DCV-003-2013014 Seat No. _____

B. Sc. (Sem. III) (CBCS) (WEF-2019) Examination

August - 2022

BT-301 : Metabolism of Biomolecules

Faculty Code : 003

Subject Code : 2013014

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

1 (A) Objective : **4**

(1) What is cofactor ?

(2) What is Km ?

(3) Which is the fifth class of enzyme ?

(4) Define: Biocatalyst.

(B) Answer in brief : **2**

(1) Describe Covalent catalysis in brief.

(C) Answer in detail : **3**

(1) Explain Enzyme inhibition.

(D) Write a note on : **5**

(1) Mechanism of Enzyme regulation.

2 (A) Objective : **4**

(1) Enzyme that catalyzing group transfer reaction, is _____ class of enzyme.

(2) NAD is example of _____.

(3) Define Allosteric enzyme.

(4) Who proposed lock & key model ?

(B) Answer in brief : **2**

(1) Define Isoenzyme.

(C) Answer in detail : **3**

(1) Explain Proximity and orientation effect.

(D) Write a note on : **5**

(1) Derivation of Michaelis - Menton equation.

3 (A) Objective : 4

(1) The site for β oxidation is _____.

(2) The second name for TCA & Glycolysis.

(3) Give importance of gluconeogenesis.

(4) The last complex of ETC is _____.

(B) Answer in brief : 2

(1) Explain in brief about any two complex of ETC.

(C) Answer in detail : 3

(1) Explain: β oxidation.

(D) Write a note on : 5

(1) Describe: Glycolysis.

4 (A) Objective : 4

(1) The diversion of HMP from glycolysis begins with which molecule ?

(2) _____ is produced from pyruvate under anaerobic condition.

(3) Gluconeogenesis occur in _____.

(4) Importance of ETC.

(B) Answer in brief : 2

(1) Give biological importance of HMP.

(C) Answer in detail : 3

(1) Explain: Oxidative phosphorylation.

(D) Write a note on : 5

(1) Describe: Kreb's cycle.

5 (A) Objective : 4

(1) Light reaction of Photosynthesis occur in _____.

(2) Two photosystem involve in cyclic photophosphorylation, True/False.?

(3) Define: Deamination.

(4) The Urea cycle occurs in _____.

(B) Answer in brief : 2

(1) Explain: Decarboxylation.

(C) Answer in detail : 3

(1) Give details about Calvin cycle.

(D) Write a note on : 5

(1) Explain: Biosynthesis of nucleic acid.

6 (A) Objective : 4

(1) Release of oxygen occur during which process of photosynthesis ?

(2) What is C3 plants?

(3) Define Transamination.

(4) Give any two examples for diseases due to inborn error in metabolism.

(B) Answer in brief : 2

(1) Describe: Reaction of photosynthesis in which oxygen released.

(C) Answer in detail : 3

(1) Urea cycle.

(D) Write a note on : 5

(1) Explain Inborn errors of metabolism with any two examples.

7 (A) Objective : 4

(1) What do you understand by endocrine gland?

(2) Function of Adrenaline hormone in human.

(3) Deficiency of which hormone is responsible for diabetes mellitus ?

(4) Give one example of Auxin.

(B) Answer in brief : 2

(1) Explain in brief: Functions of stress hormone in plant.

(C) Answer in detail : 3

(1) Explain exocrine gland hormones.

(D) Write a note on : 5

(1) Describe: Disorders due to hormonal imbalance in human.

8 (A) Objective : 4

(1) What do you understand by exocrine gland'?

(2) Give names of any two endocrine gland.

(3) What is the role of thyroid gland ?

(4) Which hormone is mostly present in root & shoot tips ?

(B) Answer in brief : 2

(1) Role of Ethylene as plant hormone.

(C) Answer in detail : **3**

(1) Write down about Plant growth hormones.

(D) Write a note on : **5**

(1) Explain: Endocrine gland hormones.

9 (A) Objective : **4**

(1) What is Antiport ?

(2) Give example of one phospholipid present in the cell membrane.

(3) How O2 & CO_2 transport in & out of the cell ?

(4) Which protein is required to activate kinase involved in cell cycle ?

(B) Answer in brief : **2**

(1) What is G proteins ?

(C) Answer in detail : **3**

(1) Describe: Active transportation across the membrane.

(D) Write a note on : **5**

(1) Write down about signal transduction cascade.

10 (A) Objective : **4**

(1) What is Symport?

(2) What is Osmosis ?

(3) What is signal transduction ?

(4) Sodium potassium pump is the example of passive transportation across the membrane. True/False ?

(B) Answer in brief : **2**

(1) Explain proteins in the plasma membrane.

(C) Answer in detail : **3**

(1) Explain: Mechanism of hormones in signal transduction.

(D) Write a note on : **5**

(1) Role of protein kinase in cell cycle regulation.
