

**U.G. 2nd Semester Examination - 2022****ZOOLOGY****[HONOURS]****Course Code : ZOOL-H-CC-T-04****(Cell Biology)**

Full Marks : 40

Time :  $2\frac{1}{2}$  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 **five** questions:  $2 \times 5 = 10$ 

- i) Difference between flippase, floppase.
- ii) Difference between simple diffusion and facilitated diffusion.
- iii) Difference between gap junction and tight junction.
- iv) What do you mean by KDEL sequence?
- v) Define apoptosis. Mention the function of Apaf 1.
- vi) Role of anti-apoptotic gene in cancer progression.

vii) Difference between juxtacrine and paracrine signalling.

viii) Role of PKA in GPCR pathway.

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

- i) Describe the mechanism of TIM and TOM pathway of mitochondria. 5
- ii) Write down the process of intrinsic pathway of apoptosis. Mention the role of Perforin and Granzyme.  $3 + 2 = 5$
- iii) How many helix present in G-protein? How does GPCR hyper active through cholera toxin? What do you mean by orphan receptor?  $1 + 3 + 1 = 5$
- iv) Difference between oncogene and tumor suppressor gene. What do you mean by angiogenesis? Define metastasis.  $3 + 1 + 1 = 5$

3. Answer any **two** questions of the following: $10 \times 2 = 20$ 

- i) Give a brief description on fluid mosaic model of plasma membrane. Write a short note on asymmetrical nature of plasma membrane.

*[Turn over]*

Difference between active and passive transport.  $5+2+3=10$

ii) Describe the activation process of MPF. How does Separase become activate? Mention its role. Describe the mechanism of spindle assemblage check point.  $3+2+1+4=10$

iii) Write a short note on Burkitt's lymphoma. What do you mean by two hit hypothesis? Describe it with reference to Retinoblastoma. How does 'Warburg effect' act as hallmark of cancer? Mention the characteristics of cancer cell.  $2+1+3+2+2=10$

iv) What do you mean by primary messenger? Describe the mechanism of co-translational translocation initiated by GTP hydrolyzing protein. Write a short note on IP3 or DAG act as second messenger in GPCR. How does glycogen metabolism occur through GPCR?  $1+3+3+3=10$

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