



NAVRACHANA UNIVERSITY

School: School of Engineering & Technology
Program: BTech Civil
Year: IV **Semester:** VII
Examination: End Semester Examination
Examination year: November 2023

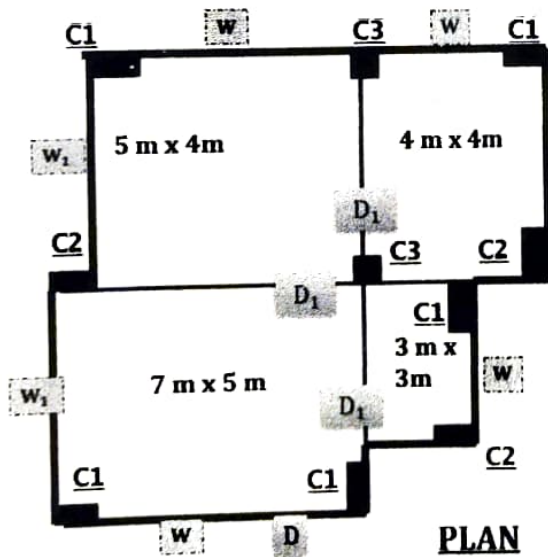
Course Code: CE 428 **Course Name:** Estimating & Costing
Date: 25/11/2023
Time: 10:00 to 12:00

Total Marks: 40
Total Pages: 02

Instructions:

- Write each answer on a new page.
- Use of a calculator is permitted.
- * COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping

Q. No.	Details	Marks	COs*	BTL#
Q.1	Calculate the quantities for specified items and quote the final rate specifying brief description considering the following rates. 1] Excavation at Rs. 1000/m ³ 2] RCC Footing at Rs. 15000/m ³ 3] RCC Slab and Beams at 20000/m ³ 4] External walls plaster in CM (1:4) at Rs 250/m ²	20	CO1, CO2	BT1, BT2



Type	Footing size (L x B)	Depth of footing d	Column size D	Column size
C ₁ /F ₁	1.75 x 1.40	0.30	0.65	0.60 x 0.45
C ₂ /F ₂	1.50 x 1.50	0.35	0.50	0.50 x 0.30
C ₃ /F ₃	1.40 x 1.60	0.20	0.30	0.30 x 0.30

Notes:

- All walls: 30 cm thick
- Excavation depth: 2m
- 0.1m thick and 0.15m bearing for PCC
- Plinth Beam c/s: 0.3m x 0.45m
- Slab Thickness: 0.125m
- Beam at Slab level c/s: 0.30m x 0.45m
- Plinth Level: 0.60m from G.L
- Total Floor height: 3.125 m
- Parapet height: 0.9 m
- Bearing of footing for column: 50 mm
- D = 1.5 m x 2.1 m
- D₁ = 1.0 m x 2.1 m
- W = 1.6 m x 1.2 m
- W₁ = 1.0 m x 1.2 m

Attempt the following (Any 2)

10 C04, BT1,
C05 BT3,
BT6

- (i) Enlist the types of building contracts. Explain difference between item rate and lumpsum contract.
- (ii) Which are ways for the invitation of tender? Give a comparison of them as a list to be viewed at a glance.
- (iii) Explain the 4 envelope method of an open tender.

Q.3 Prepare an approximate estimate of building project with total plinth area of

5 C03 BT3,
BT4

All building is 150 sqm. and from following data:

Plinth area rate Rs. 50000 per sqm

Cost of water supply @7½% of cost of building.

Cost of Sanitary and Electrical installations each @ 8½% of cost of building.

Cost of architectural features @2% of building cost.

Cost of roads and lawns each @2.5% of building cost

Cost of contingencies @5% of building cost..

Add suitable profit.

Q.4 Explain the parameters affecting Rate analysis. When and why are they required?

5 C05 BT1,
BT6

OR

Find the quantity of bricks, cement and sand required for 10 m³ of brickwork in CM (1:6).

*****End of Question Paper*****