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Universiti Tun Hussein Onn Malaysia

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION**

**SEMESTER II  
SESSION 2014/2015**

<b>COURSE</b>	<b>:</b>	<b>MEAT, POULTRY &amp; AQUATIC PRODUCTS TECHNOLOGY</b>
<b>COURSE CODE</b>	<b>:</b>	<b>BWD 31403</b>
<b>PROGRAMME</b>	<b>:</b>	<b>3 BWD</b>
<b>DATE</b>	<b>:</b>	<b>JUNE 2015/JULY 2015</b>
<b>DURATION</b>	<b>:</b>	<b>3 HOURS</b>
<b>INSTRUCTION</b>	<b>:</b>	<b>ANSWER ALL QUESTIONS</b>

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

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- Q1** (a) Meat tenderness is a major factor affecting the consumers' assessment of meat quality. Please indicate how each of factors listed below influence the meat tenderness.
- (i) Chilling
  - (ii) Electrical stimulation
- (6 marks)
- (b) Aging, sometimes called "conditioning" or "ripening," is a natural process which improves the palatability attributes of meat.
- (i) How would you improve eating quality of meat during aging process?
  - (ii) Compare and contrast between wet-aged beef with dry-aged beef.
- (14 marks)
- Q2** (a) High pressure technology shows an increasing interest in food processing because of its potential to decrease the level of microbial contamination without any heat. What is the common technique of high pressure used in meat industry?
- (2 marks)
- (b) The application of high hydrostatic pressure (HPP) to food processing is an innovative alternative to thermal-treatment and chemical preservatives. How would you prove this statement?
- (10 marks)
- (c) What would happen if we combine pressure with heat treatment during processing on meat production?
- (8 marks)

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- Q3** (a) Consumers nowadays are concern about health and nutrition conscious and prefer to avoid food products with high fat or salt content. In order to achieve favorable product characteristics in reducing fat and salty content, several hydrocolloids capable in improving water binding and texture are of interest to meat processors.
- (i) Recall **TWO (2)** critical factors that should be considered when choosing hydrocolloids in red meat processing.
  - (ii) Elaborate how would hydrocolloid improve the mechanical and functional properties of restructured meat products?
- (10 marks)
- (b) Although utilization of probiotics and prebiotics is one of main trends in the development of functional foods, but the term “probiotics” and “prebiotics” have not been well define in the meat industry.
- (i) Suggest how to implement probiotics and prebiotic in meat processing.
  - (ii) Predict how will it contribute to meat industry?
- (10 marks)
- Q4** (a) Batters are a suspension of dry ingredients to coat the product. Highlight **THREE (3)** main categories of batters in poultry products.
- (6 marks)
- (b) There are many problems can occur during battering and breading operations. The problem are usually visible in the finish products but may be detected during the process itself. Examine the possible causes of product failure on the given condition of batter products.
- (i) Uneven coating
  - (ii) Flares and tails
  - (iii) Ballooning
  - (iv) Marriages
- (12 marks)
- (c) After frying, the product is usually frozen in order to preserve its freshness, crispiness and appearance. List **TWO (2)** typical freezing methods in battering procedure?
- (2 marks)

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**Q5 (a)** After cleaning and packaging, the fish should be stored either by refrigerating or freezing to maintain the freshness. Define the freezing methods below:

- (i) Double wrapping
- (ii) Freezing in ice block
- (iii) Glazing

(6 marks)

(b) Fish is a highly perishable product which needs proper handling to increase its shelf life. What approach would you use to preserve fish product?

(6 marks)

(c) Could you make distinction between sun drying and dehydration in fish preservation procedure?

(8 marks)

**-END OF QUESTION-**