Human Physiology(P.G.)

[CBCS]

M.Sc. Second Semester End Examination-2024

(Regular & Supplementary Paper)

PAPER- PHY-202

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 – 15
[Marks – 20]
[Advance Microbial Studies]

1. Answer any two questions of the following: 2x2=4

a. Write down any two applications of a Biofermentor.

b. Differentiate between microaerophillic and facultative anaerobic bacteria.

c. How do microorganisms serve as biological tools in food industry?

d. Name one anti fungal agent with its mode of action.

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

a. State the mode of pathogenesis of HIV along with its interaction with target cell. 4

b. What is meant by microbial resistance and sensitivity towards an antibiotic? State with example. 2+2

c. What is humus? Name two denitrifying bacteria. 2+2

d. What is meant by Enrichment media? Give two examples. 2+2

3. Answer any one question of the following: 1x8=8

a. Discuss the basic requirements of an ideal bacterial growth. Describe the methods commonly used for measuring the bacterial growth. 4+4

b. Describe the upstream process of fermentation. Write down two health benefits of a fermented food. Name two food spoilage bacteria. 4+2+1

Unit – 16
[Marks – 20]
[Advance Studies in Applied Biotechnology & molecular Pharmacology]

1. Answer any two questions of the following: 2x2=4

a. What is GMO? Give an example. 1+1

b. What is meant by intracellular trafficking? 2

c. What is the role of Taq DNA Polymerase? What is the source of the enzyme? 1+1

d. What is bioremediation? 2

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

a. What are restriction enzymes and restriction sites? What is the

difference between sticky and blunt ends? Why are sticky ends better? 2+1+1

b. What is PCR? Briefly discuss the major steps in PCR. How many numbers of cycles is usually carried out in PCR? 1+2+1

c. What is programmed cell death? Mention the role of mitochondria in it. 1+3

d. Define stem cells. Explain the unique properties of stem cells. 1+3

3. Answer any one question of the following: 1x8=8

a. What is the most commonly used microorganism for ethanol production? Describe in detail with a schematic representation, the ethanol production by fermentation. 2+6

b. What is cloning? Discuss in detail the cloning procedure in animals. 2+6
