Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.TECH(CE)/SEM-8/CE-803/2012

2012

CONSTRUCTION MANAGEMENT TECHNOLOGY & DEPARTMENTAL PROCEDURE

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

$10 \times 1 = 10$

i) An independent bathroom may have a minimum floor area ..... square metres.

a) 2·0 b) 1·9

c) 1·45 d) 1·5.

ii) If for an activity optimistic time is 1 day, pessimistic time is 8 days and most likely time is 3 days, then the expected time is

a) 3·5 days b) 3·6 days

c) 3·75 days d) 4 days.

iii) Expected time is obtained by

a) $t_E = (t_o + 4t_L + t_p)/6$

b) $t_E = (2t_o + 2 \cdot 5t_L + 3t_p)/7$

c) $t_E = (t_o + 3 \cdot 5t_L + t_p)/2$

d) $t_E = (2 \cdot 5t_o + 1 \cdot 5t_L + 0 \cdot 25t_p)/9$.

iv) Slack =

a) $(T_L - T_E)$ b) $(T_E - T_L)$

c) $(T_E + T_L)$ d) $(T_L - T_E)/(T_L + T_E)$.

v) For a building with a maximum height of 8·0 m, the minimum rear space is

a) 2·5 m b) 3·0 m

c) 2·0 m d) 1·2 m.

vi) If the width of means of access of a plot is above 7·0 m to 10·0 m, the maximum permissible height of building is

a) 12·0 m b) 11·0 m

c) 14·5 m d) 18·0 m.

vii) A critical activity has

a) maximum float b) minimum float

c) zero float d) average float.

viii) The amount of time by which the activity completion can be delayed without interfering with the start succeeding activity is known as

a) earliest completion time

b) total float

c) free float

d) none of these.

ix) Numbering of events is a network can be done using

a) Fulkerson rule b) Gnatt's rule

c) Taylor's rule d) none of these.

x) Muster Roll is the

a) attendance record of daily labour employed

b) measurement of the daily work done

c) accounting register for consumable materials

d) none of these.

xi) The occurrence of the starting of an activity is called its

a) head event b) tail event

c) dual role event d) none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. The maintenance project of a building consists of 10 jobs. The predecessor relationships are identified by their node numbers as indicated below. Draw the network diagram for the project.

Job	Identification	Job	Identification
A	(1, 2)	*F*	(4, 5)
B	(2, 3)	*G*	(4, 7)
C	(2, 4)	*H*	(5, 8)
D	(3, 6)	*I*	(6, 8)
E	(3, 5)	*J*	(7, 8)

3. For a particular activity of a project, time estimates received from two engineers *A* & *B* are as follows :

Name of Engineer	Optimistic time (t_0) in weeks	Most likely time (t_e) in weeks	Pessimistic time (t_p) in weeks
A	4	6	8
B	3	5	8

State who is more certain about time of completion of the job.

4. What is contract ? What are the essentials of a contract ?

5. Describe about security deposit and retention money.

6. Write short notes on the following :
   a) Dumper
   b) Grader.
7. Describe the equipment generally used in bituminous pavement construction.

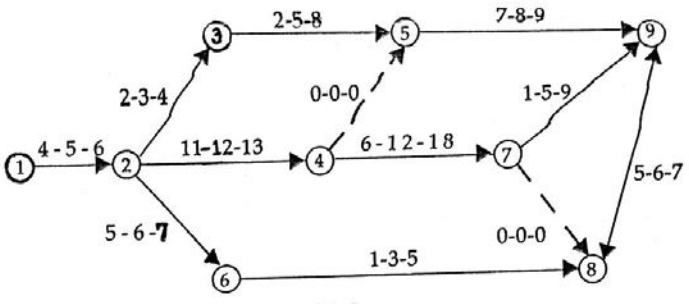
GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

8. a) What are the duties and liabilities of the Engineer appointed by the Employer ?
   b) What are the advantages and disadvantages of percentage rate contract ?
9. The network for a certain project is shown below. If the scheduled time of completion of project is 38 days, determine the slack for each event and also find the critical path. What is the probability of completion of the project in 38 days ? Use the following normal distribution table : 8 + 3 + 4

Probability Factor	Probability
1·0	84·13
1·5	93·32
2·0	97·72
2·5	99·38



10. Write short notes on any *three* of the following : 3 × 5

    a) Power Sholves

    b) Conveyors

    c) Fire Protection as per National Building Code

    d) Rights and responsibilities of owner, contractor and engineer

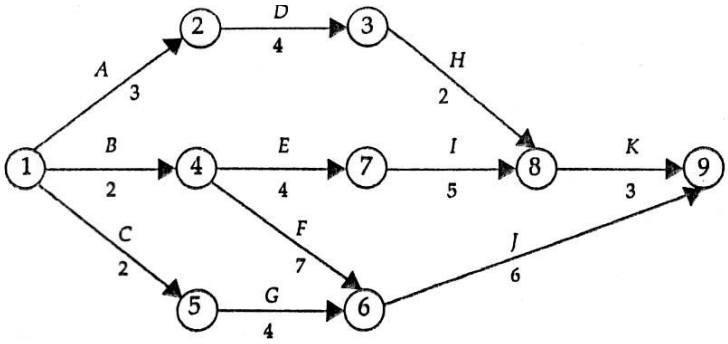
    e) EMD and SD.

11. For the given network,

    a) calculate earliest and latest activity time for each activity

    b) calculate total float, free float and independent float

    c) determine the critical path. 5 + 7 + 3



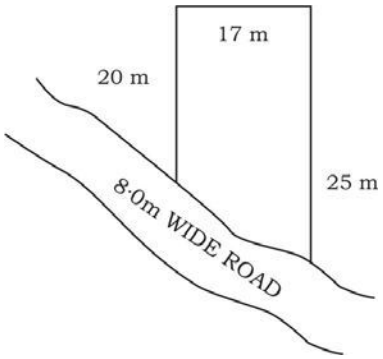
12. a) What do you understand by Covered area of a building ? How does FAR control the built-up area and height of a building ?

b) A residential building is to be constructed on a plot area shown in figure.

F.A.R. in 2

Maximum Ground Coverage is 50%

Determine the built-up area of the building.



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