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PG/MIS/H. PHY-302/15

M.Sc. 3rd Semester Examination, 2015

HUMAN PHYSIOLOGY

PAPER – H.PHY-302 (Unit-27 & 28)

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

Write the answers to questions of each Unit in separate books

UNIT—27

Answer all questions

1. (a) Describe in brief the major features of Archaea along with their differences with Bacteria.

(b) What is ribotyping ? (2+2)+1

(Turn Over)

(2)

Or

- (a) What is pilli ? Write down its significance.
- (b) Mention two major features of Gm -ve bacteria that differentiate them from Gm +ve bacteria. (1+2)+2
2. (a) Differentiate chemically defined media and complex media used in microbial culture.
- (b) Write down the importance of selective media with an example. $(1\frac{1}{2} + 1\frac{1}{2}) + 2$

Or

- (a) Mention the classification of bacteria according to their temperature preferences for survival.
- (b) State the physiological and structural adaptations in bacteria in relation to their temperature preferences.
- (c) Name one special culture technique for a fastidious bacteria 2+2+1

(3)

3. (a) Classify antibiotics in relation to their mechanisms of action giving examples of each class.
- (b) Mention two possible alternatives to antibiotic therapy.
- (c) Discuss in brief the mode of action of one antifungal agent. $2+1+2$

Or

- (a) Discuss in brief the underlying mechanisms for bacterial resistance development.
- (b) Mention two major bacterial species involved in Yoghurt preparation along with the underlying physico-chemical mechanism involved in it. $3\frac{1}{2}+1\frac{1}{2}$
4. (a) Give a brief account of HIV-1 genome.
- (b) Mention the role of Reverse transcriptase and Integrase in HIV-1 infection.
- (c) State the major modes of transmission of HIV. $(2+2)+1$

(4)

Or

(a) Discuss in brief the pathogenicity of *Plasmodium falciparum* with special emphasis on Rosette formation.

(b) What are brady-sporozoites ? 4 + 1

UNIT-28

Answer **all** questions

1. Write down the functions of Macrophage in immune system. 5

Or

Write short notes on : $2\frac{1}{2} + 2\frac{1}{2}$

(i) Natural killer cell (NK cell)

(ii) Secondary lymphoid organs.

2. Draw the different receptors present on the surface of the B-cells and mention their functions. 5

(5)

Or

How complements are activated by the three pathways? 5

3. What is anaphylaxis? Write in brief the mechanism of mast cell degranulation. 1+4

Or

Discuss the dose-dependant functions of Tumor nurosis factor (TNF). 5

4. Describe the immunological titre and prozone. 5

Or

Write short notes on different types of ELISA. 5