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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; Feb. - 2021

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 equipments and develop skill to work individually as an entrepreneur.

Note: ***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.*

Q. No.		Questions	Marks	BLs	COs	POs
		I : PART - A	**10**			
I	a.	Define Depreciation.	2	L1	CO4	PO9
	b.	Define Construction management.	2	L1	CO2	PO2
	c.	Define Obsolescence cost.	2	L1	CO4	PO9
	d.	Define Dummy activity.	2	L1	CO3	PO3
	e.	Define Entrepreneur.	2	L1	CO4	PO11
		II : PART - B	**90**			
		UNIT - I	**18**			
1	a.	Explain Break-Even analysis with graph.	9	L2	CO3	PO3
	b.	The following table gives an initial outlay and annual revenue of a production firm using three different technologies. Find the best alternative, if the interest rate is 20% compounded annually.	9	L4	CO1	PO2
	c.	A piece of equipment is available for purchase for Rs. 12,000/, has an estimated useful life of five years and an estimated salvage value of Rs. 2,000. Determine the description and book value for each of the five years using straight line method and sum of year digits method.	9	L3	CO4	PO9

	Initial Outlay	Annual Revenue	Life (years)
Alternative 1	13,00,000	4,00,000	10
Alternative 2	21,00,000	6,50,000	10
Alternative 3	23,00,000	8,60,000	10

Contd….2

UNIT - II **18**

2 a. Describe safety requirements for demolition works and safety measures to be accepted for excavation. 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 diagram, explain the different stages of a connection project life cycle. 9 L2 CO3 PO3

UNIT - III **18**

3 a. For construction equipment following information is available:

i) Initial cost Rs. 65,00,000

ii) Cost of tyre sets Rs. 3,50,000 to be replaced after carry 3000 hours of operation

iii) Cost of major overhaul and repairs Rs. 8,00,000 to be carried out after every 4500 hour of operation

iv) Cost of fuel, lubricants and minor repair and maintenance Rs. 1100/hour

v) Estimated life of Machine - 13,500 hours of operation

vi) Estimated salvage value - 15% of initial cost

vii) Estimated usage of equipments - 1500 hours/year. MARR is 20% per year, estimate minimum hourly rental charges for equipment's. 9 L3 CO4 PO9

b. Identify the factors that affect the cost of owning and operating construction equipment. 9 L2 CO4 PO9

c. Discuss in detail the various reasons for replacement of construction equipment. 9 L2 CO4 PO9

UNIT - IV **18**

4 a. A small project consists of seven activities. The time estimates are given below.

Activity time (in weeks)	**1 – 2**	**1 – 3**	**1 – 4**	**2 – 5**	**3 – 5**	**4 – 6**	**5 – 6**
t_o	1	1	2	1	2	2	3
t_m	1	4	2	1	5	5	6
t_p	7	7	8	1	14	8	15

9 L3 CO3 PO3

i) Draw network ii) Determine critical path

iii) What is the probability of completing the project within 18 weeks?

Z value	+0.3	+0.4	−1.0	+1.0
Probability	61.79	65.54	15.87	84.13

Contd….3

b. From the given data, prepare the network diagram; find total float, free float and critical path.

Activity	**1 – 2**	**1 – 3**	**1 – 4**	**3 – 4**	**2 – 6**	**3 – 6**	**3 – 5**	**4 – 5**	**5 – 6**
Time(days)	3	4	14	5	5	6	4	1	1

9 L3 CO3 PO3

c. Draw WBS for residential buildings. 9 L3 CO3 PO3

UNIT - V **18**

5 a. Distinguish between an Entrepreneur and a Manager. 9 L3 CO4 PO11

b. Discuss about essential components of a project report. 9 L2 CO3 PO2

c. Write a note on;

i) KIADB 9 L2 CO4 PO11

ii) KSSIDC

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