

G 1535

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2016

Fourth Semester

Branch : Civil Engineering

CE 010 402—CONSTRUCTION ENGINEERING AND MANAGEMENT (CE)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

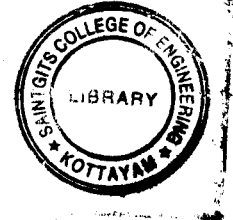
Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.



Write short notes on the following :

1. Segregation and bleeding.
2. Sand piling.
3. Dummy activity in a network.
4. Resource levelling.
5. Minimum Wages Act.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

Explain the following :—

6. Qualities of flooring materials.
7. Different pile driving equipments.
8. Total and free float.
9. Crashing and its economical impacts.
10. Industrial safety.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. What are the factors affecting workability ? Explain compaction factor with neat sketch.

Or

12. Discuss about domes and folded plates. Where they are used ? What are the construction methods used for them ? List the advantages of domes and folded plates.

Turn over

13. Explain the principles of functional planning with examples.

Or

14. With neat sketch, explain any two large scale earth moving equipments.
15. A project consists of a series of tasks labelled A, B, ... H, I with the following relationships ($W < X$, Y means X and Y cannot start until W is completed, $X, Y < W$ means W cannot start until both X and Y are completed). With this notation construct the network diagram having following constraints :

$$A < D, E; \quad B, D < F;$$

$$C < G; \quad B, G < H;$$

$$F, G < I.$$

Find also the minimum time of completion of the project when time (in days) not completion of each task is as follows :

Task :	A	B	C	D	E	F	G	H	I
Time :	23	8	20	16	24	18	19	4	10

Find the critical path and mark it clearly. Mark, EST, EFT, LST and LFT.

Or

16. A small project is composed of seven activities whose time estimates are listed.

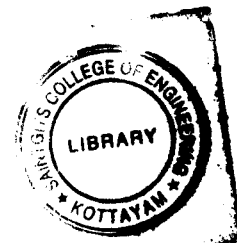
Activity		Estimated time duration		
i	j	Optimistic	Most likely	Pessimistic
1	2	1	1	7
1	3	1	4	7
1	4	2	2	8
2	5	1	1	1
3	5	2	5	14
4	6	2	5	8
5	6	3	6	15

Draw the project network.

Find expected duration and variance of each activity. What will be the probability for the project to complete no more than 4 weeks later than expected.

17. The following table gives the activities in a construction project and other relevant information. Draw activity network of the project crash the activity step by step until all paths are critical :

Activity i-j	Normal time days	Crash time days	Normal cost Rs.	Crash cost Rs.
1-2	20	17	600	720
1-3	25	25	200	200
2-3	10	8	300	440
2-4	12	6	400	700



Activity i-j	Normal time days	Crash time days	Normal cost Rs.	Crash cost Rs.
3-4 ...	5	2	300	420
4-5 ...	10	5	300	600
4-6 ...	5	3	600	900
5-7 ...	10	5	500	800
6-7 ...	8	3	400	700

Or

18. Explain in detail about resource allocation resource smoothing and resource levelling.
19. What are the constitutional directions, for the welfare of labourers of construction industry ?
What are the acts supporting the welfare of labourers ? Explain any one in detail.
- Or
20. Discuss about workers participation in management. What are the obstacles to the concept in the present era.

(5 × 12 = 60 marks)

