CBSE Test Paper 05

Ch-2 Sexual Reproduction in Flowering Plants

1. One out of two male gametes fuses with two polar nuclei to produce PEN, which is abbreviation of
   a. Primary endosperm nucleus
   b. Primary embryo nucleus
   c. Primitive embryo nucellus
   d. Principle endosperm nucleus
2. How many meiotic divisions are required to form 64 pollen grains
   a. 80
   b. 32
   c. 16
   d. 64
3. The flower which possesses both androecium and gynoecium is called perfect or:-
   a. Hermaphrodite
   b. Complete flower
   c. Unisexual
   d. Dioecious
4. Placenta is located inside the
   a. Ovule cavity
   b. Micropyle
   c. Funicle
   d. Ovarian cavity
5. The female gametophyte in angiosperm is :-
   a. Ovule
   b. Carpel
   c. Embryo sac
   d. Egg
6. Write the name of layer of anther wall occurs below middle layers, also mention its function.
7. Write the name of centrally located, diploid celled mass of ovule that provides

nutrition to developing embryo sac.

8. Name the parts of an angiosperm flower in which development of male and female gametophyte take place.
9. At which stage pollen grains are shed from anther?
10. Why are date palms referred to as dioecious?
11. Mention the site where syngamy occurs in amphibians and reptiles respectively.
12. Draw a schematic labeled diagram of a fertilized embryo sac of an angiosperm.
13. i. With the help of a labelled diagram depict the organization of a typical embryo sac just after double fertilization.
    ii. How are seeds advantages to angiosperms?
14. What is geitonogamy? Give an example. How does geitonogamy differ from xenogamy in plants?
15. Differentiate between:
    a. hypocotyol and epicotyl
    b. coleoptile and coleorrhiza
    c. integument and testa
    d. perisperm and pericarp

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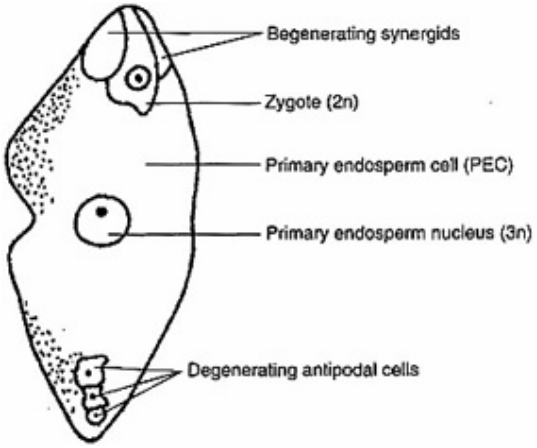
Answer

1. a. Primary endosperm nucleus, **Explanation:** Two polar nuclei and one male gamete fuse with together to form primary endosperm nucleus which is abbreviated as PEN.
2. c. 16, **Explanation:** Each microspore mother cell produces four pollen grains by reduction division. Hence to produce 64 pollen grains 16 meiotic or reduction division is required.
3. a. Hermaphrodite, **Explanation:** Bisexual flower conation both male and female reproductive parts i.e. sepals and petals. These flowers are also called as monoecious or hermaphrodite.
4. d. Ovarian cavity, **Explanation:** Placenta is located inside the ovarian cavity. It help in transport of nutrient to megasporangium or ovule. Ovule is attached to placenta by means of stalk called funicle.
5. c. Embryo sac, **Explanation:** The female gametophyte in angiosperms is called Embryo sac. It contains egg apparatus, antipodal cells and polar nuclei. After fertilisation embryo sac changes into seed.
6. The tapetum is a specialised layer of nutritive cells found within the sporangium, particularly within the anther, of flowering plants, where it is located between the sporangenous tissue and the anther wall.

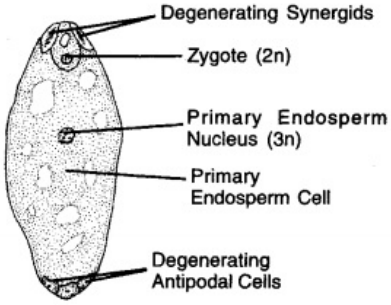
   This gives the nourishment to the developing pollen grains inside the anthers.
7. **Nucellus;** It protects the embryo and also provides reserve food material that are needed for the growth of the embryo
8. Male gametophyte - It develops in microsporangium inside the pollen grains.
   Female gametophyte - It develops in the ovule.
9. In 60% plants, pollen grain shed at the two-celled stage (Generative Cell + Tube Cell) and in 40%, at 3-celled stage (Tube cell + 2 male gametes).

10. Date palm is a dioecious species with male and female flowers being produced in clusters on separate palms. These flowering clusters are produced with axils of leaves of the previous year's growth.

11. In amphibians, syngamy occurs outside the body of organism in the external medium (water)
    - In reptiles syngamy occurs inside the body of the organism.

12. 

13. i. Diagram showing Embryo sac after Double fertilization



ii. Seed formation in angiosperms offers many advantages such as:
    a. Helps to perennate during unfavourable conditions.
    b. Remains viable for several years by reducing their rate of metabolic activities this is known as dormancy.
    c. Seeds (in fruits) possess special structures for dispersal, thus helping in introducing the species into new areas.
    d. Due to low water contents, seeds can be stored for consumption by animals and man.
    e. Seed banks have been established for genetic conservation of plants.
    f. Their formation is independent of water.
    g. During their production there is scope of variation.

14. Geitonogamy is a type of self pollination in which the pollen grains from the anthers of one flower are transferred to the stigma of another flower borne on the same plant. However they require a pollinating agent. Example: Cucurbits

Geitonogamy	**Xenogamy**
It refers to the transfer of pollen grains from the anthers of one flower to the stigma of another flower on the same plant.	It refers to transfer of pollen grains from the anthers of one flower to the stigma of another flower on a differ plant.
It is a type of self pollination.	It is cross pollination.

15. a. Hypocotyl - The portion of embryonic axis between the radical and cotyledon
    Epicotyl - The portion of embryonic axis between the plumule and cotyledon
    b. Coleoptile - It is a conical protective sheath over the plumule in monocot seeds.
    Coleorrhiza - It is a protective sheath over the radical and root tip.
    c. Integument is the covering of ovule, while testa is the outer seed coat developed from the outer integuments.
    d. Perisperm is the residual persistent nucellus, while the pericarp is the fruit wall derived from the ovary wall.