KJ-455

M.Sc. (Chemistry)

3rd Semester Examination, June, 2020

Paper - II

Chemistry of Biomolecules

Time : Three Hours] [*Maximum Marks* : 80

Note : Answer **all** questions. The figures in the right-hand margin indicate marks.

Unit-I

1. (*a*) How is ATP synthesized from ADP ? 8

(*b*) Discuss the mechanism of exergonic and endergonic process. 12

OR

(*a*) What are cytochromes ? Classify them on the basis of their structure and absorption of light. 8

(*b*) Discuss the structure and biological function of haemoglobin. 12

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Unit-II

2. Write notes on the following :

(*a*) Chiral recognition and catalysis 12

(*b*) Molecular symmetry 8

OR

Explain the structure and enzymatic activity of xanthine oxidase and cytochrome P-450. 20

Unit-III

3. (*a*) Describe Fischer's key-lock mechanism related with enzyme reaction. Give suitable examples. 10

(*b*) What are enzyme regulators and inhibitors ? 5

(*c*) Write a note on vitamin-B_{12}. 5

OR

(*a*) Explain the effect of immobilization of enzymes. 10

(*b*) Explain the structure and biological function of coenzyme A. 10

Unit-IV

4. (*a*) Write notes on the following : 12

(*i*) Osmotic pressure

(*ii*) Membrane equilibrium

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(*b*) Explain the forces in biopolymer interaction. 8

OR

(*a*) Discuss the mechanism of ion transport through cell membrane. 12

(*b*) Explain the various types of binding processes in biological system. 8

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