Course Code: 16CE134 **R16**

SIDDHARTH GROUP OF INSTITUTIONS:: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code: ECV **(**16CE0134) **Course & Branch**: B.Tech - CE

Year & Sem: IV-B.Tech & I-Sem **Regulation:** R16

UNIT –I
Introduction & Standard Specifications

1	1. (a) What is meant by detailed estimate? (b) Differentiate between estimating and costing. (c) What is meant by detailed estimate? (d) Define plinth area estimate. (e)List out the method for building estimate.	**[L1][CO1]** **[L4][CO1]** **[L1][CO1]** **[L1][CO1]** **[L1][CO1]**	**[2M]** **[2M]** **[2M]** **[3M]** **[3M]**
2	List various types of estimates. Explain any two in brief.	**[L2][CO1]**	**[12M]**
3	Briefly explain the different types of estimates discussing when each one is preferred.	**[L2][CO1]**	**[12M]**
4	Explain any three types of approximate estimates in detail	**[L2][CO1]**	**[12M]**
5	Explain about the approximate method of estimation. And also tell where it is used.	**[L2][CO1]**	**[12M]**
6	Explain the different items to be considered during the estimation of a building and give their units.	**[L2][CO1]**	**[12M]**
7	Explain the following general items of work involved in the estimation for a building (i) Earthwork in excavation (ii)Concrete in Foundation (iii)Doors &Windows	**[L2][CO1]**	**[12M]**
8	Explain the following general items of work involved in the estimation for a building (i) Brick or Stone Masonry with Cement Mortar (ii) Damp proof course (iii)Lintel over openings	**[L2][CO1]**	**[12M]**
9	Explain the following general items of work involved in the estimation for a building (i) RCC Works (ii)Floor Finishes with Ceramic Tiles and Marbles (iii)Plastering and Pointing	**[L2][CO1]**	**[12M]**
10	Explain the following general items of work involved in the estimation for a building (i) White (or) Colour Washing & Painting (ii) Cornice & Iron Works (iii) Electrification, Sanitary and Water Supply Works	**[L2][CO1]**	**[12M]**

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UNIT –II
ESTIMATION OF BUILDINGS

1	(a) Explain long wall and short wall method. (b) Explain Centre line method in detail.	**[L2][CO2]** **[L2][CO2]**	**[6M]** **[6M]**
2	Calculate the quantities of the following items for the building shown in fig (1) using Long wall and short wall method (a) Earth work in excavation (b) Brick work in foundation and plinth (c) PCC (1: 5: 10) below the foundation (d) Damp Proof Course (e) Brick masonry in CM (1:6) for super structure.	**[L3][CO2]**	**[12M]**
3	Calculate the quantities of the following items for the building shown in fig (1) using Centre line method (a) Earth work in excavation (b) Brick work in foundation and plinth (c) PCC (1: 5: 10) below the foundation (d) Damp Proof Course (e) Brick masonry in CM (1:6) for super structure.	**[L3][CO2]**	**[12M]**
4	Calculate the quantities of the following items for the building shown in fig (2) using Centre line method (a) Earth work in excavation (b) Brick work in foundation and plinth (c) PCC (1: 5: 10) below the foundation (d) Damp Proof Course (e)Brick masonry in CM (1:6) for super structure	**[L3][CO2]**	**[12M]**
5	Calculate the quantities of the following items for the building shown in fig (3) using Long wall and short wall method (a) Earth work in excavation (b) Brick work in foundation and plinth (c) PCC (1: 5: 10) below the foundation (d) Damp Proof Course (e)Brick masonry in CM (1:6) for super structure	**[L3][CO2]**	**[12M]**
6	Calculate the quantities of the following items for the building shown in fig (3) using Long wall and short wall method (a) Earth work in excavation (b) Brick work in foundation and plinth (c)PCC (1: 5: 10) below the foundation (d) Damp Proof Course (e)Brick masonry in CM (1:6) for super structure	**[L3][CO2]**	**[12M]**
7	Calculate the quantities of the following items for the building shown in fig (4) using Long wall and short wall method (a) Earth work in excavation (b) Brick work in foundation and plinth (c)PCC (1: 5: 10) below the foundation (d) Damp Proof Course	**[L3][CO2]**	**[12M]**

