

S. Y. B. SC. (BIOTECHNOLOGY) SEM – III (2010 COURSE) :

WINTER - 2017

SUBJECT: BIOCHEMISTRY –II

Day: Friday  
Date: 03/11/2017

W-2017-0953

Time: 10.00 AM TO 01.00 PM  
Max. Marks: 80

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION-I

- Q.1** A) Attempt any **ONE** of the following: (06)
- i) Describe the cellular location of glycolysis and various reactions involved in it.
  - ii) Give the structure of ATP and explain the factors involved in its dissociation stabilization.
- B) Attempt any **TWO** of the following: (10)
- i) Describe the various factors affecting enzyme activity
  - ii) Explain amphibolic nature of Citric acid cycle.
  - iii) Discuss the glycolysis pathways and energy release in it.
- Q.2** Write short notes on any **FOUR** of the following: (16)
- a) Glycogen storage diseases
  - b) Classification of enzymes
  - c) Two Laws of thermodynamics
  - d) Adenosine Tri- phosphate (ATP)
  - e) Competitive inhibitor

SECTION-II

- Q.3** A) Attempt any **ONE** of the following: (06)
- i) Describe the electron transport chain.
  - ii) Discuss the urea cycle and its cellular location.
- B) Answer any **TWO** of the following: (10)
- i) Explain  $\beta$  - oxidation of saturated fatty acids.
  - ii) What are lipoproteins? Explain different types of lipoproteins.
  - iii) Describe nitrogen cycle.
- Q.4** Write short notes on any **FOUR** of the following: (16)
- a) Glucogenic and ketogenic amino acids
  - b)  $C_3$  and  $C_4$  plants.
  - c) Transamination reaction of amino acids
  - d) Allosteric enzymes
  - e) Photorespiration
- Q.5** Attempt any **EIGHT** of the following: (16)
- a) What are chylomicrons?
  - b) Name one essential and one non-essential amino acids.
  - c) Define uncouples. Give two examples.
  - d) Give two examples of CAM plants.
  - e) What are activation energy and binding energy?
  - f) Give the significance of RUBISCO enzyme.
  - g) Write Michalis-Menten rate equation.
  - h) Give names of any two ketone bodies.
  - i) Write two biotechnological applications of peptides.

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