

## OPERATIONS MANAGEMENT

Time: 50 minutes

Max marks: 30

1. A transport bus has 40 seats, of which 5 seats are damaged and unusable. In a month, on an average, the bus runs with only 20 seats filled. Determine the ideal and effective capacity utilisation for the month. (2 marks)
2. What are the ways to match capacity with the given demand by a small amount during a short time period, by modifying supply? (3 marks)
3. Differentiate between Aggregate Planning and Master Production schedule. (2 marks)

4. Sijjat Papads makes 5 types of papads in the same factory. Only one type can be produced at the same time. The stock position and demand rate on Monday morning are as follows:

Type	Stock	Demand/day
Small	2000	500
Medium	1000	200
Large	150	50
Chilly	2400	400
Tomato	1600	300

Which type should be taken up for production immediately?

(2marks)

5. At 8:00, a student lists out the tasks to be done during the day as follows:

Task	Description	Time required (hrs)	Due Time (hrs)
A	Write letter to home	0.5	13:00
B	Study for test	2	14:00
C	Write assignment	3	11:00
D	Wash clothes	1.5	17:00
E	Take books from library	1	12:30

Determine the sequence in which the jobs should be carried out according to SPT, EDD and CR rules.

(4 marks)

6. A person needs to carry out wiring of his house. He has identified the various activities and precedence relationships as follows:

	Activity	Predecessor	Time (days)
A	Buy pipe and cable	-	1
B	Buy switches and fittings	-	2
C	Buy main switch	-	1
D	Cut channels on wall	-	5
E	Fix pipes, draw cables	A, D	3
F	Fix switches, fittings	B, E	2
G	Fix main switch	C, F	1
H	Charge and test wiring	G	1
I	Plaster and conceal pipes	E	5

What is the latest day to start buying the main switch without affecting the overall schedule?

(4 marks)

7. A student staying in the hostel owns a motor cycle. To fill petrol, he has to travel to the nearest petrol pump at an expenditure of Rs20.00. The estimated petrol consumption is 2 litres every month. The carrying rate is 24% **per year** and the petrol costs Rs40.00 per litre. How much petrol should he buy at a time? (3 marks)
8. Dawkins makes kitchen pans each of which consists of a pan, handle and two screws to fix

the handle on to the pan. The latest MPS calls for 1000 Nos in week 4 and 2000 Nos in week 5 and the lead time for final assembly is one week. The present inventory status is as follows:

Item	Pan	Handle	Screw
Lot Size Rule	L4L	FOQ=3000	POQ=2 weeks
Beginning inventory	500	1000	800
Lead time (weeks)	1	2	2
Scheduled receipts	500 in week 1	1000 in week 3	400 in week 2

Determine the planned order release quantities and weeks **only for Screw**.

(4 marks)

9. Explain the Kanban system of production control considering two work centres.

(4 marks)

10. What are the principles specified by Taylor for the application of scientific management?

(2 marks)