



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2017/2018**

COURSE NAME : MICROBIAL DIVERSITY &
ECOLOGY

COURSE CODE : BWJ 20203

PROGRAMME CODE : BWW

EXAMINATION DATE : DECEMBER 2017 / JANUARY 2018

DURATION : 3 HOURS

INSTRUCTION : ANSWERS ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

- Q1** (a) Name the first person to observe microorganisms accidentally. (2 mark)
- (b) Eukaryotic cells have intracellular and extracellular components. State **TWO (2)** extracellular component and describe their functions. (6 marks)
- (c) Compare and contrast **THREE (3)** different structures of prokaryotic and eukaryotic cells. (12 marks)
- Q2** (a) Describe **THREE (3)** major groups of monerans. (6 marks)
- (b) The bacteriophage or phage virus replicates only inside the bacterial cell. Phage virus shows two types of cycles during its replication. Illustrate these **TWO (2)** types of cycles. (4 marks)
- (c) Describe the phenomenon known as 'red tide' and analyze the environmental changes it can cause. (10 marks)
- Q3** (a) Determine **TWO (2)** main phases of reproduction in bacteria. (4 marks)
- (b) Explain **THREE (3)** nutrition systems in bacteria. (6 marks)
- (c) Suggest **FIVE (5)** practices that would minimize the potential of introducing bacteria into water supply. (10 marks)
- Q4** (a) Compare the carbon cycle and the phosphorus cycle. (12 marks)
- (b) The basic principles of how microbes degrade contaminants are relatively straightforward. However, a range of factors may complicate bioremediation. Evaluate **FOUR (4)** factors that may interfere the success use of microbes in bioremediation. (8 marks)

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- Q5** (a) There are microbes found to be living in extreme environments. Determine **TWO (2)** types of extremophiles and their importance to the environment.
(10 marks)
- (b) There has been a hot debate between genetic technologists and conservationists on the potential use of genetic engineering as a tool for conservation. From those debates, discuss whether genetic engineering should be used as a tool for conservation.
(10 marks)

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END OF QUESTIONS