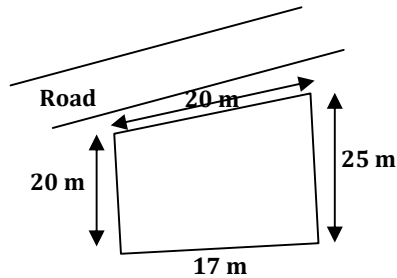


- (vii) Notice inviting tender published through press publication is called
 - (a) open tender
 - (b) single tender
 - (c) limited tender
 - (d) selected tender.
- (viii) Type of fire extinguisher used in class A fire is
 - (a) Dry Chemical Powder
 - (b) Halon
 - (c) Soda acid type
 - (d) Chemical Foam.
- (ix) The distance between the building facing a NH and the centre line of the highway is
 - (a) 15 m
 - (b) 30 m
 - (c) 45 m
 - (d) 60 m.
- (x) Aspect of bedroom of a residential building is
 - (a) NW-W-SE
 - (b) SE-S-SW
 - (c) NW-N-NE
 - (d) SE-S-SW-W.

Group - B

- 2. (a) Write short notes on: (i) Aspect (ii) Prospect (iii) Grouping.
 - (b) What are the practical considerations taken during planning of a building?
- 9 + 3 = 12**
- 3. (a) Find out the maximum ground coverage area of the plot as given below for a (G+3), residential building as per municipal laws.



- (b) What do you understand by covered area of a building? How does FAR control the built up area and height of a building?
- 6 + 6 = 12**

Group - C

- 4. (a) Determine the output of a bulldozer for the following operating condition: (make necessary assumptions)
 - (i) Sandy loam top soil having swell = 30%

- (ii) Haul Distance = 50 meter
- (iii) Loose volume = 3m³
- (iv) Operating factor = 45 min/hr
- (v) Forward speed(F) = 2.5 kmph
- (vi) Reverse speed(R) = 5.5 kmph

- (b) Write short notes on bulldozer and backhoe.

5 + 7 = 12

- 5. (a) Calculate the no. of Transit Mixture (TM) required for transporting concrete from central batching plant to site. The cycle time data of 6m³ typical transit mixture is given below
 - Loading time of TM = 6 mins
 - Travel time of loaded TM to site = 30 mins
 - Average waiting time at site = 5mins
 - Discharge time of concrete at the site = 15 mins
 - Travel time for return trip = 24 mins
 - The continuous central batching plant is having an average output of 60 m³/hr.
- (b) What is batching? Explain in detail the different types of batching. Describe tilting type mixer and non tilting type mixer.

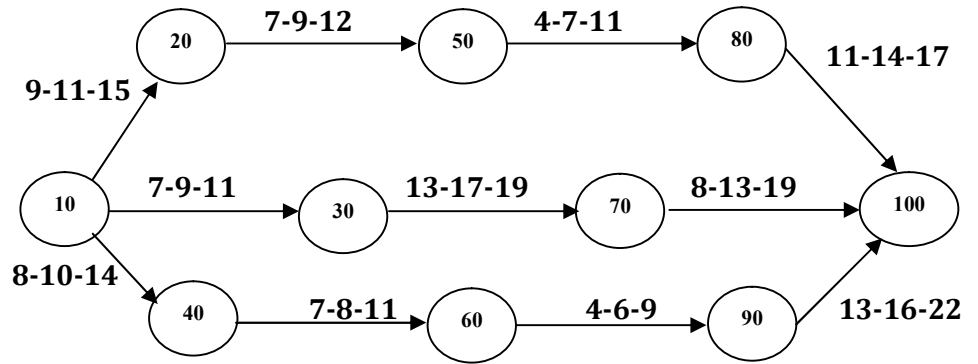
5 + 7 = 12

Group - D

- 6. A project consists of the following activities and activity times.
 - (a) Draw the network to find the critical path.
 - (b) Compute the total floats, free floats and independent float of each activity.

Task	Preceded by	Time(days)
A	-	8
B	-	10
C	-	8
D	A	10
E	A	16
F	B, D	17
G	C	18
H	C	14
I	F, G	9

7. In the given network, the optimistic, the most likely and pessimistic time estimates are given for each activity. If 10 and 100 are the start and end events respectively, find the critical path using Slack method.



12

Group - E

8. (a) What is contract? Briefly describe about lump sum contract and cost plus bid fee contract.
 (b) What are the responsibilities of a Chief Engineer and Engineer?
 $2 + 4 + 6 = 12$
9. (a) Write short notes on:
 (i) Unbalanced tender
 (ii) Liquidated damages.
 (b) Draw the organization chart of PWD.

$6 + 6 = 12$

**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: $10 \times 1 = 10$
- (i) The most suitable type of equipment for compacting cohesive soil is
 (a) smooth-wheeled rollers (b) pneumatic tyre rollers
 (c) sheep foot rollers (d) vibratory rollers.
- (ii) Grader is used mainly for
 (a) trimming & finishing
 (b) shaping & trimming
 (c) finishing & shaping
 (d) finishing, shaping & trimming.
- (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) Critical Path is
 (a) always longest (b) always shortest
 (c) may be longest (d) may be shortest.
- (v) A vibrator that is used for concentrating columns or their walls is
 (a) internal vibrator (b) external vibrator
 (c) platform vibrator (d) surface vibrator.
- (vi) Slack time in PERT analysis
 (a) is minimum for critical activities
 (b) can never be less than zero
 (c) can never be greater than zero
 (d) is always zero for critical activity.