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TAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY FACULTY OF COMMERCE, HUMAN SCIENCES AND EDUCATION

DEPARTMENT OF GOVERNANCE AND MANAGEMENT SCIENCES

QUALIFICATION: BACHELOR OF BUSINESS MANAGEMENT		
QUALIFICATION CODE: 07BBMN	LEVEL: 7	
COURSE CODE: OPM611S	COURSE NAME: OPERATIONS MANAGEMENT	
SESSION: JUNE 2024	PAPER: PAPER 1/1	
DURATION: 2 HOURS	MARKS: 100	

	FIRST OPPORTUNITY EXAMINATION QUESTION PAPER
EXAMINER(S)	MS C KAUAMI
MODERATOR:	MR ERNEST MBANGA

INSTRUCTIONS

- 1. Answer ALL the questions.
- 2. Show all formulae and calculations as marks will be awarded for them.
- 3. Write clearly and neatly.
- 4. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Calculator.

THIS QUESTION PAPER CONSISTS OF 7 PAGES (Including this front page)

Section A:

[14 Marks]

Question 1: Multiple Choice - Choose the correct Answer.

(Kindly note that questions 1 & 4 are 2 marks each, the rest 1 mark each)

- 1. How many <u>minutes</u> will it take to produce the backlog of 18 calculators with capacity to produce 24 calculators an hour.
 - A. 1 hour and 30 minutes
 - B. 45 minutes
 - C. 67 minutes
 - D. 90 minutes
 - E. None of the above
- 2. _____ allows organisations to minimize costs and involves bulk buying, movement and bulk storage of raw materials and finished goods.
 - A. Product availability.
 - B. Risk management.
 - C. Economies of scale.
 - D. Uncertainty.
- 3. According to the Theory of Constraints (TOC), bottlenecks can be caused by:
 - A. Equipment and how it is used
 - B. Policies
 - C. Employee capability
 - D. All of the above
 - E. A&C
- 4. Sara James Bakery has a plant for processing breakfast rolls. Last week the facility produced 148,000 rolls. The effective capacity is 175,000 rolls. The production line operates 7 days per week with three (3) 8-hour shifts per day. The line was designed to process nut-filled, cinnamon-flavoured, sugar-coated Deluxe roll at the rate of 1,200 per hour. Determine design capacity.
 - A. 148 000
 - B. 175 000
 - C. 323 000
 - D. 67 200
 - E. 201 600

- 5. The following are service demand management strategies except,
 - A. Customer segmentation for different times/days
 - B. Difference in pricing during peak and slack times
 - C. Make use of a reservation system
 - D. encourage customer participation in the rendering of service
- 6. Among services supply management strategies, there is need to use that can be called in any time
 - A. Contingent employees
 - B. Shared capacity
 - C. Management
 - D. Suppliers
- 7. In service sector aggregate plans
 - A. Bind strategic goals and workforce schedules
 - B. Bind capacity and workforce schedules
 - C. Focuses on product families or total capacity requirements rather than individual products.
 - D. All of these
 - E. None of these
- 8. Aggregate planning requires the manipulation of the following controllable variable to ensure that the plan meets demand, excluding:
 - A. Inventory
 - B. Employees
 - C. Idle time /over time
 - D. Pricing
 - E. Suppliers
- 9. One of the advantages of lean methodology is combining craft and mass production and this means:
 - A. Combining quality and remedy of inefficiencies
 - B. Combining old ways and large-scale production
 - C. Combining art and technology
 - D. None of these
 - E. All of these

- 10. The lean stabilisation strategy is utilised to stabilise
 - A. Production and support process
 - B. Demand and supply
 - C. the supply chain
 - D. internal relationships
- 11. The following are part of the lean techniques, except:
 - A. Standard times
 - B. Kanban

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- C. Involvement of employees
- D. 2 Bin system

12. Lean systems have the following core elements, except

- A. Demand driven
- B. Supply driven
- C. Eliminate waste
- D. Excellence & continuous improvement

Section **B**

[53 Marks]

Question 2: Operations management

(10)

(2 marks per correct answer x 5 = 10)

Briefly explain ANY 5 of the **8-Ms** an operations manager needs to manage for the best results and high productivity.

Question 3: Supply chain management

(16)

Read the following case study and answer the questions that follow:

Case study: Mavunfa Toys and Novelties

John Matlare is the CEO of Mavunla Toys and Novelties. This organisation's main product is a Madiba doll, which stands 30 cm high and is a life-like replica of South Africa's former president. Matlare is in the process of evaluating suppliers that will be able to manufacture non-toxic paint, according to his strict specifications, with which to paint the doll. The paint has to be non-toxic because the doll will be the toy of choice for many children. Matlare cannot afford to put the lives of children at risk. This is a critical strategic element of his supply chain. The organisation that he chooses should be able to contribute to his product. (Source: from 'Operations Management' 2nd Edition 2006, by Kruger, de Wit and Ramdass).

- i. Define the terms supply chain, supply chain management, and supplier. (6)
- By making use of a diagram, present the supply chain for a manufacturing concern such as Mavunla Toys and Novelties. (4)
- iii. <u>Identify</u> any <u>two</u> strategic partners of Mavunla Toys and Novelties and <u>discuss</u> their role/contribution to Mavunla Toys and Novelties. (6)

Question 4: Design of goods and services

Explain the concepts of a) Robust Design and b) Mass Customization. (5 marks each)

Question 5: Process Design

Outline the six characteristics that helps in fully understanding a process, including the categories under which each characteristic is found. (1 mark per category and characteristic = 9)

(10)

(9)

Question 6: Quality management(8 marks)(1 mark per cost type and each explanation)Name and explain the different types of costs of quality.

Section C

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Question 7: Forecasting

Actual sales of Toyota Hilux Double Cab Bakkies for the first six month in 2023 were as follows:

January: 50 February: 85 March: 92 April: 104 May: 97 June: 90

Use this information and determine in whole numbers:

- i) The average actual monthly sales for that period (2)
- ii) Trend: Increase the actual sales for June by 5% per month for the next three months. (6)
- iii) SMA: make a forecast for July using a <u>four months</u> simple moving average.
 (3)
- iv) WMA: make forecast for July, using a <u>three months</u> weighted moving average where the weights are 0.5; 0.3 and 0.2 respectively (4)
- v) Make a forecast for July, using the <u>exponential smoothing technique</u>, if the forecast for June was 80 and the smoothing constant is 0,5. (3)

(18)

[33 Marks]

Question 8: ABC Classification of Inventory

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As a recent operations management graduate you've established Tura Motors, a second-hand car parts dealer and need to ensure optimum management of inventory. Your first priority is to classify the inventory using ABC analysis. The following is a complete list of inventory holding of the company. (1 mark per correct answer)

Item	Annual demand	Cost (N\$)
1	10 000	8
2	4 400	12
3	1 500	45
4	1225	250
5	1 000	20
6	500	500
7	300	1 500
8	600	20
9	1 750	10
10	2 500	5
11	800	35
12	1350	350
13	6 000	10
14	2 500	50
15	120	700

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