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	(e)Brick masonry in CM (1:6) for super structure		
8	Calculate the quantities of the following items for the building shown in fig (4) using Long wall and short wall method (a) Earth work in excavation (b) Brick work in foundation and plinth (c)PCC (1: 5: 10) below the foundation (d) Damp Proof Course (e)Brick masonry in CM (1:6) for super structure	**[L3][CO2]**	**[12M]**
9	Calculate the quantities of the following items for the building shown in fig (5) using Long wall and short wall method (a) Earth work in excavation (b) Brick work in foundation and plinth (c)PCC (1: 5: 10) below the foundation (d) Damp Proof Course (e)Brick masonry in CM (1:6) for super structure	**[L3][CO2]**	**[12M]**
10	Calculate the quantities of the following items for the building shown in fig (5) using Long wall and short wall method (a) Earth work in excavation (b) Brick work in foundation and plinth (c)PCC (1: 5: 10) below the foundation (d) Damp Proof Course (e)Brick masonry in CM (1:6) for super structure	**[L3][CO2]**	**[12M]**

Fig: (1)

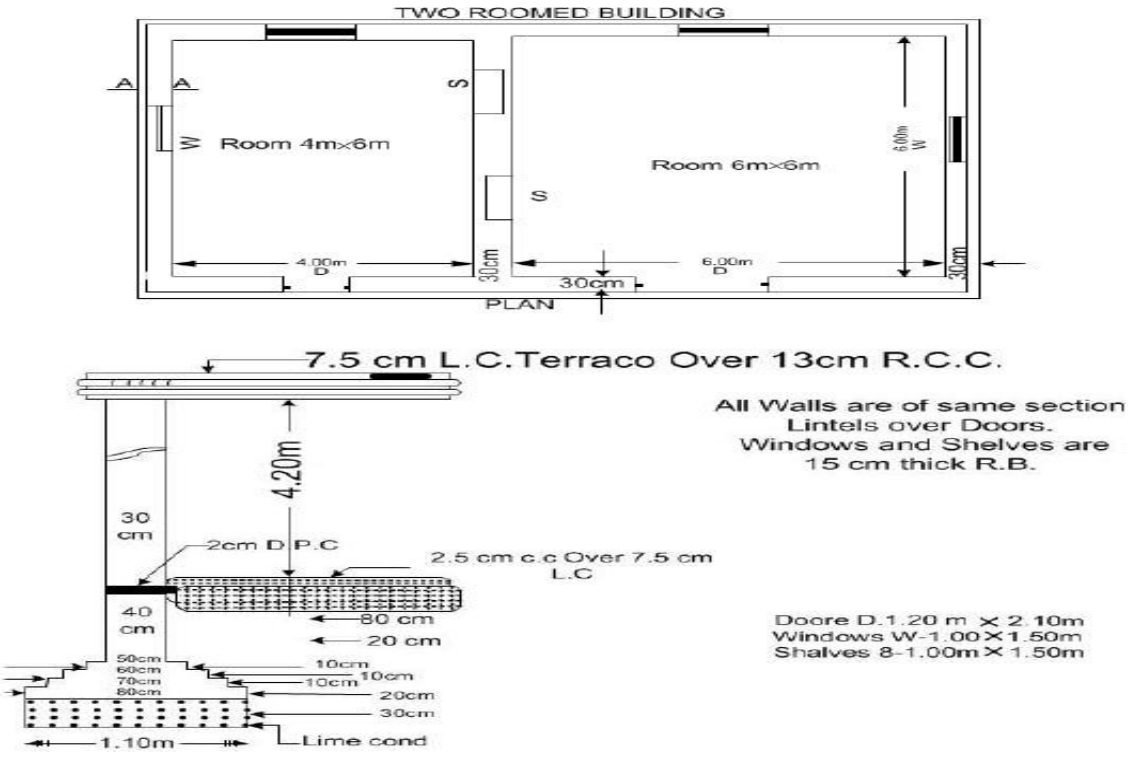


Fig: (2)

