

**PROJECT PLANNING AND MANAGEMENT
(CIVL 4121)**

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.

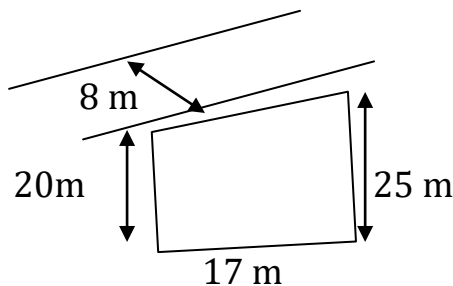
**Group – A
(Multiple Choice Type Questions)**

1. Choose the correct alternative for the following: **10 × 1 = 10**
- (i) Aspect of Store room of a residential building is
(a) NW-W-SW (b) SE-S-SW
(c) NW-N-NE (d) SE-S-SW-W
- (ii) An arbitrator is one who mediates between
(a) Two aggrieved parties (b) Public and contract
(c) Public and workers (d) Engineer and architect.
- (iii) Type of fire extinguisher used in class A fire is
(a) Dry chemical Powder (b) Halon
(c) Soda acid type (d) Chemical Foam.
- (iv) The amount of compensation payable by a contractor to the owner because of delayed construction is
(a) security deposit (b) retention money
(c) liquidated damage (d) unliquidated damage.
- (v) For any residential building if floor area is 2, and the plot size is up to 500sq.m maximum permissible ground coverage should be
(a) 60% (b) 50% (c) 65% (d) 55%.
- (vi) In critical path method, critical path is obtained by joining
(a) critical events (b) critical activities
(c) sub-critical events (d) sub-critical activities.
- (vii) Minimum width of stair in your college should be
(a) 1 m (b) 1.2 m (c) 1.5 m (d) 2 m.
- (viii) For an activity, the optimistic time, most likely time and pessimistic time are 5 days, 7 days and 12 days respectively. The expected time is
(a) 6 days (b) 12 days (c) 7.5 days (d) 9.5 days.

- (ix) Notice inviting tender published through press publication is called
(a) Open tender (b) Single tender
(c) Limited tender (d) Selected tender.
- (x) Target contract is of certain origin combining the merits of
(a) cost plus fixed fee contract
(b) cost plus fluctuating fee contract
(c) all in contract
(d) sub-contract.

Group - B

2. (a) A residential building is to be constructed on a plot area shown in figure. F.A.R. is 2. Maximum Ground Coverage is 50%. Determine the built-up area of the building. [(CO5) (Analyze/IOCQ)]



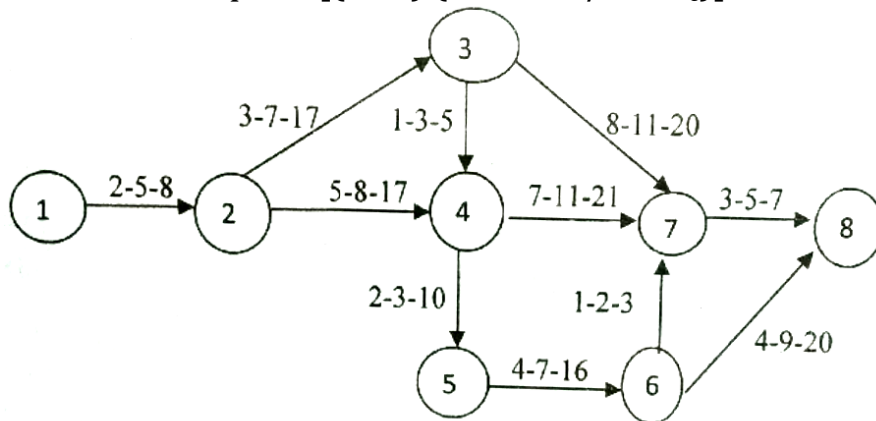
- (b) Write short notes on:
(i) Carpet area and Ground Coverage
(ii) Circulation. [(CO5) (Understand/LOCQ)]
5 + 7 = 12
3. (a) A building is to be constructed on a plot area of 1500 sq.m. The site is adjacent about two streets, one of 30m width and the other of 20 m, FAR is 2.0. If each storey contains 3 flats, determine the built up area of the building and its height. Ground coverage is maximum 50%. [(CO5) (Evaluate/HOCQ)]
- (b) What are the basic requirements of building planning? [(CO5) (Understand/LOCQ)]
8 + 4 = 12

Group - C

4. (a) What is a Ready mix concrete? Describe dry batching and wet batching. What are the advantages and disadvantages of ready mix concrete? [(CO4) (Understand/LOCQ)]
- (b) Define semi automatic and automatic batching plant. [(CO4) (Understand/LOCQ)]
(2 + 3 + 3) + 4 = 12
5. (a) Find the output of 5 cum power shovel excavating material whose swell is 30% . It handles on average heaped loose volume of 5.5 cum. With cycle time of 50 secs. Assume efficiency as 1. [(CO4)(Evaluate/HOCQ)]
- (b) Write short notes on Clamshell and Grader with their schematic diagram.

Group - D

6. The time estimates in days are shown in the given network. Find out standard deviation for the network and critical path. [(CO3) (Evaluate/HOCQ)]



12

7. (a) Draw the comparison between CPM and PERT. [(CO3) (Analyse/IOCQ)]
 (b) Following information are given for a construction project.

Activity	Activity Duration	Predecessors
1-2	3	-
1-3	5	-
2-4	4	1-2
4-5	5	1-3, 2-4
3-5	8	1-3

Draw the network and calculate

- (i) Earliest and latest activity times
 (ii) Total, free and independent float

Also determine the critical path. [(CO3) (Evaluate/HOCQ)]

4 + 8 = 12

Group - E

8. (a) Briefly describe the duties and responsibilities of parties involved in a construction project. [(CO6) (Understand/LOCQ)]
 (b) What are the important features of contract? [(CO2) (Understand /LOCQ)]

8 + 4 = 12

9. (a) Distinguish between security deposit and retention money. [(CO2) (Analyse/IOCQ)]
 (b) What is arbitration? Discuss the need for arbitration. What are the wanted qualifications of arbitrator? [(CO6) (Understand/IOCQ)]

5 + (2 + 2 + 3) = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	43.7%	28.5%	28.5%

Course Outcome (CO):

After the completion of the course students will be able to

1. Develop the bar chart for the project.
2. Compile the tender documents.
3. Estimate the critical path of the project i.e., the maximum duration which the project requires for completion.
4. Understand the uses of various construction equipments at site and the preparation of concrete.
5. Make use of the bylaws of different authorities to get the approval of drawings for construction.
6. Understand the process of arbitration in case the projects suffer from disputation.

*LOCQ: Lower Order Cognitive Question; IOCQ: Intermediate Order Cognitive Question; HOCQ: Higher Order Cognitive Question

Department & Section	Submission link:
ME & Sec A	https://classroom.google.com/c/NDA2MTY4MjQ4MjQx/a/NDYzNjcwOTM5MTE3/details
ME & Sec B	https://classroom.google.com/c/NDA2MTY4MjQ4MjQx/a/NDYzNjcwOTM5MTE3/details