17577

21415

3 Hours/100 Marks

Seat No. | | | | | | | | |

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

(2) Illustrate your answers with ***neat*** *sketches* ***wherever*** *necessary.*

(3) Figures to the ***right*** *indicate* ***full*** *marks.*

(4) ***Assume*** *suitable data, if* ***necessary****.*

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

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

MARKS

1. A) Attempt **any three** of the following : **12**

a) State the factors affecting scheduling.

b) What are Therbligs ? Where they are used ?

c) State and explain Fulkerson's rule.

d) Differentiate between CPM and PERT (any 4 points).

B) Attempt **any one** of the following : **6**

a) State the various types of maintenance in industry. What are the advantages and economics of using maintenance ?

b) Explain various statistical tools for quality control.

P.T.O.

MARKS

2. Attempt **any four** of the following : **16**

a) Compare breakdown maintenance and preventive maintenance by four points.

b) Define : (i) mean (ii) mode (iii) median and (iv) range.

c) What is meant by break even analysis ? State the characteristics of a break even point.

d) A manufacturing firm incurrs a fixed cost of Rs. 24,000. The variable cost amount to Rs. 14/- selling price is Rs. 20. Find the production in number of units at break even point.

e) What are the machine requirements for setting up a new factory ?

f) Find out the standard time using the following data.
Average time for manual elements = 2 min.
Average time for machine elements = 3 min
Performance rating = 125%
Allowance = 15%.

3. Attempt **any two** of the following : **16**

a) A small engineering industries consists of a project which have six activities. The three time estimate in number of days for each activity are given below.

Activity ↓	Time		
	t_o (days)	t_m (days)	t_p (days)
1-2	2	5	8
2-3	1	1	1
3-5	0	6	18
5-6	7	7	7
1-4	3	3	3
4-5	2	8	14

i) Draw the network diagram and mark the critical path.
ii) Calculate expected time
iii) Calculate the total project duration
iv) Calculate total slack.

b) Explain project management and planning under uncertainty with suitable example.

c) Define : (i) Accounting and (ii) Cost-accounting. List the types of accounting. Write the entries involved in journal and ledger books.

MARKS

4. A) Attempt **any three** of the following : **12**

   a) What are the activities to be listed under production control ? Explain in brief.

   b) Make a two handed process chart for filling ink in a pen.

   c) Explain the terms :

      i) AOA and

      ii) AON network.

   d) What are the methods of cost accounting ? State the advantages of cost accounting.

   B) Attempt **any one** of the following : **6**

   a) What are the requirements of good maintenance ? Explain its new developments.

   b) Compare P-chart and C-chart (any 6 points).

5. Attempt **any two** of the following : **16**

   a) List types of production and explain various tools and techniques of PPC.

   b) Explain SIMO chart with suitable example.

   c) Define :

      i) Event

      ii) Activity

      iii) Critical path and

      iv) Forward and Backward path.

   Write the steps involved in CPM.

MARKS

6. Attempt **any four** of the following : **16**

a) Explain the following terms in connection with PPC.
   i) Routing
   ii) Dispatching.

b) Write the objectives of method study.

c) What are the various steps involved in PERT ? Explain.

d) What are the functions of dummy activities in PERT ?

e) State the advantages of SQC.

f) Compare $\overline{X}$ and R chart by four points.
