

M.Sc. 2nd Semester Examination, 2011

MICROBIOLOGY

PAPER—VII

Full Marks : 40

Time : 2 hours

Answer any two questions from each Group

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

GROUP—A

[Marks : 20]

Answer any two questions

1. (a) What do you mean by virulence of a pathogen ?
Dimorphic nature of fungi helps in pathogenesis ? Explain.

(b) Give two example of adhesin factors of particular pathogen.

(c) Classify bacterial exotoxins according to their mode of action.

(d) Briefly describe the stages of infectious disease. (1 + 2) + 1 + 2 + 4

2. (a) Distinguish between *T*-dependent and *T*-independent antigens.

(b) Discuss the role of toll like receptors (TLR) for recognition of microbial antigens in innate immunity.

(c) Describe the biological effects of complements.

(d) What is mixed lymphocyte culture? How it helps in the detection of HLA antigens with reference to transplantation? 2 + 3 + 2 + 3

3. Write short notes (any *four*) : $2\frac{1}{2} \times 4$

(i) Cellular damages during viral infection

(ii) Hypervariable regions of antibody

(iii) Sandwich ELISA

(iv) Pernicious anemia

(v) Graves disease

(vi) Immuno-suppressive drugs.

GROUP—B

[Marks : 20]

Answer any *two* questions

4. (a) In T_4 Viral replication how unique pyrimidine is formed and state its role in the protection of viral DNA from attack by host-restriction enzyme.

(b) Give an idea about viral envelopes and their composition.

5 + 5

5. Write notes on :

3 + 3 + 4

(i) Prions

(ii) Cultivation of animal viruses

(iii) Interferon.

6. (a) Name a disease caused by a plant virus and indicate its role in affecting the susceptible crop.

(b) How the nature of viral genome could be identified and its titre could be determined. 5 + 5