

# 22573

**11920**

**3 Hours / 70 Marks**

Seat No.

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- 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) Assume suitable data, if necessary.
- (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

- 1. Attempt any FIVE of the following: 10**
- Define 'SOP'.
  - Define 'time study'.
  - State objectives of SQC in apparel industry.
  - Define production control.
  - Enlist any four types of events.
  - State need of maintenance.
  - Enlist various costs associated with maintenance.
- 2. Attempt any THREE of the following: 12**
- Analyze various types of allowances in time study.
  - Compare production planning with production control.
  - State the Fulkerson's rule to number the events in network.
  - Explain assumptions and uses of Break-even point.

P.T.O.

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

- Explain application of Ergonomics in garment industry with 2 suitable examples.
- Analyze functions of PPC.
- Analyze components of production cost for basic formal men's shirt.
- Explain evaluation of maintenance performance with calculation of TPMP and down time index.

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

- a) Calculate standard time from given data -

Elements	Cycles (Time in min.)		
	1	2	3
↓			
A	2.1	2.1	1.9
B	0.8	0.9	0.9
C	3.6	3.5	3.8

- Assume performance rating as 90% except element C is  $m/c$  element.
  - Assume contingency allowance 15% and relaxation allowance 2%.
- Compare CPM with PERT.
  - Calculate B.E.P. in terms of units for following data -
    - Land and buinding → 9 lakhs.
    - Sales revenue → 20,000/- for 100 shirts.
    - Variable cost → 2000/- for 100 shirts.
  - Give significance of  $P/V$  ratio
  - Analyze significance of maintenance in garment industry with 2 suitable examples.

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

- a) Explain principles of motion economy.
- b) Organise the day-wise PPC schedule for 10,000 basic formal shirts to be delivered after 30 days.
- c) Construct the network from given data -

Activity	Predecessors	Activity time (weeks)
A	–	4
B	A	3
C	A	2
D	B	5
E	B	3
F	C, D	4
G	E, F	3

and find critical path.

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

- a) A small project is composed of following activities with time estimates -

Activity	To	Tm	Tp
1 - 2	1	1	7
1 - 3	1	4	7
1 - 4	2	2	8
2 - 5	1	1	1
3 - 5	2	5	14
4 - 6	2	5	8
5- 6	3	6	15

- (i) Construct a network and find critical path.
  - (ii) Calculate standard deviation of project.
- b) Explain concept of B.E.P with graphical representation and state its advantages.
  - c) Explain methodology of condition based maintenance.