



DIPLOMA IN CIVIL ENGINEERING

CENTRALIZED QUESTION BANK

4010651 - Estimation And Costing Laboratory

**DIRECTORATE OF TECHNICAL
EDUCATION GOVERNMENT OF
TAMILNADU**

DIPLOMA END SEMESTER / YEAR EXAMINATION – 2023

Course: Civil Engineering

Subject : Estimation And Costing Laboratory

QP Code : 4010651

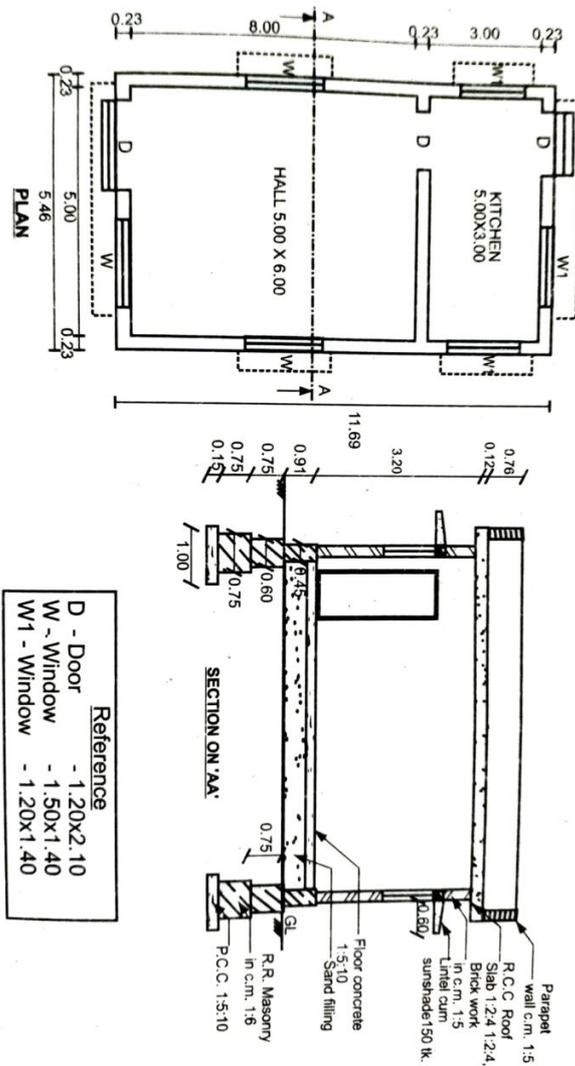
Time : 3 Hours Date :

Session:

