CONSTRUCTION MANAGEMENT & TECHNOLOGY (SEMESTER - 8)

CS/B.TECH (CE)/SEM-8/CE-803/08

1. ....
   Signature of Invigilator

2. ....
   Signature of the Officer-in-Charge

Reg. No. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Roll No. of the Candidate [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

CS/B.TECH (CE)/SEM-8/CE-803/08
ENGINEERING & MANAGEMENT EXAMINATIONS, MAY – 2008
CONSTRUCTION MANAGEMENT & TECHNOLOGY (SEMESTER - 8)

Time : 3 Hours]   [Full Marks : 70
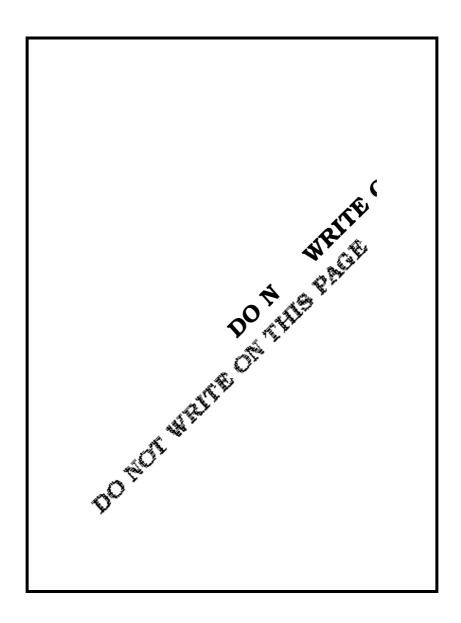
INSTRUCTIONS TO THE CANDIDATES :

1. **This Booklet is a Question-cum-Answer Booklet.** The Booklet consists of **32 pages**. **First page** of the Booklet shows Instructions to the Candidates. The **questions** of this concerned subject commence from **Page No. 3**.

2. a)   In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.

   b)   For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.

3. Fill in your Roll No. in the box provided as in your Admit Card before answering the questions.

4. Read the instructions given inside carefully before answering.

5. You should not forget to write the corresponding question numbers while answering.

6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.

7. Use of Mobile Phone, Calculator or Log table is totally prohibited in the examination hall.

8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, which will lead to disqualification.

9. Rough work, if necessary is to be done in this booklet only and cross it through.

   No additional sheets are to be used and no loose paper will be provided

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FOR OFFICE USE / EVALUATION ONLY
Marks Obtained

			Group – A							Group – B		Group – C		Total Marks	Examiner's Signature
Question Number															
Marks Obtained															

....
Head-Examiner/Co-Ordinator/Scrutineer

VIII-857 (3-A)

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SEMESTER – 8

Time : 3 Hours]   [Full Marks : 70

GROUP – A

(Multiple Choice Type Questions)

1.   Choose the correct alternatives for any *ten* of the following :   10 × 1 = 10

   i)   An activity is a task

      a)   started   b)   completed

      c)   being performed   d)   not related to any.

   ii)   An event is a job

      a)   started or completed   b)   going to be started

      c)   going to be completed   d)   any of (b) or (c).

   iii) A CPM network is

      a)   activity oriented   b)   event oriented

      c)   both (a) and (b)   d)   any one of (a) or (b).

   iv)   CPM network consists of which of the following type of activities ?

      a)   Predecessor

      b)   Successor

      c)   Both predecessor and successor

      d)   Predecessor or successor.

VIII-857 (3-A)

v) A dummy activity is introduced when an activity is depending on two activities

    a) emerging out of an event concurrently

    b) entering into an event concurrently

    c) both (a) and (b)

    d) none of these.

vi) While submitting a tender the contractor is to be deposit a certain amount of money with the department as guarantee of the tender. This deposit is called

    a) Security deposit   b) Retention money

    c) Earnest money   d) any of these.

vii) The distance of building line for a building facing a NH is from the centre line of the highway

    a) 15 m   b) 30 m

    c) 45 m   d) 60 m.

viii) If the covered area of all floors of a building fronting a steet of width of 10 m is 1000 sq.m having a plot area of 500 sq.m and ground coverage of 400 sq.m, FAR is

    a) 3   b) $2 \cdot 5$

    c) 2   d) none of these.

ix) A scraper is

    a) best loading machine

    b) best hauling machine

    c) best loading and hauling machine

    d) only scraping machine.

x) A vibrater that is used for concreting columns or their walls is

    a) internal vibrator   b) external vibrator

    c) surface vibrator   d) platform vibrator.

xi) It is of paramount importance that concrete should be given

    a) 70% compaction   b) 80% compaction

    c) 90% compaction   d) 100% compaction.

xii) An embankment constructed of granular soils has Relative Density (%) between 65 to 85. The compaction is

    a) very loose   b) loose

    c) medium   d) dense.

xiii) Concrete cubes made of gravels instead of stonechips will fail in crushing through

    a) gravels   b) mortar joints

    c) both gravels and morter joints   d) none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.   3 × 5 = 15

2. a) What are building bye-laws?   2

    b) What are the various aspects governed by building bye-laws ?   3

3. Give the rules regarding provision of side and rear open spaces around buildings as per the National Building Code of India or any other metropolitan authority governing building rules.   5

4. Define activity, event & network.   5

5. What are the requirements for lavatory block for dwelling units ?   5

6. Give the requirements of fitments for office building.   5

7. a) Distinguish between activity and event.   2

    b) Identify the events and the activities of any *six* of the following :   3

       i) Dig the foundation

       ii) Laying brick flat soling in foundation

iii) Concrete poured in foundation

iv) Cure the concrete

v) Foundation completed

vi) Door frame fixed

vii) Construct wall

viii) Lay D.P.C.

GROUP – C

(Long Answer Type Questions)

Answer any *three* questions.   3 × 15 = 45

8. A Manufacturing Company is considering the construction of a new factory building. The following list shows the project activity, precedence relationships and time estimates :

Activity	*Description*	*Immediate Predecessor(s)*	*Time*
A	Problem definition	—	3
B	Preliminary study of costs and constrains	A	3
C	Analysis of problems in existing building	A	3
D	Incorporation of requirements in new building	C	5
E	Details drawings of new building	B, C	6
F	Contractor surveying and laying out	D, E	9
G	Cost analysis	E	5
H	Engineers reviewing feasibility	G	3
I	Contractor building the factory	G, F	5
J	Building inspection	I, H	6
K	Final plant layout	J	4

   a)   Develop a CPM network for this project.

   b)   Identify the critical path.

   c)   Compute the total and free floats for the activities.

9.   The network for a certain project is shown in the following figure :

   a)   Determine the expected time for each path.

   b)   Which path is critical ?

   c)   What is the earliest expected time for the project ?

   d)   If the scheduled completion time is 48 days, what is the probability of finishing the project in this time ?

(For normal deviate of + 1·0, + 1·1, + 1·2, + 1·3 ; probability is 84·1%, 86·4%, 88·5%, 90·3%)

dia

10.   Discuss any *three* of the following :

   a)   Earliest event time and latest event time

   b)   Time estimates for PERT activities

   c)   Total float and free float

   d)   Dummy activity.

VIII-857 (3-A)

11. a) Discuss the requirements of staircase for different types of buildings.

   b) Give the general rules for bathroom and water closet.

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 building is to be constructed on a plot area of 1050 sq.m. The site abuts two streets, one of 20 m width and the other of 10 m, FAR is 2·0.

   If each storey contains 3 flats, determine the built-up area of the building and its height. Ground coverage is maximum 50%.

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END