

**INTERMEDIATE EXAMINATION****SET 1****MODEL QUESTION PAPER****TERM – DECEMBER 2025****PAPER – 9****SYLLABUS 2022****OPERATIONS MANAGEMENT AND STRATEGIC MANAGEMENT****Time Allowed: 1 Hour****Full Marks: 100**

Answer all questions. Each question carries 2 marks.

SECTION – A (Compulsory)**1. Choose the correct option:****[15 x 2 =30]**

- i. Which one of the following is associated with the configuration of departments, work centres and equipment and machinery, with focus on the flow of materials or work through the production system?
 - a. Facility Location
 - b. Facility Layout
 - c. Capacity Planning
 - d. Process
- ii. Which ISO defines Quality Assurance in Final Inspection Test:
 - a. ISO 9002
 - b. ISO 9003
 - c. ISO 9001
 - d. ISO 9004
- iii. In a particular plant there are 12 workers manufacturing a single product and the output per month consisting of 25 days of that particular product is 500. How much is the monthly productivity?
 - a. 20
 - b. 38
 - c. 42
 - d. 50
- iv. Which phase of product life cycle is characterized by Saturation in the market place?
 - a. Maturity Phase
 - b. Growth Phase
 - c. Introduction Phase
 - d. Decline Phase

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- v. Which among the following is not the limitation of Gantt Chart:
- It does not convey the variability of the task duration, equipment performance, and human potential, any one of which could influence the accuracy of loading the work centres.
 - It clearly indicates the details regarding progress of activities.
 - It does not give a clear indication of the interrelationship between separate activities.
 - The chart is static and must be uploaded periodically to account for new job arrival and revised time estimates for existing jobs.
- vi. Which among the following stands correct for PERT:
- Time estimate is deterministic with known time duration. Single time estimate.
 - Activity orientation
 - Focused on time
 - More suitable for repetitive projects
- vii. Free float is defined as:
- Total float by deducting slack time of the head event.
 - Total float by deducting slack time of the tail event
 - Free float by deducting tail slack
 - Free float by adding tail slack
- viii. 'Z' chart is a chart used in:
- Programme control
 - Job control
 - Cost control
 - Quality control.
- ix. Spares can be classified as per service level:
- Rotable spares
 - Insurance spares
 - Capital spares
 - All of the above
- x. Frequency of breakdown:
- Number of break down / Available machine hour
 - Available machine hour /Number of break down



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- c. Down time due to maintenance / Number of break down
- d. Number of break down / Down time due to maintenance

xi. Which Ocean strategy focus on making the competition irrelevant:

- a. Red Ocean Strategy
- b. Blue Ocean Strategy
- c. Green Ocean Strategy
- d. Black Ocean Strategy

xii. Which among the following are the benefits of having a vision:

- a. Good visions are inspiring and exhilarating
- b. It represents a discontinuity, a step function and a jump ahead so that the company knows what it is to be.
- c. Good visions are competitive, original and unique
- d. All the above

xiii. SMART goal framework does not include:

- a. Strategy
- b. Measurable
- c. Relevant
- d. Time Based

xiv. The characteristics of Business Environment includes:

- a. Complex Environment
- b. Multi-faceted
- c. Dynamic
- d. All of the above

xv. In the context of BPR, what does “reengineering” refers to?

- a. Continuously improving existing processes
- b. Completely redesigning and reconstructing processes
- c. Outsourcing business processes
- d. Automating manual tasks



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Section – B

(Answer any five questions out of seven questions given. Each question carries 14 Marks)

[5 x 14 = 70]

2. (a) “Recent trends in production and operations management relate to global competition and the impact it has on manufacturing firms.” State the recent trends. [7]

- (b) Below data are collected related to work study for 150 hrs on a floor shop employing 7 labours having a shift of 8 hrs in a day.