Max Marks: 100

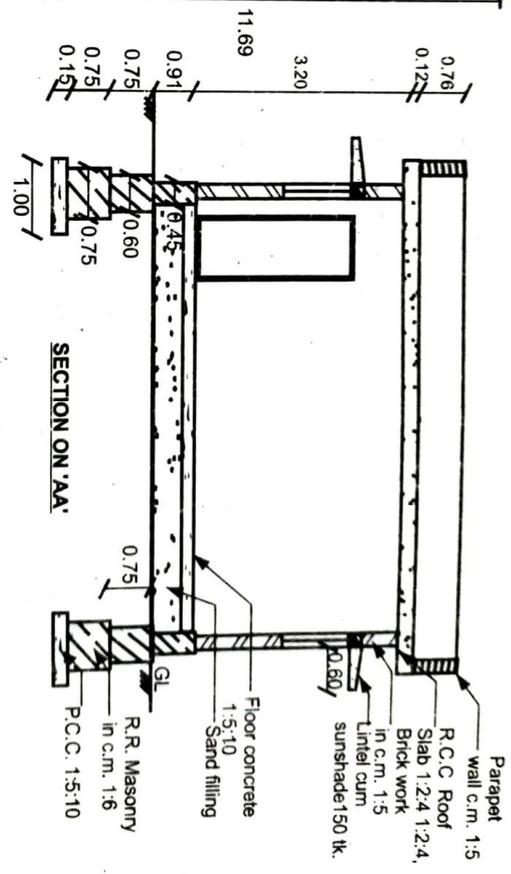
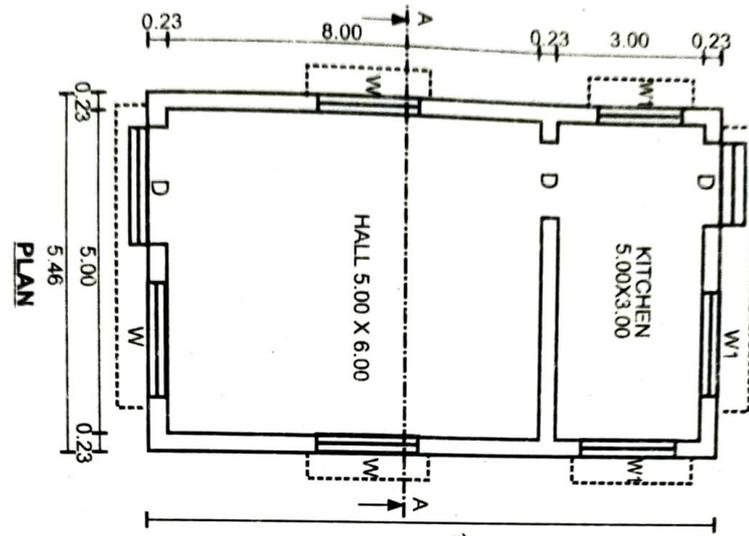
Answer the Following Questions

1. Prepare the Complete list of items to be executed with units for detailed estimate of a given structure from the given drawing. All Dimensions are in m.



(95 Marks)

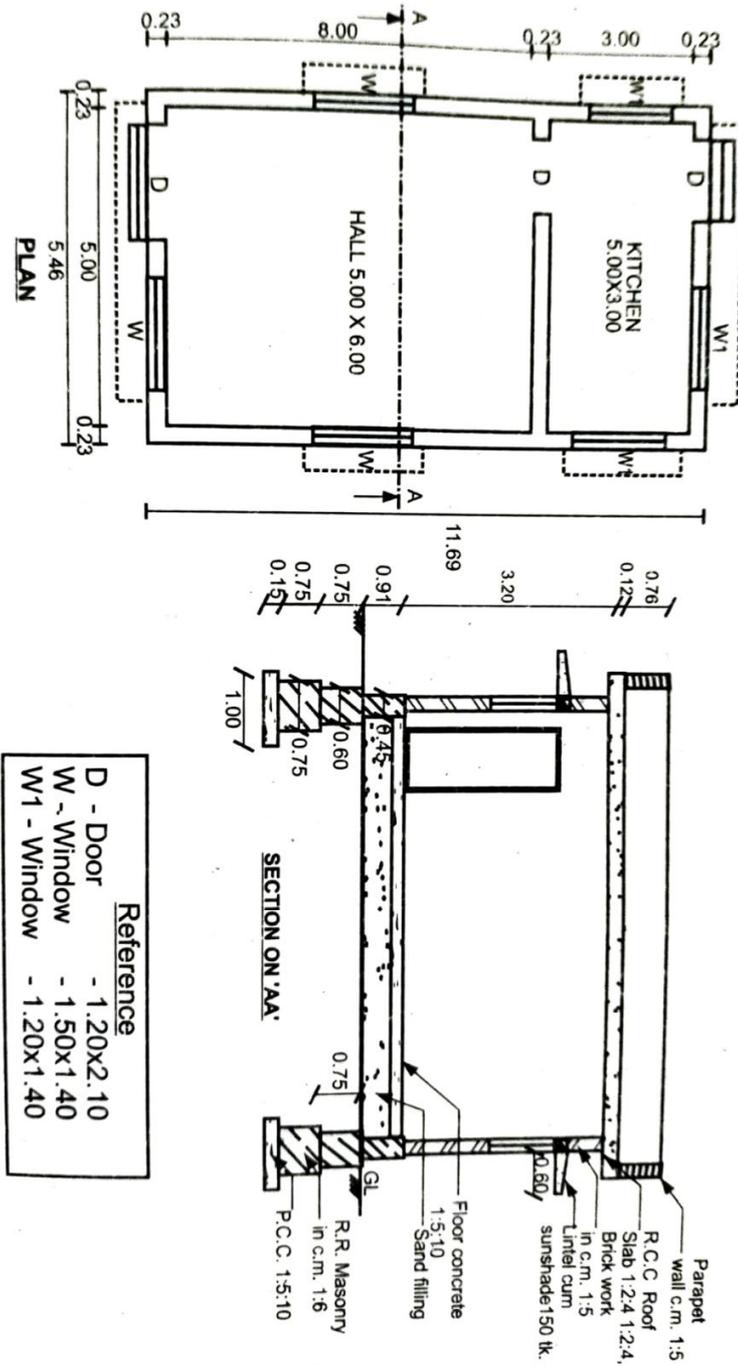
2. Prepare a report on market rates for the materials, labor wages, hire charges of tools & equipment required to construct the given structure



