

M.Sc. 3rd Semester Examination, 2013

HUMAN PHYSIOLOGY

PAPER – PHY- 302

Full Marks : 40

Time : 2 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

UNIT –27

Answer any two questions from the following :

1. (a) What is peptidoglycan? What is its importance?
(b) Differentiate cell wall structure of Gm + ve and Gm – ve bacteria.

(Turn Over)

(2)

- (c) Classify bacteria according to the flagellar arrangement. (3 + 2) + 3 + 2
2. (a) What is chemically defined media ?
- (b) Describe selective media and enrichment media.
- (c) What are the special techniques adopted for culturing bacteria requiring increased CO₂ concentration ?
- (d) What are acidophiles? $3 + \left(1\frac{1}{2} + 1\frac{1}{2}\right) + 2 + 2$
3. (a) What is AIDS ?
- (b) How does HIV infection cause low level of CD4⁺ T-cells ?
- (c) Discuss in brief the structural characteristics of HIV. 2 + 3 + 5
4. (a) Discuss the mode of action of one antibiotic who acts as inhibitor of protein synthesis.

- (b) Give an account of the underlying mechanisms responsible for development of resistant bacteria towards antibiotics and reasons behind that.

3 + (4 + 3)

UNIT – 28

Answer any two questions from the following :

1. (a) What are the forces involved in Ag-Ab interactions.
 - (b) Draw the different receptors present on the surface of the B-cell and mention their functions.
 - (c) What advantage might there be in having a variety of different antibody classes? 2 + 4 + 4
2. (a) Describe the classical pathway of the complement system with suitable diagram.
 - (b) Write the immunological functions of the following:
 - (i) T-helper cell
 - (ii) Macrophage.

5 + $\left(2\frac{1}{2} + 2\frac{1}{2}\right)$

(4)

3. (a) What is O.D.D. technique ?

(b) How can you prepare monoclonal antibodies in laboratory and mention their importance. 10

4. Write short notes on :

5 × 2

(i) ELISA

(ii) Graves' disease.
