

**B.Sc. Semester - 5 (CBCS) Examination
December -2020 (NEW COURSE)
Prokaryotic Metabolism (Core)**

Time: 1:30 Hours**Marks: 42****Instructions:**

1. Figures to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions.
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Q.1 A) Answer any one out of two : (07)

1. Write a note on Energy metabolism.
2. Write on General properties of Regulatory Enzymes.

Q.1 B) Answer any one out of two : (04)

1. Discuss Standard free energy.
2. Give mechanism of Enzyme reactions.

Q.1 C) Answer any three out of five : (03)

1. What is Entropy?
2. What is competitive inhibitor?
3. Give two examples of energy rich compounds.
4. Give Michaelis Menten Equation.
5. What is pacemaker enzyme?

Q.2A) Answer any one out of two : (07)

1. Describe : TCA
2. Explain : Catabolism of Amino acids

Q.2 B) Answer any one out of two : (04)

1. Describe: Glyoxylate cycle
2. Explain : β Oxidation

Q.2 C) Answer any three out of five : (03)

1. Give two names of organisms exhibiting ED pathway.
2. The carrier of two carbon units used to biosynthesize a fatty acid is
3. What is PFK?
4. Mention end products of oxidation of Palmitic acid.
5. Name two enzymes playing central role in Pentose phosphate pathway?

Q.3A) Answer any one out of two : (07)

1. Explain : Oxidative phosphorylation.
2. Discuss : Photosynthesis.

Q.3 B) Answer any one out of two : (04)

1. Describe : use of Isotope labelling in studying biosynthesis.
2. Discuss : ATPase

Q.3 C) Answer any three out of five :

(03)

1. Name any two carriers found in ETC.
2. Which substrate is biosynthetic precursor of arginine and proline synthesis?
3. Who isolated auxotrophic mutants in the year 1940?
4. What is PMF?
5. Name any one enzyme playing role in Anaerobic respiration.

Q.4 A) Answer any one out of two :

(07)

1. Discuss : The Enteric group and related bacteria.
2. Write a note on Archaeobacteria.

Q.4 B) Answer any one out of two :

(04)

1. What are Nitrifying Bacteria?
2. What are Sulphur Bacteria?

Q.4 C) Answer any three out of five :

(03)

1. Give any one type of conversion of Iron by Iron bacteria.
2. Give example of Hydrogen bacteria.
3. Give name of membrane of Halobacteria.
4. Name any two species of Chemoautotrophic bacteria.
5. State true or false: *Leuconostoc mesentroides* is a homo fermentative bacteria.

Q.5 A) Answer any one out of two :

(07)

1. Explain Major modes of Membrane Transport.
2. Discuss: Quorum sensing.

Q.5 B) Answer any one out of two:

(04)

1. Discuss: ATP binding cassette transporter family.
2. What are Membrane Proteins?

Q.5 C) Answer any three out of five :

(03)

1. Name any one lipid found in Membrane of Bacteria.
2. Give types of Signal Transduction.
3. Name any two molecules pass through membrane by simple diffusion process.
4. What is Antiport?
5. What is the name of successful model of Cytoplasmic membrane?
