



JAH-003-1013014

Seat No. _____

B. Sc. (Biotechnology) (Sem. III) (CBCS)

(W.E.F. 2016) Examination

November - 2019

BT - 301 : Metabolism of Biomolecules

(Theory)

Faculty Code : 003

Subject Code : 1013014

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- 1 (a) Answer all : 1×4
- (i) The NAD is an example of _____.
 - (ii) In _____ inhibition the structure of inhibitor and substrate are similar.
 - (iii) The second class of enzyme is _____.
 - (iv) LDH 1,2,3 are examples of _____.
- (b) Answer any **one** out of two : 1×2
- (i) Explain about Isoenzyme .
 - (ii) What is biocatalyst ?
- (c) Answer any **one** out of two : 1×3
- (i) Define allosteric enzyme. Give one example.
 - (ii) What is Transition state analog ? Explain.
- (d) Answer any **one** out of two : 1×5
- (i) Give a detailed account on Michalies menten equation.
 - (ii) Define reversible inhibition in detail.

- 2 (a) Answer all : 1×4
- (i) Glycolysis occurs in _____.
- (ii) The complex 1 of ETC is _____.
- (iii) The other name of kreb cycle is _____.
- (iv) The number of ATP formed by 1 kreb cycle by 1 acetyl CoA.
- (b) Answer any **one** out of two : 1×2
- (i) Explain the fate of pyruvate under anaerobic conditions.
- (ii) How many ATP will be produced by oxidation of palmitic acid ?
- (c) Answer any **one** out of two : 1×3
- (i) Explain only the irreversible steps to obtain glucose from pyruvate in the process of gluconeogenesis.
- (ii) What is metabolism ? Explain.
- (d) Answer any **one** out of two : 1×5
- (i) Write a detailed note on HMP pathway .
- (ii) Write a detailed note on Beta oxidation of fatty acid.
- 3 (a) Answer all : 1×4
- (i) What is GABA ?
- (ii) Which enzyme is used in transamination ?
- (iii) The urea cycle occurs in _____.
- (iv) Give the full form of CTP.
- (b) Answer any **one** out of two : 1×2
- (i) Give one reaction of transamination.
- (ii) Write the reaction of photosynthesis.

- (c) Answer any **one** out of two : 1×3
- (i) Explain the cyclic pathway of photosynthesis.
 - (ii) Explain the decarboxylation and deamination pathway.
- (d) Answer any **one** out of two : 1×5
- (i) Explain the urea cycle in detail.
 - (ii) Explain the inborn errors of metabolism in detail with examples.
- 4 (a) Answer all : 1×4
- (i) Name 2 endocrine hormones.
 - (ii) Name one peptide hormone.
 - (iii) Name one auxin.
 - (iv) Name one gibberelin.
- (b) Answer any **one** out of two : 1×2
- (i) Give the role of auxins for the plant.
 - (ii) Give the role of ABA for the plant.
- (c) Answer any **one** out of two : 1×3
- (i) Explain the functions of plant hormones.
 - (ii) Explain the functions of animal hormones.
- (d) Answer any **one** out of two : 1×5
- (i) Write a detailed note on hormones synthesized by Anterior lobe of pituitary.
 - (ii) Explain about exocrine hormones.

- 5 (a) Answer all : 1×4
- (i) Give one phospholipid present on membrane.
 - (ii) The full form of DAG is _____.
 - (iii) The function of protein kinase is _____.
 - (iv) Name one primary signal molecule.
- (b) Answer any **one** out of two : 1×2
- (i) Define ABC transporter. Explain.
 - (ii) Define symporter. Explain.
- (c) Answer any **one** out of two : 1×3
- (i) Define GPCR. Explain its parts.
 - (ii) Give the history of plasma membrane.
- (d) Answer any **one** out of two : 1×5
- (i) Explain the regulation of cell cycle by protein kinase.
 - (ii) Give a detailed account of fluid mosaic model.
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