

Enrollment No	
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Q.P. Code	EM570
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K.E.Society's  
**Rajarambapu Institute of Technology, Rajaramnagar.**  
 (An Autonomous Institute)

**ESE Examination- December- 2015**  
 First Year M. Tech. Civil Construction Management SEMESTER - I  
**Construction Project Management (CCM 5011)**

Day and Date: Mon, 14/12/2015

Time: 10:30 - 1:30 pm

Max Marks- 100

Instructions:

- 1) All questions are compulsory.
- 2) Assume suitable data where ever necessary.

Q.1 Attempt any two.

- (a) Describe different types of projects with suitable examples. (8)
- (b) Discuss need of studying project management phases. (8)
- (c) Explain role and responsibilities of a project manager. (8)

Q.2 (16)

The following are the activities and their durations of a small project. Draw the network and mark critical path. Prepare activity table showing EST, EFT, LST, LFT, calculate all floats and explain how you will utilize these floats for controlling the project.

Activity	1-2	1-3	2-5	2-7	3-4	3-6	4-5	5-6	5-7	6-7	7-8
Duration in days	10	12	9	11	5	5	7	8	10	6	12

OR

Following table indicates normal duration, normal cost, crash duration and crash cost for a project. Compress the network in steps. Overhead cost of the project is Rs. 1100.00 per week. Determine the optimum project duration and cost.

Activity	Duration in weeks		Cost in Rs.	
	Normal	Crash	Normal	Crash
1-2	7	5	4000	6000
1-3	11	11	5000	5000
1-4	19	16	7500	9000
2-3	6	5	2500	3250
3-4	8	6	6000	8500
3-5	14	12	4500	6000
4-5	13	9	10000	15000

Q.3 A) a) What do you mean by project charter? How to define it? What does it include and who is responsible for the same. (12)

(b) Define and classify project work breakdown levels. (6)

OR

(b) Prepare tasks and work package levels structure of any one construction project. (6)

Q.4 Attempt any two.

(a) Demonstrate precedence network diagramming and discuss all four types of relationship and lag values. (9)

(b) Prepare activity table for small construction project which can be used for M.S project. (9)

(c) Justify need of linear scheduling with suitable example. (9)

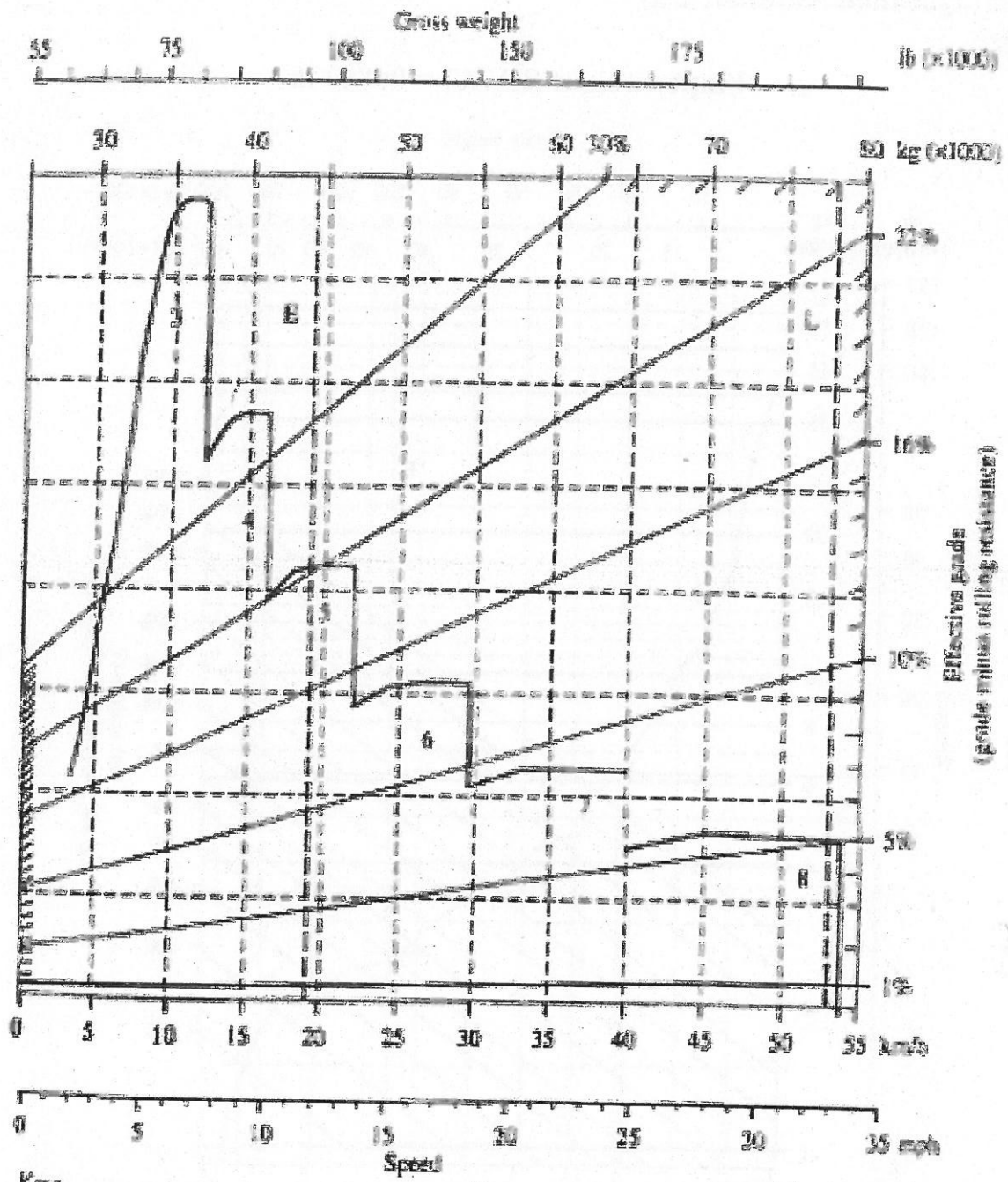
Q.5 (a) Prepare ideal site layout for any one construction project and justify your layout with proper explanation. (12)

