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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / (Full Time) - END SEMESTER EXAMINATIONS, APR / MAY 2024

Civil Engineering  
**CE5801 Estimation Costing and Valuation Engineering**  
 (Regulation 2019)

Time: 3 hrs

Max. Marks: 100

CO1	Explain the basic concept of quantity estimation for building, roads, canals and hydraulic structures by manual and software packages.
CO2	Acquire the knowledge to calculate rate analysis and man-hours required for the common civil works by manual and software packages.
CO3	Develop the specification for the materials used in construction, online and offline tender procedures and tender document preparation and report preparation.
CO4	Acquire the knowledge of construction contracts and contract document preparation.
CO5	Identify the valuation for building, land and plant and machineries, calculation of rent, mortgage and lease.

**BL – Bloom's Taxonomy Levels**

(L1-Remembering, L2-Understanding, L3-Appling, L4-Analysing, L5-Evaluating, L6-Creating)

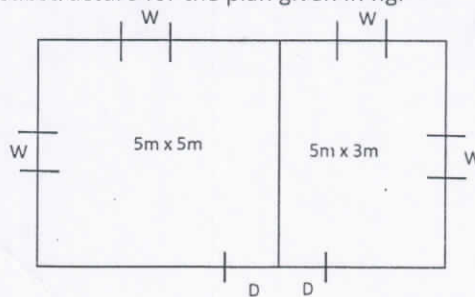
**PART- A (10x2=20Marks)**

(Answer all Questions)

Q. No.	Questions	Marks	CO	BL
1	Write about different methods of estimation.	2	CO1	L1
2	When do you prefer supplementary estimate?	2	CO1	L2
3	What are the materials you consider to carry out the rate analysis for the brickwork?	2	CO2	L1
4	List out the factors to be considered for analysis of rate for various items of work.	2	CO2	L1
5	What do you mean by general specification?	2	CO3	L1
6	State the data necessary for the preparation of tenders.	2	CO3	L2
7	Write about E tender.	2	CO4	L2
8	Explain the item rate contract.	2	CO4	L1
9	Classify the various methods of depreciation	2	CO5	L1
10	Write the purpose of valuation.	2	CO5	L1

**PART- B (5x 13=65Marks)**

(Restrict to a maximum of 2 subdivisions)

Q. No.	Questions	Marks	CO	BL
11 (a)	<p>Estimate the quantity of earthwork excavation, quantity of outside and inside plastering and quantity for brickwork in superstructure and substructure for the plan given in fig.</p>  <p>Door D= 1.2x2.1m      Window W= 1.5x1.5m          Height of the building 3.5m. Thickness of brick wall 30cm. The width</p>	13	CO1	L4



	and depth of the foundation concrete is 90cm and 30cm, respectively. The width and depth of the first footing is 60cm and 30cm, respectively. The width and depth of the second footing is 50cm and 30cm, respectively. The width and depth of the basement is 40cm and 60cm, respectively.			
<b>OR</b>				
11 (b)	Reduced levels of ground along the centre line of a proposed road from chainage 0 to 200m are given below. The formation level at the 40m chainage is 102.75m. The formation of road from chainage 0 to 80m has rising gradient of 1 in 30. The formation level has falling slope of 1 in 100 from chainage 80 to 200m. The formation width of the road at top is 10m and the side slopes of banking are 2:1. Prepare an estimate of the earthwork for the road.	13	CO1	L4
12 (a)	Calculate the rate for 2.5cm thick cement concrete floor of 1:5:10 for the given plan in question. 11 (a). The quantity of labour for 100m <sup>2</sup> are Mason-10Nos, Bhisti- 2Nos and Mazdoor-5Nos and woman coolie - 5Nos. Adopt the market rate for the labours and materials.	13	CO2	L4
<b>OR</b>				
12 (b)	Calculate the rate for construction of brick work in super structure for the given plan in question. 11 (a). The quantity of labours required for 10 m <sup>3</sup> are Mason- 2 Nos, Man Mazdoor - 4 Nos, Woman Mazdoor - 2 Nos. Consider the market rate for the labours and materials.	13	CO2	L4
13 (a)	Describe the detailed specification for the foundation concrete and plastering for the superstructure.	13	CO3	L3
<b>OR</b>				
13 (b)	Explain about the process of tender and finalisation of the tender to sign the contract.	13	CO3	L3
14 (a)	Compare arbitration and litigation.	13	CO4	L3
<b>OR</b>				
14 (b)	Explain in detail about BOT contracts.		CO4	L3
15 (a)	Calculate the depreciated replacement cost of a building by straight line method. Total plinth area of the building is 3000 m <sup>2</sup> Age of the building is 20 years. Life of the building is 50 yrs. Scrap value at the end of useful life is 10%. The present rate of the building is Rs 20000/- per m <sup>2</sup> .	13	CO5	L4
<b>OR</b>				
15 (b)	Calculate the present value of the property. Value of the land Rs.2 Crores. Cost of building Rs.1.5 Crores. Age of the building 15 years. Estimated cost of repairs Rs 20 lakhs. Depreciation is 1% per annum.	13	CO5	L4

**PART- C (1x 15=15Marks)**  
(Q.No.16 is compulsory)

Q. No.	Questions	Marks	CO	BL
16.	Find the value of a leasehold property from the following particulars: Replacement value of the building =Rs.40lakhs The ground rent per annum =Rs30000/- Estimated life of the building=50years The rent of the building = Rs 10000 per month Taxes payable =15% of gross rent Insurance premium =0.8% of gross rent Repairs and maintenance charges=15% of gross rent Interest on capital =5% Interest on sinking fund =1.5%	15	CO5	L5

