ASSIGNMENT

Course Code	**:**	**MMPC-009**
Course Title	**:**	**Management of Machines and Materials**
Assignment Code	**:**	**MMPC-009/TMA/JAN/2026**
Coverage	**:**	**All Blocks**

Note: Attempt all the questions and submit this assignment to the coordinator of your study centre. Last date of submission for January 2026 session is 30th April, 2026 and for July 2026 session is 31st October, 2026.

1. Explain the objectives of Operations Management. How does a service organization fix its performance objectives?

2. What is a batch production system? Describe how the optimum batch size is determined in batch production.

3. Under what circumstances would you use PERT as opposed to CPM in project management? Give some examples of projects where each would be more applicable than the other.

4. What do you understand by 'Capacity'? Differentiate between licensed capacity and rated capacity of a plant.

5. Define standardisation and explain its significance in materials management. Discuss the benefits of standardisation with respect to economy, efficiency, safety, quality control, communication, and environmental protection, and examine its limitations in the context of changing consumer preferences and product innovation.

1. Explain the objectives of Operations Management. How does a service organization fix its performance objectives?

Answer

Operations Management is concerned with planning, organising and controlling the processes through which inputs such as people, materials, machines, information and capital are converted into goods or services. Its purpose is not merely to produce more. The operations system has to provide the required output in the right quantity and quality, at the right time and at a cost that gives value to the customer as well as to the organisation. For this reason, operations objectives cover both performance and cost.

Objectives of Operations Management

The objectives of an operations system can be understood through the following closely related areas. They have to be balanced because improving one objective by ignoring the others can create a new problem.

1. **Efficiency or productivity:** The operation should obtain more useful output from the available inputs. Productivity improves when labour time, machine time, material, energy, space and capital are used with less waste. In a hospital this may mean treating more patients with the same facilities without lowering the quality of care; in a factory it may mean producing more acceptable units per machine-hour.
2. **Effectiveness:** An efficient process is not enough if it produces the wrong output. Effectiveness means doing the right work and meeting the real requirement of the customer. Operations decisions should therefore support the organisation's purpose and the actual demand in the market.
3. **Quality:** Goods and services should conform to the required standards and satisfy customer needs. Good quality reduces defects, rework, complaints and loss of reputation. In services, quality also includes behaviour of staff, accuracy, cleanliness, reliability and the way the customer is treated.
4. **Lead time and speed:** The time taken from the customer's request to delivery should be kept reasonable. Waiting, queues, avoidable movement, idle time and delays increase the total throughput time. Shorter lead time improves customer convenience and usually lowers work-in-process and operating cost as well.
5. **Capacity utilisation:** Manpower, machines, buildings and other facilities should be used at an appropriate level. Very low utilisation raises the cost per unit, while continuous overloading can cause breakdowns, errors, employee