S. Y. B. SC. (BIOTECHNOLOGY) SEM – III (2010 COURSE) :
WINTER - 2017
SUBJECT: BIOCHEMISTRY –II

Day: **Friday** Time: **10.00 AM TO 01.00 PM**

Date: **03/11/2017** **W-2017-0953** 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 β - 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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