

DAY — 10

SEAT NUMBER M

2018 III 06

1100

J - 282

(E)

## BIOLOGY (56)

Time : 3 Hrs.

(7 Pages)

Max. Marks : 70

- Note :**
- (1) All questions are compulsory.
  - (2) Draw neat and labelled diagrams wherever necessary.
  - (3) Figures to the right indicate full marks.
  - (4) Answers to the questions in Section-I and Section-II must be written in two separate answer books.
  - (5) Questions from Section-I attempted in the answer book of Section-II and vice-versa will not be assessed / not be given any credit.
  - (6) Answer to every new question must be started on a new page.

### SECTION – I

#### [BOTANY]

**Q. 1. Select and write the most appropriate answer from the given alternatives (along with its alphabet number) for each sub-question :**

[7]

- (i) The phenotypic ratio of incomplete dominance is \_\_\_\_.
- (a) 1 : 1
  - (b) 3 : 1
  - (c) 1 : 2 : 1
  - (d) 9 : 3 : 3 : 1

[0][2][8][2]

- (ii) Nucleoside is a nucleotide without \_\_\_\_.
- (a) sugar
  - (b) nitrogen base
  - (c) hydrogen bond
  - (d) phosphate group
- (iii) Which of the following is white button mushroom?
- (a) *Agaricus bisporus*
  - (b) *Pleurotus florida*
  - (c) *Volvariella volvacea*
  - (d) *Candida species*
- (iv) Brown rust of wheat is caused by \_\_\_\_.
- (a) viruses
  - (b) bacteria
  - (c) fungi
  - (d) aphids
- (v) The reaction centre of P. S. II is \_\_\_\_.
- (a) Chl-a, 700
  - (b) Chl-a, 680
  - (c) Chl-a, 673
  - (d) Chl-a, 650
- (vi) The enzymes required for synthesis of ATP are located on \_\_\_\_.
- (a) oxysomes
  - (b) cristae
  - (c) matrix
  - (d) ribosomes
- (vii) In a food chain, the herbivores are represented by \_\_\_\_.
- (a) producers
  - (b) primary consumers
  - (c) secondary consumers
  - (d) decomposers

**Q. 2. (A)** Answer each question in 'one' sentence only : **(6) [12]**

- (i) What is leaching?
- (ii) Define chemoautotrophs.
- (iii) Name the cell organelle in which Krebs' cycle occurs.
- (iv) What is 'deforestation'?
- (v) Give the microbial source of Vit. B<sub>12</sub>.
- (vi) What is primary treatment of sewage?

**(B)** Sketch and label a pollen grain of angiosperms. **(2)**

**(C)** Attempt any TWO of the following : **(4)**

- (i) Enlist the basic steps involved in recombinant DNA technology.
- (ii) Give 'two' examples of microbial pesticides with their hosts.
- (iii) Give the significance of respiration.
- (iv) Explain energy pyramid.

**Q. 3. (A)** Attempt any TWO of the following : **(6) [9]**

- (i) With the help of a suitable diagram describe the structure of a nucleosome.
- (ii) Describe the steps of PCR technique.
- (iii) Describe different steps involved in tissue culture technique.

**(B)** Sketch and label T. S. of a leaf showing Kranz anatomy. **(3)**

**Q. 4.** With the help of a neat and labelled diagram describe the development of female gametophyte of angiosperms.

**[7]**

**OR**

Explain “the law of independent assortment” with a suitable example.

**SECTION – II**

**[ZOOLOGY]**

**Q. 5.** Select and write the most appropriate answer from the given alternatives (along with its alphabet number) for each sub-question :

**[7]**

(i) \_\_\_\_\_ is used for desalination of brackish water.

- (a) Reverse osmosis
- (b) Ion-exchange
- (c) Adsorption
- (d) Electrodialysis

(ii) Which of the following is mesodermal in origin?

