

KADI SARVA VISHWAVIDYALAYA

B.E SEMESTER 7th EXAMINATION (NOVEMBER /2016)

SUBJECT CODE: CV702 SUBJECT NAME: Construction Management & Equipment

DATE: 10TH NOVEMBER, 2016 TIME: 10.30 am to 1.30 pm TOTAL MARKS: 70

Instructions:

1. Answer each section in separate Answer Sheet.
2. Use of scientific Calculator is permitted.
3. All questions are compulsory.
4. Indicate **clearly**, the options you attempted along with its respective question number.
5. Use the last page of main supplementary for rough work.

Section - 1

- Q1 [A] What is need of construction management? Discuss objectives of construction management. 05
- [B] Enlist various project management techniques and explain with the help of suitable example the preparation of bar chart. 05
- [C] What do you understand by job layout? What are the factors affecting it? 05

OR

- [C] Explain WBS of construction project. Discuss importance of WBS. 05
- Q2 [A] Define floats with example. Also explain the types of floats. 05
- [B] Define: (1) Event (2) Activity (3) Head event (4) Tail event (5) Critical path 05

OR

- [A] Give difference between CPM and PERT. 05
- [B] Draw AOA diagram for following data. Determine (1) Critical path (2) Project duration (3) Prepare table of **Total Float and Free Float** 05

Activity	1-2	2-3	2-4	3-4	3-5	4-5
Duration (Days)	8	12	4	6	10	6

- Q3 [A] The network for a project is shown in fig. below. Calculate the expected time for each path. Which path is critical? Draw the network showing expect time. 05

ACTIVITY	DURATION (DAYS)
1-2	6-9-18
1-3	3-7-9
1-4	5-7-10
2-6	4-8-14
3-6	8-10-12
4-5	8-10-12
5-6	3-5-6

- [B] What do you understand by updating a project network? Why it is essential? 05

OR

- [A] For a small project following data is available: 05

Activity	1-2	1-3	1-4	2-5	3-5	4-6	5-6
Normal duration	2	8	10	5	7	15	6
Crash duration	1	6	5	3	6	10	4
Normal cost	30000	40000	50000	10000	25000	70000	15000
Crash cost	32000	46000	75000	15000	26000	100000	23000

Take indirect cost as Rs 10000 per day. Determine (a) Normal project duration (b) optimum project cost (c) minimum project duration and corresponding project cost.

- [B] Explain the 'S' curve used to analyze the cash requirements of the project. 05

Section – 2

- Q4 [A] Explain in detail various financial aspects of procuring construction equipments. 05
- [B] Enlist methods of depreciation. Explain any one method with suitable example. 05
- [C] Explain economical life of construction equipments. 05

OR

- [C] Define: (1) Depreciation (2) Obsolescence cost (3) Down time (4) Investment cost (5) Water content 05
- Q5 [A] The equipment is purchased by a company whose cost is Rs. 3 lakhs. The scrap value of the equipment is Rs. 20,000. Life and age of the equipment is 20 years and 8 years respectively. Calculate Depreciated value of equipment by Straight line method and Sinking Fund method. 05
- [B] Describe the safety requirements for demolition works. 05

OR

- [A] Give comparison between wheeled and crawler tractor. 05
- [B] What are the uses of power shovels? Describe with neat sketch basic parts and Operation of power shovel. 05
- Q6 [A] Calculate per hour cost for diesel engine power shovel for 3m^3 of work with following details: Engine: 160HP, Crank Case capacity: 30 liters, number of years = 6, time between oil changes=120hours, shipping weight= 104 tones, factory pricing of equipment= Rs.700000, operating factor=0.6, freight charges= Rs. 30/tonne, unloading and assembly charges= Rs 700, Hours used per year= 5500 hrs. 05
- [B] What do you mean by scraper? Give classification of scrapers and discuss it 05
- OR
- [A] Write short note on: 1) Dumpers 2) Trailers. 05
- [B] Define belt conveyor. In which situations the belt conveyors are used? What are the advantages of it? 05

