

BACHELOR OF CIVIL ENGINEERING (5TH Year 2nd Semester) EXAMINATION, 2019

Subject: Construction Management

Time: Three Hours

Full Marks: 100

Answer any five questions

- 1 (a) Define 'Delegation of Authority'? Mention the advantages and disadvantages of Decentralization over Centralization. 3+5
- (b) Mention the importance of Directing and Controlling as Process of Management. 4+4
- (c) Define Replacement Theory. 4

2 (a) A construction Manager has two independent investments 'A' and 'B' available to him, but he lacks the capital to undertake both of them. Simultaneously, he can choose to take 'A' first and then stop, or if 'A' is successful then take 'B' or vice versa. The probability of success on 'A' is 0.7 while for 'B' it is 0.4, Both investments require an initial capital outlay of Rs 20,00,000/- and both return nothing, if the venture is unsuccessful. Successful completion of 'A' will return Rs 30,00,000/- and successful completion of 'B' will return Rs 50,00,000/- (over cost).

Draw the decision tree and determine the best strategy. 10

- b) For fixation of salary of Miller operator of a company, the Project Manager of the Company collected data from the locally available operators.

Years of Service:	11	7	9	5	8	6	10
Income (in thousands):	10	8	6	5	9	7	11

What should be the salary of an operator with 14 years of experience applied for the post? 10

- 3 (a) X company is in the process of quoting a tender called by a Public Works Department for construction of a portion of State Highway. The winning of tender also depends on how soon the company is able to complete the work. The Construction manager has listed down the activities in the project as under:

Sl No	Activity	Immediate Preceding Activity	time (week)
1	A	-----	3
2	B	-----	4
3	C	A	5
4	D	A	6

5	E	C	7
6	F	D	8
7	G	B	9
8	H	E,F,G	3

- (i) Find out the completion period.
- (ii) Find out the total float, free float and independent float for each activity 10
- b) Mention the limitations of Bar chart in Time Management and Scheduling. 4
- c) Compare PERT and CPM techniques in project management. 6

4 a) At the end of the accounting year, the accountant of X Co. extracts the following balances from his accounts books as on 31.12 2018.

	(RS)
Wages	6,40,000
Purchases	24,00,000
Sales	50,00,000
Sales Return	20,000
Stock at Jan 01,2018	19,20,000
Rent on premises paid	72,000
Discount allowed	1,00,000
Discount Received	80,000
Freight	1,00,000
General expenses	1,00,000
Bad debt	1,00,000

Prepare Trading Account and Profit & Loss Account for the year ended Dec 31,2018 , taking the following information into account .

- i) Stock at December 31,2018 was Rs 7,00,000 12
- b) Also calculate for "X" company: 2+2
- i) The turnover for the year ended 2016.

ii) The percentage of gross profit over turnover.

c) Differentiate between Trading Account and Profit & Loss account of a business concern. 4

5 (a) Prepare a balance sheet for X Co. with the following balances as on 31.3.2019.

	Rs
Capital	160,00,000
Land property	40,00,000
Stock	28,00,000
Furniture	4,00,000
Buildings	40,00,000
Debtors	10,00,000
Creditors	10,00,000
Bills receivables	2,00,000
Plant & Machinery	38,00,000
Investment	32,00,000
Goodwill	24,00,000
Cash in hand	1,60,000
Bank Overdraft	4,00,000
Loans	14,00,000
Bills payables	11,60,000
Net profit for the year	20,00,000

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(b) Explain the term "Working Capital" of a Business concern. 4

(c) Calculate the Working Capital of "X" Co. from the information as furnished at (a) 7

6. a) A company has listed down the activities in the project as under.

(time estimates in months)

Activity	Preceding Activity	Most Optimistic	Most Likely	Most Pessimistic
A	None	2	4	12
B	None	10	12	26
C	A	8	9	10
D	A	10	15	20
E	A	7	7.5	11
F	B,C	9	9	9
G	D	3	3.5	7
H	E,F,G	5	5	5

- i) Draw the PERT network for the project.
- ii) Determine the critical path
- iii) Find the expected time and variance for each activity. 12

b) The data on the operating costs per year and re-sale prices of an equipment whose purchase price is Rs 1,00,000 are given below.

Year :	1	2	3	4	5	6	7
Operating costs(Rs) :	30000	38000	46000	58000	72000	90000	11000
Resale Value (Rs):	100000	50000	25000	12000	8000	8000	8000

Calculate the optimum period of replacement. 8

7) write short notes on any four: 5X4=20

- a) Consumer interview method of forecasting
- b) Asset and Liability in connection with Balance Sheet
- c) Factors considered in determining the amount of De-centralization?
- d) Role of organizing as a process of Management
- e) Regression and Correlation theory of management.