

B.Sc. Semester - 3 (CBCS) Examination
Oct/Nov. -2019 [NEW COURSE]
BioTechnology-BT301 (Core)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Q. 1 Answer all the questions:

a. Answer one out of two-

(07 Marks)

- i. Define K_m value. Derive the Michaelis-Menten equation and its significance.
- ii. Give detail account of acid-base and covalent catalysis with example of each.

b. Answer one out of two-

(04 Marks)

- i. Write the effect on K_m and V_{max} in all type of reversible enzyme inhibition.
- ii. Write on enzyme classification.

c. Answer any three out of five-

(03 Marks)

- i. Define coenzyme.
- ii. What is proximity.
- iii.metal required for Carbonic anhydrase function.
- iv. Define isoenzyme.
- v. Define allosteric regulation.

Q. 2. Answer all the questions:

a. Answer one out of two-

(07 Marks)

- i. Discuss steps of TCA cycle.
- ii. Explain about ETC.

b. Answer one out of two-

(04 Marks)

- i. Briefly write on HMP.
- ii. Write notes on activation of fatty acid during β -oxidation.

c. Answer any three out of five-

(03 Marks)

- i. HMP is considered as amphibolic pathway-True/False.
- ii. Which pathway required pyruvate carboxylase enzyme.
- iii. Write name final electron acceptor in ETC.
- iv. How many ATP is synthesized during TCA cycle after oxidation of one glucose.
- v. Write name of major site for glycolysis in cell.

Q. 3 Answer all the questions:

a. Answer one out of two-

(07 Marks)

- i. What is Photosystem. Explain the type of photosystem in detail.
- ii. Give the detail account of purine biosynthesis.

b. Answer one out of two-

(04 Marks)

- i. Differentiate decarboxylation and deamination.
- ii. Write notes on inborn error of metabolism.

c. Answer any three out of five-

(03 Marks)

- i. Define transamination.
- ii. Major site of amino acid metabolism is liver-True/False.
- iii. Write significance of urea cycle.
- iv. Dark reaction of photosynthesis occur in stroma-True/False.
- v. What is *de-novo* pathway?

Q. 4 Answer all the questions:

a. Answer one out of two-

(07 Marks)

- i. Explain the role of Gibberellins in plant.
- ii. Discuss structure and function Thyroid gland.

b. Answer one out of two-

(04 Marks)

- i. Mention important properties of animal hormone.
- ii. Discuss disorder related to adrenal gland.

c. Answer any three out of five-

(03 Marks)

- i. Ductless gland is called exocrine gland-True/False.
- ii. Which plant hormone show triple response.
- iii. Which hormone is called emergency hormone.
- iv. Write main function of glucagon.
- v. Give one example of steroid hormone.

Q. 5 Answer all the questions:

a. Answer one out of two-

(07 Marks)

- i. Explain fluid mosaic model in detail.
- ii. Write mechanism of epinephrine signaling.

b. Answer one out of two-

(04 Marks)

- i. Write short notes on carrier transport.
- ii. Briefly write the role of protein kinase in cell cycle regulation.

c. Answer any three out of five-

(03 Marks)

- i. Define membrane fluidity.
- ii. Passive transport does not required ATP.-True /False
- iii. Which hormone required enzyme receptor for signaling?
- iv. Phospholipid is main lipid present in membrane-True/False
- v. Give one example of signal molecule.
