

**Zoology (P.G.)**

**[CBCS]**

**M.Sc. Second Semester End Examination-2024**

**(Regular & Supplementary Paper)**

**PAPER- ZOO-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 group)*

**Group A**

**Marks 20**

**(Biophysics)**

1. Answer any two questions of the following: 2x2= 4
  - a. Write down the difference between laminar and turbulent blood flow.
  - b. What is imbibition? Give an example.
  - c. What is flippase and floppase?
  - d. Write down the working principle of fluorescence microscope.

(2)

2. Answer any two questions of the following:  $2 \times 4 = 8$
- Write about on Brownian movement and Tyndall effect.
  - Write a short note on FRAP.
  - Explain the interrelationship between OP, TP, WP and DPD.
  - Write down the reflex at baroreceptors in low and high blood pressure.
3. Answer any one question of the following:  $1 \times 8 = 8$
- Define isosmotic solution. Describe the process survive by which fresh water teleost fish can survive in hypertonic lotic water and marine teleost in hypertonic sea water?  $2+6$
  - What are the advantages of using TEM over light microscope? Give reasons. Write down the sample preparation and staining procedure for TEM.  $4+(2+2)$

**Group B**

**Marks 20**

**(Biochemistry)**

4. Answer any two questions of the following:  $2 \times 2 = 4$
- Difference between motif and domain.
  - What is redox potential? How is it measured?
  - How is ammonia detoxified in urea cycle?
  - What are the sites of W-oxidation and  $\alpha$  - oxidation?

(3)

5. Answer any two questions of the following:  $2 \times 4 = 8$
- Describe the biosynthetic pathways of catecholamines in the human brain.
  - How proteins are purified by affinity chromatography?
  - Calculate total ATP yield during beta oxidation of one molecule palmitic acid (16C)
  - i) What is gel filtration chromatography? Describe the role of pH gradient in isoelectric focusing.
6. Answer any one question of the following:  $1 \times 8 = 8$
- i) What in the role of the alternative oxidase (AOX) pathway in the ETC.  
ii) Describe the process of transamination and its type.  $4+4$
  - i) Explain the rate limiting steps in pentose phosphate pathway.  
ii) Write biochemical pathways of gluconeogenesis from any three substrates.  $3+5$
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