Instructions : (1) All Questions are *compulsory.*

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

(3) Assume suitable data, if necessary.

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

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

Marks

1. **Attempt any FIVE :**   **20**

(a) Compare between job production & batch production.

(b) State the 'Therbligs' concept and give details for any three therbligs.

(c) Explain the terms : (i) AON & (ii) AOA.

(d) Define 'P.E.R.T.' & explain 3 time estimates – t_o, t_m & t_p.

(e) State requirements of good maintenance.

(f) Define :

(i) mean (ii) median (iii) range & (iv) dispersion

(g) Explain the following specific order cost accounting –

(i) Job cost Accounting (ii) Contract cost Accounting

2. **Attempt any FOUR :** 16

    (a) State advantages & disadvantages of production planning.

    (b) Define 'Time study'. Explain the steps involved in time study.

    (c) Define 'critical path' & state its significance to garment industry.

    (d) State the significance of P.E.R.T. with respect to garment industry.

    (e) Define 'quality'. State the use of SQC in quality control.

    (f) Enlist the various books in accounting & state their respective use in accounting.

3. **Attempt any TWO :** 16

    (a) (i)   Explain routing & scheduling in short.

         (ii) Discuss the factors affecting production control.

    (b) (i)   Find the critical path for following data :

Activity	1–2	2–3	1–3	2–4	3–4	3–5	4–5
Duration (in min.)	20	15	20	12	6	10	10

         (ii) Also calculate floats for each activity.

    (c) Differentiate between break-down & preventive maintenance over any four points.

4. **Answer any TWO :** 16

    (a) Prepare the man-type process chart for attaching a pocket to the front of a basic shirt.

    (b) Differentiate between CPM & PERT for any four points.

    (c) (i)   Define 'break even point'.

         (ii)   Give the graphical representation for BEP.

         (iii) Give analytical formulae for BEP calculations.

         (iv)   State importance of BEP to banks.

5. **Answer any TWO :** **16**

(a) Explain the capacity calculation & m/cs requirements for basic shirt manufacturing garment industry by assuming suitable data.

(b) (i) State the concept of forward pass & backward pass.

(ii) Explain Fulkerson's rule.

(c) Construct the network & find critical path for following PERT time estimates :

Activity $\rightarrow$	1–2	2–3	2–4	3–5	4–5	4–6	5–7	6-7
$t_o \rightarrow$	1	1	1	3	2	3	4	6
$t_m \rightarrow$	1	2	3	4	3	5	5	7
$t_p \rightarrow$	5	3	5	5	4	7	6	8

Find the project duration at 95% probability.

6. **Answer any TWO :** **16**

(a) Calculate the standard time using following data :

Cycles / Elements	1	2	3	4	5
A	0.7	0.8	0.6	0.8	0.6
B	2.4	2.7	2.5	6.8	2.6
C	3.2	3.2	3.1	3.3	3.2

Given data :

(1) Element C is a m/c element.

(2) Take performance rating as 110%.

(3) Consider total allowances as 12%.

(b) Discuss the various types of maintenance practised in garment factory.

(c) Find mean, mode, median & range for the following data :

103, 107, 108, 107, 105, 102, 107, 105, 106

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