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**Presidency University**

**Bengaluru**

 **School of Management**

**Summer term End-Term Examination - August 2024**

**Date**: 06-08-2024

**Time**: 9:30am – 12:30Pm

**Max Marks**: 100

**Weightage**: 50%

**Semester**: Summer Term July 2024

**Course Code**: MBA 4028

**Course Name**: Service Operations Management.

**Department:** SOM

 **Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any information on the question paper other than roll number.*
3. *Question paper consists of 3 parts.*

**PART A**

**Answer any 10 Questions. Each question carries 3 marks. (10Qx 3M= 30)**

1. Define “Service Operations Management” (CO:01 Knowledge)
2. What are the key characteristics of Services? (CO:01 Knowledge)
3. List down the types of Services & give two examples for each (CO:01 Knowledge)

1. What is Service Capacity? Give two examples (CO:02 Knowledge)
2. What are the four Expansion Strategies? (CO:02 Knowledge)

1. What are the two types of Queues? (CO:02 Knowledge)
2. What is meant by Inventory? List down the types of Inventories. (CO:03 Knowledge)
3. What are the factors that affect Inventory? (CO:03 Knowledge)
4. What are the different costs associated with Inventory? (CO:03 Knowledge)
5. What is “Safety Stock” and why is it used? (CO:04 Knowledge)
6. What are the consequences of “Less Capacity” or “Over Capacity” in a service organization? (CO:04 Knowledge)
7. What are the two types of “Quantitative Models” that help Capacity Planning? (CO:03 Knowledge)

**PART B**

**Answer any 4 Questions. Each question carries 10 marks. (4Qx 10M= 40)**

1. Explain Service Quality and list down the major dimensions of “Service Quality” (CO:02 Application)
2. What are the strategies adopted to manage Service Capacity Constraints? Give one example for each of the strategy. (CO:01 Application)

1. What are the functional classifications of Inventory and explain briefly each one of them? (CO:03 Application)
2. What are the criteria to be adopted while planning for Capacity? (CO:02 Application)

1. List down and explain different types of Demand Forecasting Models used in a Service Industry? (CO:03 Application)
2. What are the key reasons for failure in Service Operations Management. Give at least 5 reasons with a brief explanation of each. (CO:04 Application)

**PART C**

**Answer the following Questions. (2Qx 15M= 30)**

1. **Solve the following:** (CO:02 Analysis)

A self-service store employs one cashier at its counter. 12 customers on an average arrive every 7 minutes while the cashier can serve 10 customer every 7 minutes. Assuming Poison distribution for arrival rate and Exponential distribution for service rate, calculate the following:

Model applicable is (λ/µ/1 : ∞/FIFO)

1. Utility factor or traffic intensity of the system
2. Average number of customers at the cash counter
3. Average number of customers in the queue at the cash counter
4. Waiting time of a customer at the cash counter
5. Waiting time in the queue at the cash counter
6. **Solve using Monte Carlo Simulation:** (CO:03 Analysis)

A dentist schedules appointments for his patients for 30 minutes for various dentistry work. The table shows the various categories of work along with the time taken and the number of patients.

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Time Required** | **No. of Patients** | **Probability** |
| Filling | 45 mins | 40 | 40/100=0.4 |
| Crowning | 60 mins | 15 | 0.15 |
| Cleaning | 15 mins | 15 | 0.15 |
| Extracting | 45 mins | 10 | 0.10 |
| Check-up | 15 mins | 20 | 0.20 |

Simulate the clinic work for 4 hours if the work starts at 8 am. Assume all patients come on time. Use the following random numbers as given:40,82,11,34,25,66,17,79