OR iii. Describe resource management. What are the various factors to be kept in mind while planning and organising a constructional site? **6**

Q.6 Attempt any two:

i. Discuss any one computer application for project management with it's features and advantages. **5**

ii. What do you understand by Project Monitoring? Discuss it's various aspects. **5**

iii. What are various causes of cost overruns? Suggest it's corrective measures. **5**

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Total No. of Questions: 6 *Total No. of Printed Pages:4*

Enrollment No.....

Faculty of Engineering

End Sem (Even) Examination May-2019

CE3EC05 Construction Project Management

Programme: B. Tech. Branch/Specialisation: CE

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. For the execution of a project, a contractor is **1**

(a) A person (b) A firm (c) An agency (d) All of these

ii. Pre-tender stage requires **1**

(a) Acquisition of land.

(b) Selection of site.

(c) Formalisation of alignment of work.

(d) All of these.

iii. Mile Stone charts were invented in the year of **1**

(a) 1910 (b) 1940 (c) 1930 (d) 1920

iv. For the supply of materials for concrete, form work reinforcing and placing of concrete, removal of form work and curing of concrete, number of bar(s) required on bar chart, is **1**

(a) 1 (b) 2 (c) 3 (d) 4

v. If D is the duration, ES and EF are the earliest start and finish, LS and LF are latest start and latest finish time, then the following relation holds good **1**

(a) EF = ES + D (b) LS = LF - D

(c) LF = LS + D (d) All of these

vi. The time by which activity completion time can be delayed without affecting the start of succeeding activities, is known as **1**

(a) Duration (b) Total float (c) Free float (d) Interfering float

vii. The first stage of a construction is **1**

(a) Preparation of tender (b) Survey of the site

(c) Initiation of proposal (d) Preparation of estimate

P.T.O.

viii. The main advantage of line organisation, is: **1**
(a) Effective command and control.
(b) Defined responsibilities at all levels.
(c) Rigid discipline in the organisation.
(d) All of these.

ix. Which of the following is not a function of project management software? **1**
(a) Reporting (b) Project Budgeting
(c) Screening (d) Team collaboration

x. While scheduling a project by C.P.M. **1**
(a) A project is divided into various activities.
(b) Required time for each activity is established.
(c) Sequence of various activities is made according to their importance.
(d) All of these.

Q.2 i. What do you understand by Pre-Construction planning? Illustrate with example. **2**

ii. Explain various principles of Construction Management. **3**

iii. What do you understand by the term Construction Planning? Also explain its various stages. **5**

OR iv. Discuss the professional relation between a client and contractor including importance of both parties. **5**

Q.3 i. Explain Optimistic, Pessimistic and Most likely time. **3**

ii. For a project, 3 time estimates for various activities are given in the table. **7**

Activity	t_o	t_m	t_p
1-2	2	4	6
2-3	8	11	20
2-4	4	7	16
2-5	3	7	17
3-7	3	5	13
3-4	0	0	0
4-6	2	3	10
5-6	4	9	20
6-7	7	10	13
7-8	2	5	13

(a) Draw the PERT network.
(b) Find critical path.
(c) Find Standard deviation of Project.
(d) Find Probability of completion in 35 days.
(e) Find the scheduled time if probability of completion is 90%.

OR iii. Define PERT in brief. Also explain **7**
(a) Earliest expected occurrence time
(b) Latest allowable occurrence time
(c) Slack
(d) Probability Factor

Q.4 i. Differentiate between direct and indirect project costs and also explain how they affect the overall cost of any project work. **3**

ii. Explain the stepwise procedure of solving a network using CPM along with all the basic terminologies used in it. **7**

OR iii. For a project ABCD, there are 4 activities. The normal & crash duration (in days) along with the cost (in Rs.) is given in table. **7**

Activity	Normal Duration	Crash Duration	Direct Cost (Normal)	Direct Cost (Crash)
A	8	4	6000	12000
B	4	2	2000	14000
C	10	4	4000	8000
D	6	4	4000	8000

Indirect cost is Rs. 1000/day for the project.
Activity A and B are starting activities.
C follows B.
D follows A and C.
D is the finish activity.
Determine the optimum time and minimum cost for project.

Q.5 i. What do you mean by contract? Explain along with its importance in civil engineering field. **4**

ii. Enlist various types of Contracts and discuss any 4 in detail. **6**

Marking Scheme
CE3EC05 Construction Project Management

Q.1	i.	For the execution of a project, a contractor is (d) All of these		**1**
	ii.	Pre-tender stage requires (d) All of these.		**1**
	iii.	Mile Stone charts were invented in the year of (b) 1940		**1**
	iv.	For the supply of materials for concrete, form work reinforcing and placing of concrete, removal of form work and curing of concrete, number of bar(s) required on bar chart, is (a) 1		**1**
	v.	If D is the duration, ES and EF are the earliest start and finish, LS and LF are latest start and latest finish time, then the following relation holds good (d) All of these		**1**
	vi.	The time by which activity completion time can be delayed without affecting the start of succeeding activities, is known as (c) Free float		**1**
	vii.	The first stage of a construction is (c) Initiation of proposal		**1**
	viii.	The main advantage of line organisation, is: (d) All of these.		**1**
	ix.	Which of the following is not a function of project management software? (c) Screening		**1**
	x.	While scheduling a project by C.P.M. (d) All of these.		**1**
Q.2	i.	Pre-Construction planning definition Example.	1.5 mark 0.5 mark	**2**
	ii.	Principles of Construction Management. 1.5 marks for each	 (1.5 marks * 2)	**3**
	iii.	Construction Planning definition Its various stages 1 mark for each stage (1 mark * 4)	1 mark 4 marks	**5**
OR	iv.	Professional relation b/w a client and contractor Importance of both parties	3 marks 2 marks.	**5**
Q.3	i.	Explain Optimistic, Pessimistic and Most likely time. 1 mark for each definition	 (1 mark * 3)	**3**
	ii.	(a) Draw the PERT network. (b) Find critical path. (c) Find Standard deviation of Project. (d) Find Probability of completion in 35 days. (e) Find the scheduled time if probability of completion is 90%.	3 marks 1 mark 1 mark 1 mark 1 mark	**7**
OR	iii.	Define PERT (a) Earliest expected occurrence time (b) Latest allowable occurrence time (c) Slack (d) Probability Factor	3 marks 1 mark 1 mark 1 mark 1 mark	**7**
Q.4	i.	Differentiate between direct and indirect project costs Any two differences effect on overall cost of any project work.	 2 marks 1 mark	**3**
	ii.	Stepwise procedure of solving a network Terminologies (any four) 1 mark for each (1 mark * 4)	3 marks 4 marks	**7**
OR	iii.	Determine the optimum time and minimum cost for project. Network Optimum time Minimum cost	 1 mark 3 marks 3 marks	**7**
Q.5	i.	Definition of contract Its importance	2 marks 2 marks	**4**
	ii.	List of types of Contracts 1 mark for each type explanation (1 mark * 4)	2 marks 4 marks	**6**
OR	iii.	Resource management Factors to be kept in mind while planning and organising a constructional site (any four) 1 mark for each (1 mark * 4)	2 marks 4 marks	**6**
Q.6		Attempt any two:		
	i.	Any one computer application for project management Description Features Advantages	 1 mark 2 marks 2 marks	**5**

ii.	Definition Project Monitoring	2 marks	**5**
	It’s various aspects.1 mark for each (1 mark * 3)	3 marks	
iii.	Causes of cost overruns	2.5 marks	**5**
	Corrective measures.	2.5 marks	

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