ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. (Full Time) - END SEMESTER EXAMINATIONS, NOV / DEC 2024

CIVIL ENGINEERING
VII Semester
CE5801Estimation, Costing and Valuation Engineering
(Regulation2019)

Time:3hrs   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-Applying, L4-Analysing, L5-Evaluating, L6-Creating)
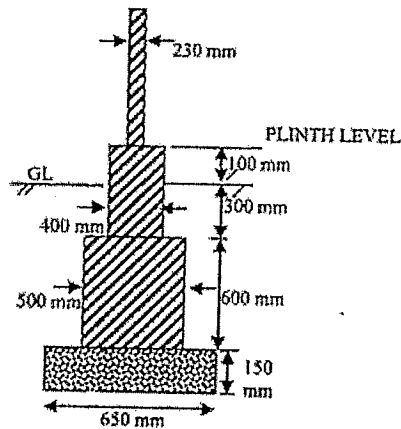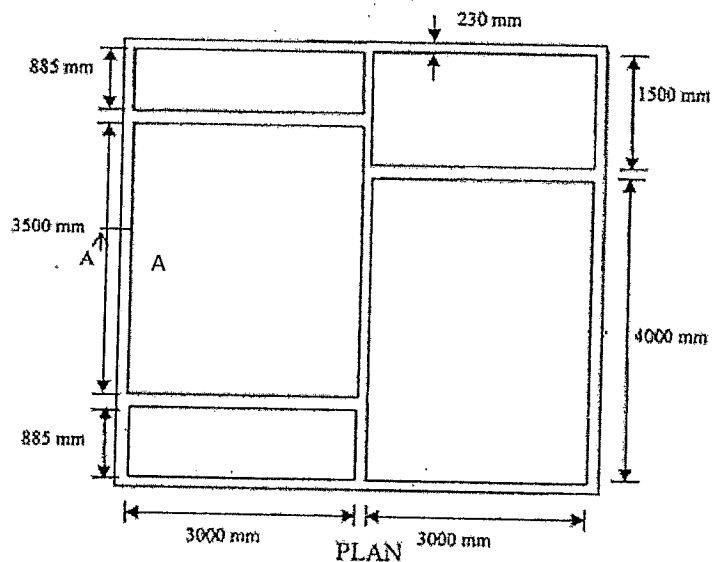
PART- A(10x2=20Marks)
(Answer all Questions)

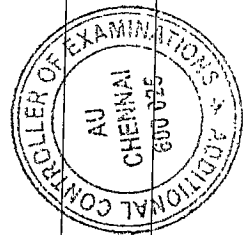| Q.No.	Questions	Marks	CO	BL
1	What do you mean by BOQ?	2	CO1	L1
2	State the different methods for estimating the volume of earthwork excavation in road works.	2	CO1	L2
3	Write about Schedule of Rates.	2	CO2	L1
4	Why should you carry out rate analysis?	2	CO2	L2
5	Write about Digital Signature Certificate in e-tendering.	2	CO3	L2
6	List out the different ways of tender publicity.	2	CO3	L1
7	Explain the clause related to payment by running bills.	2	CO4	L2
8	What is BOT and state its application?.	2	CO4	L1
9	What are the different methods of valuation of plant and machineries?	2	CO5	L2
10	State the factors reducing the value of a property.	2	CO5	L1

PART- B(5x 13=65Marks)
(Restrict to a maximum of 2 subdivisions)

Q.No.	Questions	Marks	CO	BL
11 (a)	Calculate the quantity of earthwork excavation and the quantity of Cement flooring 1:4:8 in superstructure for the building shown in fig. Q 11	13	CO1	L4

230 mm

885 mm

1500 mm

3500 mm

A

A

4000 mm

885 mm

3000 mm   3000 mm

PLAN

230 mm

PLINTH LEVEL

GL

100 mm

300 mm

400 mm

500 mm

600 mm

150 mm

650 mm

SECTION AT AA

Figure Q.11

	OR			
11 (b)	Calculate the quantity of earthwork excavation and the quantity of brick wall in superstructure in CM 1:6 for the building shown in fig. Q 11	**13**	CO1	L4
12 (a)	Calculate the rate for laying 2.5cm thick cement concrete floor of 1:4:8 for the building shown in Q.No.11. The quantity of labour for $100m^2$ are Mason-10Nos, Mazdoor I - 2Nos and Mazdoor II- 10 Nos. Adopt the market rate for the labours and materials.	**13**	CO2	L4
	OR			
12 (b)	Calculate the rate for constructing brick wall in superstructure in CM 1:6 given in figure in Q.No.11. The quantity of labours including curing required for 10 m^3 are Mason- 7Nos, Mazdoor I -7 Nos, Mazdoor II - 9 Nos. Adopt the market rate for the labours and materials.	**13**	CO2	L4
13 (a)	Discuss detailed specification for laying RCC1:2:4 in roof slab and plastering the walls of superstructure with CM 1:5.	**13**	CO3	L3
	OR			
13 (b)	Explain in detail about the notice inviting tenders and tender document according to TTT Act 2000.	**13**	CO3	L3

14 (a)	Discuss in detail about different types of contracts.	13	CO4	L3
	OR			
14 (b)	Explain about the different modes of solving disputes in contracts.	13	CO4	L3
15 (a)	A commercial complex was purchased for Rs.50 lakhs. Assuming salvage value after 5 years as Rs.40 lakhs, find the annual depreciation , total depreciation and book value at the end of 10 years by i) straight line method and ii)sinking fund method assuming 5% interest.	13	CO5	L4
	OR			
15 (b)	A freehold plot of land measures 1000 m². A three storied building stands on the plot. With the following particulars, find the value of the property. Built up area on ground floor=300m² Permissible built up on ground floor = 1/3 of plot area. Total carpet area of three floors = 600 m². Average net rate of rent per m² of area = Rs.100/-. Estimated rate of land = Rs.3000/- per m² Amount of usual outgoings =1/6 of gross rent. Rate of interest for capitalization =7%	13	CO5	L4

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

Q.No.	Questions	Marks	CO	BL
16.	Reduced level of ground along the centre line of a proposed road from chainage 10 to chainage 20 are given below. The formation level at the 10th chainage is 107m and the road is in downward gradient of 1in 200 upto the chainage 14 and then the gradient changes to 1 in 100 downward. Formation width of road is width is 10metre and side slopes of banking are 2:1(Horizontal: Vertical) Length of the chain is 30metre.Calculate the quantities of earthwork.	15	CO1	L5

Chainage	10	11	12	13	14	15	16	17	18	19	20
RL of ground	105	105.6	105.4	105.9	105.4	104.3	105	104.1	104.6	104	103.3