



**THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA**

**ASSOCIATE OF SCIENCE EXAMINATION**

**SUMMER/ SUPPLEMENTAL – 2011 AUGUST**

<b>PROGRAMMES:</b>	<b>HOSPITALITY AND TOURISM MANAGEMENT</b>
<b>COURSE NAME:</b>	<b>APPLIED MATHEMATICS FOR HOSPITALITY AND TOURISM</b>
<b>CODE:</b>	<b>(MATH1206)</b>
<b>YEAR GROUP:</b>	<b>ONE</b>
<b>DATE:</b>	<b>FRIDAY, 2011 AUGUST 26</b>
<b>TIME:</b>	<b>1:00 P.M. – 4:00 P.M.</b>
<b>DURATION:</b>	<b>3 HOURS</b>
<b>EXAMINATION TYPE:</b>	<b>FINAL</b>

\*MATH1206\*

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*This Examination paper has 4 pages*

**INSTRUCTIONS:**

**SECTION B: ANSWER ANY TWO (2) QUESTIONS IN THIS SECTION.**

**SECTION B**

**Instructions: Answer any TWO (2) questions from this section.**

**Question 1**

The weekly wages for the basic 40 hour work week of **seven (7)** members of the ancillary staff at a hotel are as follows:

- i. \$4 000
  - ii. \$4 200
  - iii. \$3 950
  - iv. \$4 000
  - v. \$4 400
  - vi. \$4 375
  - vii. \$4 000
- (a) Determine the mean, modal and median wages. **(9 marks)**
- (b) Mark, who earned a basic weekly wage of \$4 000, worked **six (6)** hours overtime this week at an overtime rate of double time. What are his overtime wages for this particular week? **(6 marks)**
- (c) Mark has been ordered by the court to hand over to the mother of his child each week 15% of his gross weekly wages. If he gives her \$100 less than the mandated 15%, how much money does she receive from Mark? **(5 marks)**
- (d) Jack, Shelly and Bill who earn \$4 200, \$4 000 and \$4 400 respectively are part of a savings deposit scheme whereby they deposit into a pooled employees account a portion of their combined weekly wages in the ratio 4:3:5. Who deposits the largest amount into the account and how much is it? **(5 marks)**

**(Total 25 marks)**

**Question 2**

- (a) A bar serves a special cocktail drink which has the two (2) main ingredients of white rum and coconut water. Two (2) 750 ml bottles of white rum and three (3) 500 ml bottles of coconut water cost \$1 290. Also three (3) 750 ml bottles of white rum and five (5) 500 ml bottles of coconut water cost \$2 050. What is the cost of a bottle each of white rum and coconut water? *(15 marks)*
- (b) For their Thursday night karaoke session, the bar makes 20 litres of its special cocktail drink to be served to all patrons in attendance that night. If each patron is to be served in an 8 fluid oz glass, how many patrons can be served? *(10 marks)*

*(Total 25 marks)***Question 3**

- (a) A catering group decided to put on a barbecue to raise funds. 20 lbs of onion are needed to season the meat for the barbecue. If the yield percent for onions is approximately 85%, how much onion must be purchased in order to have the 20 lbs of onion needed for the seasoning? *(8 marks)*
- (b) For how many years must Mr Brown invest \$4 000 at 15% simple interest for it to be doubled? *(7 marks)*
- (c) What is the edible portion quantity of trimmed filet of snapper which has a yield percent of 56.5% if 65 lbs of snapper are purchased? Given that this purchase is made each day for a restaurant, what is the maximum number of patrons that can daily order snapper in their meals if each patron is served 0.75 kg of snapper? *(10 marks)*

*(Total 25 marks)***Question 4**

The probabilities that a husband and wife will be alive twenty (20) years from now are given by 0.8 and 0.9 respectively.

- a. Find the probability that in twenty (20) years
- i. both will be alive
  - ii. neither will be alive
  - iii. at least one will be alive *(5 marks)*

- b. A certain machine is capable of making up to 200 items per hour. For four (4) consecutive hours, the machine makes 120, 118, 124 and 112 items. Find the average rate of items produced. **(5 marks)**
- c. How many different salads can be made from lettuce, escarole, endive, watercress and chicory? **(5 marks)**
- d. The fat contents in grams for one serving of eleven (11) brands of packaged foods, as determined by the US Department of Agriculture, are given as follows.  
Find the mean: 6.5, 6.5, 9.5, 8.0, 14.0, 8.5, 3.0, 7.5, 16.5, 7 & 8 **(5 marks)**
- e. For an events coordinator position in a hotel, the manager interviewed the following numbers of applicants each day over a five day period: 16, 19, 15, 15, & 14. Find the variances and the standard deviation. **(5 marks)**

**(Total 25 marks)**

**END OF EXAMINATION**