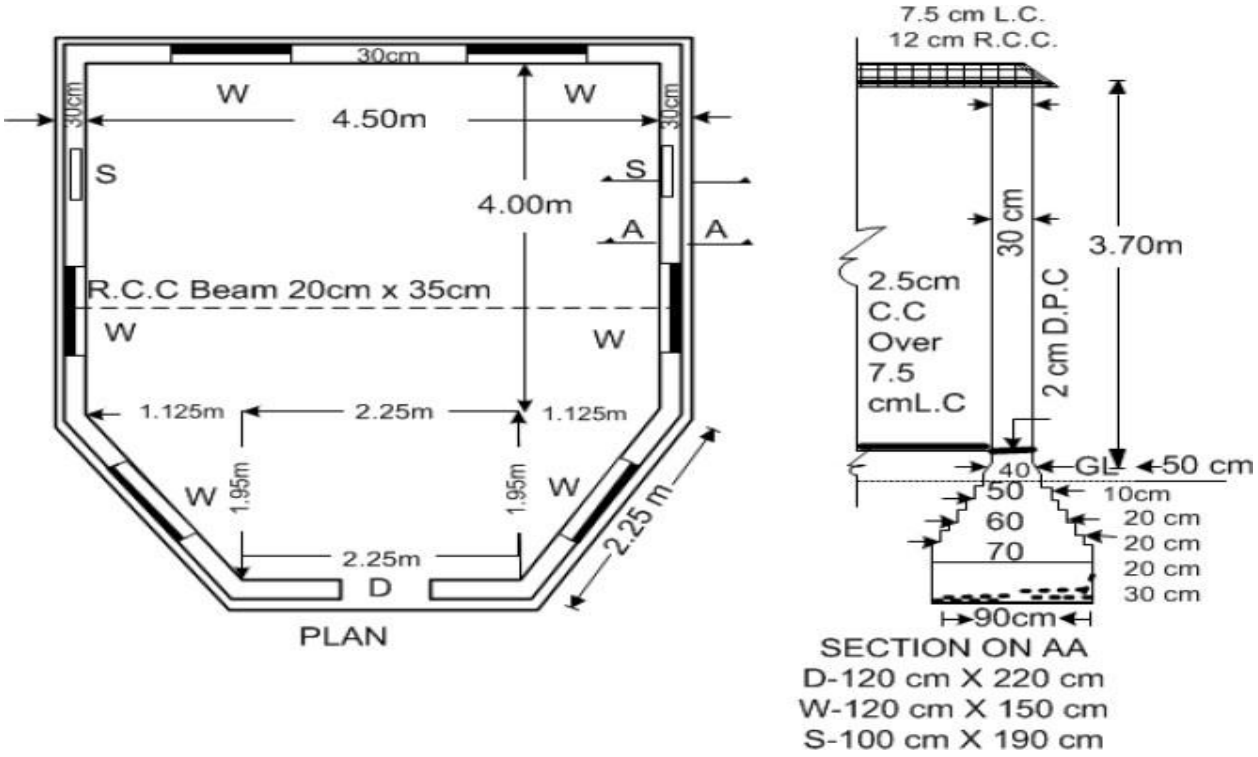
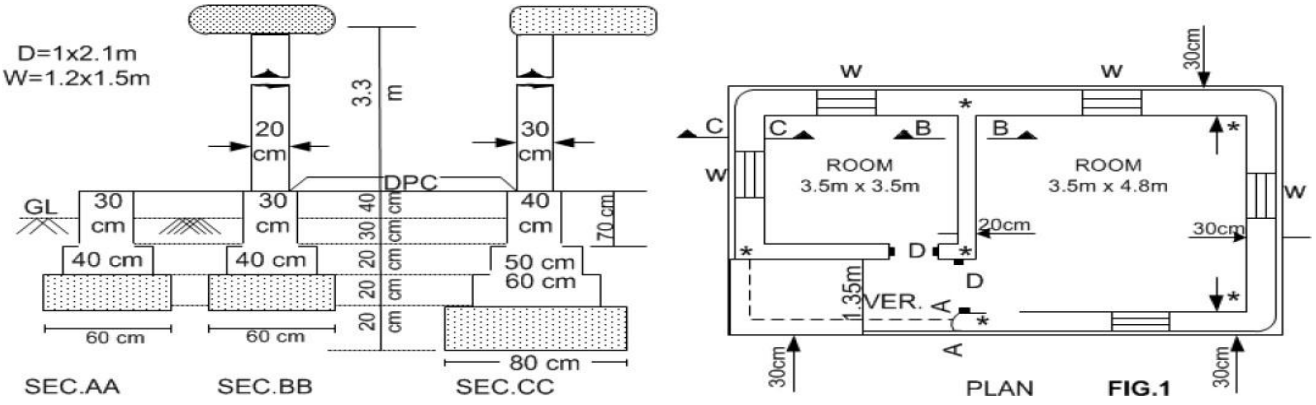


