22569

23242

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

(7) Preferably, write the answers in sequential order.

Marks

1. Attempt any FIVE of the following: **10**

a) List four types of basic production system.

b) Define the terms :

i) Work study

ii) Time study

c) Define production planning.

d) State any four advantages of lean manufacturing.

e) Define inventory control.

f) Define linear programming.

g) Define following terms related to project management techniques

i) Critical path

ii) Critical activity

Marks

2. Attempt any THREE of the following: **12**

a) Define productivity and state it's significance.

b) Describe moving average method of sales forecasting with suitable example.

c) Define 'Economic Order Quantity' and derive it's equation.

d) Enumerate the principles of motion economy pertaining to work place layout.

3. Attempt any THREE of the following: **12**

a) Define plant layout and state its objectives.

b) Define plant location and state its need.

c) Explain basic steps in sales forecasting.

d) Explain capacity planning with suitable example.

4. Attempt any THREE of the following: **12**

a) Define

i) Lean manufacturing

ii) Agile manufacturing

b) Explain the factors to be considered before doing a process plan of manufacturing the gear.

c) Describe the concept of ABC analysis as applied to inventory control.

d) Differentiate between two handed process chart and multiple activity chart.

e) Explain material requirement planning (MRP).

Marks

5. Attempt any TWO of the following: **12**

a) Draw flow process chart and outline process chart for some suitable methods.

b) A job has been sub divided into five elements. The time for each element and respective rating are given below.

Element No.	Observed time	Rating factor %
1	0.7	80
2	0.8	100
3	1.3	120
4	0.5	90
5	1.2	100

Calculate the normal time and standard time for each element and for the job if the allowance is 15%.

c) If five jobs, each of which has to be processed on two machines A and B in order AB. Processing time are given in following table.

Job	M/C A	M/C B
1	6	3
2	2	7
3	10	8
4	4	9
5	11	5

Determine the order in which these jobs should be processed so as to minimize the total processing time.

Marks

6. Attempt any TWO of the following: **12**

a) The following details are available regarding a project.

Activity	Predecessor Activity	Duration (Weeks)
A	-	3
B	A	5
C	A	7
D	B	10
E	C	5
F	D, E	4

Determine the critical path, the critical activities and the project complition time

b) Give advantages and limitations of agile manufacturing.

c) Compare between CPM and PERT. State their applications.