KUMARAGURU
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Register Number: ……..

B.E DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2009)

Seventh Semester

CIVIL ENGINEERING

CEE124**:** Construction Project Management

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The inflation of the value of money is considered in the detailed estimate as
   a) % of lump sum amount b) % of forecast amount
   c) % of cost incurred d) none of these
2. The difference between time available and time required to do a job is known as
   a) Event b) Float
   c) Duration d) Constraint
3. Which of the following statement is true regarding various activity scheduling tools?
   a) PDM allows for conditional branching and iteration of activities
   b) PDM uses activity-on-node (AON) diagramming method
   c) PDM allows for conditional branching and iteration of activities
   d) PDM uses analogous methods as an estimation technique
4. Which of the following is not the method of Activity Duration Estimation process?
   a) One time Estimate b) Three time Estimate
   c) Trapezoidal distribution estimate d) Attribute Estimate
5. The time which results in the least construction cost of an activity is known as
   a) normal time b) slow time
   c) crash time d) standard time
6. Receivables are a portion of
   a) payables b) budget cost
   c) Billings d) project cost
7. Proposed new technologies, process modifications, equipment replacements are the elements of

a) Financing
b) Contracting
c) Technical design
d) Implementation

8. Cycle time is equal to sum of
   a) Total travel time + total turn time + load time
   b) Total travel time + Haul travel time + Load time
   c) Total return time + Haul travel time + Load time
   d) Total turn time + total return time + Load time
9. Which of the following is not the content of tender notice
   a) Estimated cost
   b) Earnest money
   c) Contract document
   d) Completion period
10. It is not possible to make an alteration, addition or omission in a work in the case of
   a) Piece work contract
   b) Lump-sum contract
   c) Schedule or Item rate contract
   d) Labour contract

PART B (10 x 2 = 20 Marks)

11. Relate construction and construction management.
12. Compare PERT and CPM.
13. Explain method of assigning duration for construction activites.
14. Classify the resource constraints.
15. Explain the term cost slope.
16. Explain the term activity crashing?
17. Summarize the various classes of construction equipments?
18. Outline relative merits of leasing and hiring of equipments.
19. List various types of contracts.
20. Explain Arbitration?

PART C (5 x 14 = 70 Marks)

21. a) A small project consists of twelve activities. Interrelationships amongst various activities are as follows:
   • Activity A is starting activity and proceeds activities B,C and D.
   • Activity E depends on activities B and C
   • Activity F follows activities C and D.
   • Activities G and H can start as soon as activity D is completed.
   • Activity I succeeds activities G, E and F.
   • Activities J and K can start only when activities H and I are completed.

• Activity L is the last activity and it succeeds activities J and K.

Formulate the dependency table and draw AOA diagram.

(OR)

b) State Rules for drawing network. Explain with suitable examples, errors in AOA networks

22. a) For the network having following details estimate optimum duration and corresponding minimum cost

Activity	Normal cost,Rs	Normal duration	Crash cost (Rs)	Crash duration
1-2	4500	4	6500	2
1-3	7000	6	10000	4
1-4	5000	5	7000	4
4-5	8000	8	9500	5
2-5	7000	5	7800	3
3-5	4000	4	5000	2

Indirect cost = Rs. 2500 / week

(OR)

b) Explain in detail resources smoothing method of resources allocation problem.

23. a) Assess, Why time cost trade off is necessary? Propose various ways to reduce the activity duration.

(OR)

b) For a small project the following data is available.

I node for activity	1	1	2	3	4	4	4	5	6	7
J node for activity	2	3	3	4	5	6	7	7	7	8
Normal Duration	10	13	4	6	0	5	9	7	3	3
Crash Duration	9	10	3	4	0	4	7	5	3	2
Normal cost (Rs)	1000	780	400	320	0	250	720	420	30	300
Crash cost (Rs)	1200	900	470	410	0	300	810	580	30	400

Take indirect cost as Rs.50 per day. Estimate

(a) Normal Project duration and corresponding project cost.

(b) Optimum Project cost and corresponding project duration.

(c) Minimum project duration and corresponding project cost.

24. a) Describe the advantages and disadvantages of hiring construction equipments.

(OR)

b) Equipment that was purchased at a cost of Rs.20 lakhs, six years ago is considered for replacement. The existing equipment can be sold at a price of Rs.5 lakhs and if kept for another six years will have salvage value of Rs.1 lakh. The challenger has annual operating cost of Rs.50,000/- and its salvage value is Rs.5 lakhs at the end of 12 years. Rate of interest is 10%. Assess whether to continue services of existing equipment or replace it.

25. a) Design a tender document for a proposed highway project.

(OR)

b) Design a contract agreement for a highway project.

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