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Reg. No. : .....

Name : .....

Eighth Semester B.Tech. Degree Examination, November 2015
(2008 Scheme)
08.802 – INDUSTRIAL ENGINEERING (MPU)

Time : 3 Hours Max. Marks : 100

Instructions: *1) Answer **all** questions in Part – **A** and **any one full** question from **each** Module in Part – **B**.*
*2) Any **missing** data shall be assumed.*
*3) **All** assumptions must be **clearly** stated.*

PART – A

1. What do you mean by a flexible manufacturing system ?
2. What are the various stages of a product life cycle ?
3. List out the benefits of human factors in design.
4. Explain the concept of benchmarking.
5. Differentiate between method study and value engineering.
6. What are the components of work study ?
7. Enlist the different types of incentives.
8. What are the limitations of EOQ model ?
9. Enlist the functions of dispatching.
10. What are the principles of scheduling ? **(4×10 = 40 Marks)**

PART – B

Module – I

11. a) Describe the tools and techniques of industrial engineering. **10**

    b) Explain the elements of material handling. **10**

OR

12. a) Explain the steps in new product design. 10

b) An automatic screw cutting machine has been purchased for Rs. 60,000. Its scarp value at the end of 10 years is estimated as Rs. 12,000. Calculate the :

i) fixed percent depreciation and

ii) depreciation in first two years and last two years. Assume declining balance method of depreciation. 10

Module – II

13. a) Explain the significance, construction and applications of flow process charts and multiple activity charts. 10

b) Suppose that a turning operation has to be carried out on a cylindrical workpiece. Describe all the activities needed to accomplish the turning operation with the help of therbligs. 10

OR

14. a) Explain the various forms of non-monitory incentives. 10

b) Explain the various methods of eliminating fatigue in an industrial organization. 10

Module – III

15. A concern is engaged in casting of carburetors. Its demand from the automobile industries per year is 50,000. The cost of set up is Rs. 1,000. There are ten workers engaged, each on wage rate of Rs. 15 per day. The overhead cost is Rs. 100 per day. The daily production capacity is 200. The material cost for each carburetor is Rs. 10. The annual rate of depreciation, insurance, taxes and storage cost etc. is 20 % of unit cost. The supply should be instantaneous and no shortages are permitted. Find :

i) the economic lot size

ii) the number of runs

iii) duration of each run and

iv) economic batch quantity, if the supplier imposes the condition of Rs. 5 as transportation cost per 100 units over 5000. 20

OR

16. a) Explain any two non-destructive testing methods. 10

b) The relative humidity in a greenhouse is expected to be between 65 % and 85 %. Random samples taken over a span of one week yield the following values : 60, 78, 70, 84, 81, 80, 85, 60, 88 and 75. Find and interpret the process capability index. 10