PVP 14

Code: CE7T3

IV B.Tech - I Semester – Regular / Supplementary Examinations
JANUARY - 2022

ESTIMATION AND COSTING
(CIVIL ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11 x 2 = 22 M

1.

a) What are the different types of estimates?
b) State the units of measurement for various items related to Civil Engineering Works.
c) Differences between abstract and detailed estimate.
d) What are different deductions for the opening explain using with neat sketches?
e) Draw the typical load bearing wall cross section and label their parts.
f) Why bar bending schedule is required for RCC constructions works, explain with a bar bending schedule table?
g) What is security deposit and earnest money?
h) Define depreciation and list out various methods available for estimating the depreciation.
i) What is measurement book and state the importance?
j) Define standard data book and list out its importance in civil construction works.
k) What is balanced cut of excavation and explain it in detail?

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.

3 x 16 = 48 M

2. Explain the detailed specifications for the following

a) R.C.C. work.(1:1.5:3) for slab work. 8 M

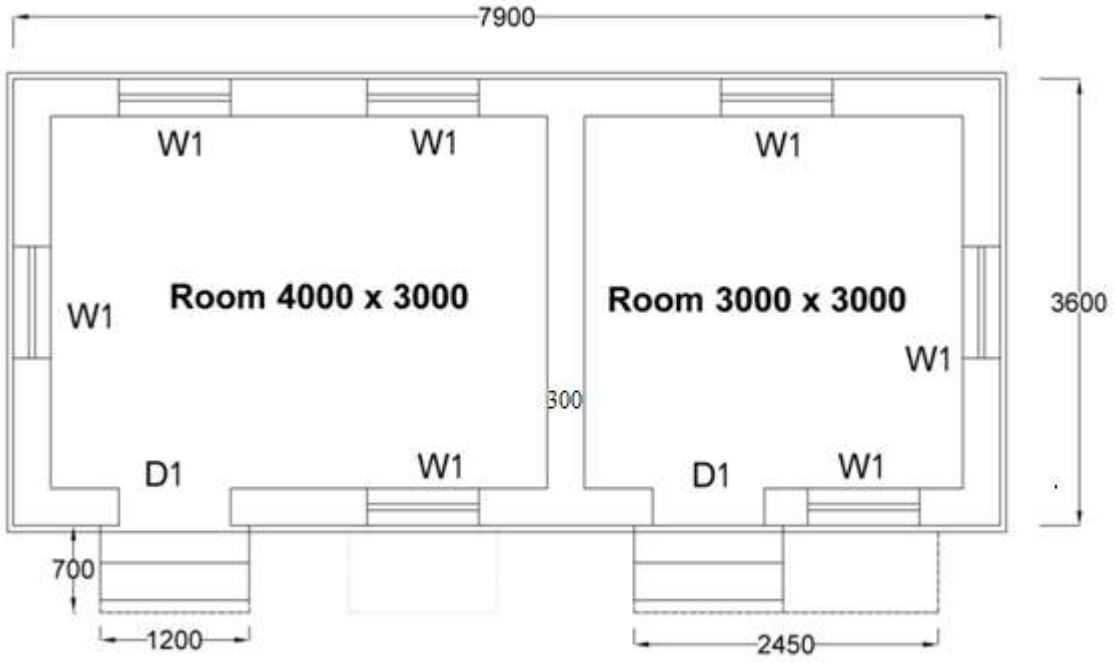
b) Brick work(1:6) for super structure wall. 8 M

3. Two room building plan and cross section is shown in Figure-1. From the drawings calculate quantities by using Long and short wall method