Reference	
D - Door	- 1.20x2.10
W - Window	- 1.50x1.40
W1 - Window	- 1.20x1.40

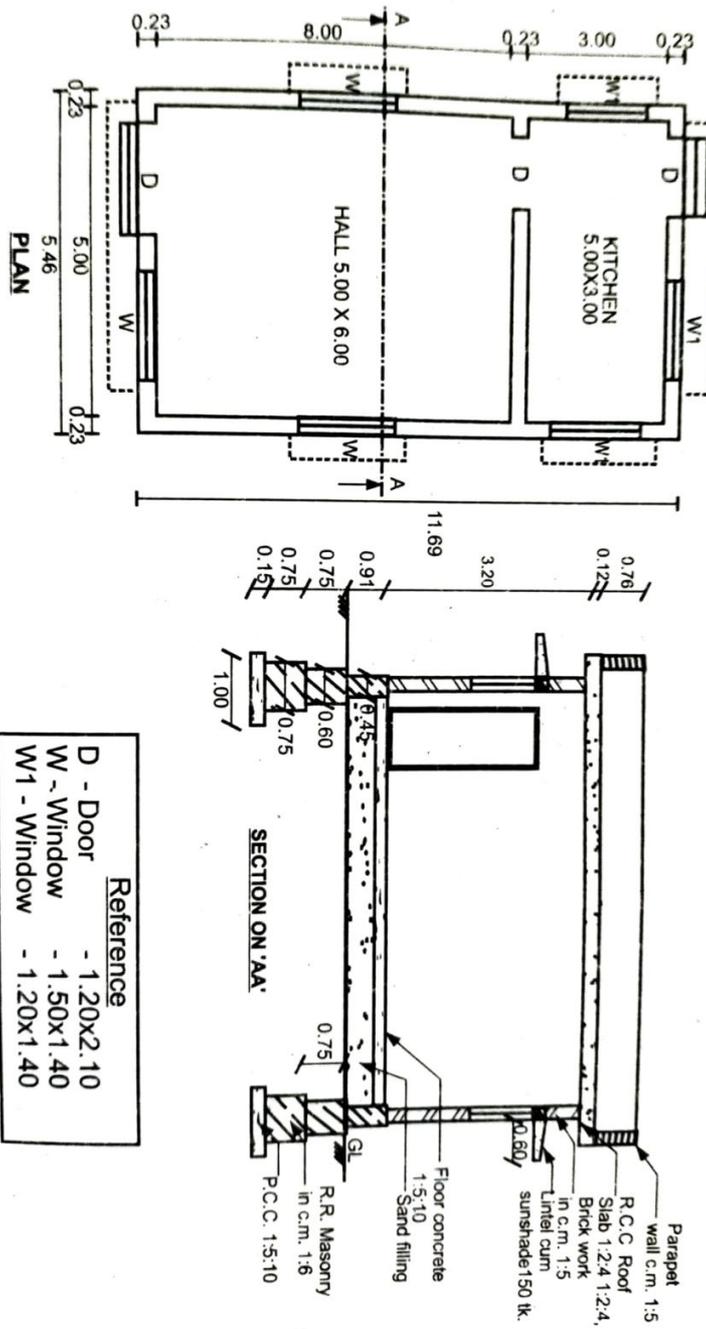
(95 Marks)