FIG:(3)



FIG(4)

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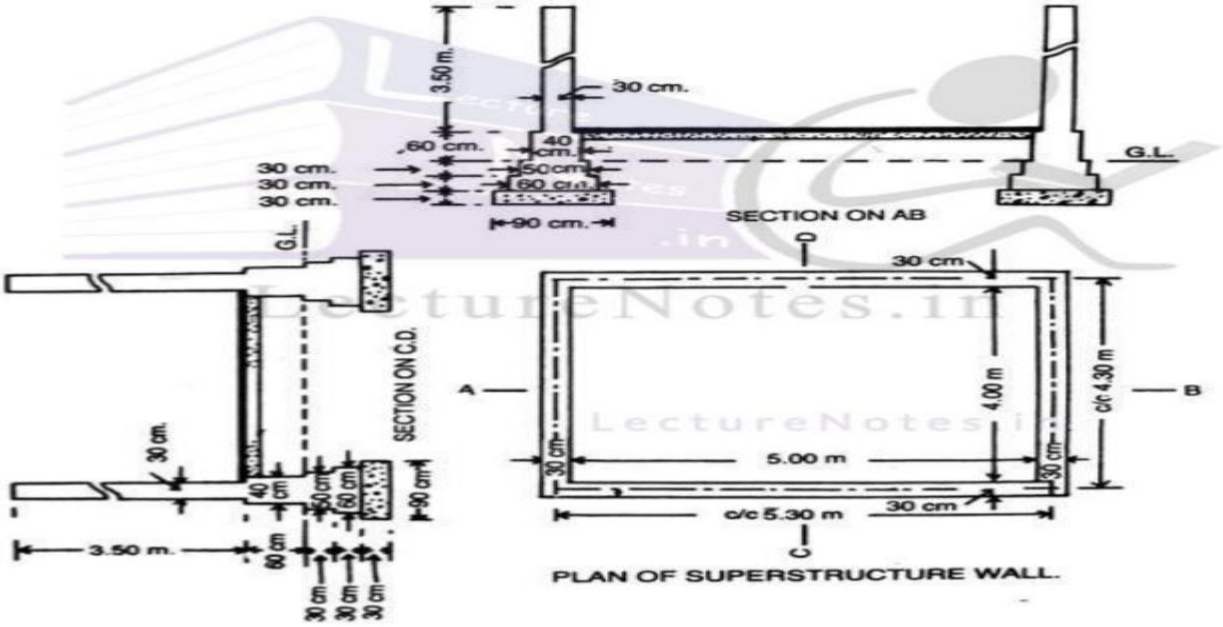
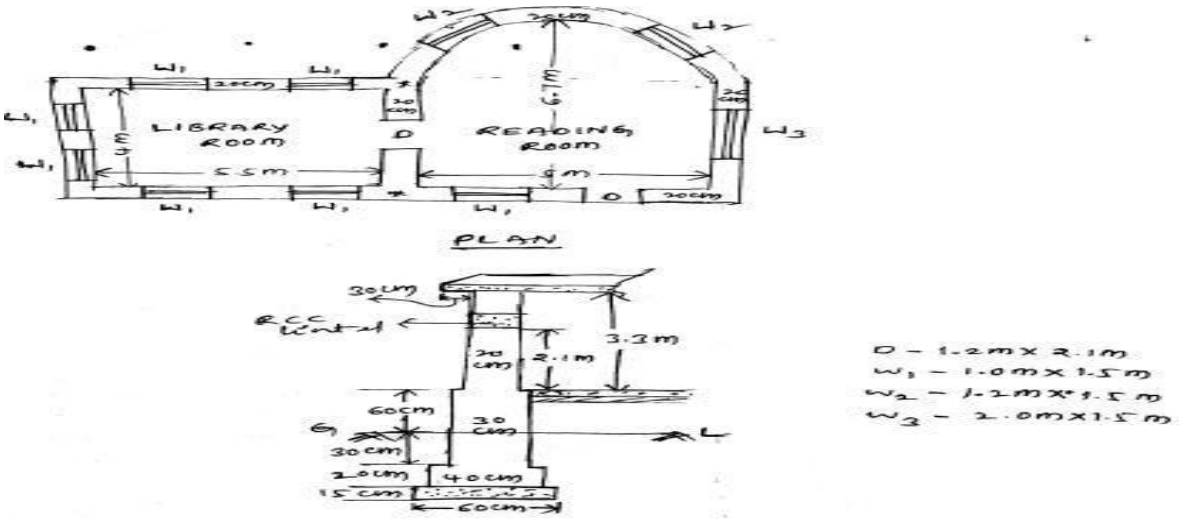


