

2016

BOTANY

[Honours]

PAPER – I

Full Marks : 90

Time : 4 hours

*The figures in the right hand margin indicate marks
Candidates are required to give their answers in their
own words as far as practicable*

Illustrate the answers wherever necessary

[NEW SYLLABUS]

GROUP – A

1. Answer any ten questions of the following : 2 × 10
 - (a) What is regma ? Cite an example.
 - (b) Write the full form of HIV and AIDS.

- (c) What is Kelp ? State its importance.
- (d) Define triphasic life cycle in algae. Give an example.
- (e) What is Buller's phenomenon ?
- (f) What is stylopodium ? Where do you find it.
- (g) Define episome.
- (h) What is diauxic growth ?
- (i) Why members of Deuteromycotina are also called Fungi imperfecti ?
- (j) Mention the pigment and reserve food of Bacillario phyceae.
- (k) How can you distinguish synergids from the egg ?
- (l) What is the nature of Vexillary aestivation ? Cite an example.

- (m) Name an algae causing disease in plants.
- (n) Distinguish an Archaeobacterium from a Eubacterium.
- (o) What are predaceous fungi? Give one example.

GROUP – B

Answer any five questions of the following : 8×5

2. Differentiate between (any two) of the following : 4×2
- (i) Mesosomes and Magnetosomes ;
 - (ii) Biological Control and Chemical control ;
 - (iii) Causal complex and disease syndrome ; and
 - (iv) Gongosira stage and Palmella stage.
3. (a) Describe the post fertilization changes in *Polysiphonia*. 4
- (b) With a labelled diagram describe the structure of a T_4 bacteriophage. 4

4. Draw the labelled diagrams of the following
(any four) : 2 × 4

(a) Nucule of *Chara* ;

(b) Sex organs in *Vaucheria* ;

(c) Pencillus of *Penicillium* ;

(d) Basidiocarp of *Agaricus*

(e) Quincuncial and imbricate aestivation ; and

(f) Structure of a pollinia.

5. Comment on (any two) the following : 4 × 2

(a) Nature of Viruses. (living or nonliving) ;

(b) Similarities of Blue green algae to
Bacteria ;

(c) Morphological feature of *Vaucheria* ; and

(d) Role of toxins in pathogenesis.

6. Describe with suitable examples the different
types of cohesion and of adhesion of stamens. 8

7. Write short notes on (any two) : 4 × 2
- (i) Parasexual cycle ;
- (ii) Koch's postulate
- (iii) Types of Ovules in angiosperms ; and
- (iv) Role of microbes in nitrogen cycle.
8. What is heteromorphic alternation of generation ? Explain the phenomenon in context with the life cycle of *Laminaria* ? 2 + 6
9. Give the scientific name of the fungi responsible for 'Ergot disease' of Rye. What is 'honey dew' stage ? Why has it been so named ? Name two alkaloids produced by this fungi. 1 + 4 + 2 + 1

GROUP – C

Answer any two questions of the following : 15 × 2

10. What does 'Gram staining' mean ? How is the cell wall of a Gram positive bacteria different from that of a Gram negative one ? State why a gram negative bacteria can not retain the stain. 4 + 8 + 3

11. With examples give an account of the dispersal of seeds and fruits and mention the different contrivances of their dispersal. 9 + 6

12. What is blight? Name the causal organism of Late blight of potato. Write down the symptoms, disease cycle and control measures of the disease. Is late blight an epiphytotic disease? Explain. 2 + 1 + (3 + 3 + 4) + 2

13. (a) Mention the economic and ecological significance of Lichen. 5

(b) Give the generic name of an alga or the fungus studied by you that has the following characters : $\frac{1}{2} \times 10$

(i) Synzoospore ;

(ii) Trumpet hyphae ;

(iii) Papulospore ;

(iv) Cleistothecium ;

(v) Cap cell ;

(vi) Cystocarp ;

- (vii) Gonimoblast filaments ;
- (viii) Sclerotium ;
- (ix) Plurilocular sporangium ; and
- (x) Stolon.

(c) Answer the following : 1 + 2 + 2

- (i) Name one prokaryotic algae producing akinetes
 - (ii) What does it mean by Gynandrosporous and Idioandrosporus filaments ?
 - (iii) Why is *Chara* called a 'stone wart' ?
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