R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT
(An Autonomous College U/s UGC Act 1956)

MBA SEMESTER-II, SEMESTER END EXAMINATION – WINTER 2025

SUBJECT CODE: 1MB1206	**DATE: 28-01-2026**
SUBJECT NAME: PRODUCTION & OPERATION MANAGEMENT	
TIME: 09:00 AM to 12:00 PM	**TOTAL MARKS: 70**

Instructions

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Write answers of **Section A** and **Section B** in **separate answer books**.
3. Attempt all questions from both **Section A** and **Section B**.
4. Each section carries **35 marks**, with a total of **70 marks** for the examination.
5. The figures to the right of each question indicate full marks, make suitable assumptions with justification.
6. BL - Bloom's Taxonomy Levels (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

SECTION A

		Marks	BL	CO
Q.1	**Multiple-Choice Questions**	**[05]**		
(a)	The main focus of production and operations management is:	1	U	1

  (i) Marketing products   **(ii)** Transforming inputs into outputs efficiently
  (iii) Managing people only   **(iv)** Financial accounting

		Marks	BL	CO
(b)	Which of the following is an example of a process layout?	1	R	1

  (i) Car manufacturing plant   **(ii)** Bottling plant
  (iii) Hospital   **(iv)** Assembly line

		Marks	BL	CO
(c)	RFID technology is primarily used for:	1	U	2

  (i) Supply chain visibility and tracking   **(ii)** Employee payroll
  (iii) Internet browsing   **(iv)** Advertising

		Marks	BL	CO
(d)	Lean production aims to :	1	U	2

  (i) Increase inventory   **(ii)** Decrease productivity
  (iii) Maximize waste   **(iv)** Eliminate waste and improve efficiency

		Marks	BL	CO
(e)	Material Requirement Planning (MRP) is used to:	1	U	2

(i) Forecast stock prices	**(ii)** Plan material needs for production		
(iii) Design marketing campaigns	**(iv)** Monitor employee attendance		

Q.2   Attempt Any Two   **[10]**

(a) Explain the system and function view of production and operation management in organizations.   **5   N   1**

(b) What are the different types of manufacturing processes? Explain Briefly   **5   U   1**

(c) Define product design. Explain various types of products and the process of designing them.   **5   A   1**

Q.3   Attempt Any Two   **[10]**

(a) Briefly Discuss the impact of IoT, RFID, and blockchain technology on production and logistics operations.   **5   N   1**

(b) What is the role of automation and robotics in modern warehouses and production lines?   **5   A   2**

(c) Explain the theoretical concept of Material Requirement Planning (MRP).   **5   U   2**

Q.4   Attempt Any Two   **[10]**

(a) What is the Lean production system? How is it beneficial for operations?   **5   E   2**

(b) Define Just in Time (JIT) production. What are its advantages in operations?   **5   N   2**

(c) Explain the concept and importance of forecasting for inventory and production control.   **5   A   2**

SECTION B

Q.5 Multiple-Choice Questions [05]

   (a) PERT technique is most suitable for: 1   R   1

      (i) Repetitive projects   **(ii)** Highly predictable projects

      (iii) Research and development projects   **(iv)** Manufacturing processes

   (b) Float or slack in a project refers to: 1   U   1

      (i) Float or slack in a project refers to: **(ii)** Delay without affecting project completion

      (iii) Risk buffer   **(iv)** Risk buffer

   (c) Quality management in projects focuses on   1   R   2

      (i) Inspection only   **(ii)** Customer satisfaction

      (iii) Customer satisfaction   **(iv)** Cost reduction

   (d) SERVQUAL primarily measures: 1   U   2

      (i) Product quality   **(ii)** Customer satisfaction

      (iii) Service quality gap   **(iv)** Brand loyalty

   (e) The ability to perform the promised service dependably and accurately is called: 1   R   1

      (i) Empathy   **(ii)** Reliability

      (iii) Assurance   **(iv)** Responsiveness

Q.6 Attempt Any Two [10]

   (a) Define PERT. Explain its objectives and applications. Explain the concept of optimistic, pessimistic, and most likely time in PERT.   5   R   1

   (b) Explain the concepts of float and slack in CPM.   5   U   1

   (c) Explain the project life cycle. Describe the activities involved in each phase.   5   U   1

Q.7 Attempt Any Two [10]

   (a) Explain the concept of Total Quality Management (TQM). Discuss its core principles and objectives.   5   A   2

(b) Five jobs **A, B, C, D, and E** are to be processed on **one machine**.   **5   N   2**
The processing times (in hours) are given below:

Job	A	B	C	D	E
Time (hrs)	6	2	8	3	5

Determine: Optimal sequence of jobs , Total elapsed time , Idle time of the machine

(c) Explain the ISO 9000 series of standards. Discuss its objectives and scope.   **5   U   2**

Q.8 Attempt Any Two   **[10]**

(a) A helpdesk receives customers at a rate of 6 customers per hour. The service rate is 8   **5   N   2**
customers per hour.
Find:
1. Average waiting time in the system (W)
2. Average waiting time in the queue (Wq)

(b) Explain the concept of Defects Per Million Opportunities (DPMO) and its importance   **5   U   2**
in Six Sigma.

(c) Describe the DMAIC methodology of Six Sigma with suitable examples.   **5   R   1**

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