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**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2019/2020**

**SECOND YEAR AND THIRD YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN MICROBIOLOGY**

**SBT 2272: MICROBIAL PHYSIOLOGY**

**DATE: APRIL, 2020 TIME: 2 HOURS**

INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

**QUESTION ONE: 30 MARKS**

a. Differentiate between Photo Autotrophs and Chemoautotrophs. (2 marks)

b. Outline the four classes of enzymes and their functions. (6 marks)

c. Briefly describe two modes of specialized transport for nutrient uptake.

(4 marks)

d. Describe the energy requiring phase of glycolysis. (6 marks)

e. Describe the synthesis of hexose sugar. (6 marks)

f. Outline the key steps in anaerobic degradation. (6 marks)

**QUESTION TWO: 20 MARKS**

a. Discuss coenzymes. (10 marks)

b. Discuss oxidative and substrate level phosphorylation. (10 marks)

**QUESTION THREE: 20 MARKS**

Discuss the Tri-carboxylic acid cycle.

**QUESTION FOUR: 20 MARKS**

Discuss the features and application of secondary metabolites.