CONSTRUCTION PLANNING AND PROJECT MANAGEMENT
(CIVL 4201)

Time Allotted : 3 hrs   **Full Marks : 70**
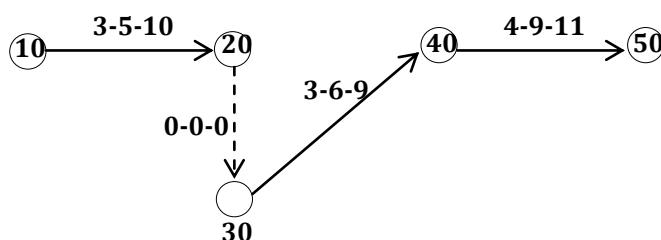
Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and
<u>any 5 (five)</u> from Group B to E, taking <u>at least one</u> 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)   For any residential building if floor area ratio 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%

    (ii)   Type of fire extinguisher used in class A fire is
            (a) Dry chemical Powder   (b) Halon
            (c) Soda acid type   (d) Chemical Foam

    (iii)   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

    (iv)   When submitting a tender, the contractor has to deposit a certain amount of money with the department as guarantee of the tender the deposit is called.
            (a) Security deposit   (b) Earnest money
            (c) Retention Money   (d) None of the above.

    (v)   An arbitrator is one who mediates between
            (a) Two aggrieved parties   (b) Public and contract
            (c) Public and workers   (d) Engineer and architect.

    (vi)   A path of a network is shown in Figure with the time estimates for its activities as mentioned along each activity. Determine the expected time for the path.
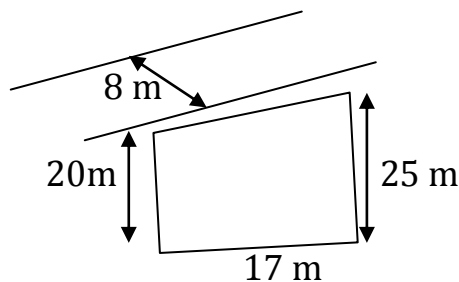

            (a) 21   (b) 20   (c) 15   (d) 19.

(vii)   If the tail slack is zero then the difference between the free float and independent float is
(a) Less than one   (b) Greater than one
(c) Equal to one   (d) Zero

(viii) The concept of free float is based on the possibility that
(a)   The float of the activity is negative
(b)   Only preceding events occur as late as possible
(c)   All events occur at their earliest times
(d)   All events occur as late as possible.

(ix)   The most suitable type of equipment for compaction of cohesive soil is
(a) Smoothed wheeled rollers   (b) Tampers
(c) Sheep foot rollers   (d) Vibratory rollers

(x)   Which one of the following is not an excavating type of equipment?
(a) Dump truck   (b) Clamshell
(c) Scraper   (d) Bulldozer.

Group – B

2. (a)   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.

(b)   Write short notes on:
(i)   Carpet area and Ground Coverage
(ii) Circulation.

5 + 7 = 12

3. (a)   What are the general requirements for fire protection of a mercantile building?

(b)   What is automatic sprinkler system? Where it should be installed?

6 + 6 = 12

Group – C

4. (a)   List and describe about the various types of equipments used for excavation of earth.

(b)   Calculate the time required to grade and finish 30 km of road formation of 9.0 m width for two lane roads with motor grader having width of 3.0 m, using 6

passes with speed for each of the successive two passes as 5 kmph, 7 kmph and 9 kmph respectively. Assume machine efficiency based on operator skill, machine characteristics and working conditions as 80%.

6 + 6 = 12

5. Write a short note on Ready Mix concrete. Briefly describe finishing and curing of concrete.
(6 + 6) = 12

Group – D

6. (a) The predecessor relationships of a network consisting of 8 events are given in the table below. The expected time of completion t_E of each activity is also given in the table below. Determine the slack for various events. The scheduled date of completion of the project is 36 days. Also determine the critical path of the network and present the computations in a tabular form.

Event No.	Predecessor event	t_E (days)	Event No.	Predecessor event	t_E (days)
1	-	-	5	4	4
2	1	5	6	5,7	8,2
3	2	8	7	3,4	12, 12
4	2,3	9,3	8	6,7	10,5

(b) Differentiate between bar chart and milestone chart.

9 + 3 = 12

7. (a) The predecessor relationships of a network consisting of 8 events are given in the table below. Determine the following
(i) Earliest event time and latest event time.
(ii) Earliest and latest start and finish times of each activity.
(iii) Total and free floats for each activity.
(iv) Critical path for the network.

Event No.	Predecessor event	Time (days)	Event No.	Predecessor event	Time (days)
1	-	-	5	2,4	4,4
2	1	5	6	4	6
3	2	8	7	3,6	7,7
4	1,3	3,0	8	5,6,7	6,2,6

(b) Differentiate between total float, free float and independent float.

9 + 3 = 12

Group – E

8. (a) What are the advantages and disadvantages of percentage rate contract?

(b) Describe about the security deposit and retention money.

6 + 6 = 12

9. (a) Draw the organization chart for PWD.

    (b) Explain the responsibility of a owner and contractor.

5 + 7 = 12

Department & Section	Submission Link
CE Sec A	https://classroom.google.com/u/0/w/MzEyOTE1MTYyNTIx/tc/MzU5MTQwODE1NzMw
CE Sec B	https://classroom.google.com/u/0/w/MzEyOTE1MTYyMTQ2/tc/MzU5MTQ4ODEyNjQ3