

Human Physiology(P.G.)**[CBCS]****M.Sc. Third Semester End Examination-2024****(Regular & Supplementary Paper)****PAPER-PHY-303****Full Marks: 40****Time: 02 Hrs***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.****(Use separate answer script for each unit)*****Unit – 27****[Marks – 20]****[Endocrinology and reproductive physiology]****1. Answer any two questions of the following: . 2x2=4**

- a. What is xenobiotics? 2
- b. State the importance of normal microbial flora in humans. 2
- c. What are chemolithotroph? Give an example. 2+2
- d. What are Nif genes? 2

2. Answer any two questions of the following: 2x4= 8

- a. What is meant by ecological niche? Briefly discuss the traditional and molecular techniques involved in microbial ecology studies. 1+3

(2)

- b. Explain the four phases of fermentation in brief. 1+3
- c. What are microbial flora? Where in human body the normal flora are found commonly? 2+2
- d. What is microbial leaching? Write a short note on bioremediation. 1+3
3. Answer any one question of the following: 1x8=8
- a. Why is the carbon cycle important? Describe in details the carbon cycle with schematic flow diagram. What is quorum sensing? 2+4+2
- b. What is denitrification? Give an example of nitrogen fixing bacteria. Briefly discuss the steps of nitrogen fixation. 2+1+5

Unit – 28

[Marks – 20]

[Cellular and Molecular Immunology]

1. Answer any two questions of the following: 2x2=4
- a. Write down the structure of immunoglobulin super family. 2
- b. What is meant by Immunologic Tolerance? 2
- c. Write down the physiological significance of class switching. 2
- d. What is death receptor? 2

(3)

2. Answer any two questions of the following: 2x4= 8
- a. Draw and describe the structure of TCR. 4
- b. Discuss the positive and negative selection in T cell maturation. 4
- c. How is the antigen processed and presented in class II MHC? 4
- d. State the significance of co-stimulatory signals. What are death receptors? 2+2
3. Answer any one question of the following: 1x8=8
- a. Describe in brief the process of B cell development Draw and explain the structure of B cell co-receptor complex. Discuss in brief the process of macrophage activation. 3+3+2
- b. Describe the genetic basis of antibody diversity with a suitable diagram. What is the physiological significance of antibody diversity?
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