

VPM's
DR VN BRIMS, Thane
Programme: MMS (2014-16)
First Semester Examination December 2014

Subject	Operations Management (OM 01)		
Roll No.		Marks	60 Marks
Total No. of Questions	7	Duration	3 Hours
Total No. of printed pages	2	Date	05-12-2014

Note: Q1 is compulsory and solve any FOUR from the remaining SIX questions. Statistical tables are given.

Q1) 20 Marks (Compulsory)

- (a) Explain the process of applying to get ISO 9001:2008 for an educational Institute.
 (b) A company follows EOQ system for inventory of spare parts. Annual demand is 1000 units purchased at 40/unit. Ordering cost is 50/order & inventory carrying cost is 25% per year. Find EOQ & TC of operation. The supplier is ready to offer 5% discount if only 1 order is placed in a year. Suggest if discount is to be accepted or not. Explain with reasons.

Attempt Any FOUR from the Remaining SIX Questions

Q2) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- (a) Explain the difference between CPM & PERT.
 (b) Define different types of plant layout. Which type will be suitable for dairy?
 (c) Draw the network diagram identify critical path and compute project duration.

Activity	Preceding Activity	Duration
A	-	8
B	-	9
C	-	7
D	A	15
E	A,B	4
F	B	1
G	B	4
H	D,E	5
I	A,B	4
J	C,G	5
K	A,B,H	8

Q3) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- (a) Find sales forecast for month 13 using exponential smoothing method with smoothing constant of 0.7 The sales data for past one year is given.
 2080 1850 1400 2130 1800 1750 2250 1950 2100 2400 2150 2250 .
 (b) Explain different methods of sales forecasting.
 (c) Explain different parameters for comparison of various sales forecasting methods.

Q4) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- (a) Explain the process of statistical quality control in an electronic component production unit.
- (b) Use Jonson's method of sequencing the jobs & find optimum sequence & total elapsed time. All jobs must be processed on machine 1 & then on machine 2

Job	A	B	C	D	E	F
Machine 1	10	5	4	5	7	3
Machine 2	2	9	7	8	5	4

- (c) Explain how Johnson's method can be applied for multiple jobs processed on 3 machines.

Q5) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- (a) Explain the concepts of time & motion study of a factory worker. Can it be applied to artists & designers?
- (b) A company produces bicycles & major parts are 2 wheels, 1 chain, 2 mudguards & 48 spokes per 1 bicycle. Annual demand of bicycles is 18000. Assume all parts are purchased. Wheels are purchased at 360/ unit. Ordering cost is 10086/ order. Inventory carrying cost is 2.5% per month. Calculate EOQ for wheels.
- (c) Prepare MRP for wheels for next 6 months with data in part b above. Lead time is 1 month & opening stock for month 1 is 225. Assume demand for all months is equal.

Q6) Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- (a) A company produces a part in stages as given below. Demand rate is 50 units/hour.

	S1	S2	S3
No of workers	2	1	3
Production time at each stage in sec/unit	74	45	123

Find bottleneck stage, process capacity, flow rate & utilisation.

- (b) Explain different factors considered while setting a petrochemical complex.
- (c) A company manufacturing soaps requires material which is purchased with following data. Ordering cost 1000/order Inventory carrying cost 1.5 % per month per unit, Purchase price 50/unit, Annual demand 18000 units Find Economic order quantity & total variable cost. The supplier is willing to give discount as below :

0 – 1200 units price is 50
1201-1500 units price is 48
1501 or more units price is 45

Should the discount be accepted? If yes find EOQ.

Q 7. Any two from (a) or (b) or (c) ————— (5x2) = 10 Marks

- (a) Explain the factors to be considered for location of a new unit producing glucose biscuits.
- (b) Explain various methods of work study used in BPO industry.
- (c) Explain the principles of statistical quality control applied in Recruitment.