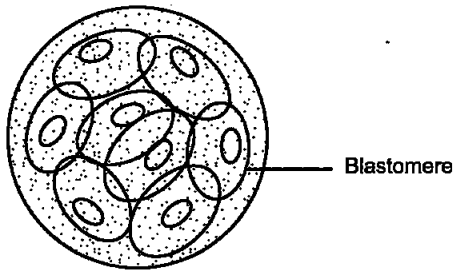
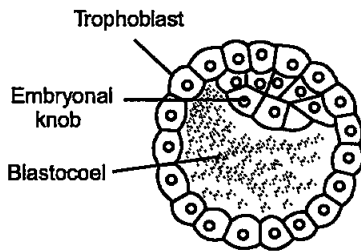


(b) Morula stage



(c) Blastocyst stage (sectional view)

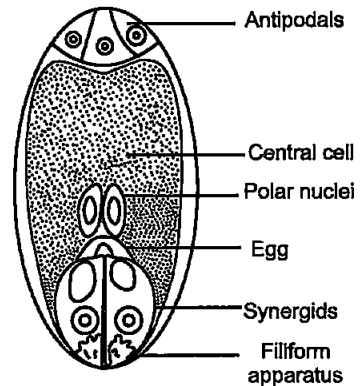


29. Draw a diagram of a mature embryo sac of an angiosperm and label the following parts in it. [5]

- | | |
|------------------------|-----------------|
| (i) Filiform apparatus | (ii) Synergids |
| (iii) Central cell | (iv) Egg cell |
| (v) Polar nuclei | (vi) Antipodals |

(b) Write the fate of egg cell and polar nuclei after fertilization.

Answer : (a)



Mature embryo sac of an angiosperm

(b) Fate of Egg cell and polar nuclei : Egg cell fuses with male gametes to form zygote. Zygote finally gives rise to Embryo while the polar nuclei fuses with the other male gamete to produce a triploid Primary Endosperm Nucleus (PEN). PEN develops into endosperm. Since two kinds of fusion syngamy and triple fusion takes place, the process is known as double fertilisation, and is a characteristic of flowering plants.

Biology 2012 (Outside Delhi)

SET I

Time allowed : 3 hours

Maximum marks : 70

SECTION-A

- Why is banana considered a good example of parthenocarpy ? [1]
Answer : Banana is considered a good example of parthenocarpy because formation of fruit in banana occurs without fertilization (parthenocarpy), *i.e.*, there is no formation of seeds.
- State two different roles of spleen in the human body. [1]
Answer : The role of spleen in the human body is that the spleen is the secondary lymphoid organ that produces lymphocytes and the red pulp of spleen removes the old or damaged red blood cells from the body.
- A garden pea plant produced axial white flowers. Another of the same species produced terminal violet flowers. Identify the dominant traits. [1]

Answer : The dominant traits are : Axial, violet flower.

- Why is it desirable to use unleaded petrol in vehicles fitted with catalytic converters ? [1]
Answer : It is desirable to use unleaded petrol in vehicles fitted with catalytic converters because lead in petrol inactivates the catalysts which convert harmful pollutants (CO, unburnt hydrocarbons, nitric oxide) to lesser harmful pollutants (CO₂, H₂O, N₂).
- Where is acrosome present in humans ? Write its function. [1]
Answer : The anterior portion of the sperm head in human beings is covered by a cap-like structure called acrosome.
Function of Acrosome :
 Acrosome is filled with hydrolytic enzyme-Hyaluronidase that aids in the entry of sperm into the ovum.