shark

Textbook evolution – One marks

1. In which type of parthenogenesis are only males produced? **Ans:** a) Arrhenotoky
2. The mode of reproduction in bacteria is by…….. **Ans**: c) Conjugation
3. In which mode of reproduction variation are seen? **Ans**: c) Sexual

4. I. **Assertion:** In bee society, all the members are diploid except drones.
Reason: Drones are produced by parthenogenesis.
Ans: a) If both A and R are true and R is correct explanation for A

II. **Assertion:** Offsprings produced by asexual reproduction are genetically identical to the parents. **Reason:** Asexual reproduction involves only mitosis and no meiosis.
Ans: a) If both A and R are true and R is correct explanation for A

III. **Assertion:** Viviparous animals give better protection to their offsprings.
Reason: They lay their eggs in the safe places of the environment.
Ans: c) If A is true but R is false

5. **Name an organism where cell division is itself a mode of reproduction.**
Ans: Amoeba.

6. **Name the phenomenon where the female gamete directly develops into a new organism with an avian example.**
Ans: Parthenogenesis is the phenomenon where the unfertilized female gamete (egg) develops into a new individual. Example – Turkey.

7. **What is parthenogenesis? Give two examples from animals.**
Ans: Development of an egg into a complete individual without fertilization is known as parthenogenesis. Examples – Honey bees, Aphis.

8. **Which type of reproduction is effective – Asexual or sexual and why?**
Ans: Sexual reproduction is highly effective than asexual reproduction since the offsprings Produced are genetically different from parents causing variations. Variation leads to evolution.

9. The unicellular organisms which reproduce by binary fission are considered immortal. Justify.

Ans: In unicellular organisms during binary fission the entire cell (organism) divides completely to form two daughter cells which later develop into adult and the process goes on repeatedly during each division leading to immortality of cell (organism). Hence unicellular organisms like amoeba are 'biologically immortal'.

10. Which is the offspring formed by asexual reproduction referred as a clone?

Ans: Young ones developed by asexual reproduction are referred as clones since they are genetically and morphologically similar to this parent.

11. Give reason for the following:

a) Some organisms like honey bees are called parthenogenetic animal.

Ans: Among honey bees, the queen bee and worker bees develop from fertilized eggs whereas the drones develop from unfertilized eggs. Hence the honey bees are parthenogenetic animals showing incomplete parthenogenesis.

b) A male honey bee has 16 chromosomes whereas its female has 32 chromosomes.

Ans: Female honey bees (Queen and worker bee) are diploid having 32 chromosomes since they develop from the fertilized egg possessing only 16 chromosomes (that is haploid).

12. Difference between the following:

Ans:

a) Binary fission in amoeba and multiple fission in plasmodium.

Binary fission	Multiple fission
i) The plane of division is hard to observe. ii) Contractile vacuoles disappear. iii) Nucleus divide into two by mitotically. iv) The cell than constricts middle. v) Cytoplasm divide into two. vi) Finally form two daughter cell.	i) In plasmodium multiple fission occurs in schizont. ii) It occurs in oocyte stages. iii) The process called schizogony. iv) The daughter individuals are called merozoites. v) It occurs in oocytes are called sporogony. vi) The young one are called sporozoites.

b) Regeneration in lizard and planaria.

Regeneration of Lizard	Regeneration of Planaria
If the tail of the lizard is cut and removed, a new tail will regeneration in damaged part. In lizard only he new tail is regenerated.	If a planaria worm get cut then each half regenerates the lost part resulting in two worms, In planaria, the cut remove part developed into an entire worm.

13. How is juvenile phase different from reproductive phase?

Ans:

Juvenile phase	Reproductive phase
Juvenile phase is the period of growth between the birth of an organism and before its its reproductive maturity.	Reproductive phase is the period of growth after juvenile phase when an individual attain reproductive maturity and reproduces

14. What is the difference between syngamy and fertilization?

Ans:

Syngamy and fertilization both are more similar terms with a difference that syngamy refers to the process of fusion of two gametes forming zygotes while fertilization refers to the process of being fertile.

Book inside two marks

1. **Why asexual reproduction is called somatogenic/blastogenic reproduction?**
   Ans: Asexual reproduction is usually by amitosis or mitotic division of the somatic (body) cells, hence is also known as somatogenic or balstogenic reproduction.
2. **Define sexual reproduction.**
   Ans: Two parents are participate in the reproductive process involving two types of gametes (egg and sperm) it is called sexual reproduction.
3. **Uniparental inheritance and without genetic variation is related to …….. reproduction.**
   Ans: Asexual reproduction.
4. **Write the correct sequence of binary fission.**
   Ans: i) Karyogamy (division of nucleus) and followed by cytokinesis (division of cytoplasm).
5. **Define plasmotomy.**
   Ans: It is the division of multinucleated parent into many multinucleated daughter individuals with the division nucleus. Examples: i) Opalania and Pelomyxa (Giant Amoeba).
6. **What is fragmentation? Give an example.**
   Ans: The parent body breaks into fragments (pieces) and such of the fragment has the potential to develop into a new individual. Example: sea anemone, and Taenia solium.
7. **Define external fertilization.**
   Ans: The fusion of male and female gametes takes place outside the body of female organisms in the water medium. Example: Sponges, Fishes and amphibians.
8. **Define internal fertilization.**
   Ans: The fusion of male and female gametes takes place within the body of female organisms. Example: Reptiles, aves and mammals.
9. **Define autogamy.**
   Ans: The male and female gametes are produced by the same cell or organism and both gametes fuse together to form a zygote. Examples: Actinosphaerium, paramecium.
10. **Define exogamy.**
    Ans: The male and female gametes are produced by different parents and they fuse to form a zygote. So it is called biparental. Example: Human – dioecious or unisexual animal.

Text book inside three marks

1. **Differentiate transverse and longitudinal binary fission.**
   Ans:

Transverse binary fission	Longitudinal binary fission
i) Plan of division is transverse axis.	i) Plan of division is longitudinal by nucleus and cytoplasm.
ii) Macronucleus divides by amitosis.	ii) The flagellum is retained usually by one daughter cell.
iii) Micronucleus divides by mitosis.	iii) Basal granules divide and form a new flagella of daughter cells.
iv) Example: Paramecium and planaria.	iv) Example: Vorticella and Euglena.

2. **What is multiple fission? Give an example.**
   Ans:
   i) The parent body divides into many similar daughter cells simultaneously.
   ii) First the nucleus divides repeatedly without cytoplasm divide.
   iii) Each nucleus surrounded by a cytoplasm to form young ones.
   iv) Examples: Vorticella, and Plasmodium.

3. Differentiate the types of regeneration.

Ans: Regeneration are two types: i) Morphallaxis and ii) Epimorphosis.

Morphallaxis	Epimorphosis
The whole body grows from a small fragment. Examples: Hydra and Planaria.	The replacement of lost body parts. They are two types reparative and Restorative. Examples: Star fish and wall lizard.

4. Differentiate the seasonal and continuous breeders.

Ans:

Seasonal breeders	Continuous breeders
i)They are breed only particular season of the year. ii) Examples: Frogs,Lizards, Birds and deers.	They are breed for whole year (no particular period). ii) Examples: Honeybees, Poultry, rabbit. etc.,

Ans:

5. Write the phases of lifecycle.

i) Juvenile phase or vegetative phase.
ii) Reproductive phase or maturity phase.
iii) Senescent phase

Textbook inside five Marks

1. **Explain the phases of life cyle.**
2. **Explain parthenogenesis.**
3. **Explain multiple fission.**
4. **What is parthenogenesis? And explain natural parthenogenesis.**

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