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**UNIVERSITI TUN HUSSEIN ONN
MALAYSIA**

**FINAL EXAMINATION
SEMESTER II
SESSION 2018/2019**

COURSE NAME : CELLS, GENES & DIVERSITY
COURSE CODE : DAS 26203
PROGRAMME : DAU
EXAMINATION DATE : JUNE/ JULY 2019
DURATION : 3 HOURS
INSTRUCTION : ANSWER **FOUR (4)** QUESTIONS
ONLY

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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- Q1**
- (a) List **three (3)** main organs of a plant and give the main function of each organ. (6 marks)
 - (b) Describe the function of vascular tissue of a plant. (3 marks)
 - (c) Plants experience two types of growth. Draw and explain each type of growth in plant. (10 marks)
 - (d) Draw a structure of a perfect flower. Show the sepal, stigma, carpel, stamen, anther and ovary. (6 marks)
- Q2**
- (a) List and explain **four (4)** of the general features of animals. (8 marks)
 - (b)
 - (i) List and explain **two (2)** characteristics of a fish. (4 marks)
 - (ii) Draw a bony fish and label its swimming bladder, gill and dorsal fin. (3 marks)
 - (c) Give **two (2)** characteristics of mammal and explain. (4 marks)
 - (d)
 - (i) Draw a structure of reptiles egg and label embryo and four membranes of the egg. (5 marks)
 - (ii) Give the advantages of reptiles having their eggs covered by tough outer shell. (1 mark)

- Q3** (a) Define :
- (i) Theory. (1 mark)
 - (ii) Fossil. (1 mark)
 - (iii) Evolution. (1 mark)
- (b) State the situations that will happen to a species if an environment's conditions change and no individuals have the alleles combinations required to survive and produce offspring. (1 marks)
- (c) Define natural selection. (1 marks)
- (d) List **five (5)** principles of natural selection and explain. (10 marks)
- (e) Plants are autotroph. Give the definition of autotroph and write a simple equation that show plants are autotroph. (4 marks)
- (f) List all kingdoms of life. (6 marks)
- Q4** (a) Draw and label the structure of a virus. Give the function of genetics material and capsid that found in a virus. (6 marks)
- (b) Virus undergoes two kind of life cycle in a host cells.
- (i) Draw the lytic cycle of a virulence virus. (5 marks)
 - (ii) Explain the lytic cycle of a virulence virus. (10 marks)
- (c) (i) Give **two (2)** benefits of bacteria in life. (2 marks)
- (ii) Give **two (2)** harmful effects of bacteria in life. (2 marks)

- Q5** (a) Explain **four (4)** differences between fungi and plants that make fungi exclude from Kingdom of Plantae. (8 marks)
- (b) Draw a structure of mushroom and show hyphae, mycelium, nucleus and septa. (4 marks)
- (c) Fungi are heterotroph. Give the definition of heterotroph and explain how fungi obtain nutrient. (5 marks)
- (d) Briefly explain the **two (2)** benefits of fungi. (4 marks)
- (e) List **two (2)** phylum of fungi and give the main characteristics of each phylum. (4 marks)
- Q6** (a) List **five (5)** main characteristics of protists. (5 marks)
- (b) Give **two (2)** organelles or formation with the mechanisms for movements of protists. (4 marks)
- (c) Define and give the purpose of endospore. (2 marks)
- (d) Most prokaryotes reproduce asexually through a process called binary fission. Draw and explain the process. (8 marks)
- (e) State whether the virus is an organisms or not. Explain your answer. (2 marks)
- (f) Explain how the virus reproduce. (4 marks)

- END OF QUESTION -