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KADI SARVA VISHWAVIDHYALAYA

B.E. SEMESTER - VII EXAMINATION (NOV 2015)

Subject Code: CV702

Subject Name: Construction Management and Equipment

Date: 24/11/2015

Time: 10:30am to 01:30pm

Total Marks: 70

Instructions:

1. Answer each section in separate Answer sheet
2. Use of Scientific calculator is permitted.
3. All questions are compulsory.
4. Indicate Clearly, the options you attempt along with its respective question number.
5. Use the last page of main supplementary of rough work.

SECTION - I

- Q-1 (A) What is mean by construction management? Discuss in brief, the role of management in project execution. [05]
- (B) Explain why planning is necessary. Describe various steps for planning of a project. [05]
- (C) What is Gant bar chart? Explain with the help of a suitable example. [05]

OR

- (C) What is milestone chart? How does it differ from a bar chart? [05]
- Q-2 (A) Explain an 'event' and an 'Activity' in detail with suitable examples. [05]
- (B) What do you understand by a 'dummy'? What are its uses? [05]

OR

- (A) A project consist of 8 events having the following predecessor relationships as under: [05]

EVENT	IMMEDIATE PREDECESSOR	EVENT	IMMEDIATE PREDECESSOR
1	-	5	3,4
2	1	6	3,5
3	1	7	6
4	2,3	8	4,7

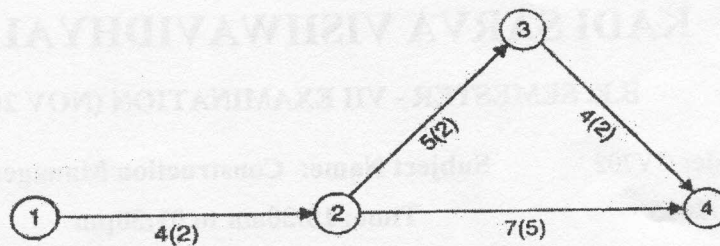
Draw a network diagram.

- (B) Time estimate for three activites A,B,C are as follows : [05]

	Optimistic Time	Most likely Time	Pessimistic Time
A	10	12	14
B	6	8	12
C	5	10	12

Determine expected time and variance for each activity. Which activity has more reliable time estimates?

- Q-3 Find out Critical path & total float of shown network and Determine Optimum time duration and cost of given network. [10]



Activity	Normal Duration (weeks)	Normal Cost (Rs.)	Crash Duration (Weeks)	Crash Cost (Rs.)
1-2	4	4000	2	12000
2-3	5	3000	2	7500
2-4	7	3600	5	6000
3-4	4	5000	2	10000

Indirect Cost = 2000.

OR

- (A) Explain: Work breakdown structure. Prepare work break down structure for construction of building. [05]
- (B) What do you understand by Job layout? What are the factors affected the job lay out? [05]

SECTION - II

- Q-4 (A) Define and explain: Depreciation, investment cost, drawbar pull, rimpull, down time. [05]
- (B) Discuss importance of safety on construction site. [05]
- (C) Discuss various types of blades available for bulldozer along with their specific usage. [05]

OR

- (C) Discuss importance of Construction Equipment on the site. [05]
- Q-5 (A) A person takes a loan of 70000/- for purchase of construction equipment. If rate of interest is 8% and he wishes to repay the loan in 10 yearly installments, find out value of installment. [05]
- (B) What are the different factors affect on operating cost? [05]

OR

- (A) Find out sinking fund for accumulating 5 lakhs in five years at the rate of interest of 8%. [05]
- (B) What are the guidelines for selecting hauling equipment? [05]
- Q-6 (A) Discuss in details various reasons for replacement of construction equipment. [05]
- (B) Write short note on : Dumper and roller. [05]

OR

- (A) Write short note on : Conveyer belt , Idlers. [05]
- (B) Discuss the factors influencing the selection of suitable excavating equipment. [05]

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