(b) Describe the use of multiple project scheduling. (4)

Q.6 a) Suggest safety policy for a construction site of multistoried building with reference to human safety, equipment safety and material safety. (12)

b) Explain types of accidents generally occur on construction site. (4)

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- Key:
- 3 3rd gear direct drive
  - 4 4th gear direct drive
  - 5 5th gear direct drive
  - 6 6th gear direct drive
  - 7 7th gear direct drive
  - 8 8th gear direct drive

- Key:
- E Empty 43,945 kg (96,880 lb)
  - L Loaded 77,565 kg (171,880 lb)
- 96,890 lb  
171,880 lb

FIGURE 8.10 Retarding performance chart for a Caterpillar 631E scraper.  
Reprinted courtesy of Caterpillar Inc.

The total length of haul is 3200 ft and has the following individual segments when moving from cut to fill.

1000 ft	-4 % grade
800 ft	3% grade
1400 ft	-2 % grade

- Q.3 a) Earthwork finishing is very important, list the equipment used to perform this task and explain various operations performed by that equipment. 6

OR

Dragline and clamshells are two equipments used for special conditions and to perform typical tasks. Explain with example projects on which they are most feasible? Why?

- b) Construction plants provide raw materials required for processing as well as mixes for application. You need to automate the flow of these raw materials and mixes to construction site. Draw a possible labelled layout of material and mix flow on following projects: (*Mixing Plant details are expected*) 10
- Construction of flexible highway pavement,
  - Construction of Rigid pavement.

- Q.4 a) Explain milling operation. State advantages and ways of probable cost saving through application of this technique? 8

OR

Draw a labelled sketch of highway cross section, tabulate various equipments required for the construction of each layer.

- b) Explain various ways of underwater concreting. Distinguish among underwater and normal concrete placing methods. 8

- Q.5 a) Boom placers are boon for concreting, Justify stating example. 6
- b) List various types of mixers, select one best for RMC plant and reason why? 6
- c) One of the oldest method of underwater concreting in "Bag Work" today also this method is used. Explain process, application and requirements of this method. 6

- Q.6 a) A bridge pier to be constructed in the bed of a creek has area of 3m x 12m and depth is 6m below water level. From the feasible methods of underwater concreting choose one and design a layout for placing concrete and also state process. 8

- b) For a construction project list various services required. Explain the need of various services required for a *Dam Construction Project*. 6

OR

**Time, Cost and Scope** are three major pillars of project management. Explain various ways through which you will reduce project cost through construction equipments.

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Q.P. Code	EM592
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K.E.Society's  
**Rajarambapu Institute of Technology, Rajaramnagar.**  
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**End Semester Examination- Dec 2015**  
First Year M. Tech. Construction Management SEMESTER - I  
Construction Contracts (CCM 5051)

Day and Date: Friday, 18.12.2015

Time: 10.30am to 01.30pm

Max Marks-100

Instructions:

- 1) All questions are compulsory
- 2) Figures to the right indicate full marks

Q.1 a) Attempt the following problem and justify your answer.

