



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

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

COURSE NAME : CELL BIOLOGY  
COURSE CODE : BWD 10103  
PROGRAMME CODE : BWD  
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020  
DURATION : 3 HOURS  
INSTRUCTION : ANSWER ALL QUESTIONS

**TERBUKA**

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

- Q1**  $\beta$ -oxidation process occurred on the  $\beta$  carbon of the fatty acid followed by cleavage of the bond between carbon  $\alpha$  and  $\beta$ .
- (a) State the net reaction and the number of turns for the process of  $\beta$ -oxidation of a saturated fatty acid (palmitoyl-CoA). (2 marks)
- (b) Explain the steps involve in the process of  $\beta$ -oxidation in saturated fatty acid. (6 marks)
- (c) Discuss how the people who are fasting have the energy to carry out daily activities. (12 marks)
- Q2** *Xeroderma pigmentosum* is a skin disorder that occurs due to the presence of defective genes for one of the protein that involved in repairing process.
- (a) State **TWO (2)** spontaneous reactions that lead to DNA damage. (2 marks)
- (b) Differentiate between both spontaneous reactions as answered in **Q2(a)**. (6 marks)
- (c) Based on the answer in **Q2(a)** and **Q2(b)**. Illustrate the mechanism of DNA damage that involved spontaneous reactions. (12 marks)
- Q3** Proteins, fat and polysaccharides that make up most of the food we eat must be broken down into smaller molecules before our cells can use them.
- (a) Name the process and state **ONE (1)** activity involved in the process. (2 marks)
- (b) Explain **THREE (3)** stages of the process as answered in **Q3(a)**. (6 marks)
- (c) Describe how the process answered in **Q3(b)** extracts energy in a cell. (12 marks)
- Q4** Fatty acids are long chains molecules of lipid-carboxylic acid found in fats and oils and in cell membranes as a component of phospholipids and glycolipids.
- (a) Explain how the type of fat is determined based on its properties. (10 marks)
- (b) Describe the mechanism of getting fat from food consumption. (10 marks)

**Q5** Human body uses cell metabolism during exercise to provide the fuel needed for the muscles.

- (a) Explain why marathon runners have leaner muscles than sprinters. (8 marks)
- (b) Discuss the correlation between muscle pain experienced during exercise and cell metabolism. (10 marks)
- (c) Suggest **TWO (2)** type of fat reducing exercises that are suitable for a healthy 62 years old woman. (2 marks)

- END OF QUESTIONS -

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