FIG(5)



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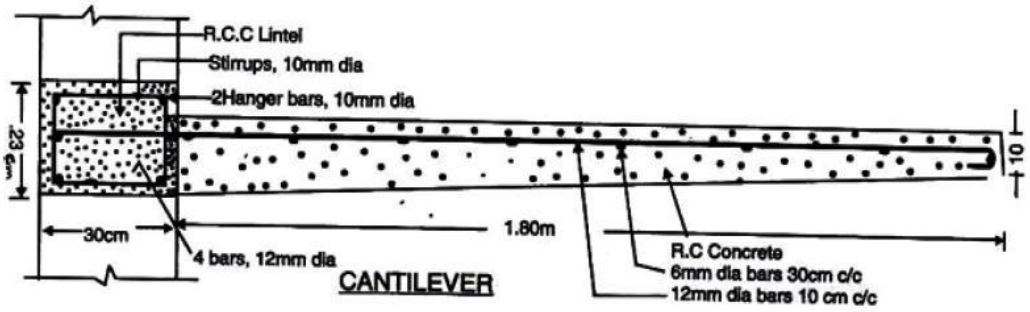
UNIT –III
Earthwork Estimation & Reinforcement Estimation

1	(a) List out the general methods for computation of earthwork. Explain. (b) Explain about Lead and lift.	**[L1][CO3]** **[L2][CO3]**	**[6M]** **[6M]**
2	A road embankment has the following data: Calculate the volume of earth work required given that the formation level is 134.00 m at all chainages and side slopes of the embankment are 2:1 and the top width is 15 m. Chainage in m: 0, 30, 60, 90, 120 G.L in m: 131.75, 130.96, 132.60, 133.35, 133.50	**[L3][CO3]**	**[12M]**
3	The ground levels along the center line of the road are given below. The formation level throughout 80 m length is 102.75. The road has a rising gradient 1 in 40. If the width of the road is 12 m and side slopes 2:1, calculate the quantity of earthwork required by any method. Chainage in m: 0, 20 m, 40 m, 60 m, 80 m R.L of ground: 101.5, 100.9, 101.5, 102, 102.85	**[L3][CO3]**	**[12M]**
4	Prepare an estimate for the portion of a road from chainage 14 to 22 from the data given below. The formation width of the proposed road is 12 m, side slopes 11/2:1 in cutting and 2:1 in banking. The road formation is proposed at uniform falling gradient 1 in 200 passing through GL at 14 m chainage. R.L of formation being 108.00 m. Chainage (30 m): 14, 15, 16, 17, 18, 19, 20, 21, 22 RL of Ground: 108.60, 109.25, 109.40, 108.85, 108.50, 107.25, 106.80, 107.15, 107.20	**[L3][CO3]**	**[12M]**
5	The formation width of a road embankment is 9.0 m. The side slopes are 2.5:1. The depths along the center line of road at 50.0 m intervals are 1.2, 1.1, 1.4, 1.2, 0.9, 1.5 and 1.0 m. It is required to calculate the quantity of earthwork by: (i) Prismoidal rule. (ii) Trapezoidal rule	**[L3][CO3]**	**[12M]**
