

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-III Regular / Remedial Examination December 2010****Subject code:132905****Subject Name: Basic Engineering in Textile****Date: 18 /12 /2010****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) 1.Explain the basic procedure for work-study and its definition. **02**
 2.Define work measurement technique. **02**
 3.Define – standard time, normal time and definition of rating. **03**
- (b) 1.Explain about micro-motion study. **04**
 2.Define predetermined motion time system. **03**

- Q.2** (a) 1.Define predecessor event, successor event and dummy activity With example and also define optimistic time, pessimistic time Most likely time in relation to PERT. **05**
 2.Compare CPM and PERT method of project planning. **02**
- (b) 1.Write a short note on SIMO chart. **04**
 2.The observe time for an element is 0.7 minutes, the rating factor is 90% and 20% is given as other allowances. Calculate standard time. **03**

OR

- (b) 1.Define critical path and explain with example. **03**
 2.Define slack, positive slack and zero slack. Which is more desirable and why? **04**
- Q.3** (a) 1.Construct a network diagram and determine the critical path for the project data given below. **07**
 And what is the use of information given in column 4.

Activity	Immediate Predecessor	Expected time(days)	Cost per day to Expenditure (In Rs.)
A – B	-	2	1,000
A – C	-	4	800
A – D	-	5	700
B – E	A – B , A – C	3	1,000
E – F	B – E	6	1,500
F – H	E – F	2	500
D – H	A - D	11	1,000
H – I	F – H, D – H	1	1,000

- (b) 1.State the assumption of the linear programming and explain mathematical formulation of linear programming. **03**
 2.Solve the following LPP by graphical method. **04**

$$Z = 2X_1 + 3X_2$$

Subject to constraints

$$X_1 \leq 6$$

$$X_2 \leq 4$$

$$X_2 \geq 0.$$

OR

- Q.3 (a)** 1.The following information were collected by a work-sampling study group entrusted with the job of calculating standard time for an operation. In all 2,000 observations were taken of which
 (i)workers idle or absent from the work place = 100
 (ii)machine not working on the job = 200
 (iii)only machine working on the job = 500
 (iv)machine and operator both working simultaneously on the job = 1200.
 Assume that there is 8 hours work per day. The study was carried out for 20 days. The total number of job produced during study period is 8,000. The performance Rating is 110. Calculate the standard time. **07**
- (b)** 1.Compare work sampling with time study. **03**
 2.Explain pulverized coal firing. **04**
- Q.4 (a)** 1.What is coal fired boiler? Explain the working of any one fire tube boiler with neat sketch. **07**
- (b)** 1.How are performance and ratings established on package boiler? **04**
 2.Write a short note on pH Value of water? **03**
- OR**
- Q.4 (a)** 1.To what does the term package boiler refer? **03**
 2.Name important factors to consider when selecting a boiler. **04**
- (b)** 1.Explain importance of inspection and quality measurement in preventive maintenance. **04**
 2.Differentiate between breakdown maintenance and preventive maintenance. **03**
- Q.5 (a)** 1.Explain maintenance of humidification plant. **04**
 2.Define DBT(Dry Bulb Temp.) and WBT(Wet Bulb Temp.) with Application. **03**
- (b)** 1.Explain humidification by air washer method with neat sketch **04**
 2.Explain functions or elements of preventive maintenance. **03**
- OR**
- Q.5 (a)** 1.Explain the distribution of different services like steam, water, compressed air, etc., in textile industries with specific application of each in textile. **07**
- (b)** 1.Have water tube boilers any advantages over fire tube boilers? **04**
 2.Are water tube boilers also packaged? Explain. **03**
