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PAQ-003-1015010

Seat No. _____

Third Year B. Sc. (Sem. V) Examination

October / November - 2018

Microbiology : MB-502

(Prokaryotic Metabolism)

(New Course)

Faculty Code : 003

Subject Code : 1015010

Time : **2** Hours] [Total Marks : **50**

Instructions : (1) All questions are compulsory.
(2) Draw diagram where required.
(3) Figures on right indicate marks of question.

1 (a) Answer the following questions : **4**

(1) Define Entropy.

(2) Define the first law of Thermodynamics.

(3) What are Hatoenzymes.

(4) What are covalent modification enzymes.

(b) Answer in brief : (any one) **2**

(1) What is Zeroth law of thermodynamics.

(2) Define Michaelis Menter equations.

(c) Answer in detail : (any one) **3**

(1) Write on double reciprocal lineviweaver burke plot.

(2) Write on non-competitive inhibition.

(d) Write note on : (any one) **5**

(1) Explain Role of Reducing power in Metabolism.

(2) Derive Michaelis Menten equation.

2 (a) Answer in brief : (any one) **4**

(1) Write down few general reactions of amino acid catabolism.

(2) Write on "Stickland reaction".

(b) Answer in brief : (any one) **2**

(1) What is Decarboxylation.

(2) Define Oxidative Deamination.

(c) Answer in detail : (any one) **3**

(1) Write note on Entaer - Doudoroff

(2) Explain Glyoixylate cycle.

(d) Write a note on : (any one) **5**

(1) Explain energetics of Palmitic acid

(2) Explain TCA cycle.

3 (a) Answer the following questions : **4**

(1) Define Photosystem II

(2) Define Cytochrome

(3) Define Protomotive forces

(4) Biochemical mutants.

(b) Answer in brief : (any one) **2**

(1) What is oxidative phosphorylation ?

(2) What is oxygenic prototroph ?

(c) Answer in detail : (any one) **3**

(1) Note on any two carriers of ETC.

(2) Difference between V-Type and F-type ATP synthesis.

(d) Write note on : (any 1 out of 2) **5**

(1) Note on peptidoglycan synthesis.

(2) Note on use of isotopic labelling in bacteria.

4 (a) Answer the following questions : **4**

(1) Define denitrification.

(2) Define chemotrophos.

(3) Define Archea bacteria.

(4) Define Heterolatic femention.

(b) Answer in brief : (any one) **2**

(1) Which pathway is known as randomizing pathway?

(2) Habitants of sulfur oxidizing bacteria.

(c) Answer in detail : (any one) **3**

(1) Explain propionate fermentation.

(2) Expalin reactions in nitrifying bacteria.

(d) Write a note on : (any one) **5**

(1) Explain methanogens.

(2) Write on homo-fermentative lactic acid fermentation.

5 (a) Answer the following questions : **4**

(1) Define - quotum sensing.

(2) Define - group translocation process.

(3) Define G. protein.

(4) Define - endocrine system.

(b) Answer in brief : (any one) **2**

(1) What is the importance of siderophores

(2) Various components present in plasma membrane.

(c) Answer in detail : (any one) **3**

(1) Difference between passive and active transport system.

(2) Write on lipid anchor proteins.

(d) Write note on : (any one) **5**

(1) Note on integral peripheral membrane proteins.

(2) Note on quarum sensing giving suitable examples.