3. Prepare a Measurement Book (M-Book) with the specified tabular column for any four items on construction work. All Dimensions are in m.



(95 Marks)

4. Prepare bill of quantities of given item from actual measurements. (Any four items)
 All dimensions are in m.



(95 Marks)

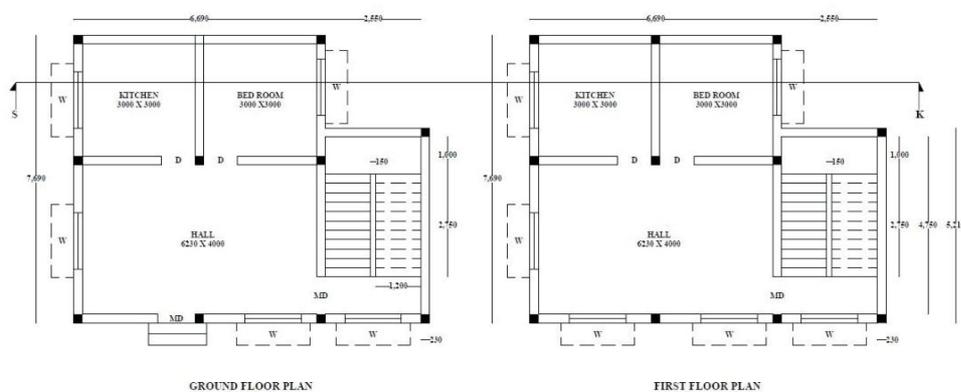
5. (i) The actual expenditure incurred in the construction of a single storey residential building of plinth area 100m^2 is found to be `Rs.38,55,000 in which 50% is towards the cost of materials and the remaining is towards the cost of labour. It is now proposed to construct a similar building of same height and specification with the plinth area of 74m^2 at the place where the cost of materials is 13% more and the cost of labour is 19% less Estimate approximately the cost of the proposed building.

(50 Marks)

