BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MSc **SEMESTER : I**
BRANCH: BT **SESSION : MO/19**

SUBJECT: BT402 METABOLISM AND BIOENERGETICS

TIME: 3:00 HOURS **FULL MARKS: 50**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks
2. Candidates must attend all 5 questions
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a) Describe the term Integration of metabolism. With example elaborate it under starvation condition. [5]
Q.1(b) Sketch an outline of metabolic classification of Organisms and justify the statement "Organisms can be classified according to their energy and carbon sources". [5]

Q.2(a) Give a diagrammatic representation of fructose metabolism in muscles and relate it with glycolytic pathway. [5]
Q.2(b) Describe Uronic acid pathway and analyze its importance if it does not yield ATP. [5]

Q.3(a) Compare Beta oxidation with omega oxidation in terms of localization and output. Interpret the total ATP production for palmitic acid after beta oxidation. [5]
Q.3(b) Describe the biosynthesis of cephalin. State the overall importance of membrane lipids. [5]

Q.4(a) Diagrammatically show oxidative deamination. Sketch the relationship between urea cycle and citric acid cycle? [5]
Q.4(b) Describe de novo biosynthesis for nucleotides. Describe the biosynthesis of AMP from IMP. [5]

Q.5(a) Living organisms preserve their internal order but there is increase in entropy of surrounding when releasing heat to system. Explain by giving example. [5]
Q.5(b) In a metabolic pool, there is an energy cycle that links anabolic and catabolic reactions. Explain the statement with suitable example. [5]

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