International Institute of Health Management Research (IIHMR), New Delhi

PGDM (HOSPITAL AND HEALTH MANAGEMENT)

(Batch 2022-2024)

RE_SUPPLEMENTARY EXAM (4th Term)
SUPPLEMENTARY EXAM (5th & 6th Term)

HOM 716-Operation Management in Hospitals

Date: June 24, 2024   **Timing & Duration: 02:30-05:30 P.M. (3 Hrs.)**   **Max. Marks: 100**

Instructions:
- Budget your time as per the marks given for each question and write your answer accordingly.
- Don't write anything on the Question Paper except writing your Registration No.
- Mobile Phones are not allowed even for computations.

Note: Be brief and to the point
Part A is compulsory.
Answer any six questions from Part B.

PART A

Part A duly answered is to be attached to the answer sheet.

Each question carries one mark   **(1 x 10 = 10 marks)**

Tick Mark the correct answer.

1. Which one of the following **would not** generally be considered an aspect of operations management?
   a. Work methods
   b. Secure financial resources
   c. Maintain quality
   d. Product or service design

2. Which one **does not use** operations management?
   a. A bank
   b. A hospital
   c. A supermarket
   d. They all use it

3. Hospitals or clinics are typical examples of:
   a. Fixed position layout
   b. Process layout
   c. Product layout
   d. None of the above

4. Inventory control method based on frequency of issues is called:
   a. ABC analysis
   b. VEN analysis
   c. FSN analysis
   d. XYZ analysis

5. Hospitals are divided into departments because
   a. it is convenient to do so
   b. each department can be assigned a specific functional responsibility
   c. it provides opportunities for promotion
   d. it is done by every organization

6. EOQ strikes a balance between inventory, carrying cost and ordering costs
   a. True   b. False

7. Which one is not generally considered to be an advantage of using models for decision making?
   a. Providing a systematic approach to problem solving
   b. Emphasizing quantitative information
   c. Providing an exact representation of reality
   d. Enabling managers to answer "what if" questions

8. Buffer stock is kept to:
   a. Compensation for uncertainty in demand
   b. Consumption during lead time
   c. Compensation for uncertainty in lead time
   d. None of the above

9. The main difference between PERT and CPM techniques is
   a. PERT uses Activity on Node diagram; whereas CPM uses Activity on Arrow diagram
   b. PERT lays emphasis on cost whereas CPM lays emphasis on time
   c. PERT is probabilistic whereas CPM is deterministic.
   d. None of the above

10. Typical measures of queuing system performance in healthcare service include:
    a. Average number of patients waiting
    b. Average time the patients wait (in queue or in the system)
    c. Capacity utilization
    d. All of the above

Part – B

(Answer any six questions)

Each question carries 15 marks   **(6 x 15 = 90 marks)**

1. Each year Yellow Stone Hospital purchases 20000 syringes that cost Rs.16 per syringe. The cost of placing an order is Rs.12 and the cost of holding is 24% per year.

   i.   Determine the economic order quantity.   **(3)**
  ii.   Compute the average inventory level, assuming that minimum inventory level is zero.   **(4)**
 iii.   Estimate the number of orders per year and time between orders.   **(4)**
  iv.   Determine the total annual cost.   **(4)**

2. What is operations management? How you can apply in healthcare services production. Explain the various operations management tools and techniques that could be applied in hospital operations management.

3.   Write short notes on any ***three***
    i.   Dummy Activity.
    ii.   Assignment problem in hospital operations management.
    iii.   Fast tracking and Crashing.
    iv.   Statistical Control charts in hospital operations.
    v.   Queuing and capacity planning in Hospitals.

4. A maintenance activity in the hospital consists of following jobs. Draw the network for the project and **calculate the total float and free float for each activity**. **What can you say about the slacks of the events** of the project.

Job	Duration (in days)
1-2	3
2-3	4
3-4	4
3-7	4
4-5	2
4-7	2
5-6	3
6-7	2

5.   Enlist the various forecasting techniques used in operations management. Explain anyone in detail.

6.   List and explain the types of time estimate that are used in PERT. Explain the application of standard normal statistic in PERT.

7.   The Medical OPD attendance of a clinic for last 13 years of operation is furnished below:

Year	OPD attendance (Patients)
2011	96
2012	116
2013	119
2014	127
2015	146
2016	145
2017	153
2018	158
2019	160
2020	165
2021	177
2022	190
2023	205

    i.   Find a simple regression for the above data.
    ii.   How many patients should the clinic expect in medical OPD in this year?

8. A Doc-in-a-Box office, a group of family practitioners, is looking for a new location to expand their services. Three locations are identified with fixed costs. Because of diverse population profiles in each location, patient visits and variable costs, revenues vary in each location as shown below:

	A	**B**	**C**
Average Revenue per patient	60	60	60
Average variable cost per patient	44	47	45
Average Number of visits	13500	12000	11500
Fixed Costs in INR	120000	145000	140000

    i.   Determine the location based on total cost.
    ii.   Determine the location based on profit.
    iii. Determine the sensitivity of the decision for varying values of visits.