

PG Odd Semester (CBCS) Exam., November—2016

BUSINESS ADMINISTRATION

(3rd Semester)

Course No. : MBACC-3401

(Production Planning and Control)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks
for the questions

Answer **all** questions

1. (a) Discuss in brief the quantitative techniques of forecasting.
- (b) Using single-exponential smoothing method, find out forecast for the 12th period for the tabulated data. Take value of α as :
- (i) 0.1
- (ii) 0.5
- (iii) 0.9

Month	Observed value
1	210
2	150
3	145
4	195
5	310
6	175
7	170
8	130
9	240
10	265
11	235

4+10=14

OR

2. (a) How does chase strategy differ from level strategy?
- (b) An organization uses overtime, inventory and subcontracting to absorb fluctuations in demand. A production plan for 12 months is devised and updated each month. The expected demand for the next 12 periods is as follows :

Time period	Unit demand (10^3)
1	10
2	15
3	30
4	27

(3)

Time period	Unit demand (10^3)
5	30
6	16
7	12
8	10
9	18
10	26
11	30
12	15

The following costs and constraints are relevant :

Maximum regular production/period
19000 units

Maximum overtime production/period
4000 units

Regular production cost—₹ 30/unit

Overtime production cost—₹ 35/unit

Subcontracting cost—₹ 37/unit

Inventory holding cost/period—
₹ 1/period

What is the optimum production plan for the next 12 months (assuming beginning inventory is zero, and no stock outs can be tolerated)? $4+10=14$

3. (a) Discuss in brief the two-machine scheduling problem. Mention the scheduling process at 'Bellop'.
- (b) A wholesale grocery distribution centre uses a two-step process to fill the

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(Turn Over)

(4)

orders. The next day's work will consist of filling the seven orders shown in the table below. Determine the job sequence that will minimize the time required to fill the orders.

Order	Time (hrs)	
	Step-I	Step-II
A	1.20	1.40
B	0.90	1.30
C	2.00	0.80
D	1.70	1.50
E	1.60	1.80
F	2.20	1.75
G	1.30	1.40

$4+4+6=14$

OR

4. (a) What is line balancing? How does it help in production system?
- (b) Process times (including setup times) and due dates for six jobs waiting to be processed at a work centre are shown below. Determine the sequence of processing according to each of the following rules :
- (i) FCFS
 - (ii) SPT
 - (iii) Due date
 - (iv) CR

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(Continued)

<i>Job</i>	<i>Processing time (days)</i>	<i>Due date (days)</i>
<i>A</i>	2	7
<i>B</i>	8	16
<i>C</i>	4	4
<i>D</i>	10	17
<i>E</i>	5	15
<i>F</i>	12	18

Assume jobs arrived in the orders shown.

$$7+7=14$$

5. What is the theory of constraints? Why should operations managers need to know about the theory of constraints? Explain. $7+7=14$

OR

6. Write short notes on the following : $7 \times 2 = 14$

- (a) JIT philosophy
(b) Bottleneck

7. Describe the capacity requirements planning process for a company operating a material requirements planning system. Discuss why Capacity Requirement Planning (CRP) is necessary given that rough cut capacity planning has been performed properly. Highlight also the capacity plan of 'Krishnan and Co'. $7+4+3=14$

8. Write short notes on the following : $7 \times 2 = 14$

- (a) CRAFT
(b) CORELAP

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