

**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) Front open space for residential building up to 15.5 m height as per municipal building rule, is ?
(a) 1.5 m (b) 1.2 m
(c) 2.0 m (d) 1.8 m
- (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) 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%
- (iv) Muster Roll is the
(a) Attendance record of the daily labour employed
(b) Measurement of the daily work done
(c) Accounting registers for consumable materials
(d) None of these
- (v) 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
- (vi) Interfering float is
(a) tail event slack
(b) head event slack
(c) difference between total float and independent float
(d) difference between free float and independent float

B.TECH/CE//8TH SEM/ CIVL 4201 (BACKLOG)/2022

- (vii) In critical path method, critical path is obtained by joining
(a) critical events (b) critical activities
(c) sub-critical events (d) sub-critical activities
- (viii) Final technical authority of a project lies with
(a) chief engineer (b) superintending engineer
(c) executive engineer (d) Assistant engineer
- (ix) The occurrence of the starting of an activity is called
(a) head event (b) tail event
(c) dual role event (d) predecessor event
- (x) 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

Group - B

2. (a) Write short notes on : (i) Roominess (ii) Kolkata Building rules for Bathroom and water closet . [(CO5) (Analyze/IOCQ)]
(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. [(CO5) (Evaluate /HOCQ)]

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

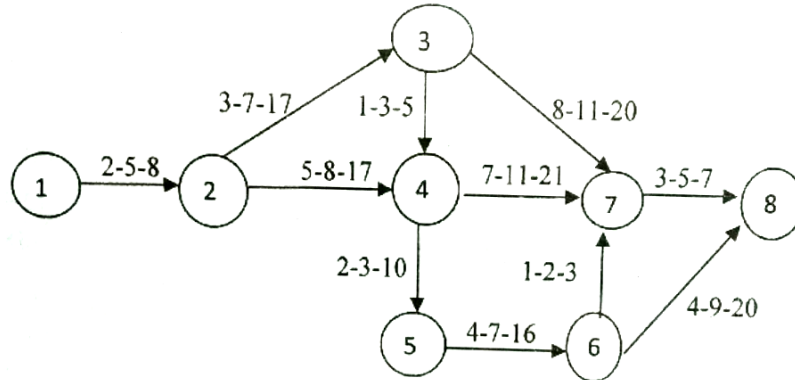
4. (a) What is a Ready mix concrete? Describe dry batching and wet batching. What are the advantages and disadvantages of ready mix concrete? [(CO4) (Understand/IOCQ)]
(b) Define semi automatic and automatic batching plant. [(CO4) (Understand/IOCQ)]
- (2 + 3 + 3) + 4 = 12**
- 5 (a) A four wheel tractor weighing 1800 kg has weight distribution between the front and rear wheels of 40% and 60 % respectively . It is operating on a level haul road whose rolling resistance is 45 kg per ton . what is the maximum effective rimpull of the tractor if the coefficient of traction between the road surface and the fire is 0.65 ? [(CO4)(Evaluate/HOCQ)]

- (b) Write short notes on Clamshell and Grader with their schematic diagram.
 [(CO4) (Understand/LOCQ)]

5 + (3.5 + 3.5) = 12

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) What is a bar chart? What are the advantages and disadvantages of bar chart?
 (b) Draw a bar chart time (weeks) Vs Activity break down as follows:

Activities	Time (weeks)
A	0-3 Weeks
B	0-4 Weeks
C	5-7 Weeks
D	6-8 Weeks
E	10-12 Weeks
F	11-13 Weeks
G	13-16 Weeks

5 + 7 = 12

[(CO1) (Evaluate/HOCQ)]

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) What are the duties and responsibilities of (i) Owner (ii) Engineer.
 [(CO2) (Analyse/IOCQ)]
 (b) What is a contract document? Mention the points that must be included in contract document. [(CO6) (Understand/IOCQ)]

4 + (2 + 6) = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	30%	30 %	30%

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 incase the projects suffer from disputation.

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