

KATHMANDU UNIVERSITY
End Semester Examination
February, 2025

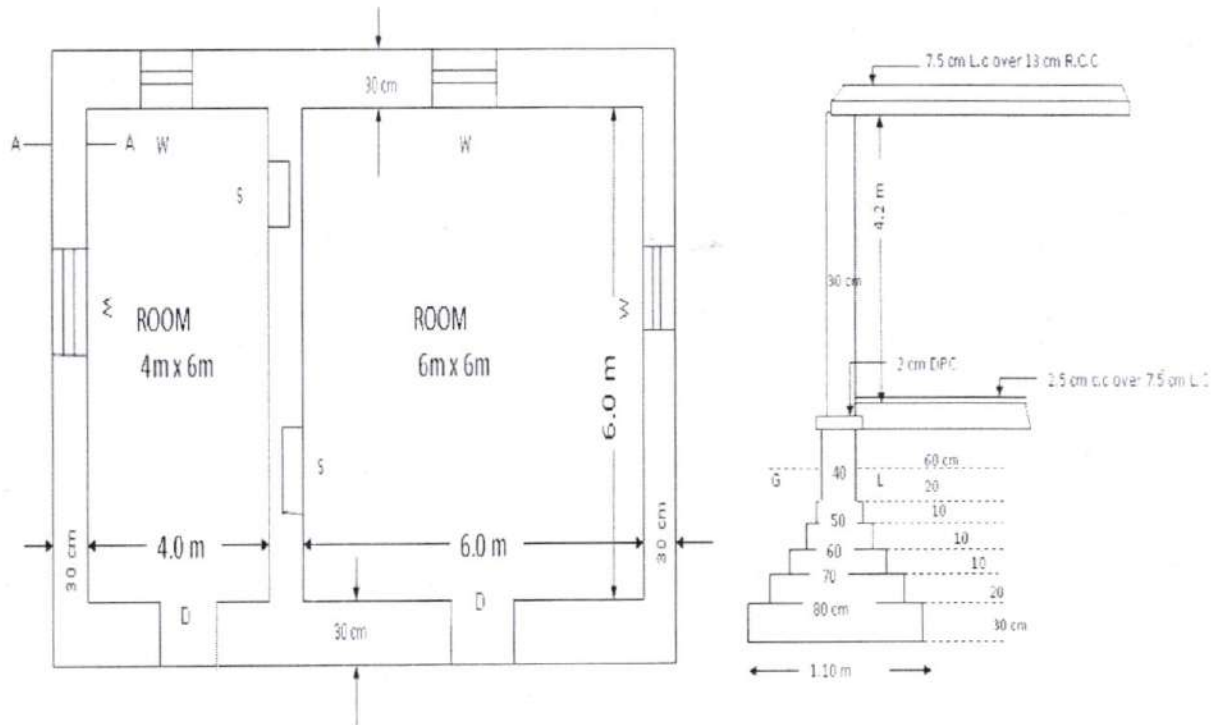
Level : B.E.
Year : II
Time : 2 hrs. 30mins.

16 FEB 2025

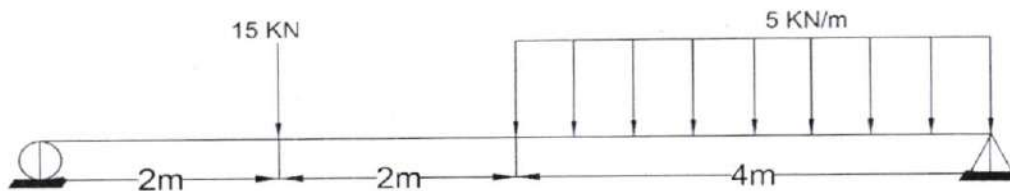
Course : CEEG 201
Semester : II
F. M. : 40

SECTION "B"

1. For the given plan of superstructure of a two-room building and section of a wall, Calculate the quantities of item listed below. [1+1+1.5+1.5]
- Earth work excavation in foundation.
 - Concrete in foundation.
 - Brickwork in foundation and plinth.
 - Brickwork in superstructure.
- Door(D) : 1.2m × 2.1m Window(W): 1m × 1.5m Shelves(S): 1m × 1.5m



2. Differentiate between Working Stress Method (WSM) and Limit State Method (LSM). Calculate reaction forces. Draw shear force diagram and bending moment diagram for given beam. [1+4]



P

P.T.O.

3. The ordinates of 3 hr. UH is given below. Assume Base flow is $15 \text{ m}^3/\text{sec}$. Derive the 9 hr. UH. [5]

Time (hr.)	0	3	6	9	12	15	18	21	24	27	30
Ordinates of 3hr UH (m^3/sec)	0	12	75	132	180	210	183	156	135	144	96

4. Construct the network diagram from the data given below. Find Critical Path, Critical activities, project duration EST and FST. [2+1+1+1]

Activity	Duration	Predecessors
A	2	-
B	1	-
C	5	A
D	3	B
E	4	B
F	6	B, C
G	1	D
H	3	E
I	5	F, G
J	4	D, H

5. A vertical summit curve is to be designed when two grades +4% and -4 % meet on a highway. The stopping sight distance and overtaking sight distance are required 150m and 500m respectively. But due to site conditions, the length of curve has to be restricted to maximum value of 800m if possible. Calculate the length of curve needed to fulfill the requirement if possible. Calculate the length of curve needed to fulfill the requirements
- Stopping sight distance
 - Overtaking distance or at least intermediate sight distance. Discuss the result. [2+2+1]
6. Discuss about the relationship between Civil Engineering and Geomatics engineering. What the aspects of building activities are covered by building bye laws. [3+1]
7. Write the advantages of tunneling. Discuss about the component part of bridge with typical cross section of bridge. [2+3]
8. Write short notes on: [4×1.5 = 6]
- Canal alignment.
 - Underground cable laying.
 - Irrigation.
 - Water balance equation.