

DAY — 10

SEAT NUMBER

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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

- (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. B₁₂.
- (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.

 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.

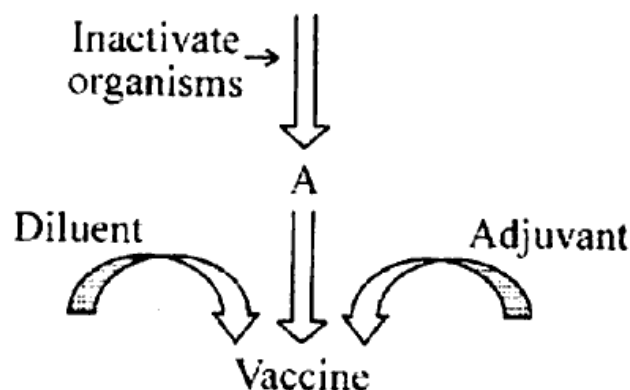
SECTION – II

[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) Jersey

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

