



Printed Pages : 3

ME – 401

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 4040**

Roll No.

## **B. Tech.**

(SEM. IV) EXAMINATION, 2006-07

### **INDUSTRIAL ENGINEERING**

*Time : 3 Hours]*

*[Total Marks : 100*

*Note : Attempts all questions, Graph paper may be used for solving problem no. 5 (b).*

- 1** Attempt any **two** parts of the followings : **10×2=20**
  - (a) Define productivity. Describe following techniques of improving productivity of an organization :
    - (i) Employee based techniques
    - (ii) Technology based techniques.
  - (b) What is work sampling? Write down the steps of performing work sampling in an organization. Compare work sampling with stopwatch time study.
  - (c) Discuss any two methods of job evaluation in detail.
  
- 2** Attempt any **two** parts of the followings : **10×2=20**
  - (a) Name various kinds of layouts. Describe, with example, principles of a good plant layout.
  - (b) Plant location is a recurring problem involving business survival. Evaluate the statement.
  - (c) Discuss the following functions of PPC :
    - (i) Dispatching
    - (ii) Follow-up.

**3** Attempt any **four** parts of the followings : **5×4=20**

- (a) Discuss the 'present worth method' of equipment replacement.
- (b) Explain the factors responsible for replacement of existing machine
- (c) Define inventory. Why is it necessary to keep inventory? Explain various costs associated with inventory.
- (d) Derive Wilson's formula for determining Economic order quantity. State clearly the assumptions made.
- (e) Discuss the significance of 36 Limits in  $\bar{x}$  and Ra chart.
- (f) Write a short note on M.R.P.

**4** Attempt any **four** parts of the followings : **5×4=20**

- (a) Define organization. Discuss the concept of 'Span of control' at various levels of management.
- (b) Describe the method of formation of a public limited company.
- (c) Discuss the salient features of a cooperative type of business organization.
- (d) Write short note on human relations in a business.
- (e) Explain the followings:-
  - (i) Master budget
  - (ii) Rolling budget.
- (f) Discuss briefly 'Payment of Wages Act'.

**5** Attempt any **two** parts of the followings : **10×2=20**

- (a) How the three floats of a network are determined? Name these floats and explain the conclusions drawn from these floats.
- (b) Fixed cost of an enterprise is Rs.60000 in a period. The sales for this period is Rs.150,000. Variable cost per unit is Rs.5. The unit sales price for each product is Rs.15. Construct the break-even chart and determine
  - (a) break-even point
  - (b) minimum number of products to be sold for earning profit
  - (c) Profit earned for sales volume of Rs.1,20000
  - (d) Margin of safety.  
Assume that no. of units sold consider with the volume of production (Graph paper may be used)
- (c) Describe big-M method for solving a linear programming problem.

**OR**

- (c) Explain with an example how two variable linear programming problems can be solved with graphical method.