6	Workout the quantity of 6 mm, 10 mm, 16 mm diameter reinforcement for rectangular beam of size 230 mm x 500 mm. The beam is reinforced with 2 Nos - 10 mm dia at top, 2 Nos - 16 mm dia at bottom, 2 Nos - 16 mm dia bent up. 6 mm diameter two legged stirrups are provided with 150 mm c/c throughout the length. Length of the beam is 4.5 5 m. Assume suitable cover.	**[L3][CO3]**	**[12M]**
7	A room 600 cm long and 500 cm wide has a flat roof. There is one T-beam in the center (cross Section below the slab 30cm X 50cm) and the slab is 15 cm thick. Estimate the quantity of iron Bars required for reinforcement (For the T-beam only) from the data given below. Main bars: 8 No.s - 25mm dia in 2 rows of 4 each (all 4 in the bottom being straight and others Bent) Stirrups: 10 mm dia and 15 cm C/C throughout. Anchor bars: 2 No. s - 16 mm dia	**[L3][CO3]**	**[12M]**
8	Estimate the quantity of steel required for R.C.C (1:2:4) slab 130 mm thick provided for a room 3.25 m x 7.5 m, resting over a 300 mm thick walls. Reinforcement details: Main reinforcement: 10 mm □ bars at 160 mm c/c (alternate bars are bent – up), Distribution reinforcement: 8 mm □ at 200 mm c/c. Also prepare bar bending schedule.	**[L3][CO3]**	**[12M]**
9	Calculate the quantity of steel required by preparing bar bending schedule, for a R.C.C (1:11/2:3) lintel cum sunshade as per the drawing given below. Take clear span of	**[L3][CO3]**	**[12M]**

	Lintel as 1.2m and bearing over the support is 0.3 m on either side.  		
10	1. Write briefly about the following: (a) Development length of Reinforcement. (b) Lap length of Reinforcement. (c) Bent up bars. (d) Cover to the Reinforcement. (e) Density of steel	**[L1][CO3]** **[L1][CO3]** **[L1][CO3]** **[L1][CO3]** **[L1][CO3]**	**[2M]** **[2M]** **[2M]** **[3M]** **[3M]**

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UNIT –IV
IV. CONTRACTS AND TENDERS