a) excavation of soil. 4 M

b) brick work for substructure and super structure. 6 M

c) RCC required for slab and lintels. 6 M



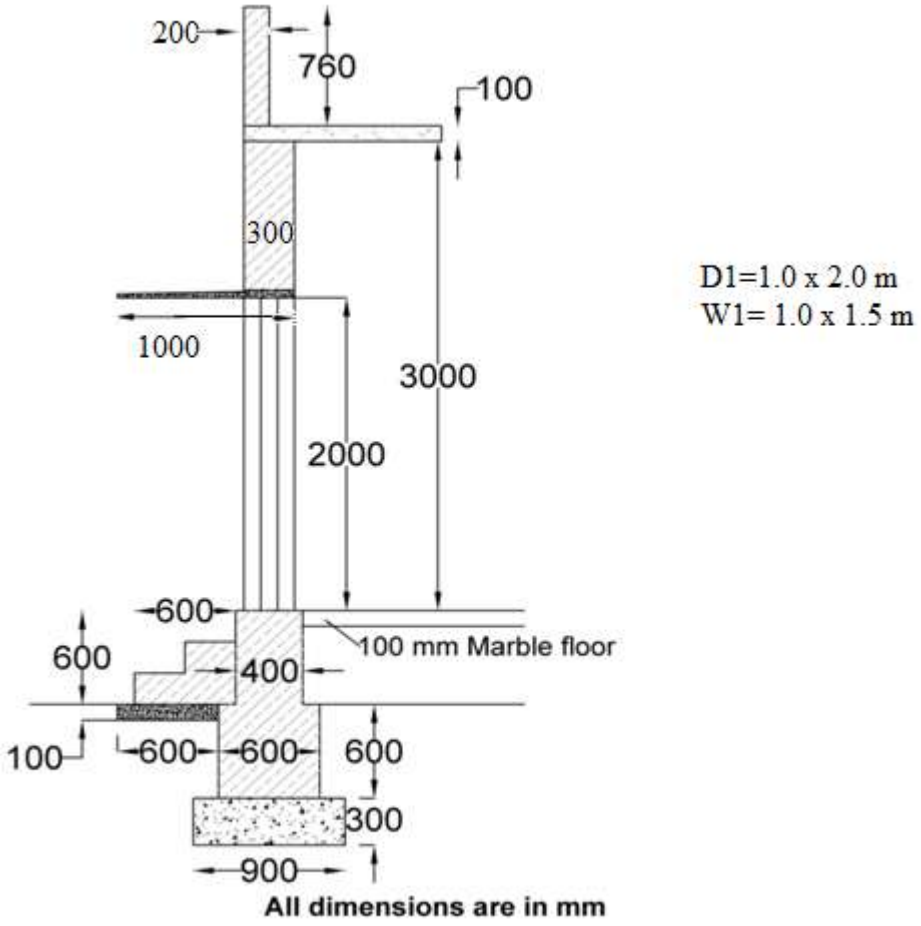


Figure-1

4. a) Calculate the quantity of steel and bar bending schedule required for an RCC column with footing from the following information. 10 M

i) Size of footing 4.5 m × 4.5m × 1.2m

ii) Steel reinforcement in the footing (HYSD–Fe415 grade)

16mm ϕ bars @200mm c/c in both ways at bottom

12mm ϕ bars @220mm c/c in both ways at top

Size of the column: 450mm × 450mm

Longitudinal reinforcement in the column: 12 numbers 30mmϕ bars

Transverse reinforcement in the column (ties):
8mm ϕ@150 mm c/c.
Height of the column from the footing top: 4.2m
Assume suitable cover to reinforcement and necessary data.

b) First class brick work in super structure with 20cm ×10cm×10cm brick with 1:4 cement sand mortar. Evaluate material and labour required for brick work with 1:4 cement mortar for $20m^3$ of work. 6 M

5. What is valuation? Explain all methods used for evaluation of structures in detail with an example. 16 M

6. Estimate the quantity and cost of earth work for a road between two sections A and K (300 m) with the following data by using trapezoidal and prismoidal methods. Formation width of the four lane road is 16m at surface and side slopes of banking is 2.5:1 (H:V). The RL at section A is 157.40m and road is downward gradient is 1 in 125 up to point F and then the gradient changes to 1 in 80 downward gradient. 16 M

Chainage in 'm'	0	30	60	90	120	150	180	210	240	270	300
	A	B	C	D	E	F	G	H	I	J	K
R.L of the ground	156.2	156.4	156.1	155.6	155.3	154.1	154	153.5	152.8	152.1	151.2