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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. - 2019
Construction Engineering Management and Entrepreneurship

Time: 3 hrs   Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

1 a.	Explain Break even analysis with the help of an example.	6
b.	Explain time-value of money.	4
c.	Calculate the break-even analysis for the following details of a company:	10

A	Output (units)	5,000	10,000	15,000	20,000	25,000
B	Fixed cost (`)	3,000	3,000	3,000	3,000	3,000
C	Variable cost (`)	500	1,000	1,500	2,000	2,500
D	Sales (`)	2,500	5,000	7,500	10,000	12,500
E	Total cost (`)	3,500	4,000	4,500	5,000	5,500

2 a. Explain;

    i) Revenue generated cash flow diagram   6

    ii) Cost-dominated cash flow diagram

b. Explain constant percentage method of depreciation with an example.   4

c. M/s Krishna castings Ltd. is planning to replace its annealing furnace. It has received tender from two different original manufacturers of annealing furnace. The details are as follows:

Particular	Manufacturer		
	1	2	3
Initial Cost (`)	80,00,000	70,00,000	90,00,000
Life (years)	12	12	12
Annual operation and maintenance cost (`)	8,00,000	9,00,000	8,50,000
Salvage value after 12 years	5,00,000	4,00,000	7,00,000

10

Which is the best alternative based on future worth method @ $i = 20\%$?

UNIT - II

3 a.	Explain the various stages of a construction project.	6
b.	Explain functions and uses of material management.	8
c.	Explain quality assurance techniques.	6
4 a.	Briefly explain classification of construction works.	8
b.	What do you understand by management information system? Explain it with a suitable example.	6
c.	Explain quality documentation.	6

UNIT - III

5 a. List the factors affecting selection of construction equipment. 4

b. With the help of diagram, explain the operations of a power shovel. 6

c. Determine the probable cost per hour of owning and operating a power shovel drivers by diesel engine with the following data:

Rated horse power	200 HP
Crank case capacity	30 litres
No. of hours between oil changes	100
Useful life	6 years
No. of working hrs/years	4000
Cost of equipment (en-factory)	50,00,000
Shipping weight	1000 kN
Freight charges	` 30 / kN
Unloading and assembling charges	` 25,000/-
Salary paid to operator	` 15,000/-
Cost of diesel	` 70 / litre
Cost of lubricating oil	` 200 / litre

10

6 a. List out earth moving equipments. Explain any one of them. 10

b. With the help of a neat diagram, explain the operations of a scraper. 10

UNIT - IV

7 a. Explain the following:

i) Planning time

ii) Planning resources

iii) Planning implementation

6

b. Explain the type of project plans. 6

c. For the following activities of a construction project, prepare an arrow diagram and mark the critical path:

Activity	Duration (Days)	Predecessors
A	6	-
B	8	-
C	4	A
D	10	A, B
E	5	B
F	6	C
G	8	B, D
H	12	E
I	4	F, G, H

8

8 a. List the differences between CPM and PERT.   4

   b. Explain the following:

      i) Total float   ii) Free float   4

      iii) Slack time   iv) Critical path

   c. The table below lists the time estimate of nine activities of a project:

Activity	Time (Days)		
	Optimistic	Most likely	Pessimistic
1 - 2	04	06	08
2 - 3	05	07	15
2 - 4	04	08	12
3 - 6	15	20	25
3 - 5	10	18	26
4 - 6	08	09	16
6 - 7	01	02	03
5 - 7	04	08	12
7 - 8	06	07	08

                                              12

      i) Determine critical path and expected project completion time

      ii) Determine the probability of completing the project in 55 days

UNIT - V

9 a. List the characteristics of an entrepreneur.   4

   b. Write a brief note on;

      i) KSFC   8

      ii) KIADB

   c. Enumerate the differences between entrepreneur and manager.   8

10 a. List the steps involved in project identification.   6

   b. Explain the types of entrepreneur.   6

   c. Explain the guidelines laid down by planning commission while preparing a project report.   8

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