U.S.N

P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Fifth Semester, B.E. - Civil Engineering
Semester End Examination; February / March - 2022
Construction Management and Entrepreneurship

Time: 3 hrs   Max. Marks: 100

Course Outcomes

The Students will be able to:
CO1: Apply the knowledge of engineering fundamentals to calculate present and future worth of money using different interest factors and comparisons.
CO2: Understand the concept of Construction management.
CO3: Understand the concept of project planning and computing CPM and PERT.
CO4: Evaluate various construction equipment and develop skill to work individually as a entrepreneur.

<u>*Note:*</u> *I) **PART - A** is compulsory. **Two** marks for each question.*
*II) **PART - B**: Answer any **Two** sub questions (from a, b, c) for Maximum of **18 marks** from each unit.*
III) Interest table and probability charts are permitted.

Q. No.	Questions	Marks	BLs	COs	POs
	I : PART - A	**10**			
I a.	Define engineering economics	2	L1	CO4	PO9
b.	Define organization management.	2	L1	CO2	PO2
c.	Define ownership cost.	2	L1	CO4	PO9
d.	Define critical path.	2	L1	CO3	PO3
e.	Define entrepreneurship.	2	L1	CO4	PO11
	II : PART - B	**90**			
	UNIT - I	**18**			
1 a.	Explain break-even analysis with graph.	9	L2	CO3	PO3
b.	An engineer has two bids for an elevator to be installed in a new building. The details of the bids for the elevator are as follows: Determine which bid should be accepted, based on the present worth method of comparison assuming 18% interest rate, compounded annually.	9	L4	CO1	PO2
c.	A company has purchased an equipment for Rs. 1,50,000 with an estimated life of 10 years. The estimated salvage value of the equipment at the end of its life time is Rs. 25,000. Determine the depreciation charge and book value at the end of various years using the declining balance method of depreciation by assuming 0.2 for *k*.	9	L3	CO4	PO9

Bid	Engineer's estimate		
	Initial cost Rs.	Service life (Years)	Annual operation and maintenance cost Rs.
Company A	10,50,000	15	60,000
Company B	11,00,000	15	70,500

UNIT - II	**18**	

2 a. Explain the importance and causes for accidents in safety management. — 9 — L2 — CO2 — PO2

b. Explain the term "job layout" and draw a job layout for a construction site for a large multi storeyed building. — 9 — L2 — CO3 — PO3

c. Through a flow diagram, briefly explain the different processes of quality management in construction projects. — 9 — L2 — CO3 — PO3

UNIT - III   **18**

3 a. Determine the probable owning and operating cost of a 15/20 m^3, electrically operated batching plant given the following particulars:

i) Power required = 61 HP (25 units/hr)

ii) Life of the equipment = 18 years

iii) Total cost of batching plant including transportation and erection = Rs. 20,00,000

iv) Hours use per year = 1600 hours

v) Investment cost = 12% of the average cost of the batching plant

vi) Scrap value = 10% of the cost of batching plant

vii) Assume straight line method for depreciation cost

viii) Maintenance and repair cost per year = 80% of depreciation per year

ix) Unit cost of electricity = Rs. 8 / unit

x) Lubrication cost = 25% of power cost

— 9 — L3 — CO3 — PO3

b. Identify the factors that affect the selection of construction equipment. — 9 — L3 — CO4 — PO9

c. Discuss the classifications of construction equipment based on their functions. — 9 — L2 — CO4 — PO9

UNIT - IV   **18**

4 a. Below given table pertains to the list of activities and their time estimates of a job.

Activity	t_0	t_m	t_p
1 - 2	3	7	10
1 - 3	4	8	13
2 - 4	2	5	7
3 - 4	5	8	10

i) What is the duration of the project?

ii) What is the variance of the project length?

iii) What is the expected completion time with the probability of 85%?

Z value	1.0	1.1
Probability	84.13	86.43

— 9 — L2,13 — CO3 — PO3

b. A project consists of the following activities. Draw the network diagram. Calculate EST, EFT, LST, LFT, F_T and F_F

Activity	10 - 20	10 - 30	20 - 40	30 - 40	20 - 50	40 - 50
Duration (days)	13	12	2	8	15	2

9   L3   CO3   PO3

c. Draw Work Breakdown Structure for building.   9   L3   CO3   PO3

UNIT - V   18

5 a. Distinguish between an entrepreneur and entrepreneurship.   9   L3   CO4   PO11

b. Discuss about guidelines given by planning commission for project report.   9   L2   CO3   PO2

c. Write a note on;

i) KSFC   9   L2   CO4   PO11

ii) KIADB

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