27/04/15

Sardar Patel College of Engineering
Andheri

Subject: Engineering Contracts Administration
Date:
Marks: 100
Time: 4 hrs.

ME Civil / Constr. Manage.) Sem-II
Engineering Contracts Administration.

Final Examination- ME/Construction Management Sem II/Civil

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

NB:

1. Question No. 1 is compulsory.
2. Out of remaining question, attempt any 4 questions.
3. In all 5 questions to attempted.
4. All questions carry equal marks.
5. Answer to each new question to be started on a fresh page.
6. Figures in brackets on the right hand side indicate full marks.

Master

Q.1)	**Solve Any Four**	**20**
a)	What are the requirements for the acceptance of tenders?	05
b)	Explain the contents of standard agreement.	05
c)	Elaborate on Industrial Disputes Act	05
d)	Elaborate on Workmens Compensation Act	05
e)	Elabrate on Minimum Wages Act	05

Q.2)	**Solve**	**20**
a)	Elaborate on importance and various types of tenders	**10**
b)	Elaborate on key points of Arbitration and Conciliation Act 1996	**10**

Q.3)	**Solve**	**20**
a)	Explain on clause "impossibility of performance"	**10**
b)	Discuss of 8 ways the contract can be discharged.	**10**

Q.4)	**Solve**	**20**
a)	Elaborate on 4 kinds of liability to pay for damages according to Indian Companies Act 1972.	**10**
b)	Elaborate on the types of contract on the basis of validity, formation and performance.	**10**

ME Civil / Construction Management), Sem - II, 27/4/15

Engineering Contracts Administration.

Q.5)	**Solve**	**20**
a)	Elaborate on Indian Contracts Act 1872	**10**
b)	Elaborate on FIDIC, JCT and NEC types of contract.	**10**

Q.6)	**Solve**	**20**
a)	What are the rules related to the contingent contract.	**10**
b)	Elaborate on the provisions in Contract Labor Act	**10**

Q.7)	**Solve**	**(20)**
a)	Elaborate on Conciliation Procedure under Conciliation Act	**10**
b)	Elaborate on finality and enforcement of Arbitration awards under Arbitration Act.	**10**

ME (Civil) (Constr. manag),
Management of Construction Resources.

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29-4-15.

BHARTIYA VIDYA BHAVAN'S

Sardar Patel College of Engineering

M Tech. - Construction Management (Civil), Semester II

SUB:- Management of Construction Resources . Total:- 100

Note. Attempt any 5 Questions.

Each Question carries 20 Marks

Master

Q1 Explain the concept ABC Analysis. List out the purpose and objectives of ABC Analysis. (20)

Q2 Explain the process of Codification .and highlight the advantage of Codification. (20)

Q3 (a) Discuss the importance of EOQ (8)

(b)An item has an annual demand of 20000/units The estimated cost of ordering is Rs. 100. The estimated Inventory carrying cost is 20 per cent. The estimated cost of ordering is Rs. 100. The estimated Inventory carrying cost is 20 per cent. The unit price of this item is Rs. 20 Calculate EOQ price of this item is Rs. 20 Calculate EOQ (12)

Q4 Explain the essential elements of a valid Contract. Highlight the basic features of Works Contract. (20)

Q5 Explain the factors influencing the selection of Construction Equipment. (20)

Q6 Calculate the Owning and Operating cost of 1.91cm Diesel operated Power Showel. (20)

- Investment Rs. 10,00,000/
- 3shift working with 20 hours per day.
- Working days in a year 300
- Annual working 6000/ Hrs.
- Life of the Machine 15000/ Hrs.
- Fuel 20.50 liters of HSD at Rs. 2/ltr
- 1.1 litre of petrol per hour at Rs.3
- Lubricants 50% of Fuel Cost
- Petty stores @ Re. 1 per hour
- Field repairs @ 50 percent of depreciation
- Labour -3 Operators at Rs. 350 per month.
- 3 Greasers at Rs. 150 per Month.

Q7 Explain the qualities of efficient Construction Managers. What are the leadership features expected from Construction Managers? (20)

ME (Civil / Const. Manag), Sem. II
Project Monitoring & Control

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02.05.15.

Sardar Patel College of Engineering

M Tech. - Construction Management / (Civil) Semester II

SUB:- Project Monitoring And Control . Total:- 100

Note. Attempt any 5 Questions.

Each Question carries 20 Marks

Master

Q 1 Explain the activities and critical success factors at different phases of a project life cycle (20)

Q2 Explain the factors influencing Project Control (20)

Q3 Explain how you propose to organise Project Control (20).

Q4 Highlight the various aspects of Cost monitoring And control (20)

Q5 What are the salient features of project Audit? Give details (20)

Q6 What are the causes for Time and Cost Overrun? Give Your Suggestions. (20)

Q7Explai the salient features of Post Completion Audit (20)

ME (Civil), (Constr. manag), Sem- II
Project Appraisal Planning &

Lib
05/05/15

Bhartiya Vidya Bhavan's

SARDAR PATEL COLLAGE OF ENGINEERING
[An Autonomous Institution Affiliated to University of Mumbai]

END SEM EXAM. - 2015

CLASS: M.Tech. Civil (Construction Management) Sem. - II

Marks : 100

SUB. : Project Appraisal Planning and Scheduling Duration: 4 Hrs.

