Reg. No: [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations December-2021
ESTIMATION, COSTING AND VALUATION
(Civil Engineering)

Time: 3 hours   Max. Marks: 60
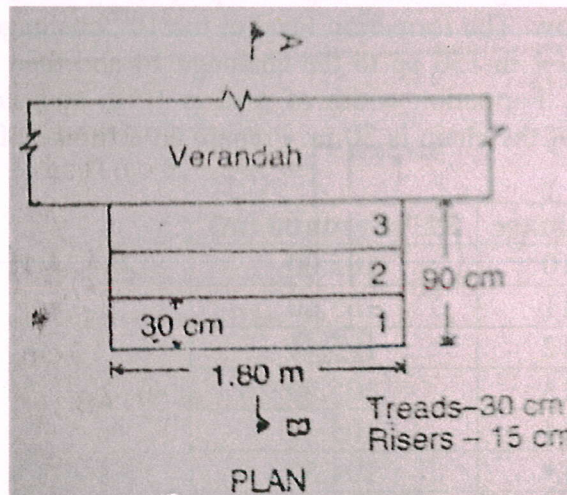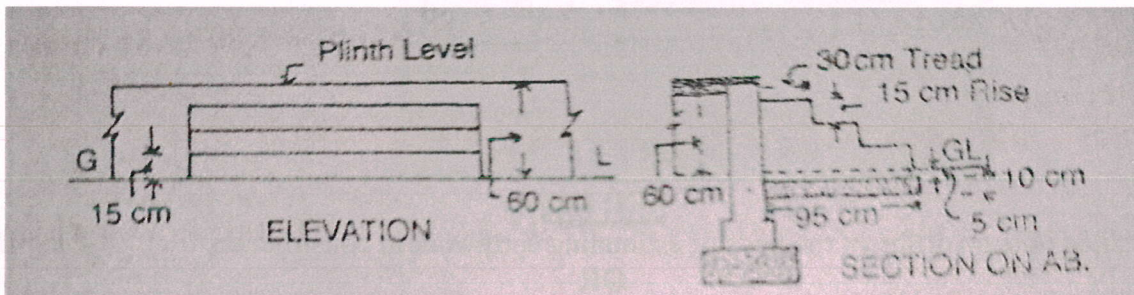
PART-A
(Answer all the Questions **5 x 2 = 10** Marks)

1	a	Find the centre length of a garage of 5 m x 8 m (outer dimensions) having 20 cm brick wall.	L3	2M
	b	Write Prismoidal formula for calculating quantity of earth, for two sections A_1 and A_2 which are separated by a distance or length L.	L2	2M
	c	What are different items of work estimated in reinforced cement concrete work?	L1	2M
	d	List various expenses that come under overhead costs.	L1	2M
	e	What is the difference between scrap value and salvage value?	L2	2M

PART-B
(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2   Estimate the quantities of earthwork, concrete, brickwork and finishing work of different types of steps from given drawings.   L3   10M

OR

3   Estimate the quantities of the following items of a two roomed building from the given plan and sections as shown in Fig. (1) Earthwork in exaction in foundation (2) Lime concrete in foundation (3) 1st class brick in 1:6 cement mortar in foundation and plinth (4) 2.5 cm thick damp proof course and (5) 1st class brickwork in 1:6 cement mortar in superstructure.   L3   10M

PLAN

D = 1×2.1m
W = 1.2×1.5m

SEC·AA   SEC·BB   SEC·CC
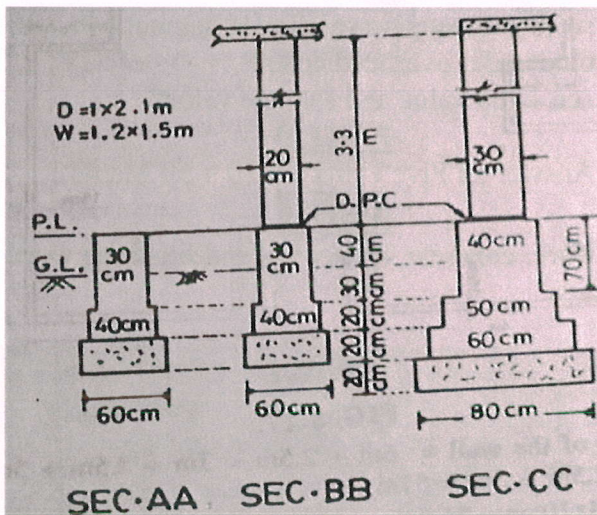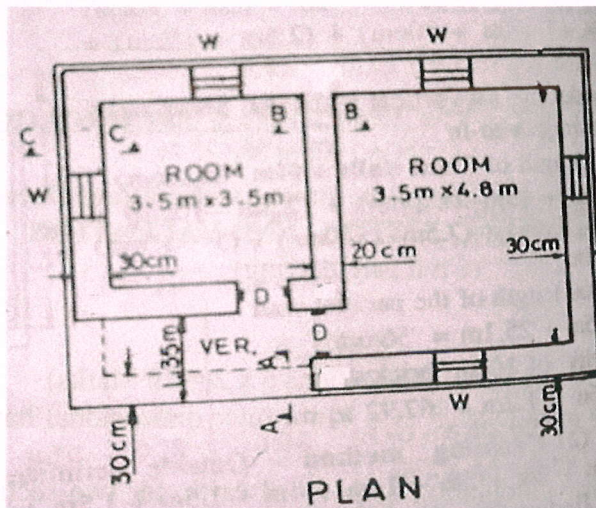
UNIT-II