- Number of observations documented in total = 3000
- Number of observations in which no working activity is observed = 500
- Manual to machine ratio = 3:2
- Average Rating factor = 120%
- Number of product produced during the period of study = 7000

Company has its own policy regarding personal allowance which is pegged at 11% of normal standard time to produce a product.

The floor shop produces 49000 products per month for 24 working days, it has an absenteeism of around 6%.

Calculate efficiency of utilisation of Labour and Productive Efficiency of Labour. [7]

3. (a) The management of HOTEL KOLKATA INTERNATIONAL is considering the period of replacement of light bulbs fitted in its rooms. There are 500 rooms in the hotel and each room has 6 bulbs. The management is now following the policy of replacing the bulbs as they fail at a total cost of ₹30 per bulb. The management feels that this cost can be reduced to ₹10 per bulb by adopting the periodic replacement policy. On the basis of the information given below, calculate and evaluate the alternative and make a recommendation to the management: [7]

Months of use	1	2	3	4	5
Percent of bulb failing by that month	10	25	50	80	100

- (b) M/s. Tubes Ltd. are the manufacturers of picture tubes of T.V. The following are the details of their operation during 2024:

Average monthly market demand	2,000 tubes
Ordering cost	₹100 per order
Inventory carrying cost	20% per annum
Cost of tubes	₹500 per tube

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Normal usage	100 tubes per week
Minimum usage	50 tubes per week
Maximum usage	200 tubes per week
Lead time to supply	6 – 8 weeks

Calculate the following:

- Economic order quantity. If the supplier is willing to supply quarterly 1,500 units at a discount of 5%, is it worth accepting?
- Maximum level of stock.
- Minimum level of stock.
- Re-order level of stock.

[7]

4. (a) Four jobs can be processed on four different machines, with one job on one machine. Resulting profits vary with assignments. They are given below:

Jobs/ Machines	A	B	C	D
I	42	35	28	21
II	30	25	20	15
III	30	25	20	15
IV	24	20	16	12

Calculate the optimum assignment of jobs to machines and the corresponding profit.

[7]

- (b) The processing times (t_j) in hrs for the five jobs of a single machine scheduling is given. Find the optimal sequence which will minimise the mean flow time and find the mean flow time.

Prepare a sequence which will minimise the weighted mean flow time and find the mean flow time.

[7]

Job (j)	1	2	3	4	5
Processing time (t_j) hrs	30	8	10	28	16
Weight (W_j)	1	2	1	2	3

5. (a) A Bank is in the process of formulating its loan policy. Involving a maximum of ₹600 Million. Table below gives the relevant types of loans. Bad debts are not recoverable and produce no interest receive. To meet competition from other Banks the following policy guidelines have been set. At least 40% of the funds must be allocated to the agricultural and commercial loans. Funds allocated to housing must be at least 50% of all loans given to personal, car, Housing. The overall bad debts on all loans may not exceed 0.06. Solve this linear program Model to determine optimal loan allocations.



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Type of loan	Interest rate %	Bad debts (Probability)
Personal	17	0.10
Car	14	0.07
Housing	11	0.05
Agricultural	10	0.08
Commercial	13	0.06

(b) For the given data determine the expected duration of the project and variance of the project.

[7]

Activity	Optimistic time (to)	Most likely Time (tm)	Pessimistic time (tp)
1-2	6	9	12
1-5	4	7	8
2-3	14	17	20
2-4	7	10	13
2-5	3	5	9
3-7	13	18	25
4-6	10	14	16
4-7	12	15	18
5-6	9	11	12
6-7	17	20	25

6. (a) Summarize EVA-driven responsibility accounting.

[7]

(b) Describe the characteristics and the benefits of Big Data.

[7]

7. (a) Discuss the concept of PESTEL Framework.

[7]

(b) Analyse BCG Matrix.

[7]

8. (a) "While designing a Control System, top management should remember that controls should follow strategy". In this context demonstrate the recommended guidelines for proper control.

[7]

(b) Demonstrate in brief some of the areas that have the ability to create goal congruence.

[7]