PROJECT PLANNING AND MANAGEMENT
(CIVL 4121)

Time Allotted : 2½ hrs   **Full Marks : 60**

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
any 4 (four) from Group B to E, taking one from each group.*

Candidates are required to give answer in their own words as far as practicable.

Group – A

1. Answer any twelve: **12 × 1 = 12**

Choose the correct alternative for the following

(i) A fire fighting system in which water is allowed to flow on a fire as a shower and fire is put out is called
(a) Automatic sprinkler system   (b) Carbon dioxide system
(c) Dry Chemical system   (d) None of these.

(ii) For a residential house minimum room height should be
(a) 2.75 m   (b) 2.4 m   (c) 3 m   (d) none of these.

(iii) For excavating solid rocks, the most suitable equipment
(a) Dragline   (b) Power shovel
(c) Clamshell   (d) Hoe.

(iv) Which of the following rollers are suitable for soil cement stabilized road construction?
(a) Vibratory rollers   (b) Sheep-foot rollers
(c) Pneumatic rollers   (d) Smooth wheel rollers.

(v) Which one of the following shovel excavators is considered most efficient in loading carriers?
(a) Dipper shovel   (b) Dragline   (c) Backhoe   (d) Clamshell.

(vi) An activity is
(a) the beginning or end of a specified job
(b) an element of work entailed in the project
(c) the movement of heavy vehicles from one place to another
(d) the progress of work up to a certain limit.

(vii) PERT stands for
(a) Programme Estimation and Reporting Technique
(b) Programme Evaluation and Review Technique
(c) Process Estimation and Review Technique
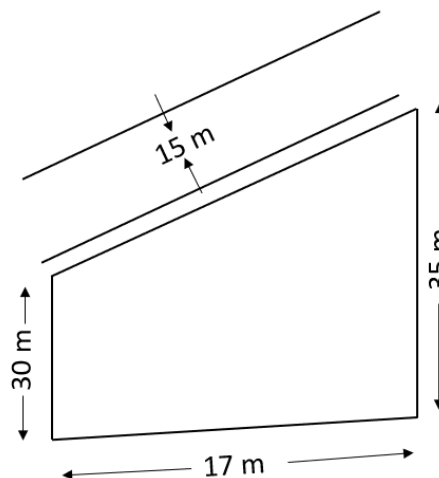(d) Planning Estimation and Resulting Technique.

(viii) Which of the following is correct about the network diagram?
  (a) The events are represented graphically by circle or nodes at the beginning or end of the activity by arrows
  (b) The tail end of the arrow represents the start of an activity
  (c) The head of the arrow represents the end of an activity
  (d) All of these.

(ix) While submitting a tender the contractor is to deposit a certain amount of money with the department as guarantee to the tender. The deposit is called
  (a) Security deposit   (b) Retention money
  (c) Earnest money   (d) Any of these.

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

Fill in the blanks with the correct word

(xi) _____ is the example of combination of an excavator and a mover.

(xii) E.M.D (Earnest Money Deposit) is depositing _____ of the contract value.

(xiii) A dummy activity in a network is represented by a _____ line.

(xiv) PWD is the abridged form of _____.

(xv) The minimum tread width allowed for public buildings is _____.

Group - B

2. (a) Describe Dry riser and Wet riser.   *[(CO5)(Remember/LOCQ)]*
   (b) 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)(Analyse/HOCQ)]*

6 + 6 = 12

3. (a) What are the objectives of building bye-laws?   *[(CO5)(Remember/IOCQ)]*
   (b) Define the following terminology: Amenities, Carpet Area & Means of Access?
                    [(CO5)(Remember/LOCQ)]
6 + 6 = 12

Group - C

4. (a) Determine the output of a bulldozer for the following situation : *[(CO4)(Analyse/HOCQ)]*
Material handled sandy loam top soil having swell = 30%
Haul distance (D) = 40 meters
Rated mould board capacity = 4 m³ loose volume
Actual operating time per hour = 45 minutes/hr
Forward speed(F) = 2.4 km per hour
Reverse speed(R) = 5 km per hour.

(b) Discuss the various equipments used for transportation. *[(CO4)(Understand/IOCQ)]*

7 + 5 = 12

5. (a) Discuss different methods of batching. *[(CO4)(Understand/IOCQ)]*

(b) What is batching plant? Discuss the different types of batching plants.
[(CO4)(Remember/LOCQ)]

4 + 8 = 12

Group - D

6. (a) A small project consisting of eight activities has following characteristics. Determine the critical path and draw the network diagram of the project.

Time-Estimates (in weeks)

Activity	Preceding activity	Most optimistic time (a)	Most likely time (m)	Most pessimistic time (b)
A	None	2	4	12
B	None	10	12	26
C	A	8	9	10
D	A	10	15	20
E	A	7	75	11
F	B,C	9	9	9
G	D	3	35	7
H	E,F,G	5	5	5

[(CO3)(Analyse/HOCQ)]

(b) Draw the comparison between CPM & PERT. *[(CO3)(Understand/LOCQ)]*

8 + 4 = 12

7. (a) The maintenance project of a building consists of 10 jobs. The predecessor relationship is identified by their node number, as indicated below:

Job	Identification	Job	Identification
A	(1,2)	F	(4,5)
B	(2,3)	G	(4,7)
C	(2,4)	H	(5,8)
D	(3,6)	I	(6,8)
E	(3,5)	J	(7,8)

Draw the network diagram for the project. *[(CO1)(Analyse/HOCQ)]*

(b) Explain 'Dummy Activity' with an example. *[(CO3)(Apply/IOCQ)]*

(c)   Enlist the three types of error in a network diagram with examples.

[(CO3)(Apply/IOCQ)]

4 + 3 + 5 = 12

Group - E

8. Write short notes on:
    (i) Unbalanced tender
    (ii) Secured advance
    (iii) Liquidated damage.

[(CO2)(Remember/LOCQ)]

(4 + 4 + 4) = 12

9. (a)   What is 'contract document'?   *[(CO6)(Analyse/HOCQ)]*
    (b)   Enlist the items in detail that a contract document must contain.

[(CO6)(Remember/LOCQ)]

    (c)   Explain 'Breach of Contract'.   *[(CO6)(Remember/LOCQ)]*

4 + 6 + 2 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	45.23	23.96	30.21