

B.Sc. Semester-II Examination, 2022-23**ZOOLOGY [Honours]**

Course ID : 22612 Course Code : SH/ZOO/202/C-4

Course Title : Cell-Biology

Time : 1 Hour 15 Minutes Full Marks : 25

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **five** of the following questions:

1×5=5

- a) Decode the name “Caspase”.
- b) What is “fluid” and what is “mosaic” in the fluid mosaic model of Plasma membrane?
- c) State the significance of NADH regarding proton motive force?
- d) Differentiate between primary active transport and secondary active transport.
- e) Why the process of ATP synthesis in mitochondria is named as oxidative phosphorylation?

f) Name the organelle which is called as “Suicidal bag”

g) What is membrane blebbing?

h) What is the significance of Hayflick’s Limit ?

2. Answer any **two** from the following: 5×2=10

a) Name one stabilizing and one destabilizing accessory protein of microtubules. Discuss briefly the role of kinesin as '+' directed cytosolic motor. 2+3

b) Differentiate between tight junction and gap junction. What is symporter protein? Give an example. State the function of GLUT-5. 2+2+1

c) With a suitable flowchart explain the extrinsic pathway of apoptosis. What is flip-flop movement of plasma membrane lipid? 4+1

d) What is limit of resolution in optical microscope ? What do you mean by 150X magnification of a compound microscope? State the basic differences between SEM and TEM. 2+1+2

3. Answer any **one** of the following question:

10×1=10

- a) How retinoblastoma formation supports the Knudson's two hit model? "p53 is the guardian of genome"- backup this statement with a suitable logic. 5+5
- b) Write down the various check points of cell cycle . State the role of cyclin- cdk complex of check point in cell cycle regulation . 2+8
