

**Model Question -3
(Biology XII)**

Time: 3 hrs

F.M. :75

Part I (Botany)

Group A

Circle the correct one from the given alternative:

[5·1=5]

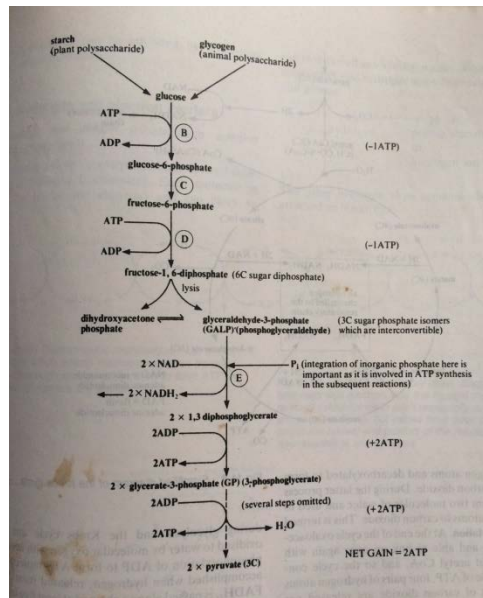
- One of the following statements is true.
 - Bolting in rosette plants is due to activity of gibberellins.
 - Breaking of dormancy in seeds is because of cytokinins.
 - Parthenocarpic fruits can be produced by treatment with auxins.
 - All of the above.
- Mendel studied seven contrasting characters for his breeding experiment with *Pisumsativum*. Which of the following he did not use ?
 - pod shape
 - leaf shape
 - plant height
 - pod color
- Emasculation is achieved by removal of
 - anthers
 - styles
 - petals
 - sepals
- is the first stable product during the C3 cycle.
 - Pyruvic acid
 - Water
 - Phosphoglyceric acid
 - None of above
- Plants bend towards the light because
 - They need light for photosynthesis.
 - They need light for respiration.
 - Light attracts them.
 - Cells on the shaded side elongate fast due to activity of Auxin.

Group B

Give short answer to the following questions.

[4·4=16]

- Study the figure carefully and answer the following questions :
 - What is the process occurring at B and D ?
 - What class of enzyme controls reaction C ?
 - Name the process occurring at E .
 - How many ATP are made in this process ?



2. Draw a well labeled diagram of a typical angiospermic ovule. And also describe its various parts. [2+2=4]
3. Calculate the offsprings from a cross between heterozygous red eyed female and normal eyed male of *Drosophila melanogaster* .
4. What is periderm ? Discuss the process of its formation . [1+3=4]

Or

Describe the types of plants on the basis of photoperiod required for them for flowering and fruiting.

Group C

Give long answers to the following questions:

[8•2=16]

5. Energy is required for every living organism. What is the ultimate source of it ? By which process plants release energy? Explain the mechanism of that energy releasing process which takes place in cytoplasm of the cell with the help of a graphic flow chart. [1+1+3+3=8]
6. What is mutation? Describe its types. [1+7=8]

OR

Give a brief biography of Mendel. Define dihybrid cross and explain the law related to it . [2+1+5=8]

Part –II (Zoology)

Group A

Circle the correct answer from the given alternatives.

(6•1=6)

1. Ciliated epithelium is not found in
a. respiratory tract b. fallopian tube c. vasderence d. vrater
2. Fertilization in frog take place in:
a. uterus b. fallopian tube c. water d. upper part of oviduct
3. Volume of urine is primarily controlled by
a. ADH or Vasopressin b. oxytocin c. ACTH d. growth hormone.
4. Foramen of monro is found in:
a. hip joint b. shoulder joint c. skull d. brain
5. Study of human population is called
a. demography b. chronology c. population science d. census
6. Which one is not an indigenous fish?
a. Grass carp b. Bhakur c. Rohu d. Naini

Group B

Give short answers to following questions.

(4×4 = 16)

1. Describe the internal structure of bones
2. How is coelom formed?

OR

What is the trend of the human population in Nepal?

3. Describe the structure and function of the spinal cord.
4. Define organ transplantation and discuss its different types.

Group C

Long answer questions.

(8×2 = 16)

5. What are communicable diseases? Discuss the causative agents, symptoms, effects and control measures of any one communicable disease you have studied. 2+2+4 = 8
6. Describe the internal structure of the heart with well labeled diagram. 3+5 = 8

Or

Give an account on the process of urine formation in human .

3+5 = 8