

MASTER OF BUSINESS ADMINISTRATION (GENERAL)

FINAL EXAMINATION

### MAY 2024

**Course: OBM4419 Duration to complete: 4 Hours**

**(Business Analytics) Start Time: 9.00 am, 8th Sept 2024**

Lecturer: HENG HAN KOK End Time: 1.00 pm, 8th Sept 2024

Instructions:

## This examination paper is confidential. The questions must be answered individually.

## Students are NOT PERMITTED to discuss or consult with other students or individuals.

**INSTRUCTIONS TO CANDIDATES:**

1. This examination has a total of 100 marks and accounts for 30% of the final assessment of the subject.
2. Answer **ALL** the questions
3. This examination paper is confidential. The questions must be answered individually. Students are **NOT PERMITTED** to discuss or consult with other students or individuals.
4. **NILAI UNIVERSITY** has strict rules to ensure that students’ work is truly the result of their individual effort, skills and knowledge. Students must ensure that any answer submitted is genuinely their own and is not plagiarized.

## ANSWER FORMAT:

1. Do not put your name on any materials related to the exam. Use only your **STUDENT ID NUMBER** for identification.
2. Answers must be word-processed in 12-sized Times New Roman with 1.5 spacing.
3. Diagrams (if any) can be submitted via picture.
4. Your answer can be submitted via a PDF document ONLY.
5. Please save your answers in the following format:

**STUDENT ID\_COURSE CODE\_COURSE TITLE\_LECTURER NAME**

1. Your answer file must reach by 1.00 PM, 8th Sept 2024.

**Duration: FOURS (4) HOURS ONLY**

This exam paper consists of **4 printed pages** (excluding the cover page)

Answer **ALL** questions in the space provided. [100 marks]

**Section A: Case Study**

**Question 1 [50 marks]**

You have been provided with 34 pieces of information from the research questionnaires to study the sales volume of stores in a supermarket. Two independent variables are considered here the price of a product, as measured in cents, and the monthly budget for in-store promotional expenditures, measured in dollars, use the appropriate statistical techniques you learned in BM4419 to do the analysis. Write a report including introduction, methodology, result & analysis and conclusion. The details are as follows.

A table with numbers and a price

Description automatically generated

1. Introduction – At least two paragraphs including the objective of the study. (10 marks)
2. Methodology – 1 paragraph to write about the respondents and describe the techniques

you used to do the analysis. (10 marks)

1. Result & Analysis – Use the appropriate statistical techniques you learned in BM 4419 to do the analysis. You must analyze and discuss your results. You may also give your

opinions /suggestions/recommendations based on your results. (20 marks)

1. Conclusion – At least one paragraph. (10 marks)

**Section B: Problem Solving**

Instruction: Answer *ANY Two (2)* questions from this section.

**Question 1 [25 marks]**

1. In a recent survey, 12 students at a local university were asked approximately how many hours per week they spend on the Internet. Their responses were:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 17 | 13 | 3 | 0 | 15 | 12 |
| 13 | 10 | 5 | 8 | 22 | 7 |

Calculate the lower quartile and upper quartile of the data, and hence find the quartile

deviation. (13 marks)

1. A survey was conducted to study the preferred way for people to order fast food. Suppose the results, based on sample of 100 males and 100 females, were as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Dining Preference | Gender | | |
| Male (M) | Female (F) | Total |
| Dine inside | 20 | 10 | 30 |
| Order inside to go | 20 | 10 | 30 |
| Order at the drive-through | 60 | 80 | 140 |
| Total | 100 | 100 | 200 |

1. If a respondent is selected, what is the probability that the selected respondent
   * + 1. prefers to order at the drive-through; (2 marks)
       2. is a female and prefers to order at the drive-through; (2 marks)
       3. is a male or prefers to dine inside the restaurant; (4 marks)
2. Given that a respondent selected is female, what is the probability that she prefers ordering at the drive-through?  (4 marks)

**Question 2 [25 marks]**

1. Researchers from the Lubin School of Business at Pace University in New York City conducted a study on Internet-supported courses. In one part of the study, four numerical variables were collected on 108 students in an introductory management course that met once a week for an entire semester. One variable collected was hit consistency. To measure hit consistency, the researchers did the following: If a student did not visit the Internet site between classes, the student was given a 0 for that time period. If a student visited the Internet site one or more times between classes, the student was given a 1 for that time period. Because there were 13 time periods, a students score on hit consistency could range from 0 to 13. The other three variables included the student s course average, the student s cumulative grade point average (GPA), and the total number of hits the student had on the Internet site supporting the course. The following table gives the correlation coefficient for all pairs of variables. Note that correlations marked with an \* are statistically significant, using \* = 0.001:

|  |  |
| --- | --- |
| **Variables** | **Correlation** |
| Course Average, | Cumulative GPA 0.82\* |
| Course Average, | Total Hits 0.08 |
| Course Average, | Hit Consistency 0.97\* |
| Cumulative GPA, | Total Hits 0.12 |
| Cumulative GPA, | Hit Consistency 0.32\* |
| Total Hits, | Hit Consistency 0.64\* |

1. What conclusions can you reach from this correlation analysis? (6 marks)
2. Are you surprised by the results, or are they consistent with your own observations and experiences? (2 marks)
3. In an experiment, the number of weeks a plant has been planted on the ground and the height of the plant have been monitored and recorded. The results are shown in the table below:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Number of weeks, X | 26 | 33 | 35 | 27 | 25 | 31 | 30 | 36 |
| Height of plant, Y (cm) | 105 | 134 | 132 | 112 | 101 | 124 | 128 | 141 |

1. Calculate the product moment correlation coefficient between the height of plant and the number of weeks the plant has been planted. Interpret your result.  (8 marks)
2. Compute the least squares regression equation for height of plant on the number of weeks.

(4 marks)

1. Interpret the values of ‘a’ and ‘b’ in the regression line obtained in part (ii).

(2 marks)

1. Estimate the height of the plant after it was planted for 32 weeks. Comment on the

accuracy of the estimate. (3 marks)

**Question 3 [25 marks]**

Formulate, and solve, a linear program for the following scenario. A boat manufacturer makes fishing boats, which are sold for a profit of RM 440 each, and canoes, which are sold for a profit of RM 330 each. Each fishing boat requires 100 assembly hours and 25 finishing hours, while each canoe requires 75 assembly hours and 50 finishing hours. The manufacturer has a total of 8000 assembly hours and 3000 finishing hours available. How many fishing boats and how many canoes should be made to maximize the manufacturer’s profit? (Let x = the number of fishing boats and y = the number of canoes.)

------------ The End ------------