Master

- Attempt **any FIVE** questions out of seven questions.
- Answer to all sub questions should be grouped together.
- Figures to right indicate full marks.
- Assume suitable data if necessary and state them clearly

Q.1 a) What are the methods of demand forecasting? Explain any two in detail. **(08)**

b) The sales of a certain product during 14-year period have been as follows:

Period	Sales	Period	Sales
1	2000	8	4000
2	2200	9	3900
3	2100	10	4000
4	2300	11	4200
5	2500	12	4300
6	3200	13	4900
7	3600	14	5300

i) Find least square regression line for data given.
ii) If α = is equal to 0.3, derive the forecast for the periods 2 to 14 using the exponential smoothing method. Assume that the forecast for period 1 was 2100.
iii) Set n=3 and develop forecasts for the periods 4 to 14 using moving average method. **(12)**

Q.2 a) What is Work Breakdown Structure? Explain it in detail with an example. **(10)**

b) What are the different phases of project? Explain each stage in brief. **(10)**

~~M.E~~ M.Tech. civil (Construction Management)

Project. Appraisal planning & scheduling Dt. 05/5/15.

b) Explain in detail about three time estimates and normal distribution curve. (08)

Q.5 a) Activity data for small construction project are given below:

i) Prepare resource histogram for early start schedule ii) Determine most preferred schedule where constraint on resource is 12. (10)

Activity	Preceding Activity	Duration(Days)	Resource Rate
A	-	2	9
B	-	1	7
C	-	2	3
D	-	3	8
E	A	5	4
F	B	1	6
G	C	5	6
H	D,E,F	5	6

b) Explain line of balance technique with example. (10)

Q.6 a) Apply stage by stage compression technique. If overhead cost for the project is Rs.1400 per unit time and indirect cost Rs.1200 per unit time, determine optimum time-cost combination. (14)

Activity	Predecessor	Normal		Crash	
		Duration in Week	Cost in Rs.(Thousand)	Duration in week	Cost in Rs. (Thousand)
A	-	4	40	2	70
B	A	3	30	2	40
C	-	2	20	2	20
D	-	5	20	3	50
E	D	2	20	1	40
F	E	1	10	1	10
G	B,D	3	30	2	80
H	C,A	3	30	2	50

b) Compare Critical path method and Critical Chain Method (06)

Q.7) a) Write in detail about classification of costs related to construction project. (08)

b) Discuss in detail about theory of Critical chain method and theory of Constraints. (12)

ME Civil / Construction. management / Sem-II.
Elective-II, Value Engineering.

Lib
08/05/15

Bharatiya Vidya Bhavan's

Sardar Patel College of Engineering

(An Autonomous Institution Affiliated to University of Mumbai)

End Semester Examination-May 2015

Academic Year: 2014-2015

Class/Sem: M.Tech. Civil Engineering with Construction Management, Sem. II

(Full Time)

Subject: Elective-II: Value Engineering

Max. Marks: 100
Duration: 4 hours

- Solve **any five questions** out of seven.
- Answer to all sub questions should be grouped together.
- **Figure** to right indicates full marks.
- Assume suitable data wherever necessary and state it clearly.

MASTER FILE

Q. No.1. (a) Define 'Value Engineering' and explain its importance with case study. (10)
(b) Distinguish between conventional management system and total quality management. (10)

Q. No.2. (a) Define and explain the terms: Basic Function, Primary Function, Use Function, Secondary Function. (10)
(b) Discuss issues affecting in Value building in a construction project. Explain with case study. (10)

Q. No.3. (a) What is time value of money? Explain its importance w.r.t. community construction project. (10)
(b) What is Internal Rate of Return (IRR)? Explain its advantages and disadvantages. (10)

Q. No.4. (a) What is LCC in construction? Discuss in detail. (10)
(b) A building costing Rs. 35 Lakhs is constructed in a metro city. The plot measuring 450 sq.m. was purchased @ Rs. 15,000/- per square meter. Work out the rent of the property. Assume 8% as net return on the cost of the construction and 4.50 % on the land value. All expected outgoing is Rs. 1 Lakhs per year. (10)

Q. No.5. (a) How operating and maintenance cost is determined over the project life cycle? Explain in detail. (10)
(b) A owner of a building generates net income of Rs. 1,50,000/- per annum from the structure. The estimated life of the structure is 10 years. If recommended repairs costing of Rs. 4,50,000/- are carried out, the building can last upto next 20 years. Owner also has standing offer of Rs.7,50,000/- for sale of building. Give justified recommendation on repairs or sale of the structure on present terms. Rate of interest on loan is 6 %. (10)

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ME (Civil / Construction Engg), Sem - II, 8/5/18
Elective - II, Value Engineering.

Q. No.6. (a) What is team building? Explain its importance in satisfactory completion of construction project. (10)

(b) Four mutually exclusive alternatives are available for purchasing a piece of construction equipment by a construction firm. The useful life of each alternative is 10 years. The cash flow details of alternatives are as per Table 1. If the construction firm's minimum attractive rate of return (MARR) is 10% per year, select the best alternative using the incremental investment rate of return analysis. (10)

Table 1 Cash flow of alternatives

Alternative / Cash flow	Alternative-1	Alternative-2	Alternative-3	Alternative-4
Initial investment (Rs.)	48,00,000	53,00,000	59,00,000	45,00,000
Annual profit (after deducting expenses) (Rs.)	7,25,000	8,05,000	9,30,000	6,50,000
Salvage value (Rs.)	9,90,000	11,85,000	13,65,000	9,40,000
Useful life (Years)	10	10	10	10

Q. No.7. (a) Give some suggestions on productivity enhancement and technical skill development of workers in a construction industry. (10)

(b) The initial cost of a piece of construction equipment mounted on pneumatic tires is Rs.62 Lakhs. The estimated salvage value and useful life of the equipment are Rs.11 Lakhs and 12 years respectively. The equipment will operate 1950 hours per year. The cost of one set of tires is Rs.4.60 Lakhs and a new set of tires will be replaced at the end of every 5 years of operation. The interest rate is 7.5% per year. Calculate the total cost per hour for the construction equipment by considering time value of money. (10)

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