



SE-8145

B. E. - II (TT) (Sem. III) Examination

April / May - 2011

Basic Engineering In Textiles

(New Syllabus)

Time : Hours]

[Total Marks :

Instructions :

(1)

नीचे दर्शावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लखवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
B. E. - II (TT) (Sem. III)

Name of the Subject :
Basic Engineering In Textiles (New)

Subject Code No. : 8 1 4 5 Section No. (1, 2,.....): Nil

Seat No. :

Student's Signature

- (2) Attempt all questions.
- (3) Make suitable assumptions wherever necessary.
- (4) Figures to right indicate full marks.
- (5) Use calculator wherever necessary.

1 (a) Answer the following questions : 10

- (i) A multiple-activity chart is a quick and easy method of determining operator and machine utilization. (True/False)
- (ii) List the Work Measurement Technique.
- (iii) What is the importance of dummy activity in CPM network ?
- (iv) What is the difference between water tube and fire tube boiler ?
- (v) List the types of maintenance.
- (vi) Write the full form of MODI.
- (vii) List the Work Measurement Techniques.
- (viii) Define Breakdown Maintenance
- (ix) Define
 - (a) Standard time
 - (b) Normal time
- (x) Write full form of IBFs.

- (b) What do you mean by workstudy ? Write down its importance. 5
- (c) Draw the different types of symbols used to record different types of events in process chart and also give the description for each. 5

- 2 (a) Solve graphically
Minimize $Z = 2x_1 + 3x_2$ subjected to constraint 7

$$x_1 + x_2 \leq 4$$

$$6x_1 + 2x_2 \geq 8$$

$$x_1 + 5x_2 \geq 4$$

$$0 \leq x_1 \leq 3$$

$$0 \leq x_2 \leq 3$$

- (b) A manufacturing firm produces two machine parts using lathes, milling machines and grinding machines. The different machining time required for each part, the machining time available on different machines and the profit on each machine part are given in following table. 7

Types of Machines	Machining time(min)		Maximum time per week (min)
	Machine Part I	Machine Part II	
Lathes	10	0.5	2,500
Milling	4	10	200
Grinding	1	1.5	450
Profit per unit	Rs. 50	Rs. 100	

- 3 (a) Explain packaged type of boiler in detail. 7
- (b) Obtain the feasible solution of following problem using simplex method 7

$$\text{Max } Z = 50x_1 + 80x_2$$

$$x_1 + 1.5x_2 \leq 600$$

$$0.2x_1 + 0.2x_2 \leq 100$$

$$0.1x_2 \leq 30$$

$$x_1, x_2 \geq 0$$

OR

- 3 (a) Explain the Economics of steam generations. 7
 (b) Use simplex technique to solve following problem. 7

$$\begin{aligned} \text{Min } Z &= x_1 - 3x_2 + 2x_3 \\ 3x_1 - x_2 + 2x_3 &\leq 7 \\ -2x_1 + 4x_2 &\leq 12 \\ -4x_1 + 3x_2 + 8x_3 &\leq 10 \\ x_1, x_2, x_3 &\geq 0 \end{aligned}$$

- 4 (a) Define : Psychrometry, degree of saturation, absolute humidity, DBT, humidity Ratio, WBT, RH. 7
 (b) Explain Break Down Maintenance in detail. 7

OR

- 4 (a) Explain the distribution of steam, water and compressed air in textile industries. 7
 (b) Differentiate between breakdown and preventive Maintenance. 7

- 5 (a) The table below lists all the activities which together constitute a small engineering project. 10

Activity	Intermediate Predecessor	Activity Duration (days)
A	-	2
B	A	3
C	A	4
D	A	5
E	B	6
F	C,D	3
G	D	4
H	B	7
I	EFG	2
J	G	3

- (i) Draw the network
 (ii) Calculate earliest start time, finish time, latest start, latest finish time of each activity
 (iii) Find the critical path
 (iv) Latest start day of activity B.

- (b) Explain the terms optimistic time, pessimistic time, most likely time and expected time with respect to PERT network. 4
- 5 (a) Find the critical path of the following project after drawing the complete network diagram. What is the project completion time ? 10
- | Activity with
time in days | Immediate
Predecessor |
|-------------------------------|--------------------------|
| A (4) | - |
| B (3) | - |
| C (5) | A |
| D (7) | C |
| E (6) | B |
| F (2) | E |
| G (2) | E |
| H (5) | F |
| I (6) | G |
| J (4) | D, H, I |
- (b) Define critical path. Give its significance in the network. 4
- 6 Answer the following questions (any four) 24
- (i) What are the types of maintenance ? Explain any one.
 - (ii) Explain pH value of water and its importance.
 - (iii) Differentiate between outline process chart and flow process chart.
 - (iv) Explain the necessity of Feed Water treatment.
 - (v) What is Atomiser ? Explain any one.
