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B. Tech. 6th Semester (Mechanical Engineering)

Examination, May-2013

INDUSTRIAL ENGINEERING

Paper- ME-312-F

Time allowed : 3 hours] [Maximum marks : 100

Note : Students have to attempt **five** questions in total with **least one question from each section and Q. No. 1 is compulsory.**

1. (a) What is principle of motion economy?
- (b) What are the various methods of productivity measurement?
- (c) What is Economic batch quantity?
- (d) What is Breakeven analysis?
- (e) State difference between variable and attributes
- (f) What is FSN inventor control?
- (g) Name the different forecasting methods.
- (h) What is quality assurance system?
- (i) Define quality and state its approaches.
- (j) What is a value engineering?

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Section-A

2. (a) What is meant by job evaluation? Describe briefly the procedure to be adopted for making quantitative evaluation of jobs at the operators level. 10
- (b) "Productivity is a means of increasing the welfare of the nation." Justify the statement. 10
3. (a) Describe systematic procedure of work study, explaining all steps. 10
- (b) Discuss various allowances which are taken in account while calculating standard time. 10

Section-B

4. (a) What is economic order quantity? Derive the formula for EOQ when shortage is allowed. 10
- (b) The rate of use of a particular raw material from stores is 20 units per year. The cost of placing and receiving an order is Rs. 40. The cost of each unit is Rs. 100. The cost of carrying inventory is percent / Year is 0.16 and it depends upon average stock. Determine.
- (i) Economic order quantity
- (ii) If lead time is 3 months, calculate the order point. 10

5. (a) What is meant by breakeven analysis ? What are the assumptions of break even analysis ? Enlist its advantages and limitations. 10
- (b) ABC company sold 5,00,000 litres of paint with variable cost of Rs. 28/- per litre every year. Each litre contributes 30% of its revenue to fixed cost and profits. The company is contemplating a price reduction of 5% this year. Calculate how many litres will the company be required to sell at the 5% price reduction in order to earn the same profit. 10

Section-C

6. Explain Total Quality Management ? Explain the ISO 9000 in detail. 20
7. (a) Explain the procedure for scheduling 'n' jobs on 'm' machines. 10
- (b) What is just in time in production planning and control ? Explain. 10

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Section-D

8. Write short notes on-

(a) Management information system

(b) Product life cycle

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9. Explain the following:

(a) Role of Ergonomics in product design and development

(b) Value engineering and its analysis.

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