

OLABISI ONABANJO UNIVERSITY, AGO - IWOYE

DEPARTMENT OF MICROBIOLOGY

B. Sc (Microbiology) 2015/2016 RAIN SEMESTER EXAMINATION

Course code and title: MCB204 - Microbial Physiology and Metabolism

Instruction: Attempt three (3) questions in all. Time Allowed: 1½ hours

1(a) Highlight three limitations of the plating techniques.

(b) Define plasmids and list the types of plasmid.

(c) What is generation time? Suppose the generation time of a bacterium is 90 minutes and the initial number of cell in a culture is 10^3 cells at the start of the log phase. How many bacteria will there be after 8 hours of exponential growth?

2(a) Explain the bacterial growth curve.

(b) Give reasons why cells that are vigorously growing when inoculated into fresh medium have a shorter lag phase?

(c) List the functions of the following organelles:

i. Plasma membrane

ii. Bacteria endospore

i. Cell wall

ii. Capsules

3(a) What are vitamins? In a tabular form give ten (10) examples of common vitamins required for microbial nutrition stating their functions and their co-enzyme form.

(b) Write short notes on carbon, energy and electron sources as they relate to the nutritional types of microorganisms.

4(a) Write extensively on oxygen requirement and effect of pH on microbial growth.

(b) What are chemoorganotrophic heterotrophs? Give ten examples of them.