



FACULTY OF BUSINESS

FINAL EXAMINATION

Student ID (in Figures) :

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Student ID (in Words) :

Course Code & Name : **MGT5104 OPERATIONS MANAGEMENT AND DECISION SCIENCES**
 Semester & Year : January – April 2022
 Lecturer/Examiner : Suhada Ishak /Assoc. Prof Dr Akram Al-Khaled
 Duration : 3 Hours

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 3 parts:
 - PART A (30 marks) : Answer all THREE (3) problem solving questions. Answers are to be written in the Answer Booklet provided.
 - PART B (70 marks) : Answer all FIVE (5) essay questions. Answers are to be written in the Answer Booklet provided.
2. Candidates are not allowed to bring any unauthorised materials except writing equipment into the Examination Hall. Electronic dictionaries are strictly prohibited.
3. This question paper must be submitted along with all used and/or unused rough papers and/or graph paper (if any). Candidates are NOT allowed to take any examination materials out of the examination hall.
4. Only ballpoint pens are allowed to be used in answering the questions, with the exception of multiple choice questions, where 2B pencils are to be used.

WARNING: The University Examination Board (UEB) of BERJAYA University College regards cheating as a most serious offence and will not hesitate to mete out the appropriate punitive actions according to the severity of the offence committed, and in accordance with the clauses stipulated in the Students' Handbook, up to and including expulsion from BERJAYA University College.

Total Number of pages = 5 (Including the cover page)

PART A : PROBLEM SOLVING QUESTIONS (30 MARKS)

INSTRUCTION(S) : Answer **ALL THREE (3)** questions. Write your answers in the Answer Booklet provided.

Question 1

Bi-lo Appliance Super-Store has outlets in several large metropolitan areas in New England. The general sales manager aired a commercial for a digital camera on selected local TV stations prior to a sale starting on Saturday and ending Sunday. She obtained the information for Saturday–Sunday digital camera sales at the various outlets and paired it with the number of times the advertisement was shown on the local TV stations. The purpose is to find whether there is any relationship between the number of times the advertisement was aired and digital camera sales. The pairings are:

Location of TV Station	Number of Airings	Saturday–Sunday Sales (\$ thousands)
Providence	4	15
Springfield	2	8
New Haven	5	21
Boston	6	24
Hartford	3	17

- a. Determine the dependent variable. (1 mark)

 - b. Draw a scatter diagram. (3 marks)

 - c. Compute the correlation coefficient. (5 marks)

 - d. Interpret these statistical measures. (1 mark)
- (Total: 10 marks)**

Question 2

Arbitron Media Research Inc. conducted a study of the iPod listening habits of men and women. One facet of the study involved the mean listening time. It was discovered that the mean listening time for a sample of 10 men was 35 minutes per day. The standard deviation was 10 minutes per day. The mean listening time for a sample of 12 women was also 35 minutes, but the standard deviation of the sample was 12 minutes. At the .10 significance level, can we conclude that there is a difference in the variation in the listening times for men and women?

- a. State the null hypothesis, alternate hypothesis and the decision rule for this test. (5 marks)
- b. Compute the value of the test statistic. (2 marks)
- c. Interpret the result regarding H_0 . (3 marks)

(Total: 10 marks)

Question 3

Using simple moving averages and the following time series data, respond to each of the items.

Period	Demand	Period	Demand
1	126	6	101
2	112	7	132
3	135	8	141
4	145	9	110
5	106	10	131

- a. Compute all possible forecasts using a four-period simple moving average model. (3 marks)
- b. Compute all possible forecasts using a six-period simple moving average model. (2 marks)
- c. Compute the MADs for each moving average forecast. (4 marks)
- d. Determine which forecast has less error. (1 mark)

(Total: 10 marks)

End of Part A

PART B : ESSAY QUESTIONS (70 MARKS)

INSTRUCTION(S) : Answer **ALL FIVE (5)** questions. Write your answers in the Answer Booklet provided.

Question 1

a) The spread of the new coronavirus, COVID-19, is being felt globally across operations in ways that are difficult to model and assess. The affected regions are at the heart of many global supply chains. Propose **FIVE (5)** actions that can be taken by companies with direct exposure to the COVID-19 outbreak.

(10 marks)

b) Inventory management is the supervision of non-capitalized assets (inventory) and stock items. A component of supply chain management, inventory management supervises the flow of goods from manufacturers to warehouses and from these facilities to point of sale. Illustrate **FIVE (5)** ways on how companies use their inventory.

(10 marks)

(Total: 20 marks)

Question 2

“Process Strategy is to create a process to produce offerings that meet customer requirements within cost and other managerial constraints.” Based on the above statement, explain **FOUR (4)** basic process strategies of operations management.

(16 marks)

Question 3

To empower employees and implement Total Quality Management (TQM) as a continuing effort, everyone in the organization must be well-trained in the techniques of TQM. Interpret **THREE (3)** fundamental tools used in Total Quality Management.

(9 marks)

Question 4

PERT (Programme Evaluation Review Technique) and CPM (Critical Path Method) are project management techniques, which have been created out of the need of Western industrial and military establishments to plan, schedule and control complex projects. Distinguish **FIVE (5)** differences between PERT and CPM.

(10 marks)

Question 5

Project management is a complex undertaking, with many stages and processes. It should follow the full business lifecycle, from definition and justification of the project, through to delivering demonstrable benefits for the business. Describe any **THREE (3)** categories of risk in project management. Provide relevant examples for each of the risk identified based on a project.

(15 marks)

END OF EXAM PAPER