

**THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA****ASSOCIATE OF SCIENCE EXAMINATION****SEMESTER II – 2019 MAY**

PROGRAMMES: HOSPITALITY AND TOURISM MANAGEMENT
CULINARY ARTS

COURSE NAME: APPLIED MATHEMATICS FOR HOSPITALITY AND
TOURISM

CODE: MATH1205

YEAR GROUP: ONE

DATE: THURSDAY, 2019 MAY 16

TIME: 3:00 P.M. – 5:00 P.M.

DURATION: 2 HOURS

EXAMINATION TYPE: FINAL

This Examination Paper has 9 Pages

INSTRUCTIONS:

1. ANSWER ALL QUESTIONS FROM SECTION A
2. SECTION B CONSISTS OF FOUR (4) QUESTIONS. ANSWER ANY TWO (2)

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

SECTION B

Instruction: In the booklet provided, answer any **TWO (2)** questions from this section.

Question 1

The table below shows the number of tourists who participate in the Viking River Cruise as part of their vacation during the 6 year period from 1996 to 2001.

<i>Year</i>	1996	1997	1998	1999	2000	2001
<i># of tourists</i>	8000	9500	7500	9000	8800	9500

- A. i. Calculate the mean number of guests who travel on the Viking River Cruise per year. **(5 marks)**
- ii. Draw a line graph to show the trend in Viking River Cruise travel for the period shown **(8 marks)**
- iii. What is the probability that for any year chosen at random the number of tourists who participate in the Viking River Cruise is less than 9500? Express the answer as a percentage. **(4 marks)**
- B. The number of minutes spent travelling to and from work weekly by 8 employees in a restaurant are given below:
- 104, 75, 120, 66, 98, 72, 44, 86.**
- i. What is the range of the amount of time spent travelling weekly? **(2 marks)**
- ii. What is the median of the weekly travel time? **(3 marks)**
- iii. Calculate the standard deviation of the time spent travelling weekly. **(8 marks)**
- (Total 30 marks)**

Question 2

- A. Violette needs a loan to launch her pastry business. At the local credit union, she can get \$500 000 at a simple interest rate of 8 % per annum for 3 years. A small business lending agency offers her the same amount for 3 years at 7.5% per annum compound interest.
- Determine the **total** to be repaid if Violette chooses to borrow from the credit union. (5 marks)
 - Calculate the **interest** to be repaid if she chooses the lending agency (5 marks)
 - Which financial institution should she choose? (1 mark)
- B. As a part of his course work for a catering course Phineas is required to cater a party for 25 children. A recipe for pistachio cake serves 5 persons and requires $\frac{1}{2}$ cup of pistachios. 1 cup of pistachios weighs 4 ounces and pistachios are purchased for \$ 500 per pound, how much will the pistachios cost for the party? (6 marks)
- C. Randi is paid a basic rate of \$1 200 per hour for a basic 35-hour work week. During a week she works 10 hours overtime at time and a half and 8 hours at double time.
- What is her gross wage for the week? (6 marks)
 - What is her net wage for that week if income tax is levied at a rate 16 % and her allowances are:
 - single person allowance of \$3 000
 - dependent relative allowance of \$5 000?

(Total 30 marks)

Question 3

- A. Jan's Bakery needs to prepare dessert items for three different customers, A, B and C.
- 100 pounds of flour is needed for the orders. If flour is stored in 10-kilogram bags, how many bags of flour are required to prepare the order? **(3 marks)**
 - The chef uses 11 L of milk to make 257 portions of chocolate bavaroi. How many millilitres of milk is in each portion given it is a uniformed mixture? **(2 marks)**
 - The orders will be delivered in six containers decorated with red ribbon. Ribbon comes in 3-yard rolls. How many rolls will it take to decorate the containers if each requires 150 cm of ribbon? **(6 marks)**
 - Jan's delivery driver used the following amounts of diesel over a month: 35.5 litres in week one, 42.9 litres in week two, 86.9 litres in week three and 66.2 litres in week four. If diesel costs \$40 per gallon, how much would fuel have cost for the month? **(4 marks)**
 - The bakery hopes to make an overall profit of \$108,000 from the orders in the ratio 2:3:4 respectively. How much profit is expected from each customer? **(4 marks)**
- B. Evaluate $\sum_4^8 (n - 1)(2n + 75)$ **(6 marks)**
- C. A hotel with 220 rooms is expecting an occupancy level of 75% during spring break.
- How many rooms are expected to be vacant? **(2 marks)**
 - Each room costs US\$85 per night. A promotional discount of 15% is being offered to college students. What is the discounted cost for a group of students staying in 4 rooms for 3 nights? **(3 marks)**

(Total 30 marks)

Question 4

A. Solve:

i. $\frac{m-2}{3} + 1 = \frac{2m}{7}$ (5 marks)

ii. $4x - 2y = 10$
 $x + y = 4$ (5 marks)

B. At Fun Tours Inc., one of the tour drivers covered the following distances in tours during last week:

Monday	– 157 kilometres
Wednesday	– 264 kilometres
Thursday	– 73 kilometres
Saturday	– 301 kilometres

i. What was the mean distance travelled? (3 marks)

ii. Use a bar graph to represent the data. (6 marks)

C. The company charges a base fee of \$2 750 per tour and \$200 per kilometre for the distance covered.

i. Write an equation for determining the cost C of a tour covering d kilometres. (2 marks)

ii. A group of tourists take a tour of the city on a Fun Tours Inc. jitney. Use the equation formed to determine the cost of the tour if the speedometer on the jitney shows that the journey started with the tracker on 0050109 km and ended on 0050137 km. (4 marks)

D. An airline offers reservations in two categories (economy, first class) with five choices of meal service (snack only, vegetarian meal only, chicken meal only, soup only, juice only). In how many ways can a customer make a reservation? (1 mark)

E. On Flight 047, reservations were made for 11 snack, 7 vegetarian, 33 chicken, 5 soup, and 9 juice orders. If a passenger on this flight is picked at random,

i. What is the probability that the passenger ordered soup or juice? (2 marks)

ii. What is the probability that the passenger made a non-vegetarian order? (2 marks)

(Total 30 marks)

END OF EXAMINATION