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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2021/2022**

COURSE NAME : FUNCTIONAL FOODS AND
NUTRACEUTICALS

COURSE CODE : BWD 30702

PROGRAMME CODE : BWD

EXAMINATION DATE : JANUARY / FEBRUARY 2022

DURATION : 3 HOURS

INSTRUCTIONS : 1. ANSWER ALL QUESTIONS.
2. THIS FINAL EXAMINATION IS AN
**ONLINE ASSESSMENT AND
CONDUCTED VIA OPEN BOOK.**

THIS QUESTION PAPER CONSISTS OF **TWO (2)** PAGES

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- Q1** (a) End product of nutraceuticals can be in the form of tinctures. Explain briefly about tinctures and possible side effects of tinctures. (8 marks)
- (b) List **FIVE (5)** types of functional foods with the appropriate examples. (10 marks)
- (c) Oat has been shown to act as a powerful functional food and beneficial for human health. Discuss the effects of oat intake on human body. (7 marks)
- Q2** (a) Food processing significantly alters the content and compositions of polyphenols. Describe and explain the food processing techniques that can affect the content and composition of phenolic compounds in plants. (12 marks)
- (b) Calcium is a nutrient that all living organisms need, including humans. It is the most abundant mineral in the body, and it is vital for bone health. Determine the manufacturing aspect of calcium as functional food and nutraceutical. (13 marks)
- Q3** (a) Vitamin C, also known as L-ascorbic acid, is a water-soluble vitamin that is naturally present in some foods, added to others, and available as a dietary supplement. Vitamin C can be easily degraded during manufacturing processes. Illustrate and explain the manufacturing aspect of Vitamin C in nutraceutical industry. (15 marks)
- (b) Probiotics are live microorganisms promoted with claims that they provide health benefits when consumed, generally by improving or restoring the gut flora. Point out the criteria for microorganism to be included as probiotic in food and drinks. (10 marks)
- Q4** (a) Compare and contrast the process and manufacturing aspects between the green, oolong and black tea by highlighting the major phytochemicals in each tea. (15 marks)
- (b) Tea is the second most widely consumed drink in the world and usually prepared by using hot water. Point out **FIVE (5)** advantages of using hot water to prepare the tea. (10 marks)

- END OF QUESTIONS -