PARUL UNIVERSITY
FACULTY OF ARCHITECTURE AND PLANNING
B.Arch./ B.ID/ Winter 2021-22 Examination
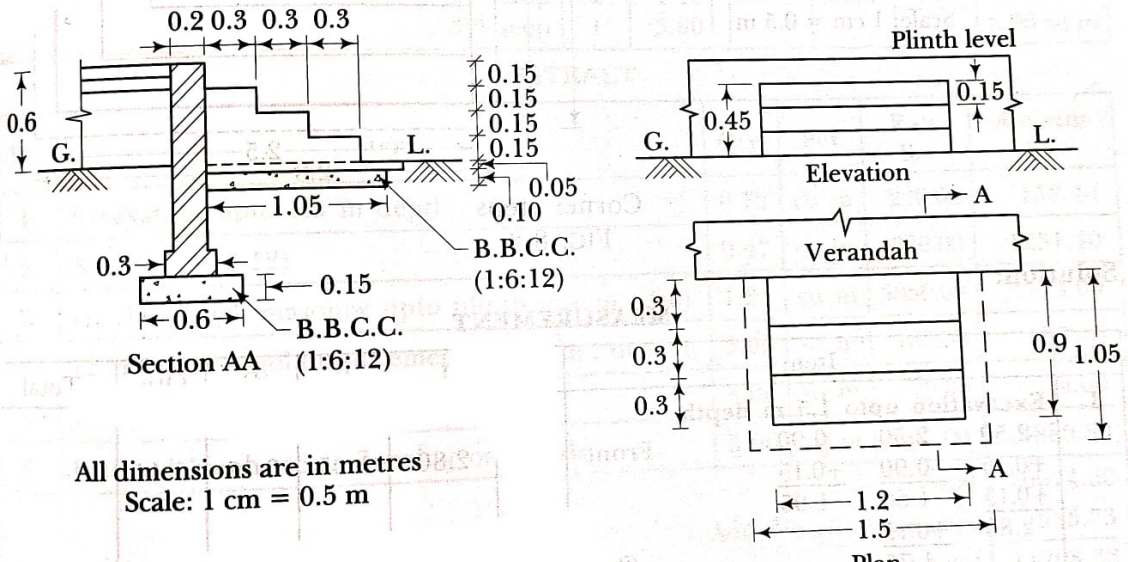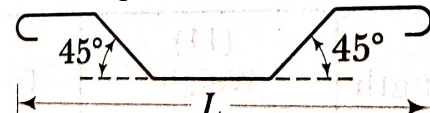
Semester: 6   Date: (28/02/2022)
Subject Code: (01101352)   Time: 2hrs
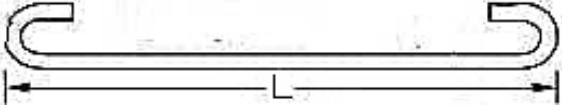   Total Marks: 50

Subject Name: (Estimating, Costing, and Specifications)

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever required.
4. Draw suitable sketches wherever required.

Q.1	**A.** Prepare the Measurement form of a simple step for the following items as shown below:	(5+5)

1. Excavation up to 1.5 m depth
2. B.B.C.C. foundation concrete (1:6:12)
3. First class brick masonry upto plinth in cu.m (1:6)
4. 12 mm thick cement finish plaster on risers and sides with three coats of whitewashing
5. Polished kotah stone flooring on treads

B. Determine the dimensions of a septic tank for the following data:
1. Number of people = 100
2. Sewage/capita/day = 120 litres
3. Rate of deposited sludge = 30 litres/capita per year
4. De-sludging or cleaning period = 1 year
5. Length : width = 4:1
6. Depth of the tank = 1.5 m

Q.2	**Attempt any five out of six. 1 is compulsory.**	(20)
1)	For the given Both side bent-up bar, what will be Total length of the bar?	4
2)	**A.** List the important aspects of the design of a specification **B.** Cement (cu.m) required for preparing 10 cu.m of cement concrete in the proportion of 1:2:4 is _____.	2+2
3)	Number of modular bricks of nominal size required for 21.01608 cubic meter brick work considering 12 mm as thickness of cement mortar is _____.	4

4)	**A.** Define Specification and its 3 objects briefly. **OR** **B.** If a wall is 5m length, 3.5m high, and 30cm thick, and the rate of brickwork is Rs 32 per cu.m, calculate the cost of finished wall plastered on two sides where the cost of plastering is Rs 200 per sqm.	4
5)	**A.** List the groups of items and information present in Scheduled of rates. How a SOR is different from a BOQ. **OR** **B.** Briefly explain any two methods of computing quantities of various items such as excavation, foundation concrete, brickwork, etc.	4
6)	For the given Straight bar, what will be the Hook length and Total length of bar? 	4
Q.3	**Attempt any four out of six**	**(10)**
	1. Importance of Rate Analysis	
	2. Write any one disadvantage of the Closed specification.	
	3. Calculate the number of standard cement bags required to prepare 1400 kg of concrete in the ratio 1:2:4 (mixed by weight batching)	
	4. What does a Detailed estimate consist of?	
	5. Which estimate is used to decide financial aspect?	
	6. Name any three lumpsum items.	
Q.4	**Attempt any two out of three**	**(10)**
1)	Briefly explain the three items under which the various RCC structures are estimated.	5
2)	Write specifications for laying 38 mm Damp Proof Course with concrete of 1:2:4 at plinth level.	5
3)	**A.** Estimate the number of bricks of unit size 250 mm X 125 mm X 75 mm for laying one course of 250 mm thick brick wall using rat trap bond for running length of 4.550 m **B.** What are the advantages of open specification over restricted specification?	3+2