

- (vii) Grader is used mainly for
 - (a) trimming & finishing
 - (b) shaping & trimming
 - (c) finishing & shaping
 - (d) finishing, shaping & trimming.
- (viii) CPM is
 - (a) event oriented
 - (b) activity oriented
 - (c) both event and activity oriented
 - (d) none of these.
- (ix) Earliest expected time of event is represented by
 - (a) t_e
 - (b) T_E
 - (c) T_L
 - (d) T_s .
- (x) Slack is
 - (a) always zero for critical activities
 - (b) can never be greater than zero
 - (c) can never be less than zero
 - (d) is minimum for critical activities.

Group - B

- 2. What do you understand by built up area of building? The plot area of a building is 1000 sq.m. The front width of the road is 10 m. F.A.R. = 2. Ground coverage of building is 40%. Determine built up area & height of building. 12
- 3. Write about the following: (4 × 3) = 12
 - (i) Carpet area
 - (ii) Floor area ratio
 - (iii) Means of access
 - (iv) Ground coverage.

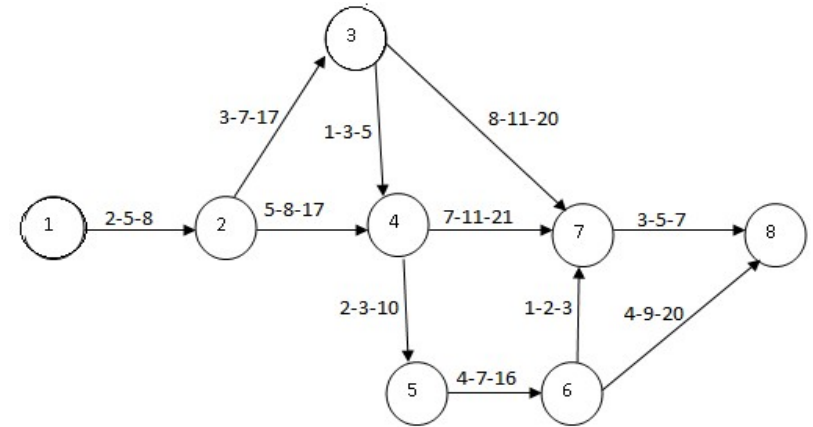
Group - C

- 4. Write short notes on: (4 × 3) = 12
 - (i) Shovel
 - (ii) Backhoe
 - (iii) Sheep foot roller
 - (iv) Vibratory roller.
- 5. (a) Briefly describe equipments used in bituminous pavement construction.
- (b) Write about:
 - (i) Co-efficient of traction
 - (ii) Output of scrapper.

6 + 6 = 12

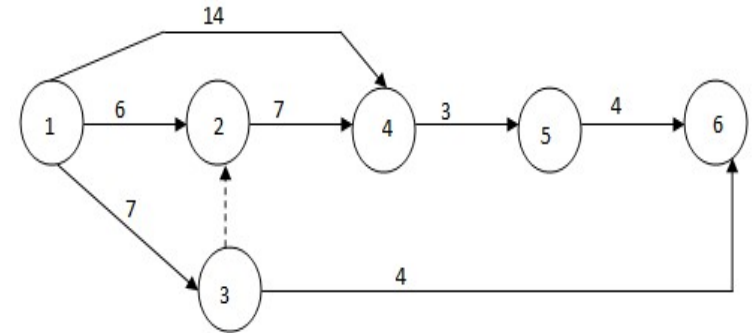
Group - D

- 6. The time estimates in days for optimistic, most likely and pessimistic times of various activities are shown below in the network diagram. Which path is critical? Find EST, EFT, LST, LFT and total float for each activity.



12

- 7. Determine the total float and free float and critical path for installation project represented by the network shown in the figure below. Estimated duration for activities in days is shown in the figure.



12

Group - E

- 8. Write about the following: (4 × 3) = 12
 - (i) Unbalanced tender
 - (ii) Secured advance
 - (iii) Liquidated damages
 - (iv) Lump sum contract.

9. (a) What is contract? What are the essentials of a contract?
 (b) What is arbitration? What is the need for arbitration? What are the powers of arbitrator?

6 + 6 = 12

**PROJECT PLANNING AND MANAGEMENT
(CIVL 4283)**

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) The time by which activity completion time can be delayed without affecting the start of succeeding activities is known as
 (a) duration (b) total float
 (c) free float (d) none of these.
- (ii) For any residential building if floor area ratio is 2, and plot size is up to 500 sq.m., maximum permissible ground coverage is
 (a) 60% (b) 50% (c) 65% (d) 55%.
- (iii) The most suitable type of equipment for compaction of cohesive soil is
 (a) smooth wheeled rollers (b) vibratory rollers
 (c) sheep foot rollers (d) tamper.
- (iv) If the covered area of all floors of a building fronting a street of width 10 m is 1000 sq.m. having a plot area of 500 sq.m & ground coverage of 400 sq.m. FAR is
 (a) 3 (b) 2.5 (c) 2 (d) None of these.
- (v) Free float for an activity is
 (a) difference between latest start time & earliest start time of activity
 (b) difference between its earliest finish time & earliest start time of its successor activity.
 (c) difference between latest allowable occurrence time & earliest occurrence time for head event of activity
 (d) difference between the excess time that exists between finishing & starting of two successive activities.
- (vi) An arbitrator is one who mediates between
 (a) two aggrieved parties (b) public & workers
 (c) engineer & architect (d) public & contractor.