

**Model Question -7  
(Biology XII )**

**Time: 3 hrs**

**F.M. :75**

**Part –I (Botany)**

**Group A**

**Circle the correct answer from the given alternatives.**

**(5x1=5)**

**Attempt all questions**

1. Casparian strips are found in
  - a. epidermis
  - b. endodermis
  - c. exodermis
  - d. pericycle
2. The stalk of the ovule is called
  - a. funicle
  - b. micropyle
  - c. chalaza
  - d. nucellus
3. What is the name of the process by which turgidity of a cell is maintained?
  - a. wall pressure
  - b. osmotic pressure
  - c. diffusion pressure
  - d. turgor pressure
4. Cross between F1 heterozygotes with the recessive parent is called
  - a. back cross
  - b. out cross
  - c. test cross
  - d. monohybrid cross
5. What is callus ?
  - a. tissue that grows to form an embryoid
  - a. an unorganized actively dividing mass of cells
  - b. an insoluble carbohydrate
  - c. a tissue that grows from an embryo

## Group B

Give short answers to the following questions.

(4×4=16)

1. Describe the mechanism responsible for the formation of monocot embryos in angiosperms. Give an example of any two species belonging to monocot. (3+1=4)
2. Describe the role of the vascular bundle. Differentiate between open and closed vascular bundles. (1+3=4)
3. Describe the process of crossing over and its significance. (3+1=4)
4. What do you mean by bio-fertilizer? Mention about green manure. (2+2=4)

Or

Define linkage. Describe in detail about the complete linkage with an example. (1+3=4)

## Group C

Give long answers to the following questions

(2×8=16)

5. What are the criteria for selecting pea plants for the hybridization experiment by Mendel? When a cross is made between red flower and white flower pea plants, what proportions of phenotype in the offspring could be expected to be in F<sub>2</sub> generation. What will be the effect on the monohybrid ratio? (2+4+2=8)

Or

Define sex linked inheritance. Discuss it with special reference to eye color of *Drosophila melanogaster*. (1+4+3=8)

6. Define respiration. Describe the mechanism of aerobic respiration that occurs in mitochondria. (1+4+3=8)

## Part – II (Zoology)

### Group A

Circle the correct answer from the given alternatives.

(6×1 = 6)

1. Myelin sheath in CNS is formed by  
a. astrocytes                      b. microglia                      c. oligodendrocytes                      d. schwann cells
2. In telolecithal eggs, yolk is present  
a. throughout the egg                      b. at the center                      c. at opposite side                      d. at one pole
3. The number of lobes in liver and lungs of human are respectively  
a. 3 and 2                      b. 4 and 5                      c. 5 and 4                      d. 3 and 5
4. HCl of the gastric juice  
a. inactivates ptylin and activates pepsin                      b. activates ptyalin and inactivates pepsin  
c. inactivates both ptyalin and pepsin                      d. activates both ptyalin and pepsin
5. COPD is caused by  
a. smoking                      b. alcoholism                      c. drug abuse                      d. AIDS
6. All are true for IVF except  
a. It is available in our country.  
b. It is done through an external fertilization process.  
c. Surrogate mother is involved.  
d. Multiple eggs are collected during this process.

### Group B

**Give short answers to the following questions.**

**(4·4 = 16)**

1. Explain how striated and smooth muscles differ from each other. (3+1)
2. Coelom is the cavity present between the body wall and the gut wall. Explain the process of formation of coelom in frog. (2+2)

Or

Mention some application of microorganisms in dairy and beverage industries. (2+1+1)

3. Explain the mechanism of transportation of oxygen and carbon dioxide by blood. (1+3)
4. Write a short note on cardiovascular diseases. (2+1+1)

### Group C

**Give long answers to the following questions**

**(2·8 = 16)**

5. Describe the structure and function of the human ear with well labelled diagram. (5+3)

OR

Describe the structure and function of the thyroid gland. (5+3)

6. What is DOTS? Discuss the causative agent, symptoms and effect and control measures of tuberculosis. (1+1+2+2+2)