B. Tech.

(SEM. VI) EXAMINATION, 2006-07

TIME & MOTION STUDY

Time : 3 Hours] [Total Marks : 100

Note : Attempt all questions.

1 Attempt any two parts : 10×2=20
   (a) Discuss the contribution of F.W. Taylor in the area of Industrial Engineering.
   (b) Differentiate between production and productivity. Also explain various measures of productivity measurement.
   (c) Explain the relationship between productivity and standard of living.

2 Attempt any two parts : 10×2=20
   (a) Define the term work study. The field of work study has changed the industrial set up during last 50 years. Describe some changes that have taken place during that period.
   (b) Discuss the role of Method study in the field of Industrial Engineering. Explain steps for conducting Method study.
   (c) Draw and discuss the usefulness of multiple activity chart with example.
3 Attempt any two parts: 10×2=20
   (a) Write different time study techniques. How stop watch study should be carried out?
   (b) State various methods of rating. Explain Westinghouse method.
   (c) What is the concept of fatigue and how is it role in development of principles of motion economy rules.

4 Attempt any two parts: 10×2=20
   (a) What is work sampling and how it works in industry. Discuss a few applications of this technique.
   (b) Discuss systematic sampling and how it differs from Random sampling. Discuss a few advantages of systematic sampling.
   (c) The following data relates to a work sampling study of a long cycle non-repetitive operation.
      (i) Total time of study .................. 10 days
      (ii) Total number of observations......... 1200
      (iii) Observations of productivity
            activity ...................................... = 900
      (iv) Manually controlled elements ..........=600
      (v) Machine controlled elements ..........=300
      (vi) Total units produced
            acceptable ............................ =4000 pieces
      (vii) Average Rating index...............= 110%
      (viii) Observations of unavoidable delay ....=100
            Calculate the standard time.
5 Attempt any two parts:\n
(a) State desirable characteristics of good wage system. Also discuss factors affecting wages.

(b) Explain any two systems:
   (i) The Bedaux point system
   (ii) Emerson’s efficiency plan
   (iii) Gantt task bonus system

(c) The workers are paid as per Bedaux plan. The hourly rate is Rs. 15/-. Standard time for a particular job is 8 hours. Calculate daily earning of a worker, if the job is completed in 6 hours and 8 hours respectively.