Code: 20CE3602

III B.Tech - II Semester – Regular / Supplementary Examinations APRIL 2024

ESTIMATION AND COSTING
(CIVIL ENGINEERING)

Duration: 3 hours   Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level   CO – Course Outcome

			BL	CO	Max. Marks
		UNIT-I			
1	a)	Explain Detailed Specifications for CM (1:3) for plastering.	L2	CO1	7 M
	b)	Mention the detailed specifications of earthwork excavation in foundations.	L2	CO1	7 M
		OR			
2		What are different types of estimates and explain them with examples.	L2	CO1	14 M
		UNIT-II			
3		Explain Long-wall and Short wall method and centerline method for estimation of different items of civil engineering works discuss them with neat sketches.	L2	CO2	14 M
		OR			

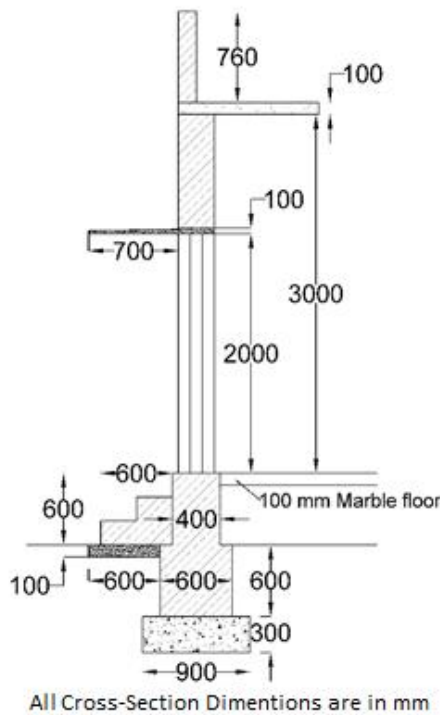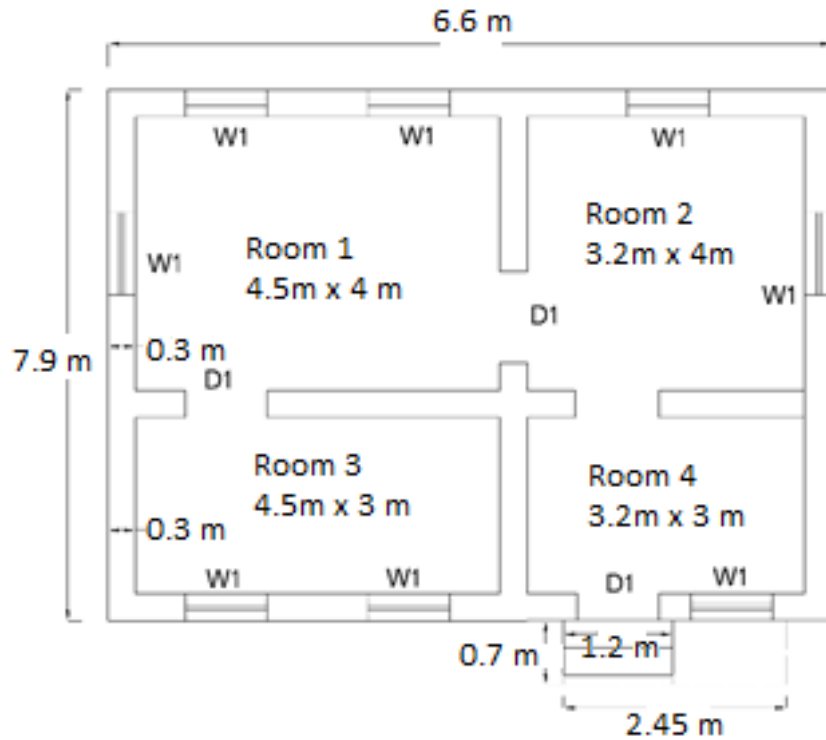| 4	For the building plan and cross section is shown in Figure 1. From the drawings calculate quantities by using Long and short wall method. (i) Earth work in excavation (ii) First Class Brick work in foundation and plinth (iii) First Class Brick work in super structure Fig. 1: Building plan and Cross-section	L4	CO2	14 M