4 Write a detailed note on different methods of estimating earthwork in construction.   L1   10M

OR

5 Reduced level (R.L.) of ground along the centre line of a proposed road from chainage   L3   10M
10 to chainage 20 are given below. The formation level at the 10th chainage is 107 and
road is in downward gradient of 1 in 150 up to the chainage 14 and then the gradient
changes to 1 in 100 downward. Formation width of road is 10 m and side slopes of
banking are 2:1 (H:V). Length of the chain is 30 m. Prepare an estimate of earth at the
rate of Rs.275% cu.m.

| Chainage	RL of ground (m)
10	105.00
11	105.60
12	105.44
13	105.90
14	105.42
15	104.30
16	105.00
17	104.10
18	104.62
19	104.00
20	103.30

UNIT-III

6 Prepare a schedule of bars for the RCC lintel shown in figure assuming bearing of the lintel be 15 cm on walls at each side. Weight of 100 mm dia bar = 0.62 kg/rm and 6 mm dia bar = 0.22 kg/rm.   **L3**   **10M**
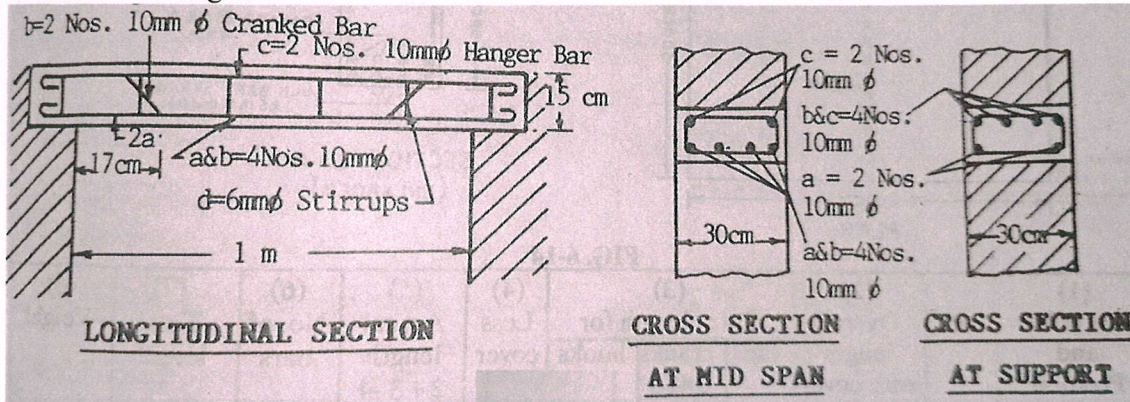
OR

7 The following figure shows the longitudinal section & cross section of a simple beam of clear span 5.0 m. The thickness of support wall is 300 mm. Workout the total quantity of the reinforcement in the beam. Also prepare the bar bending schedule.   **L3**   **10M**
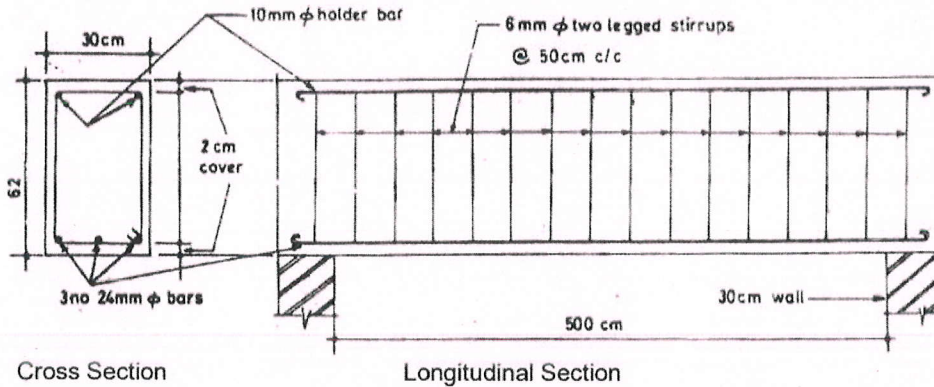
UNIT-IV

8 Work out rate per cu.m for RCC work in beams and slabs with 1:1½:3 cement concrete.   **L3**   **10M**

OR

9 (a) Prepare rate for ashlar masonry in superstructure in 1:6 cement sand mortar.   **L3**   **5M**

(b) Calculate rate per sq.m for laying 2 cm thick damp proof course with 1:2 cement mortar.   **L3**   **5M**

UNIT-V

10 What are different specifications for first class brickwork?   **L2**   **10M**

OR

11 A three-storied building is standing on a plot of land measuring 800 sq.m. The plinth area of each storey is 400 sq.m. The building is of RCC framed structure and the future life may be taken as 70 years. The building fetches a gross rent of Rs.1500.00 per month. Work out the capitalized value of the property on the basis of 6% net yield. For sinking fund 3% compound interest may be assumed. Cost of land may be taken Rs.40.00 per sq m. Other data as required may be assumed suitably.   **L3**   **10M**

END