

B.TECH/CE/8TH SEM/CIVL 4201/2019
CONSTRUCTION PLANNING AND PROJECT MANAGEMENT
(CIVL 4201)

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
any 5 (five) from Group B to E, taking at least one from each group.*

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

Group – A
(Multiple Choice Type Questions)

1. Choose the correct alternative for the following: **10 × 1 = 10**

- (i) Arrange the following phases of project management in correct order:
 1. Controlling 2. Scheduling 3. Planning
 (a) 1-2-3 (b) 2-1-3 (c) 3-1-2 (d) 3-2-1.
- (ii) _____ type of excavator is used for digging below, at or above
 operating level in a vertical range.
 (a) Skimmer (b) Dragline (c) Clamshell (d) Back trench.
- (iii) Earnest money deposit for any civil work is generally
 (a) 5% of estimated cost (b) 2% of estimated cost
 (c) 3% of estimated cost (d) 4% of estimated cost.
- (iv) For a residential house minimum room height should be
 (a) 2.75m (b) 3m (c) 2.4m (d) 3.3 m.
- (v) Pick up the incorrect statement from the following :
 (a) An activity of a project is denoted by an arrow on the net work
 (b) The tail of the arrow indicates the start of the activity
 (c) The head of the arrow indicates the end of the activity
 (d) The arrows are drawn from right to left.
- (vi) Sinking fund is
 (a) the fund for rebuilding a structure when its economic life is over.
 (b) raised to meet maintenance costs.
 (c) the total sum to be paid to the municipal authorities by the tenants .
 (d) a part of the money kept in reserve for providing additional structures
 or structural modifications.

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- (vii) Notice inviting tender published through press publication is called
 (a) open tender (b) single tender
 (c) limited tender (d) selected tender
- (viii) Type of fire extinguisher used in class A fire is
 (a) dry chemical powder (b) Halon
 (c) soda acid type (d) chemical foam.
- (ix) A turn-key contract means
 (a) to design and build
 (b) to perform all the functions from inspection to completion of the
 construction
 (c) to build the structure only.
 (d) the same as the unit price contract.
- (x) Aspect of bedroom of a residential building is
 (a) NW-W-SW (b) SE-S-SW (c) NW-N-NE (d) SE-S-SW-W.

Group – B

2. (a) Write short notes on : (i) Roominess (ii) Kolkata building rules for
 bathroom and water closet .
- (b) What are the basic requirements of building planning?
6 + 6 = 12
3. (a) A building is to be constructed on a plot area of 1050 sq.m. The site is
 adjacent about two streets, one of 20m width and the other of 10 m , FAR is
 2.0. If each storey contains three flats, determine the built-up area of the
 building and its height . Ground coverage is maximum 50%.
- (b) Define habitable room, means of access, ground coverage.
6 + 6 = 12

Group – C

- 4.(a) Find the output of 4 cum power shovel excavating material whose swell is
 30%. It handles on an average heaped loose volume of 4.5 cum, with cycle
 time of 40 secs. Assume efficiency as 1.
- (b) Write short notes on Clamshell and Grader with their schematic diagram.
4 + 8 = 12
- 5.(a) What is a ready mix concrete? Describe dry batching and wet batching.
 What are the advantages and disadvantages of ready mix concrete ?
- (b) Define semi automatic and automatic batching plant .
10 + 2 = 12

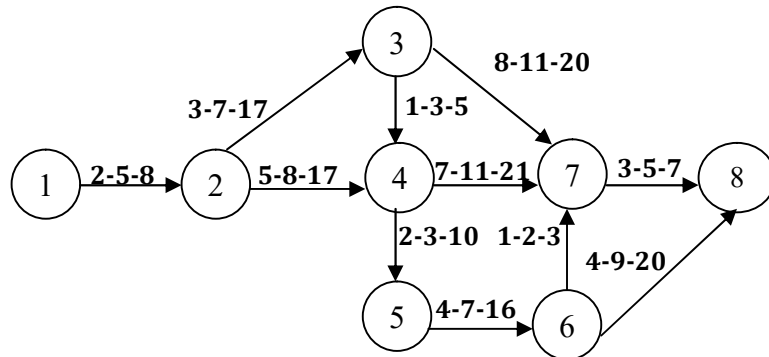
Group - D

6. The time estimates t_o , t_m , t_p of each activity of a project are given below:
- Draw network diagram.
 - Compute the expected duration and variance of each activity.
 - Determine the expected duration.
 - Find the variance and standard deviation of the entire project.

Activity	t_o (days)	t_m (days)	t_p (days)
1-2	2	5	14
1-3	3	12	21
2-4	5	14	17
3-4	2	5	8
4-5	1	4	7
3-5	6	15	30

12

7. The time estimates in days for optimistic, most likely and pessimistic times of various activities are shown below in the network diagram. Draw the critical path and obtain the approximate value of standard deviation for the network.

**12****Group - E**

8. What are the powers of an arbitrator? State the steps to be taken to avoid any arbitration.
9. What should a tender document include? Explain the role of an engineer appointed by the owner.

5 + 7 = 12**6 + 6 = 12**