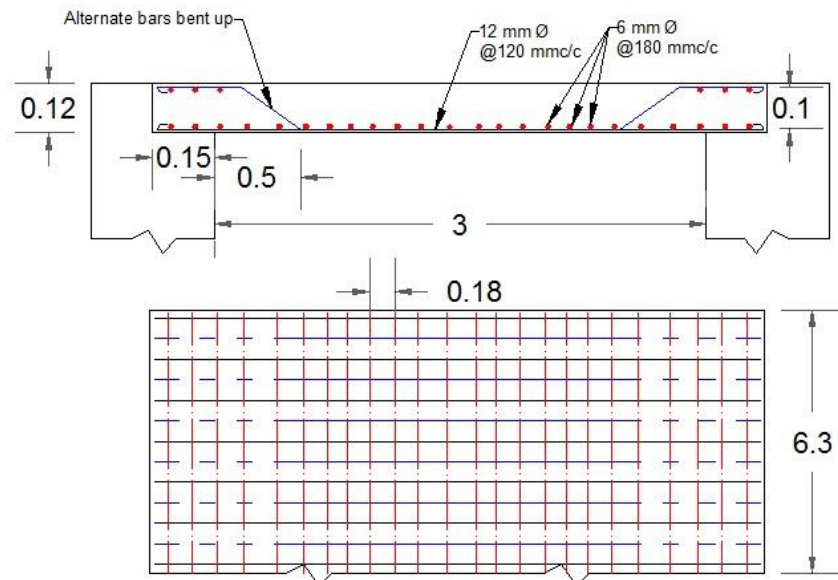|					
UNIT-III					
5	a)	Prepare Bar bending schedule for reinforced beam of 5 m length. Assume size of beam, bearing on walls, diameter of bars, no. of bars, bent up bars, end hooks, main reinforcement and stirrups suitably. Also draw cross section of beam.	L4	CO3	7 M
	b)	First class brick work in super structure with 20cm ×10cm×10cm brick with 1:4 cement, sand & mortar. Evaluate material and labor required for brick work with 1:4 cement mortar for 10 m^3 of work.	L4	CO3	7 M
OR					
6	a)	Prepare a detailed estimate of a RCC roof slab of 3m clear span and 6m length shown in Fig. 2. Also prepare steel bar bend schedule. Fig. 2: Steel detailing of RCC Slab	L2	CO3	7 M
	b)	Explain importance of rate analysis in civil construction and how it is affects cost of construction also state the their elements.	L2	CO3	7 M
UNIT-IV					
7	a)	Calculate the standard rent of a building with the following data: cost of land – Rs. 20,00,000 Cost of the building – Rs. 40,00,000 Expected life of building – 90 years Return expected: 6% on land and 8% on building Annual repairs: 1.5% on the total cost of building	L2	CO4	8 M

		Sinking fund on 3% interest basis on 85% of the building. Other outgoings: 30% of the return from the building			
	b)	Define depreciation and list out various depreciation methods. Explain it briefly with examples.	L2	CO4	6 M

<div align="center">OR</div>

8	a)	What are different contract documents in civil engineering and general conditions of contract? Explain them.	L2	CO4	8 M
	b)	Define valuation. Explain briefly the valuation methods.	L2	CO4	6 M

<div align="center">UNIT-V</div>

9	a)	What are the different methods available for estimating earth work of road construction? Explain with neat sketches.	L2	CO5	7 M
	b)	What are the different methods available for estimating earth work of Canal works? Explain with neat sketches.	L2	CO5	7 M

<div align="center">OR</div>

10	a)	Estimate the quantity and cost of earth work for a road between two stations A to B with the following data. Width of road is 13 m at formation surface and side slope 2:1. Rate of earth work in banking and cutting may be taken as Rs. 400/- per cubic meter including lead up to 200 m with a condition that portion of earth work available from cutting is to be utilized for banking within the same lead of 200 m. The data on field for the portion of road are as follows:	L4	CO5	8 M

Chainage	0	1	2	3	4	5	6
RL of GL (m)	133.5	134.9	135	132.8	131.4	131.1	130.7
FL (m)	133.1	133.3	133.7	133.7	133.1	132.9	132.8

RL – reduced level, GL – Ground level, FL – Formation level

	b)	Explain in detail various types of reports used for estimation in the construction of buildings.	L2	CO5	6 M