



BOARD QUESTION PAPER : JULY 2016

BIOLOGY

Time: 3 Hours

Total Marks: 70

Note:

- i. All questions are compulsory.
- ii. Answers to Section-I and Section-II should be written in **Two Separate** answer books.
- iii. Questions from Section-I attempted in the answer book of Section-II and vice-versa will not be assessed / not be given any credit.
- iv. Draw neat and labelled diagrams wherever necessary.
- v. Figures to the right indicate full marks.
- vi. Answer to every new question must begin on a new page.

SECTION – I**[BOTANY]**

Q.1. Select and write the most appropriate answer from the given alternatives for each sub-question:

[7]

- i. Genotype of human blood group 'O' will be _____.
 (A) $I^A I^A$ (B) $I^A I^B$
 (C) ii (D) $I^A i$
- ii. 'Cry' genes are present in _____.
 (A) *Agrobacterium tumefaciens* (B) *Bacillus thuringiensis*
 (C) *Rhizobium species* (D) *Escherichia coli*
- iii. 'Tropane' is obtained from _____.
 (A) *Daucus carota* (B) *Catharanthus roseus*
 (C) *Datura stramonium* (D) *Mentha piperata*
- iv. Which of the following vitamins is not fat soluble?
 (A) Vitamin A (B) Vitamin B
 (C) Vitamin D (D) Vitamin K
- v. How many meiotic divisions are required to produce 200 seeds?
 (A) 50 (B) 100
 (C) 200 (D) 250
- vi. Energy flow in ecosystem is _____.
 (A) reverse (B) unidirectional
 (C) bidirectional (D) multidirectional
- vii. Endosperm of angiosperm is _____.
 (A) haploid (B) diploid
 (C) triploid (D) tetraploid

Q.2. (A) Answer in 'One' sentence only :

(6)[12]

- i. What is Bacteriophage?
- ii. What is emasculation?
- iii. What is VAM?
- iv. What is the role of decomposers in an ecosystem?
- v. Name any two edible mushrooms.
- vi. What is ecological succession?



- (B) Sketch and label the 'Ultrastructure of Mitochondrion'. (2)
- (C) Answer the following (Any TWO): (4)
- Give the floral adaptations for anemophily.
 - Name any two antibiotics with their microbial source.
 - Describe the formation of helobial endosperm.
 - Give the hazardous effects of agrochemicals.
- Q.3. (A) Answer the following (Any TWO): (6)[9]
- Explain incomplete dominance with suitable example.
 - What are transgenic plants? Explain with any two examples.
 - Explain micropropagation and somatic hybridization.
- (B) Sketch and label stages in development of angiospermic female gametophyte from functional megaspore. (3)
- Q.4. Give the central dogma of protein synthesis. Explain the process of translation. [7]

OR

What is dark reaction in photosynthesis? Describe C_3 Pathway.

SECTION – II

[ZOOLOGY]

- Q.5. Select and write the most appropriate answer from the given alternatives for each sub-question: [7]
- Vermiform appendix is an example of _____ organ.
(A) vestigial (B) homologous
(C) sense (D) analogous
 - In which of the following disorders number of chromosomes present is 47?
(A) Turner's syndrome
(B) Cushing's syndrome
(C) Acquired Immuno - Deficiency Syndrome
(D) Down's syndrome
 - Human blood clotting factor VIII is used to treat _____.
(A) pituitary dwarfism (B) diabetes mellitus
(C) haemophilliacs (D) cystic fibrosis
 - A person suffering from diabetes insipidus shows _____.
(A) hyperglycemia (B) hypoglycemia
(C) polyuria (D) hypertension
 - Photoreceptor cells are present in _____.
(A) blind spot (B) retina
(C) cochlea (D) cornea
 - 'HAART' is suggested for the treatment of _____.
(A) malaria (B) cancer
(C) AIDS (D) high cholesterol level
 - For DNA fingerprinting radioactive probe obtained from _____ is used in India.
(A) Banded Krait (B) King Cobra
(C) Viper (D) Rat snake



- Q.6. (A) Answer in 'One' sentence each:** (6)[9]
- Give any two examples of commensalism.
 - What is the common name of *Apis mellifera*?
 - Which growth hormone is used to enhance dairy productivity?
 - Define Linkage.
 - Name of two classes to which *Archaeopteryx* acts as connecting link.
 - Define the term natality.
- (B)** Sketch and label Malpighian body. (2)
- (C) Attempt any TWO of the following:** (4)
- Enlist any four sequential evolutionary names of human ancestors.
 - Give the significance of transgenic animals for betterment of life.
 - Give the economic importance of lac.
 - Give the fate of mesoderm.
- Q.7. (A) Attempt any TWO of the following:** (6)[9]
- Explain the mechanism of sex determination in birds.
 - Give any two unique features of acquired immunity.
 - With the help of pyramid, describe the growing population.
- (B)** Sketch and label reflex arc. (3)
- Q.8.** Explain the process of early cleavage till the formation of morula. [7]

OR

Describe five types of leucocytes, with the help of diagrams. Add a note on their functions.