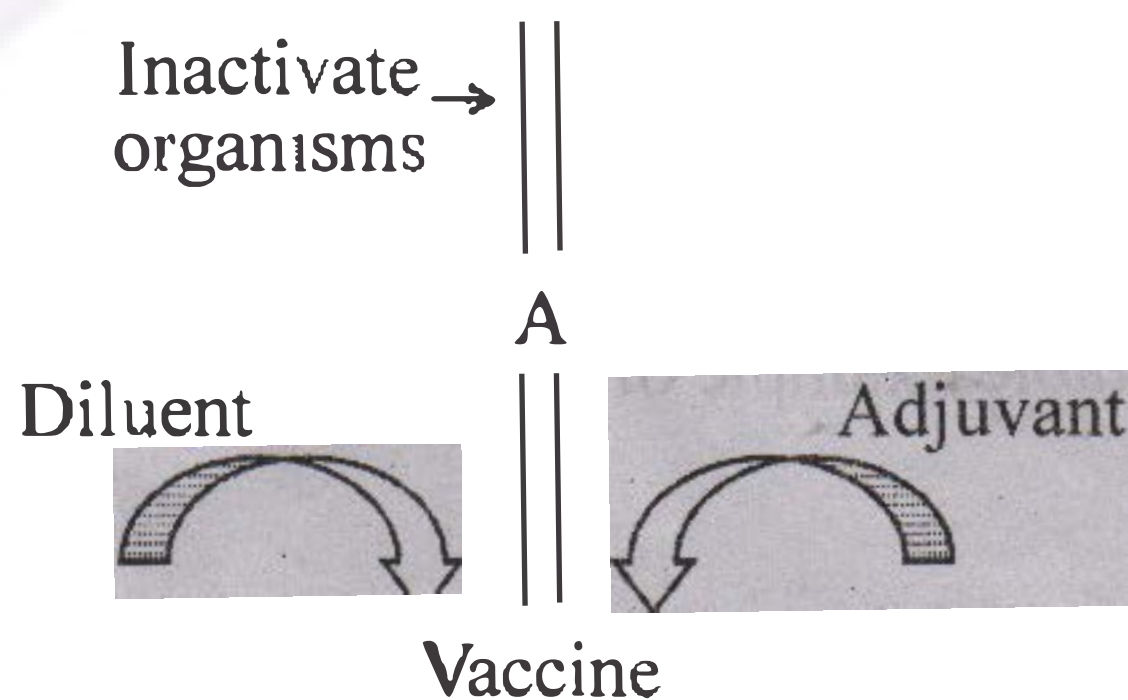
- (a) Retina
- (b) Enamel of teeth
- (c) Heart
- (d) Liver

(iii) \_\_\_\_\_ is an exotic breed of cow.

- (a) Gir
- (b) Sindhi
- (c) Sahiwal
- (d) Jersy



- (iv) \_\_\_\_\_ maintains basic metabolic rate.
- Thyroxine
  - ADH
  - GH
  - Oxytocin
- (v) Which of the following is an example of ZW-ZZ type of mechanism of sex determination?
- Honeybee
  - Fish
  - Bird
  - Human being
- (vi) Transfer of gene between populations that differ genetically from one another is called \_\_\_\_\_.
- Gene mutation
  - Gene flow
  - Genetic drift
  - Genetic recombination
- (vii) In the given diagram of vaccine manufacturing process 'A' is \_\_\_\_\_
- antigen
  - antibody
  - antitoxin
  - antibiotics



**Q. 6. (A)** Answer the following questions in only 'one' sentence each : **[12]**  
(6)

(i) Longer toes and long prehensile tail indicate which adaptation?

(ii) What does 'IUCD' indicate?

(iii) Name the valve between left atrium and left ventricle and give its significance.

(iv) Give the use of bovine growth hormone.

(v) State any 'two' symptoms of Down's syndrome.

(vi) Mention any 'one' skeletal difference between ape and man.

**(B)** Sketch and label structure of Antibody. (2)

**(C)** Attempt any TWO of the following : (4)

(i) Name the causative organism of 'typhoid' and draw its diagram.

(ii) State the economic importance of 'lac culture'.

(iii) 'All organisms produce more young ones'. Comment.

(iv) Describe 'agranulocytes' with the help of diagrams.

**Q. 7. (A)** Attempt any TWO of the following : (6) [9]

(i) Define parasitism and give any 'two' types with suitable example of each.

(ii) Describe the structure of chromosome with a suitable diagram.

(iii) Define 'genomics'. Give any 'two' applications of it.

**(B)** Sketch and label Malpighian body. (3)

**Q. 8.** Describe the histology of 'human testis'. Write a note on human sperm. [7]

**OR**

With the help of a neat and labelled diagram describe the anatomy of 'human eye'. Explain the mechanism of vision.

