**R15**

**Code No: 723AA**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**MBA III Semester Examinations, January-2018**
**PRODUCTION AND OPERATIONS MANAGEMENT**

**Time: 3hours** **Max.Marks:75**

**Note:** This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A** **5 × 5 marks = 25**

1.a) Define 'production system' and explain its classification. [5]
b) Describe standardization procedure along with its advantages. [5]
c) Critically evaluate quantitative and qualitative approaches to designing process layouts. [5]
d) What is Heuristic Procedure? Give relevant example to explain. [5]
e) When is it appropriate to use the VED, SDE & XYZ classification scheme? [5]

**PART - B** **5 × 10 marks = 50**

2.a) Discuss the role of operations in strategic management.
b) Define productivity and explain how overall productivity measured. [10]

**OR**

3. Explain the concept of world class manufacturing. What is its relevance for developing country like India? [10]

4. What is value engineering? What are the advantages of Value engineering? [10]

**OR**

5. What is the role of ergonomics in the product design process of an automobile manufacturing company? [10]

6. How does the choice of the layout affect the operational performance of an organization? [10]

**OR**

7. What are the pros and cons of using the location factor analysis method for location planning? Do you have any recommendations on how to use this method for location planning? [10]

8. Classify the following as a job shop or as a flow shop for the purpose of scheduling. Also, identify the relevant parameters of the system that have bearing on the scheduling complexity.
a) Executive health checkup in a hospital
b) Tirupati temple queue complex having multiple stages
c) Breakfast buffet system at Taj Hotel
d) Final assembly shop of a computer manufacturer
e) Computerized passenger reservation system of Indian Railways. [10]

**OR**

9. A job shop has five jobs for processing. There are four machines in the shop. The jobs visit the machines in a particular order (indicated by each job's routing file). The table below has details of the machines visited by each job and the processing time of each machine. The table also has information on the due dates.

| Jobs | Machines visited (Processing time in minutes) | | | | Due by (minute) |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | |
| 1 | 1(12) | 3(7) | 4(8) | 5(4) | 45 |
| 2 | 2(7) | 4(6) | 3(5) | 5(6) | 35 |
| 3 | 1(8) | 2(5) | 3(9) | 4(5) | 37 |
| 4 | 3(6) | 1(6) | 2(6) | 5(7) | 29 |
| 5 | 2(9) | 4(8) | 5(6) | 3(7) | 40 |

Develop a schedule for the jobs using SPT, EDD & FCFS rules. Compute the machine waiting time and job waiting time for all the schedules obtained using the above rules. If you were to select a scheduling rule on the basis of minimum job waiting time, what will be your recommendation? If there is a penalty for delay @ Rs.250 per minute and a reward of Rs.100 per minute of completing early, compute the cost of the schedules attributable to these. [10]

10. Elucidate importance of store management. Why scrap management should be followed in store management. [10]

**OR**

11. A manufacturer of electric ovens has made the following estimate for annual consumption and unit cost of the components that are for manufacturing. Perform an ABC analysis and advise how the manufacturer should plan and control for inventory. [10]

| Item no | Annual Consumption | Unit of measurement | Unit value (Rs) |
|---|---|---|---|
| 1 | 200 | tonnes | 7000 |
| 2 | 400 | tonnes | 5000 |
| 3 | 40000 | pieces | 30 |
| 4 | 60000 | pieces | 1 |
| 5 | 40000 | pieces | 1.25 |
| 6 | 20000 | pieces | 10 |
| 7 | 4000 | litre | 200 |
| 8 | 20000 | metre | 3 |
| 9 | 10000 | Pieces | 7 |
| 10 | 10000 | pieces | 8 |
| 11 | 80000 | pieces | .50 |
| 12 | 60000 | pieces | 1.25 |

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