

**Total Pages—5 PG/IIIS/PHY/302.1 & 302.2/24**

**M.Sc. 3rd Semester Examination, 2024**

**PHYSIOLOGY**

*( Human Physiology )*

**PAPER — PHY-302.1 & 302.2**

*Full Marks : 50*

*Time : 2 hours*

**Answer all questions**

*The figures in the right hand margin indicate marks*

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

**PAPER : PHY-302.1**

**GROUP — A**

**Answer any two questions from the following :**

$2 \times 2 = 4$

- 1. Write a brief note on lipopolysaccharides. 2**

*( Turn Over )*

( 2 )

2. What is assay media ? 2
3. What is the importance of pilus in bacteria ? 2
4. What is known as rosetting ? 2

**GROUP – B**

Answer any **two** questions from the following :

4 × 2 = 8

5. State the five-kingdom classification of life by R.H. Whittaker along with the basis of such classification. 4
6. Write down the structural features of bacterial flagella along with its functions. 3 + 1
7. What is meant by '+' ss RNA virus ? How does it differ from '-' ss RNA virus ? Give examples of each of them. 2 + 1 + 1
8. Classify bacteria, based on their preferences of temperatures for survival. Mention one feature of bacteria surviving at lower temperatures. 3 + 1

( 3 )

GROUP – C

Answer any **one** question from the following :

- 8 × 1 = 8
9. What is selective media ? Explain with an example. Name one medium that acts both as selective and differential medium. Write down one example of special culture technique of bacteria. 5 + 2 + 1
10. Define antibiotics. Mention the major features of antibiotics for being qualified as chemotherapeutic agents ? What are beta-lactam antibiotics ? 2 + 5 + 1

PAPER : PHY-302.2

GROUP – A

Answer any **two** questions from the following :

- 2 × 2 = 4
11. What is Isotypic determinants ? 2
12. Antigenic specificity is one of the characteristics of adaptive immunity. What are the other characteristics ? 2

- 13. Mention the relationship among the CDs, MHC molecules and T-cell types to induce the immunogenic reaction.** 2
- 14. Distinguish between affinity and avidity of antibody.** 2

**GROUP – B**

Answer any **two** questions from the following :

4 × 2 = 8

- 15. With relevant diagram(s) write briefly on the maturation and clonal selection of B-lymphocytes. With an example define graft-versus-host disease.** 3 + 1
- 16. Describe different types of agglutination tests with proper examples.** 4
- 17. State the procedures of antigen measuring system of Sandwich ELISA assay. Mention the applications of ELISA.** 3 + 1

( 5 )

- 18.** How lymph forms ? Write about the sequence of events which leads to allergic response. Mention the specific similarity between the DiGeorge's syndrome and the nude mice.

1 + 2 + 1

**GROUP – C**

Answer any **one** question from the following :

8 × 1 = 8

- 19.** What is the germinal center in the secondary lymphoid organ ? What is the thymus-dependent and thymus independent area of a lymph node ? Why it is said so ? What are the differences between the class-I and class-II MHC molecules ? Why autoimmune diseases develop ?

1 + 1 + 1 + 3 + 2

- 20.** Describe the structure of the variable region of immunoglobulins. State the structure, properties and SIgA transport (transcytosis) mechanism of immunoglobulin A. 2 + 2 + 2 + 2

**[ Internal Assessment -- 10 Marks ]**

