22573

12425

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

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

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

(3) Figures to the right indicate full marks.

(4) Use of Non-programmable Electronic Pocket Calculator is permissible.

(5) Use of Steam tables, logarithmic, Mollier's chart is permitted.

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

Marks

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

a) Define 'Therblig'.

b) Enlist types of allowance in Time Study.

c) State any 4 objectives of PPC.

d) Enlist functions of PPC.

e) Give formulae to calculate variance and standard deviation.

f) Define TPMP.

g) Give formulae to calculate down time index and maintenance cost index.

Marks

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

a) Prepare man-type flow process chart for pocket attaching, with summary table.

b) Elaborate on single and double acceptance sampling plan guidelines.

c) State Fulkerson's rule for numbering activities in network construction.

d) Calculate BEP (units) and margin of safety if-

i) Factory rent - Rs. 2000

ii) Selling price - Rs. 9/unit

iii) Purchase cost - Rs. 5/unit

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

a) Highlight application principles of motion economy in cutting department of garment industry.

b) Balance the production line for full sleeve men's shirt with pocket for daily production of 1000 shirts. Justify no. of m/c allottment.

c) Analyses direct and indirect cost elements in garment manufacturing industry.

d) Analyses types of cost associated with maintenance.

Marks

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

a) Following data is given for time study -

Elements	Cycles (Min.)		
	1	2	3
A	0.8	0.84	0.89
B	1.17	2	1.14
C	2.4	2.35	2.38

Calculate standard time of operation if -

i) Relaxation allowance - 15%

ii) Contingency allowance - 2%

iii) Performance rating - 0.85.

b) Compare CPM with PERT.

c) Analyses BEP with graphical representation. Justify each line in graph.

d) i) Give formula to calculate P/V ratio and contribution.

ii) State advantages of margin of safety.

e) Schedule types of maintenance to be implemented in apparel manufacturing industry.

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

a) Explain 'Examine' step of SREDDIM in details.

b) Production Manager of garment company inspected no. of defective garments in 5 random sampes with batch of 20 garments in each sample. Table shows no. of defective garments in each sample of 20.

Sample	1	2	3	4	5
No. of defective garments	3	2	1	2	1

Draw p-chart and np-chart and state conclusion for each chart.

c) Draw network. Find critical path and project duration for following data -

Activity	1-2	1-4	1-7	2-3	3-5	4-6	4-8	5-6	6-9	7-8	8-9
Duration (days)	2	2	1	4	1	5	8	4	3	3	3

Marks

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

a) i) Construct network and find project duration for data -

Activity	Predecessor	Time estimate (days)		
		To	Tm	Tp
A	-	1	2	3
B	A	2	4	6
C	A	1	2	3
D	B, C	1	3	5
E	B, D	2	4	6
F	E	2	5	14

ii) Find probability of completion of project within expected time.

b) Define BEP. State advantages and limitations of BEP.

c) Explain classification of maintenance.