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BS-1361 Seat No._____

B. Sc. (Sem. - IV) Examination

April/May - 2014

CC - I - 5 : Biotechnology

(Cellular Metabolism - II)

Time : 3 Hours] [Total Marks : 70

1 Multiple choice question : 5

(i) _____ATPs are synthesized in urea cycle.

(a) 1
(b) 2
(c) 0
(d) 3

(ii) _____ is second messenger.

(a) DAG
(b) ATP
(c) NO
(d) P1P2

(iii) ATP is not produced by

(a) Photophosphorylation
(b) Oxidative phosphorylation
(c) Substrate level phosphorylation
(d) All of above

(iv) Highest Energy is stored in

(a) Glucose
(b) Glycogen
(c) Glycerol
(d) Lipid

(v) Light reaction of photosynthesis occurs in
(a) Thylakoid
(b) Cytoplasm
(c) Stroma
(d) Mitochondria

2 Give answer of any five : 5
(i) Name the different types of G protein and its subunits.
(ii) Enlist different signaling molecules.
(iii) Give examples of photosynthetic bacteria.
(iv) Give the full form of ETC and ATP.
(v) What is Ketogenesis ?
(vi) How many ATP will be produced by degradation of $NAOH_2$?
(vii) Why fatty acid oxidation is called β-oxidation ?

3 Give answers of any six : 12
(i) What is Transmination ? And give its importance.
(ii) Explain Diffusion.
(iii) Name the types of Signaling Receptors.
(iv) Give function and location of ATPase enzyme.
(v) What is oxidative deamination ?
(vi) Name the enzymes involved in nucleotide catabolism.
(vii) Which components are functioning in ETC of mitochondria ?
(viii) What is photorespiration ?

4 Give answers of any five : 30
(i) Discuss Urea cycle.
(ii) Explain Active and Passive transport with examples.

(iii) Describe Dark reaction of photosynthesis.

(iv) Discuss C4 cycle with importance.

(v) Discuss Epinephrine Signaling.

(vi) Describe de novo pathway of nucleotide biosynthesis.

(vii) Explain fatty acid biosynthesis.

5 Give answers of any two : **18**

(i) Explain in detail β-oxidation of fatty acid.

(ii) Explain in detail ETC and oxidative phosphorylation.

(iii) How insulin lower blood glucose level ? Explain.

(iv) Describe Light Reaction of Photosynthesis.
