

**Model Question -9
(Biology XII)**

Time: 3 hrs

F.M. :75

Part: I (Botany)

Group A

Circle the correct answer from the given alternatives.

(5 · 1 = 5)

1. Wooden doors swell up and get stuck up during rainy season due to
a. endosmosis b. exosmosis c. imbibition d. capillarity
2. A yellow seeded pea plant is crossed with a green seeded pea plant. The offsprings in F₁ generation shall be
a. all yellow b. all green c. 3 yellow : 1 green d. 3 green : 1 yellow
3. Drooping of Mimosa (touch-me-not) upon touching is an example of
a. thigmotropism b. seismonasty c. nyctinasty d. chemonasty
4. One of the following is not true.
a. Entomophilous flowers have sticky rough pollen grains.
b. Triple fusion in Angiosperms is essential for formation of endosperm.
c. Secondary growth occurs in all dicot plants.
d. Full form of rDNA is ribosomal deoxyribonucleic acid.
5. A young legume ploughed back in the soil produces
a. farmyard manure b. composite manure c. green manure d. biofertilizer

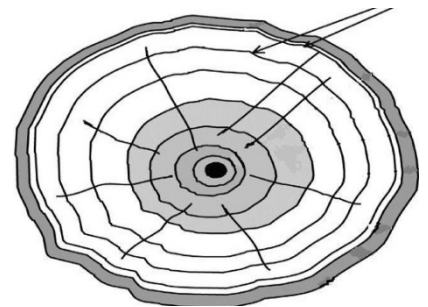
Group B (Botany)

Give short answers to the following questions.

(4 · 4 = 16)

1. What do you mean by vegetative reproduction? Discuss its significance. (1+3)
2. What are linked genes? Describe the incomplete linkage in maize. (1+4)
3. Define genetic engineering. In what way could it be harmful? (1+4=4)
4. What is genetic code? Discuss its characteristics. (1+4=4)

OR



- i. What is this diagram about?

- ii. Draw the diagram and label.
- iii. Name the tissues responsible for the process and give the reason if it could happen in monocots. (1+1+1+1=4)

Group C

5. Eye color in *Drosophila* is a sex linked trait. What does it mean? Describe the mechanism of inheritance of eye color in *Drosophila*. (1+ 4+3)

Or

Define replication of DNA. Describe the semi-conservative mode of DNA replication with necessary diagrams. (1+3+4)

6. Calvin cycle of photosynthesis consists of three distinct phases. What are those? Explain each. Show it in graphic representation. And give the significance of each phase. (1+5+2)

Part – II (Zoology)

Group A

Circle the correct answer from the given alternatives (6x1 = 6)

1. The phagocytic cell present in human blood is
a. acidophil b. basophil c. neutrophil d. lymphocyte
2. Grey crescent is present in
a. secondary oocyte b. zygote c. spermatid d. ovum
3. In nephron, there is complete absorption of
a. urea b. Salt c. water d. glucose
4. Swallowed food doesn't enter windpipe due to structure called
a. uvula b. epiglottis c. diaphragm d. larynx
5. Which of the following is a stimulant?
a. Alcohol b. heroin c. morphine d. caffeine
6. Vaccines are available for all the diseases except for
a. typhoid b. cholera c. ascariasis d. tuberculosis

Group B

Give short answers to the following questions. (4x4 = 16)

1. Describe the structure of multipolar myelinated neurons with diagram. (2+2)
2. Explain how segmentation occurs during development of frog. (2+2)

Or

Define amniocentesis. Mention its merits and demerits. (0.5+2.5+1)

3. Describe the structure and function of digestive gland pancreas. (3+1)
4. Mention the causes, effects and control measures of alcoholism. (1+2+1)

Group C

Give long answers to the following questions (2x8 = 16)

5. Describe the structure and function of the human eye with a well labeled diagram. (5+3)

Or

Justify pituitary gland as master gland. (1+5+2)

6. Discuss the causative agent, mode of transmission, symptoms, control and prevention of Cholera in the context of Nepal. (1+2+2+3)