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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
Seventh Semester, B.E. - Civil Engineering
Semester End Examination; Dec - 2017/Jan - 2018
Construction Engineering Management and Entrepreneurship

Time: 3 hrs   *Max. Marks: 100*

Note: *i) Answer **FIVE** full questions, selecting **ONE** full question from each unit.*
        ii) Missing data, if any, may be assumed suitably.

UNIT - I

1 a. What is Engineering economy? Bring out fundamental problems in economics and economic motives. **6**

   b. State law of demand and supply. Briefly explain supply demand curve. **6**

   c. A company has the details :
   Fixed cost = Rs.20,00,000; Variable cost per unit = Rs. 100; Selling price per unit = Rs.200. Find;
   I) Break even sales quantity
   II) The break even sales **8**
   III) If the actual production quantity is 60,000, find;
        i) Contribution   ii) Margin of Safety (MS).

2 a. What is time value of money? Bring out the concept of nominal and effective interest rate with example. **6**

   b. List uniform series compound amount factor and uniform series sinking fund factor along with cash flow diagram. **6**

   c. A person wishes to have 5.00 lakh rupees, 10 years from now. He plans to deposit a lump sum amount now at rate of interest 6% compounded annually. Determine the lump sum amount to deposit now. **4**

   d. For a loan amount of 1.00 lakh rupees at 11% per annum, repayable in 15 years, calculate the EMI. **4**

UNIT - II

3 a. State conditions for present worth comparisons. **8**

   b. A construction company has two quotations (bids) to purchase equipment. The details are as follows : **12**

Bid	Initial cost Rs.	Annual operation and maintenance Rs.	Service life years
A	4,50,000	27,000	15
B	5,40,000	28,500	15

   Find which bid should be accepted based on present worth method of comparison at 15% interest rate?

4 a. Briefly explain future worth comparison method and pay back method. **8**

   b. Among the two alternatives given below, to obtain desirable return evaluate best alternative based on future worth comparison method at 12% interest rate. **12**

Details	Alternative - I	Alternative - II
i) First Cost (Rs.)	20,00,000	36,00,000
ii) Annual tax (Rs.)	80,000	1,50,000
iii) Annual income (Rs.)	8,00,000	9,80,000
iv) Salvage value (Rs.)	Zero	Zero
v) Life (years)	20	20

UNIT - III

5 a.	Give classification of construction works. Bring out various stages in construction works.	8
b.	List out objectives of materials management.	6
c.	Bring out importance of safety management in construction.	6
6 a.	Discuss briefly basic elements of quality in construction.	6
b.	Briefly explain value engineering job plan phases.	6
c.	Explain factors affecting selection of construction equipment.	8

UNIT - IV

7 a. Define :
   i) Critical path   ii) Slack
   iii) Float   iv) Free float.   4

 b. Write differences between CPM and PERT.   6

 c. Activities and duration of a project are listed below. If the scheduled completion time is equal to earliest expected time (T_E) for the end event. Calculate the slack time for each event and identify the critical path.   10

Activity	0 - 1	1 - 3	1 - 2	2 - 3	1 - 4	3 - 4	4 - 5
Duration (Days)	3	16	6	8	10	5	3

8 a. State steps involved in construction planning.   6
 b. Explain briefly construction of Barchart and Milestone chart.   6
 c. Briefly Explain :
   i) Job layout
   ii) Work break down structure.   8

UNIT - V

9 a. Explain the terms :
   Sinking fund, Obsolescence and Depreciation.   6

 b. List different methods of valuation of property. Explain any one method.   6

 c. Calculate the standard rent of a residential building newly constructed from the following data :
   i) Cost of land = Rs. 1.00 lakh
   ii) Cost of construction = 4.00 lakh
   iii) Cost of roads within compound and fencing Rs. 20,000
   iv) Cost of sanitary and water supply works at 8% cost of building
   v) Cost of electrification including fans at 10% of cost of building
   vi) Municipal house tax = Rs. 400 per annum
   vii) Water tax at Rs. 250 per annum
   viii) Property tax at Rs. 140 per annum.   8

10 a. Write characteristics of an entrepreneur.   6
 b. Write short note on :
   i) KIADB
   ii) KSFC.   6
 c. Briefly bring out planning commission guidelines for project report.   8

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