



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020**

COURSE NAME : MICROBIOLOGY
COURSE CODE : DAS 26503
PROGRAMME CODE : DAU
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : ANSWERS **FIVE (5)** QUESTIONS ONLY

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

- Q1** (a) (i) Define Microorganisms. (1 mark)
- (ii) State and explain the important of study and understand Microbiology. (2 marks)
- (b) Louis Pasteur (1822-1895) was a French Microbiologist that disproved the theory of spontaneous generation by his experiments that used microbe and media in various set.
- (i) Give the statement that Pasteur's about microbe and disease. (1 mark)
- (ii) Sketch and explain the experiment done by Pasteur to prove about microbe and disease. (6 marks)
- (c) (i) State and explain **four (4)** role of microbe in ecosystem. (8 marks)
- (ii) Explain contribution of microbe in Oxygen cycle. (2 marks)
- Q2** (a) (i) List and describe all **three (3)** domains of life. (3 marks)
- (ii) Organisms can be classified by nutrition type which based on energy and carbon sources. State all **four (4)** groups of organisms based on nutritional type and give the energy and carbon sources of each type. (8 marks)
- (b) State and sketch all basic shape of bacteria (3 marks)
- (c) Give **three (3)** groups of bacteria based on oxygen requirement. Sketch the growth of bacteria in agar tube and explain the effect of oxygen on growth. (6 marks)
- Q3** (a) (i) State the main structure that made up in most of the fungi and give **two (2)** functions of the structure (3 marks)
- (ii) Explain how fungi obtain nutrient. (3 marks)
- (b) (i) Define virus and explain the reasons why virus are not categorized as organisms. (3 marks)
- (ii) State the material that build up virus particle and its function. (6 marks)
- (iii) Sketch and explain lytic cycle of virus. (5 marks)

- Q4** (a) Sketch the 'Standard Bacterial Growth Curve' and explain each phase. (8 marks)
- (b) Pour plate method is one of the method used to get the accurate numbers of microbes. Explain the method and how to count the number of microbes in the samples. (4 marks)
- (c) Culture media contains nutrition and physical growth parameters necessary for microbial growth. Classification of media are based on function of the media. State all **four (4)** basic group of culture media and explain its function. (4 marks)
- (d) Differentiate positive and negative staining of microbe. (4 marks)
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- Q5** (a) (i) Define epidemics, pandemics, and outbreaks. (3 marks)
- (ii) Identify prevention action to control pandemics and epidemics infection. (2 marks)
- (b) (i) Describe **four (4)** purpose of epidemiology. (4 marks)
- (ii) Write **nine (9)** routes of infection. (9 marks)
- (iii) Recall **one (1)** success story in history of epidemiology. (2 marks)
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- Q6** (a) (i) Explain acquired immunity, active immunity and passive immunity by giving suitable example. (3 marks)
- (ii) Describe mechanism of 'Herd Immunity' (sketch diagram). (4 marks)
- (b) Applications of biotechnology in food industries are including fermentation products and whole cell product.
- (i) Select **one (1)** product and sketch production process flow diagram. (5 marks)
- (ii) Identify **two (2)** alternative suggestion that can improve the production profit. (4 marks)
- (iii) Name **four (4)** product of fermentation and its raw material. (4 marks)

- END OF QUESTIONS -

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