



**KC-8145**  
**B. E. - II (Sem. III) Examination**  
**November / December – 2012**  
**Basic Engineering in Textile (B.E.T.)**

Time : 3 Hours]

[Total Marks :

**Instructions :**

(1)

<p>નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : <b>B. E. - 2 (SEM. 3)</b></p> <p>Name of the Subject : <b>BASIC ENGINEERING IN TEXTILE (B.E.T.)</b></p> <p>Subject Code No. : <b>8</b> <b>1</b> <b>4</b> <b>5</b> Section No. (1, 2,.....): <b>NIL</b></p>	<p>Seat No. : <input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/></p> <div style="border: 1px solid black; border-radius: 15px; height: 80px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">Student's Signature</div>
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- (2) Attempt all questions.  
(3) Make suitable assumption wherever necessary.  
(4) Fig. to the right indicate full marks.

1 (a) Attempt all : 10

- (1) Define term “work study”.
- (2) Name the techniques of work study.
- (3) Draw symbol of operation and Inspection for process chart.
- (4) List Benefit of flow process chart.
- (5) Define term “Normal time”.
- (6) Define term “standard time”.
- (7) Note down two limitation of time study.
- (8) Define the “critical path”.
- (9) Give the Application of Linear programming method.
- (10) Define the term “CPM” and “PERT”.

(b) Attempt all :

- (1) Briefly discuss SIMO chart. 4
- (2) Solve following LPP using simplex 6

$$\begin{aligned} \text{Maximize} \quad & Z = 3x_1 + 4x_2 \\ \text{Subject to} \quad & x_1 + x_2 \leq 450 \\ & 2x_1 + x_2 \leq 600 \\ \text{where} \quad & x_1, x_2 \geq 0 \end{aligned}$$

2 Attempt all :

- (1) Discuss the advantages and limitation of time study. 7
- (2) Find the initial basic feasible solution of following transportation problem by Vogel's approximate method.

		W <sub>1</sub>	W <sub>2</sub>	W <sub>3</sub>	W <sub>4</sub>	Capacity
Factory	F <sub>1</sub>	19	30	50	10	7
	F <sub>2</sub>	70	30	40	60	9
	F <sub>3</sub>	40	8	70	20	18
Requirement		5	8	7	14	34 (total)

OR

2 Attempt all :

- (1) Explain PERT and it's Important in network analysis. What are the requirement for the Application of pert techniques ?
- (2) An Automobile company manufacturing scooter has decided to come up with a scooter specially designed for women only. The project involves several activities listed in the following data : 8

Activity	Description	Predecessor activity
A	Study design of scooter in the market	—
B	Design the new scooter	A
C	Design the marketing program	A
D	Design new production system	B
E	Select advertising media	C
F	Test prototype	D, E
G	Release scooter in market	F

Draw suitable network.

3 Two out of three :

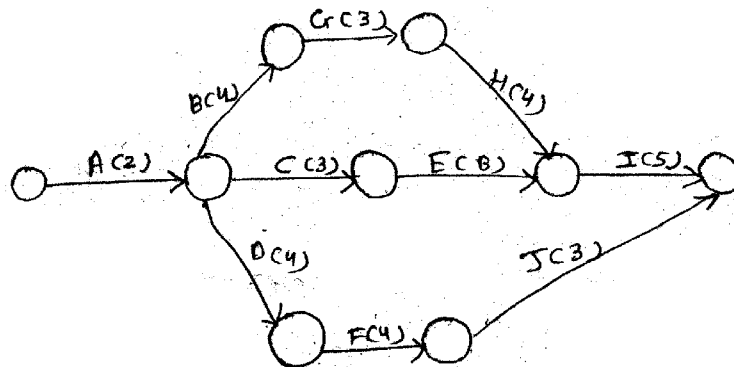
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- (1) Write method of solving an assignment problem. Illustrate with an example.

- (2) The following is cost matrix of assigning 4 professors to 4 key courses. Class of preparation time in hour for diff. topics varies from professor to professor and is given in the table below. Each professor is assignment only one course. So as to minimize the total preparation time for all course

Professor	Courses			
	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>
A	2	10	9	7
B	15	4	14	8
C	13	14	16	11
D	4	15	13	9

- (3) The network of a small project is shown below :



The data for the cost and time is also given below. If the indirect cost of the project is estimated to be Rs. 100 per day of the project duration what is optimal project duration ?

Activity	Normal time days	Crash time days	Normal cost (Rs.)	Crash cost (Rs.)
A	2	1	70	80
B	4	2	80	200
C	3	1	130	230
D	4	2	130	300
E	3	3	120	120
F	4	2	80	120
H	4	2	100	280
I	5	2	80	200
J	3	2	60	00

Total Normal cost = 1120

- 4 (a) Attempt all : 10
- (1) Cochran Boiler is Horizontal tube Boiler.  
(a) True (b) False
  - (2) Normally in package Boiler \_\_\_\_\_ fuels are used.
  - (3) Give the name of components of a steam distribution system.
  - (4) What is function of Atomizer ?
  - (5) What is summer air conditioning ?
  - (6) Define WBT and give it's Application.
  - (7) Define Breakdown maintenance.
  - (8) Define feed water treatment.
  - (9) List the factor affecting comfort air conditioning.
  - (10) List the impurities which are present in water.
- (b) (1) Write short note on preventive maintenance. 5
- (2) Write down typical causes of equipment breakdown and disadvantages of breakdown maintenance. 5
- 5 (1) Explain with neat sketch coal fire tube boiler. 7
- (2) Define air conditioning system. Give the classification and application or requirement of air conditioning system in Industry and textile industry. 8
- OR**
- 5 (1) Give objective of firing equipments and write down short note on Atomizer with neat sketch. 7
- (2) Explain the distribution of different service like steam, water, compressed air, etc. in textile industries with specific application of each in textile. 8
- 6 (1) What is Important of Feed water system and write down effect of Impurities. 7
- (2) Write short note on external water treatment system with neat sketch. 8
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