DAY —— 09 SEAT NUMBER

2017	III	10	1100	J-573	(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 alphabets) for each sub-question : **[7]**

(i) The genotype of human blood group B is _____ .

(a) $I^A i$

(b) $I^B i$

(c) $I^A I^A$

(d) ii

(ii) Breakdown of detritus into smaller particles is called _____.

(a) fragmentation
(b) leaching
(c) catabolism
(d) humification

(iii) In *Brassica* (rapeseed, mustard) _____ variety is resistant to Aphids.

(a) *Pusa A-4*
(b) *Pusa Gaurav*
(c) *Pusa Sawni*
(d) *Pusa Shubra*

(iv) The antibiotic chloromycetin is obtained from _____

(a) *Sclerotiana libertine*
(b) *Aspergillus niger*
(c) *Streptomyces griseus*
(d) *Streptomyces venezuelae*

(v) The _____ enzyme is used to cut DNA at specific point.

(a) DNA polymerase
(b) Alkaline phosphatase
(c) restriction endonuclease
(d) DNA ligase

(vi) R. Q. for proteins is about _____ .

(a) 0·7 (b) 0·8
(c) 0·9 (d) 1·0

(vii) Ozone depletion is occuring widely in the stratosphere, it leads to ozone hole caused mainly due to _____ .

(a) ethylene
(b) methane
(c) CFCs
(d) CO_2

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

(i) Give an example of the source of thermostable enzyme DNA polymerase.

(ii) Give an example of the non-edible or poisonous mushroom, studied by you.

(iii) Name the secondary metabolites in *catharanthus roseus*.

(iv) What is meant ~~by~~ ~~ecological~~ succession?

(v) Name the organism and enzyme which bring about alcoholic fermentation of sucrose.

(vi) Enlist any 'two' floral adaptations in *salvia*.

(B) Give schematic representation of carbon cycle. (2)

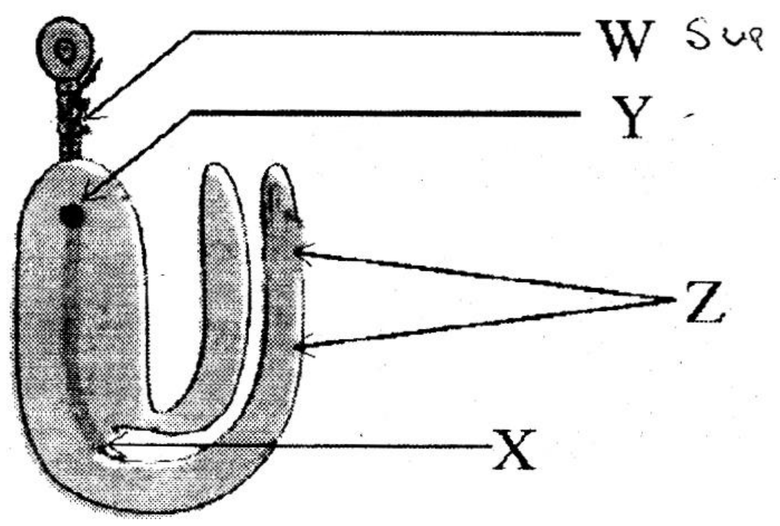
(C) Attempt any <u>TWO</u> of the following : (4)

(i) What is a 'test cross'? Explain significance of a test cross.

(ii) Explain 'Wobble hypothesis' with the help of a suitable diagram.

(iii) What is a 'biopatent'? Explain it with a suitable example.

(iv) Name the parts W, X, Y and Z from the following figure:



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

(i) Explain replication of bacteriophage with the help of a suitable diagram.

(ii) What are 'biofertilizers'? Explain them with suitable examples.

(iii) Differentiate between anemophily and entomophily.

(B) Sketch and label V. S. of mature anatropous ovule. (3)

Q. 4. What is 'photophosphorylation'? Describe non-cyclic photo-phosphorylation with schematic representation. Give its significance. **[7]**

OR

What is 'RNA'? Explain different types of non-genetic RNA with diagrams and functions.

SECTION – II

[ZOOLOGY]

Q. 5. Select and write the most appropriate answer from the given alternatives (along with its alphabets) for each sub-question : **[7]**

(i) Which of the following has normal vision?

(a) Xc Xc

(b) Xc Y

(c) XC Xc

(d) Xc Yc

(ii) In DNA fingerprinting technique, radioactive DNA probe is obtained from _____ of female banded krait snake.

(a) X chromosome

(b) Y chromosome

(c) X and Y chromosomes

(d) autosome

(iii) Abortion in the first trimester of pregnancy may occur due to lack of _____ .

(a) aldosterone

(b) testosterone

(c) oestrogen

(d) progesterone

(iv) _____ contribute about 60% of the total volume of the semen.

(a) Prostate glands

(b) Cowper's glands

(c) Seminal vesicles

(d) Bartholin's glands

(v) Lowering of blood pressure is related with the production of _____ .

(a) ADH

(b) ANF

(c) GH

(d) LH

(vi) Humulin is used to treat _____ .

(a) Diabetes mellitus

(b) Diabetes insipidus

(c) Hepatitis

(d) Nephritis

(vii) The modification of original genetic make-up is focussed by _____ .

(a) PCR

(b) DNA fingerprinting

(c) Electrophoresis

(d) Gene therapy

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

(i) Which material is used for isolation of DNA in fingerprinting technique?

(ii) Give significance of podocyte.

(iii) What is 'commensalism'?

(iv) What is the function of acrosome?

(v) Distinguish between X and Y chromosomes.
(Mention any 'two' points.)

(vi) Give any 'two' examples of endangered species.

(B) Sketch and label the 'Structure of HIV'. (2)

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

(i) Write a note on erythrocytes.

(ii) What are the uses of vaccine?

(iii) Describe the process of budding in *hydra*.

(iv) Name the species used in sericulture. Name the stages in the life cycle of a silk moth in cyclic form.

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

(i) Explain ABO blood group system in human being with a suitable chart.

(ii) Describe diagrammatic representation of age structure showing declining population.

(iii) With the help of a neat and labelled diagram, describe reflex arc.

(B) Sketch and label 'human male reproductive system'. (3)

Q. 8. Enlist human endocrine glands. **[7]**
Describe the T. S. of thyroid gland and add a note on deficiency of thyroxine.

OR

Define 'evolution'. Give the principles of Darwin's theory of natural selection. Mention any 'one' objection to it.

◆◆◆