

Name: \_\_\_\_\_ Student ID \_\_\_\_\_

**Prince of Songkla University  
Faculty of Engineering**

Exam: Mid Term, Semester I  
Date: October 9, 2015  
Subject: 230-560 - Food Unit Operations

Academic Year: 2015 – 2016  
Time: 1:30 –4:30 PM  
Room: A400

*ทฤษฎีในการสอบโทษขั้นต่ำคือ ปรับตกในรายวิชาที่ทฤษฎี และพักการเรียน 1 ภาคการศึกษา*

**Instructions:** This is a Closed Book exam consisting of 9 pages (not including the cover sheet). The points for each problem are not distributed evenly. Place your name and the student ID number on every page. Students are allowed to use only a pen or pencil and a calculator.

Points Distribution (For Grader Only)		
Part	Points Value	Score
1	25	
2	16	
3	20	
4	30	
5	45	
6	30	
7	24	
Total	190	

Exam prepared by  
Ram Yamsaengsung  
October 1, 2015

**PLEASE CHECK TO MAKE SURE THAT  
YOU HAVE ALL 9 PAGES OF THE EXAM BEFORE BEGINNING.  
GOOD LUCK!**

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**I. True and Faults (T/F). If Faulty, make the statement True. (25 points)**

- 1. Meat must be cooked to at least center temperature of 50°C to ensure proper destruction of microbes and bacteria.
- 2. Chicken requires a lower *safe minimum cooking temperature* than beef.
- 3. Food not only provides calories for the body, but it also promotes growth, build tissues, stimulate hormones, and contribute to the well-being of the human body and mind.
- 4. Consumption of contaminated produce can lead to *foodborne illness*, often called "*food poisoning*."
- 5. Safe storage temperature for fresh fruits and vegetables in the refrigerator should be at 4.4°C or higher.
- 6. Washing fruits and vegetables with soap or detergent is not recommended.
- 7. The original type of *sushi*, known today as *nare-zushi*, was first developed in Central Asia, spread to South China, before its introduction to Japan.
- 8. There are 22 known amino acids with 7 8 being *essential amino acids*.
- 9. Vitamin C can be found in Citrus fruits, green vegetables, and potatoes.
- 10. Vitamin E can be found in vegetable oils and avocado.
- 11. Green leafy vegetables are good sources of Vitamin C, Foliates, Vitamin K, Calcium, Iron, Magnesium, and Alpha and Beta-carotene.
- 12. Red/purple berries are a good source of Lycopene.
- 13. Olive oil is a good source of mono-unsaturated fatty acids.
- 14. The first truly modern bread was founded in Rome around 1,000 BC.
- 15. Frito-Lays® is the world's largest snack food company with Americans alone consuming over \$6 billion a year.
- 16. Popcorn was first developed by the Chinese.
- 17. A pharmacist from Atlanta, Georgia in the US founded Coca-Cola by mixing mineral water with "Coca-Cola" syrup in 1886.
- 18. France is the largest producer of wine, followed by the United States and Chile.
- 19. There are more than 30,000 wine and champagne labels around the world.
- 20. Dairy products are a major source of calcium, protein, and vitamin A.
- 21. Milk is often pasteurized using HTST process at 82°C for 15 sec, while UHT is processes at 135-150°C for 4-15 sec.
- 22. To extend shelf-life of milk, a sterilization process at 116°C for 20 minutes is used.
- 23. The two main of sources of sweetness for hard candies such as Halls® and Sugus® are sugar and fructose syrup.
- 24. Swensen's was founded in San Francisco, United States in 1948 by Earle Swensen with the motto of "Quality, Quantity, and Value for their Money."



**III. Answer the following questions based on your trip to Tesco Lotus, Hat Yai. (25 points)**

- (1) Name 6 brands (or types) of salty snacks. **(3 points)**
  
- (2) Name 4 examples dessert snacks and 2 of its major ingredients. **(4 points)**
  
- (3) Name 3 brands of ice cream and what ingredient is used to give ice cream its smooth texture?  
**(3 points)**
  
- (4) Name 4 brands of soft drinks and what makes it sweet (do not use sugar).  
**(3 points)**
  
- (5) Name 6 types (plants) of cooking oil. **(3 points)**
  
- (6) List 8 types of fresh fruits in their English names. **(4 points)**
  
- (7) Name the 5 main groups of products found at Lotus Bakery. Which is the best-selling item? **(5 points)**



**V. Answer the following questions from the FOOD COMPANY PRESENTATIONS. (45 points)**

- (1)** Name the 6 companies or food brands that were presented by you and your classmates and list 3 major products, type of products, flavors of the products, or restaurant franchise (brands) by each company. **(18 points)**

**(2) Answer the following questions. (27 points)**

- 2.1 Which company sells 1.4 billion bottles per day? (2 points)
- 2.2 What is the slogan for Coca-Cola (since 2009)? What is the slogan CP meatballs (in Thai)? (4 points)
- 2.3 Frito-Lay is a subsidiary of which giant company? (2 point)
- 2.4 Fill in the slogan for CP-All, "Convenience without \_\_\_\_\_". (2 points)
- 2.5 Fill in the slogan for Pocky®, "Enjoy your \_\_\_\_\_, Enjoy your \_\_\_\_\_." (2 points)
- 2.6 Which of the Birdy® product brand is called, "Good Morning Shots"? (2 points)

- 2.7 Which of the Birdy® product brand has the slogan, “นุ่มกลมกล่อม ลงตัว”? (2 points)
- 2.8 List the 4 core values of Unif® (Unif-President). (4 points)
- 2.9 The brand “Glico®” was named after which carbohydrate compound? (2 points)
- 2.10 What type of vegetable oil did Lays® began using in its frying process? What was the reason for switching to this oil? (3 points)
- 2.11 Fill in the following CP-All slogan, “สะอาด \_\_\_\_\_ มั่นใจ \_\_\_\_\_.” (2 points)

**VI. Answer the following questions about Food Ingredients and Functionalities (30 Points)**

1. Select **5 products** that were posted by you and your classmates in the Food Ingredients and Functionalities assignment posted in Facebook. List the **THREE MAJOR** ingredients in each product (not including water, unless specified). **Underline** the #1 ingredient in each product. (20 points)

2. For the your team's product that you posted in Facebook, list the major ingredients and their functions? (10 points)





**VII. Cooking VDO Presentation. (24 points)**

1. List the 6 food cooking products presented by you and your classmates. **(6 points)**

2. Select 2 products and list the ingredients and procedures for making each of the products. Give ONE suggestion on how to make it better, more attractive, or can sell for a higher price. **(18 points)**

<b>Name of Your Product:</b>	<b>Name of Your Friend's Product:</b>
<b>Ingredients:</b>	<b>Ingredients:</b>
<b>Procedures:</b>	<b>Procedures:</b>
<b>How to Make it Better:</b>	<b>How to Make it Better:</b>

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**Bonus: Where was the picture above, on the left taken (be specific)? (4 points)**



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**Congratulations! End of Exam!**