



UNIVERSITY EXAMINATIONS: 2025/2026
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN
INFORMATION TECHNOLOGY
BIT 404
BCOM
BBL
OPERATIONS MANAGEMENT
(ONLINE)
END TERM EXAMINATION

DATE: TUESDAY 6.00-9.00PM DECEMBER, 2025 **TIME: 2 HOURS**

INSTRUCTIONS: Question One is Compulsory, Choose Three Other Questions

SECTION A (COMPULSORY)

QUESTION ONE (15 Marks) Compulsory

Read the case below and answer the following questions:

SWB is in the furniture making business. It produces 150 000 wooden bookcases each week using batch production. SWB sells all its output to one customer. Quality control is important. SWB has 240 employees, of which 100 are part-time workers. SWB's managers use noticeboards around the factory and meetings with employees every month to help reduce communication barriers. The Operations Manager is considering introducing just-in-time inventory control to reduce the amount of waste.

- a) Discuss THREE factors a business should consider when deciding whether to introduce just-in-time inventory control. **(6 marks)**
- b) Identify TWO advantages and TWO disadvantage to SWB of using quality control.
 - i. Advantages: **(2 marks)**
 - ii. Disadvantages: **(2 marks)**
- c) Do you think it is a good idea for a business to have only one customer? Justify your answer. **(3 marks)**
- d) Explain if it is better for SWB to use full-time employees rather than part-time employees. Justify your answer. **(2 marks)**

SECTION B

(ANSWER ANY THREE (3) QUESTIONS IN THIS SECTION)

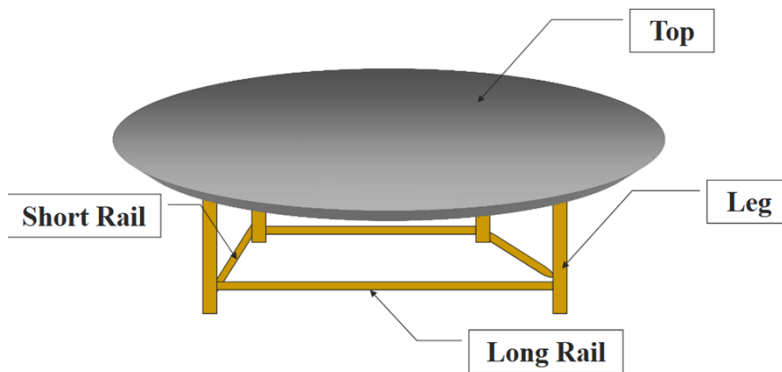
QUESTION TWO (15 marks)

- a) Overstocking or under stocking are both problems that can adversely affect the operations of an organization. To manage this problem effectively organizations, need to adopt systems. Discuss THREE techniques an organization can adopt. **(9 Marks)**
- b) Using Kenya Defence Forces as an example, illustrate its production process. **(6 marks)**

QUESTION THREE (15 marks)

a) Using the diagram below prepare a bill of materials (BOM) plan for the table.

(5 Marks)



b) Using examples, discuss FIVE reasons why operations managers have adopted Material requirements planning (MRP) method. **(10 marks)**

QUESTION FOUR (15 marks)

- a) An automotive parts assembly line produces an average of 95 units per hour during a shift. The line's maximum possible output (design capacity) is 120 units per hour. However, the effective capacity, which accounts for quality checks, changeovers, and material delivery times, is 100 units per hour.
- Determine the utilization and efficiency for the automotive company. (Show your workings) **(4 marks)**
 - Interpret your results in a(i) above. **(1 mark)**
- b) A university lecture hall hosts an average of 12 lectures per week. The maximum (design) capacity for this specific hall is 20 lectures per week (if used every hour of every day), but the effective capacity, considering maintenance, scheduling conflicts, and typical academic hours, is 15 lectures per week.
- Determine the utilization and efficiency for the university. (Show your workings) **(4 marks)**
 - Interpret your results in b(i) above. **(1 mark)**
- c) Describe FIVE reasons why creativity and innovation is vital for the product development process to be successful. **(5 marks)**

QUESTION FIVE (15 marks)

- a) With the increased awareness of the importance of a healthy lifestyle, the gym industry is growing in Kenya. Discuss FIVE ways customers might judge this service quality. **(10 marks)**
- b) Identify FIVE reasons why Gym A can charge a higher price than Gym B for its gym membership. **(5 marks)**

QUESTION SIX (15 marks)

- a) Prepare a check sheet for the occurrences of defective computer monitors based on the following data, which an analyst obtained from the process for making the monitors. Workers are given a 15-minute break at 10:15 a.m. and 3:15 p.m., and a lunch break at noon. **(5 marks)**

Interval Start Time	Number of Defects	Interval Start Time	Number of Defects	Interval Start Time	Number of Defects
8:00	1	10:45	0	2:15	0
8:15	0	11:00	0	2:30	2
8:30	0	11:15	0	2:45	2
8:45	1	11:30	1	3:00	3
9:00	0	11:45	3	3:30	0
9:15	1	1:00	1	3:45	1
9:30	1	1:15	0	4:00	0
9:45	2	1:30	0	4:15	0
10:00	3	1:45	1	4:30	1
10:30	1	2:00	1	4:45	3

- b) Explain your conclusion from your answer in (a) above. **(2 marks)**

- c) Using examples, analyze how the use of modern manufacturing systems might improve operational efficiency.
 - i. CAD **(2 marks)**
 - ii. CIM **(2 marks)**
 - iii. CAM **(2 marks)**
 - iv. MRP **(2 marks)**