

U.G. 2nd Semester Examination - 2022**ZOOLOGY****[HONOURS]****Course Code : BZOCCCHC 202****Course Title : Cell Biology**

Full Marks : 30

Time : 2 Hours

*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 **ten** of the following: $1 \times 10 = 10$
- Why mycoplasma naturally resistant to antibiotics?
 - What is pericentriolar material?
 - What is the main difference between viroid and virusoid?
 - Mention the role of cytochrome C in electron transport chain?
 - What is NOR?
 - Name the essential part of a peptide that helps in nuclear transport.

- Name one glycoprotein that mediate Ca^{2+} dependent cell-cell adhesion.
 - Define MPF in cell cycle and its significance.
 - What is zona occludens?
 - What do you mean by treadmilling function of actin filaments?
 - Name the tumor-suppressor gene that leads to childhood eye cancer, if mutated.
 - Mention the significance of Wee 1 in yeast.
 - Which part of a nascent polypeptide first binds to the cytosolic surface of endoplasmic reticulum?
 - Name one trans membrane glycoprotein.
 - What are death receptors?
2. Answer any **five** of the following : $2 \times 5 = 10$
- Write down the structure of GPCR.
 - What is calmodulin and CREB?
 - Briefly describe the intermediate filament.
 - Write down the contribution of succinate dehydrogenase in energy production.
 - Why does lysosomes maintained a low pH?

- f) Which typically lasts longer, interphase or mitotic phase and why?
- g) Draw and label the picture of anaphase-II stage of a dividing cell along with its chromosomal distribution?
- h) Provide the steps of a generalised MAP kinase cascade?

3. Answer any **two** of the following: $5 \times 2 = 10$

- a) Describe the intrinsic pathway of apoptosis with suitable diagram.
- b) Write down the role of cAMP in glycogen metabolism. Briefly describe the role of CDK's during cell cycle progression. $2+3$
- c) What is nuclear pore complex? Differentiate between active and passive transport. Write down the Chemiosmotic hypothesis of ATP production. $1+2+2$
