U.G. 2nd Semester Examination - 2022

Molecular Biology & Biotechnology

[HONOURS]

Course Code : MBBT-H-201-T-CCR-3

(Mammalian Physiology)

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: 2×5=10

   a) Illustrate chloride shift with diagram.

   b) Name two catecholamine hormones. Mention their functions.

   c) Differentiate between isotonic and isometric contraction.

   d) Explain haemopoiesis with examples.

   e) Between Intrinsic and Extrinsic pathway of blood coagulation, which pathway is longer and why?

   f) Mention the location and function of goblet cells and parietal cells.

   g) Describe the structure and function of chemical synapse.

   h) Name two plasma proteins. How are they synthesized?

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

   a) Distinguish between the mechanism of action of water-soluble and fat-soluble hormones.

   b) Comment on the role of bile in digestion of fats. How are bile pigments formed? 4+1

   c) How does D-2,3-bisphosphoglycerate (BPG) affect O_2 binding affinity of Hemoglobin? Explain.

   d) Write a note on origin and conduction of heart beat. What is natural pacemaker? 3+2

3. Answer any **two** from the following questions : 10×2=20

   a) Hemoglobin binds oxygen cooperatively. —Explain. What is Bohr Effect? 6+4

   b) Distinguish between nervous and endocrine control. With diagram, illustrate the structure and function of hypothalamo- hypophysial tract. 4+6

c) Describe Renin - Angiotensin - Aldosterone System. Comment on the role of antidiuretic hormone in controlling kidney function. 6+4

d) What is action potential? What is all–or–none rule? Nerve impulse propagates in a specific direction.—Why? 3+3+4

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