What action will you take in respect to the following

- a) The owner failed to provide drawings, specifications and blueprints etc. on time to the contractor. 05
- b) The materials brought on the site by the contractor are not according to the specifications. 05

b) Describe in detail role and responsibilities of an Engineer as per Indian Contract Act. 08

**OR**

- b) Describe the a) main features, b) advantages and c) drawbacks of the following types of contract 08
- Cost plus fixed fee contract
  - Cost plus variable fee contract

Q.2 a) Discuss the workmen's compensation act with special reference to Lay-off and Retrenchment. 10

b) Discuss the process of settlement of disputes through arbitration. 08

**OR**

b) Discuss rights of surety in contract of guarantee 08

Q.3 a) Maharashtra Government's public works department is planning to Construct Public building at Mumbai, whose design and drawings are prepared by department itself. Department wants to call foreign contractors to bid for the same. Consult to Public Works Department regarding International Contracting and Suggest book to be used for international contracting and features of the same. Also explain features of book to be used. 10

b) Discuss in detail definitions entitled under clause contract in FIDIC red book. 06

**OR**

b) Discuss the features of various books required to follow for International Contracting. 06

- Q.4 Attempt any **TWO**
- a) Suppose you are appointed as an engineer in one of the reputed construction company wherein International Contracting practices are being followed. Discuss duties, authorities, delegation by the Engineer in detail. 08
  - b) Discuss in details Contractors general obligations as per FIDIC red book. 08
  - c) Discuss role and responsibilities of Owner according to FIDIC. 08
- Q.5 Attempt any **TWO**
- a) Explain the valid points by which the Contractor can refuse to nominate subcontractor. 08
  - b) Discuss in detail Staff and Labor clause from FIDIC red book. 08
  - c) "Role of Contractor during testing is most important" Justify the sentence in accordance with red book. 0
- Q.6 Discuss in detail following clause's of FIDIC red book (Any **TWO**)
- a) Termination by Employer 08
  - b) The employer 08
  - c) Parties and Persons 08

Enrollment No	
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Q.P. Code	EM603
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K.E.Society's  
**Rajarambapu Institute of Technology, Rajaramnagar.**  
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**End Semester Examination- December 2015**  
First Year M. Tech. Civil Construction Management SEMESTER - I  
**Human Resource Management in Construction (CCM:509f)**

Day and Date: Mon, 21/12/2015.

Time: 10:30 - 1:30 pm

Max Marks- 100

Instructions:

- 1) All questions are compulsory.
- 2) Assume suitable data where ever necessary.

Q.1 Attempt any two.

(20)

- (a) Why should HR plan be integrated with the overall organizational strategic plan? How can this integration be achieved?
- (b) What do you understand by Human Resource Management? Explain its objectives and functions.
- (c) What are the differences among job rotation, job enlargement and job enrichment?

Q.2 Attempt any two.

(20)

- (a) Compare any two types of organization structures with reference to their merits and demerits.
- (b) Suggest and prepare an organization structure for a construction company who is running their business all over India. Justify your answer.
- (c) Comment on Human Relations Approach of HR.

Q.3 Attempt any two

(20)

- (a) Explain the internal and external sources of recruitment. Under which circumstances you will suggest internal recruitment and why?
- (b) What is selection? Explain the process of selection for multinational company.
- (c) Describe the benefits of accident free construction site.

Q.4 Attempt any two

(20)

- (a) Which training technique do you recommend for each of the following occupants? Why?
  - 1) A clerk in an office
  - 2) A bar bender
  - 3) Site supervisor
  - 4) Project manager
- (b) What do you understand by employee remuneration? What is its significance?
- (c) Justify ideal remuneration.

Q.5 Attempt following

(20)

- (a) Describe the methods of performance appraisal.
- (b) Suggest suitable appraisal criteria for appraisal of site supervisor.

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EM618

END SEMESTER EXAMINATION, 2014-15

M. Tech. Civil Engineering SEMESTER-II

**RESEARCH METHODOLOGY**

Course Code: CCM 5071

Day & Date: Wednesday, 23<sup>rd</sup> December, 2015

Time: 10:30 - 1:30 pm

Max. Marks 50

Instructions:

- i. All questions are compulsory
- ii. Figures to the right indicate full marks
- iii. Assume suitable data if necessary and mention it.

<b>Que.1</b>	a. Illustrate the components involved in Field report for Data Processing.	<b>8</b>
	b. Explain Sample Design. Describe the main Steps in Sampling Design <i>OR</i>	<b>8</b>
	b. Explain Research Problem. Also discuss steps involved in defining the Research Problem.	<b>8</b>
<b>Que.2</b>	a. Explain how analyzing and Synthesizing of the Literature is carried out <i>OR</i>	<b>7</b>
	a. State and Elaborate Different methods of Data Presentation used in Data Processing.	<b>7</b>
	b. Develop methodology needed to be carried out for Literature review for Analytical Research.	<b>9</b>
<b>Que.3</b>	a. Explain the steps involved in Experimental Design Process.	<b>10</b>
	b. Describe the common DOE terms and Concepts with some suitable example. <i>OR</i>	<b>4</b>
	b. Explain in brief various Strategies of Experimentation?	<b>4</b>
	c. Distinguish Between following (ANY ONE)	<b>4</b>
	i. Analysis of Variance & Regression analysis	
	ii. Single factor factorial design & Two factor factorial design	

