

**FACULTY OF BUSINESS MANAGEMENT
END OF SEMESTER EXAMINATIONS - APRIL 2025**

PROGRAMME: MBA

YEAR/SEM: YEAR 2/SEMESTER 1

COURSE CODE: MBA 851

NAME: ADVANCED OPERATIONS MANAGEMENT

DATE: 2025-04-15

TIME: 2:00-5:00PM

INSTRUCTIONS TO CANDIDATES:

1. Read the instructions very carefully
2. The time allowed for this examination is STRICTLY three hours
3. Read each question carefully before you attempt and allocate your time equally between all the Sections
4. Write clearly and legibly. Illegible handwriting cannot be marked
5. Number the questions you have attempted
6. Use of appropriate workplace examples to illustrate your answers will earn you bonus marks
7. Any examination malpractice detected will lead to automatic disqualification.

DO NOT WRITE ANYTHING ON THE QUESTION PAPER

Section A Answer Any One Question

Question 1:

Case Study - Product Design and Innovation

TechNova Inc., a leading technology company, is planning to launch a new product, the SmartWatch 2.0, which will include advanced features such as health monitoring, voice assistant integration, and longer battery life. The company needs to design the product and the manufacturing process to ensure the product is innovative, cost-effective, and meets customer expectations.

- a). Discuss the key principles of product design that TechNova should consider when developing the SmartWatch 2.0. How should the company balance functionality, aesthetics, and cost in the design process?
- b). Describe how TechNova can utilize the concept of design for manufacturability (DFM) to ensure smooth production processes and cost efficiency. Provide examples of potential design challenges and solutions.

Section B Answer any THREE Questions

Question 1:

- a. What are the key objectives of facility layout planning, and how does an efficient layout contribute to overall operational performance? (12 Marks)
- b. Discuss the differences between process-oriented and product-oriented layout types. In which situations would each type be most beneficial, and why? (13 Marks)

Question 2:

- a) Discuss the key challenges faced by operations managers in managing production scheduling in a high-mix, low-volume production environment. What strategies can be implemented to overcome these challenges? (15 Marks)
- b) Explain the role of lean manufacturing in improving production processes. How can a company implement lean principles to reduce waste and improve efficiency in a manufacturing plant? (10 marks)

Question 3:

- a) What are the main factors that influence the location decisions of a manufacturing firm? Discuss how these factors impact both short-term and long-term operational success. (13 Marks)
- b) A company is considering expanding its operations internationally. What are the potential advantages and disadvantages of choosing an overseas location, and how should these factors impact the company's decision? (13 Marks)

Question 4:

- a) Explain the role of project management in operations management, particularly in the context of new product or service design and implementation. What key project management tools are most useful for operations managers in this process? (10 Marks)
- b) Discuss the challenges in managing the timeline, budget, and scope of a project for a new product launch? (15 Marks)

Question 5:

- a) Discuss the principles of facility or plant location (5 Marks)
- b) Explain the factors that an organization must consider when selecting a location for a new facility. (12 Marks)
- b) Discuss the role of globalization in location decisions. How can organizations balance local market needs with global supply chain efficiency? (8 marks)

Question 6:

- a) Write short notes on the following:
 - i. Design for production (3 marks)
 - ii. Design for distribution (3 marks)
 - iii. Design for use (3 marks)
- b) Product design aims to create a product with excellent functional utility and sales appeal at an acceptable cost within a reasonable time. In line with performance and functionality, What are the objectives of product and service design (10 marks)
- c) Several functions in organisations are getting to be strategic, product design being one of them. If that is the case, how does product design contribute to achieving the overall organisation's strategic functions? (6 marks)