



**FACULTY OF BUSINESS**

**FINAL EXAMINATION**

Student ID (in Figures) : 

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Student ID (in Words) : \_\_\_\_\_  
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Course Code & Name : **MGT5104 OPERATIONS MANAGEMENT AND DECISION SCIENCE**  
Semester & Year : September – December 2022  
Lecturer/Examiner : Assoc. Prof Dr Akram Al-Khaled/Suhada Ishak  
Duration : 3 HOURS

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**INSTRUCTIONS TO CANDIDATES**

1. This question paper consists of 2 parts:  
PART A (30 marks) : Answer all TWO (2) problem solving questions. Answers are to be written in the Answer Booklet provided.  
PART B (70 marks) : Answer all FOUR (4) 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 = 3 (Including the cover page)**

**PART A : PROBLEM SOLVING QUESTIONS (30 MARKS)**

**INSTRUCTION(S)** : Answer **ALL TWO (2)** questions. Write your answers in the Answer Booklet provided.

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**Question 1**

Merqeen Supply Company sells and delivers office supplies to companies, schools, and agencies within a 50-km radius of its warehouse. The office supply business is competitive, and the ability to deliver orders promptly is a big factor in getting new customers and maintaining old ones. The manager of the company wants to be certain that enough drivers and vehicles are available to deliver orders promptly and that they have adequate inventory in stock. Therefore, the manager wants to be able to forecast the demand for deliveries during the next month. Listed below are the records of previous delivered orders from January to October.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Orders	120	90	100	75	110	50	75	130	110	90

- Using 3-month moving average, compute the monthly demand forecast for the above data. (7 marks)
  - Forecast the orders for November and December by using method (a) (3 marks)
- (Total: 10 marks)**

**Question 2**

The following ANOVA summary table is for a multiple regression model with two independent variables:

Source	Degree of freedom	Sum of Squares	Mean Squares	$F$
Regression	2	30		
Error	10	120		
Total	12	150		

- Determine the regression mean square ( $MSR$ ) and the mean square error ( $MSE$ ). (4 marks)
  - Compute the overall  $F_{STAT}$  test statistics. (3 marks)
  - Identify whether there is a significant relationship between  $Y$  and the two independent variable at 0.05 level of significance. (6 marks)
  - Compute the coefficient of multiple regression,  $r^2$  and interpret the meaning. (3 marks)
  - Calculate the adjusted  $r^2$ . (4 marks)
- (Total: 20 marks)**

**End of Part A**

**PART B : ESSAY QUESTIONS (70 MARKS)**

**INSTRUCTION(S)** : Answer **ALL FOUR (4)** questions. Write your answers in the Answer Booklet provided.

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**Question 1**

“The main purpose of regular maintenance is to ensure that all equipment required for production are operating at 100% efficiency at all times. A superb maintenance program requires company-wide participation and support by everyone ranging from the top executives to the shop floor personnel.”

Based on the aforementioned statement, determine **FIVE (5)** reasons why it is crucial for everyone in the organization to be involved with Total Productive Maintenance (TPM).

(10 marks)

**Question 2**

Supply Chain Management works as a backbone of an organization in managing critical issues of business like global expansion, environmental concerns and rapid growth which create the value for the business.

Critically debate **FOUR (4)** roles of supply chain management in the 21st Century.

(20 marks)

**Question 3**

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.

Elaborate on **FIVE (5)** phases of project management. Provide a relevant example for each phase to fortify your answer.

(20 marks)

**Question 4**

The competitive priorities operationalize the organization’s competitive strategy. The operations strategy focuses on specific capabilities of the operation that give the company a competitive edge. These capabilities are called competitive priorities. By excelling in one of these capabilities, a company can become a winner in its market.

Examine **FOUR (4)** categories of competitive priorities that are commonly used by organizations. Provide relevant examples to fortify your answer.

(20 marks)

**END OF EXAM PAPER**