

**OLD**

**2015**

**Part-I 3-Tier**

**BOTANY**

**PAPER—I**

**(Honours)**

*Full Marks : 90*

*Time : 4 Hours*

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**Group—A**

1. Answer any ten questions of the following : 2×10
  - (a) Write down the name of causal organism of 'tikka disease of ground nut' and 'bacterial blight of rice'.
  - (b) Write down two spere characters of *Alternaria* Sp.
  - (c) What are isometric & anisometric viruses ?

*(Turn Over)*

- (d) Write down two uses of citric acid.
- (e) Give example of two toxic cyanophytes.
- (f) Write down two unique properties of myxomycetes.
- (g) Mention two economic importances of actinobacteria.
- (h) What is 'fairy ring'?
- (i) What are the properties of an ideal fungicide?
- (j) What is synzoospore? Where is its seen?
- (k) Who proposed five kingdom concept? Mention position of bacteria in this classification system.
- (l) What is meant by the term by algal bloom?
- (m) What are trumpet hyphae and blepharoplast?
- (n) What is Helotism?
- (o) Name the microbes involved in cheese & vinegar production.

### Group—B

2. Answer any *five* questions : 5×8.

- (a) Explain different phases of a bacterial growth curve in batch culture with proper diagram. Why does the lag and stationary phase remain parallel to the x-axis in a bacterial growth curve? (5+1)+2

- (b) Mention different classes of immunoglobulins. Write down the structure of an immunoglobulin with suitable diagram. 3+(3+2)
- (c) Describe the mode of action of tetracycline and chloramphenicol. 4+4
- (d) Draw and describe vegetative structure of a member of bacillariophyta. Mention the uses of diatomite? (2+4)+2
- (e) Write notes on :
- (i) Structure of HIV ;
- (ii) Actinomycetes. 4+4
- (f) Classify fungi as per Ainsworth (1973) upto subdivisions with characters and examples. 8
- (g) What is auxospore? Describe with diagram the two processes of auxospore formation in permales. 2+3+3
- (h) What is meant by the term 'host-parasite interaction'? How does a pathogen infect a host? 2+6

### Group—C

3. Answer any two questions : 2×15
- (a) Draw and describe life cycle of *Vaucheria*. Write a note on evolution of sex in algae. 4+4+7

(b) Write short notes on (any three) :

(i) Heterocyst ;

(ii) Parasexuality ;

(iii) Bacterial capsule ;

(iv) Rice tungro virus ;

(v) Mushroom cultivation.

5×3

(c) (i) What is plasmid? What are the different types of plasmid found in bacteria?

(ii) What is horizontal gene transfer in bacteria? Write down the transformation mechanism of *Streptococcus pneumoniae* in detail.

(2+4)+(2+7)

(d) (i) What is somatogamy? Write an essay on heterothallism?

2+5

(ii) Name the host, pathogen & disease cycle of black stem rust of wheat.

2+1+5

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