1	(a) Define contract and briefly explain contract document. (b) List out and explain various types of contracts.	**[L2][CO4]** **[L2][CO4]**	**[6M]** **[6M]**
2	(a) What are the particulars of a typical tender notice? Explain. (b) What are the condition of contract? Explain	**[L2][CO4]** **[L2][CO4]**	**[6M]** **[6M]**
3	What are the types of tender? Explain the requirements of tendering	**[L2][CO4]**	**[12M]**
4	Explain the following briefly: (a) Earnest Money Deposit. (b) Security Deposit. (c) Comparative Statement. (d) Termination of contract.	**[L2][CO4]**	**[12M]**
5	What are the contents of a tender document? Explain the complete tendering procedure with illustrations	**[L2][CO4]**	**[12M]**
6	Explain the contract system and the types of contracts in detail	**[L2][CO4]**	**[12M]**
7	What are the different types of contract? Explain any Two in detail.	**[L2][CO4]**	**[12M]**
8	What are the documents that are attached in the contract agreement? What are the essentials and conditions of contract?	**[L1][CO4]**	**[12M]**
9	(a) List different types of construction contracts and state their main attributes. (b) List the documents included in a construction contract.	**[L1][CO4]**	**[12M]**
10	Explain the following briefly: (a) Municipal Tax. (b) Market Value. (c) Capital cost. (d)Yearly Purchase	**[L2][CO4]**	**[12M]**

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UNIT –V
RATE ANALYSIS & VALUATION

1	Prepare rate analysis for the following item of work: Cement concrete in foundation 1:4:8 - unit 1 cu.m Assume materials and labour in the market rate	**[L3][CO5]**	**[12M]**
2	Carryout the rate analysis for following items: (i) 12 mm thick plastering in C.M. 1:6. (ii) 2.5 cm thick cement concrete 1:1 ½:3 damp proof course (DPC).10M	**[L3][CO5]**	**[12M]**
3	Explain the rate analysis of brickwork in 1:6 cement sand mortar and brick work in 1:4 cement sand mortar	**[L2][CO5]**	**[12M]**
4	Evaluate the cost of the following items of work. (a) Brick Masonry in super structure with CM 1:6. (b) Plastering with CM (1:4) of 12 mm thick. (c) Flooring with Kadapa slabs.	**[L4][CO5]**	**[12M]**
5	(a) Calculate the rate of 2.5 cm thick D.P.C with cement and sand in (1:2) (b) Calculate the rate of 50 sq. m of 12 mm thick plastering in cm (1:3) for first floor**.**	**[L3][CO5]**	**[12M]**
6	What is valuation? What are the various purposes of valuation?	**[L1][CO5]**	**[12M]**
7	A building is situated on a land of 250 sq.m. The built up portion is 10 m x 8.5 m. The building is first class type and provided with water supply, sanitary and electric fittings. The age of the building is 10 years. Work out the valuation of the property. Assume plinth area rate as Rs. 20,000 per sq.m and cost of land as Rs. 4500 per sq.m	**[L3][CO5]**	**[12M]**
8	(a) Define valuation. Explain briefly the valuation methods. (b) An old building has been purchased by a person @ a cost of Rs.4, 00,000 excluding the cost of land. Calculate the amount of annual sinking fund @ 8% interest assuming the life of the building as 25 years and the scrap value of the building as 10 % of the purchase.	**[L2][CO5]** **[L3][CO5]**	**[6M]** **[6M]**
9	(a) Explain about Mortgage and how to fix the rent of government buildings. (b)) A building is situated by the side of a main road of Anantapur on land of 500 sq m. The built up portion is 20 X 15m. The building is 1st class type provided with water supply, sanitary and electrical fitting and the age of the building is 30 years. Work out the valuation of the property	**[L1][CO5]** **[L3][CO5]**	**[4M]** **[8M]**
10	Write briefly about the following: (a) Salvage Value. (b) Scrap value. (c) Annuity. (d) Book Value. (e) Obsolescence.	**[L1][CO5]**	**[12M]**

Prepared by:
1. A.JYOSHNA