

2016

M.Sc.

3rd Semester Examination

HUMAN PHYSIOLOGY

PAPER—PHY-302

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

(Unit—27)

Answer all questions from the following :

1. (a) Give an account of taxonomic kingdoms of life mentioning the basis for such classification.

(Turn Over)

(b) What is 'Pure Culture'?

(c) What is 'Serotype'?

3+1+1

Or

(a) Write in brief about the Baltimore Classification of Viruses.

(b) Write down the importance of bacterial capsule.

(c) What is LPS?

2+2+1

2. (a) What is differential media? Give an example.

(b) Write briefly on culture requirements of Capnophiles.

(c) What is assay media?

(1+1)+2+1

Or

(a) Mention the several classes of bacteria depending on their preference for oxygen during growth.

(b) Discuss the underlying mechanism for oxygen toxicity in obligate anaerobes.

(c) Write down the mechanism of UV radiation mediated damage to microbes. 2+2+1

3. (a) What are antibiotics? Name one natural and one semi-synthetic antibiotics.

(b) Mention the criteria of antibiotics to be considered as chemotherapeutic agent.

(c) What is therapeutic Index of antibiotics?

(1+1)+2+1

Or

(a) Write in brief about the mode of action of aminoglycosides.

(b) What are antimetabolite antibiotics?

(c) Mention the important biochemical targets for antifungal chemotherapy. 2+1 $\frac{1}{2}$ +1 $\frac{1}{2}$

4. (a) Write down the mechanisms of HIV mediated low level of CD4⁺ T cells.

- (b) Write down the importance of Env protein of HIV.
- (c) Give a brief account of Reverse Transcription and Integration phase of HIV life cycle. 2+1+2

Or

- (a) Mention two important characteristics of Plasmodium.
- (b) Discuss in brief the erythrocytic stage of life cycle of malarial parasite.
- (c) What is hemozoin ?
- (d) What are transgenic mosquitoes? 1+2+1+1

(Unit—28)

Answer all questions from the following :

1. Write down the functions of Lymphoid organ in immune system. 5

Or

4. Describe the process of MAB production and its importance in research and diagnostics. 4+1

Or

Write short notes on SRID and ODD.

$2\frac{1}{2} + 2\frac{1}{2}$

(a) Differentiate between adjuvants and haptens. 5

(b) Describe the landmark discovery in immunology made by Jenner and Pasteur. 2+3

2. Draw the different markers present on the surface of T-cells and mention their functions. 3+2

Or

What are CDR regions located on an antibody molecule and what are their importance in immunological functions? $2\frac{1}{2} + 2\frac{1}{2}$

3. Discuss the immunological functions of IFN γ . 5

Or

What do you mean by MHC restriction? Where are the most polymorphic amino acid residues located? Explain your answer with suitable diagram. 2+3