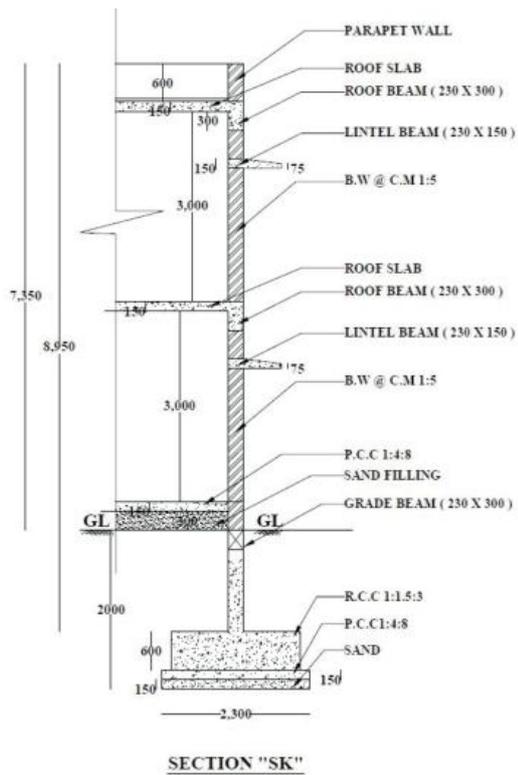
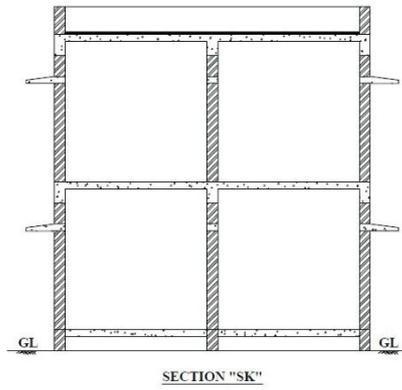
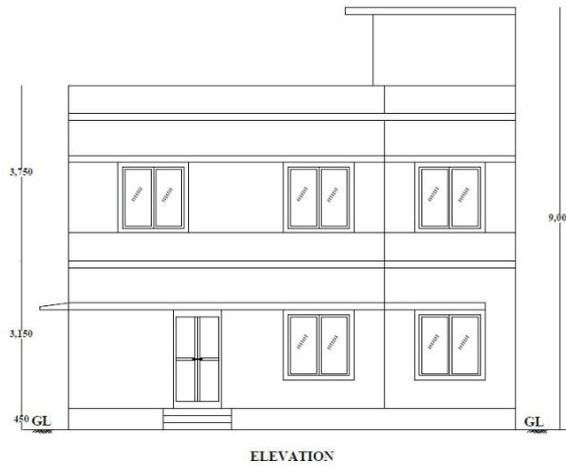
- (ii) The total expenditure incurred in the construction of a building for a shopping complex of plinth area 300m^2 and height 4m is Rs.10 lakhs. A similar building of plinth area 200m^2 and height 3.6m is proposed to build in the same locality, the increase in the cost of materials and labours is found to be 20%. Determine the probable expenditure.

(45 Marks)

6. Prepare detailed estimate for brickwork, beam, roof slab and plastering work for walls with deduction from the given set of drawings using “standard measurement and abstract format” for RCC framed structure using description of item (G+1 Building)

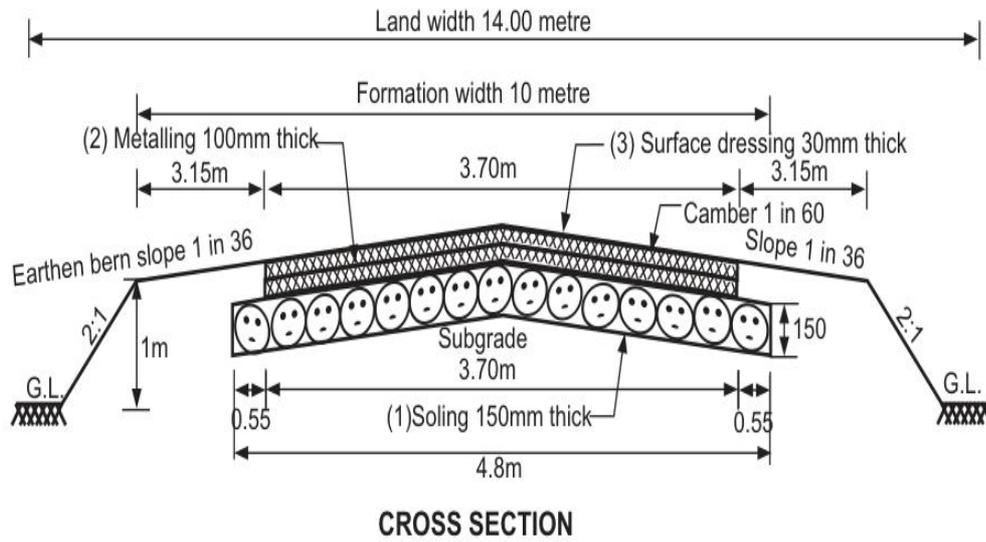


Plan and Section of building (G+1)



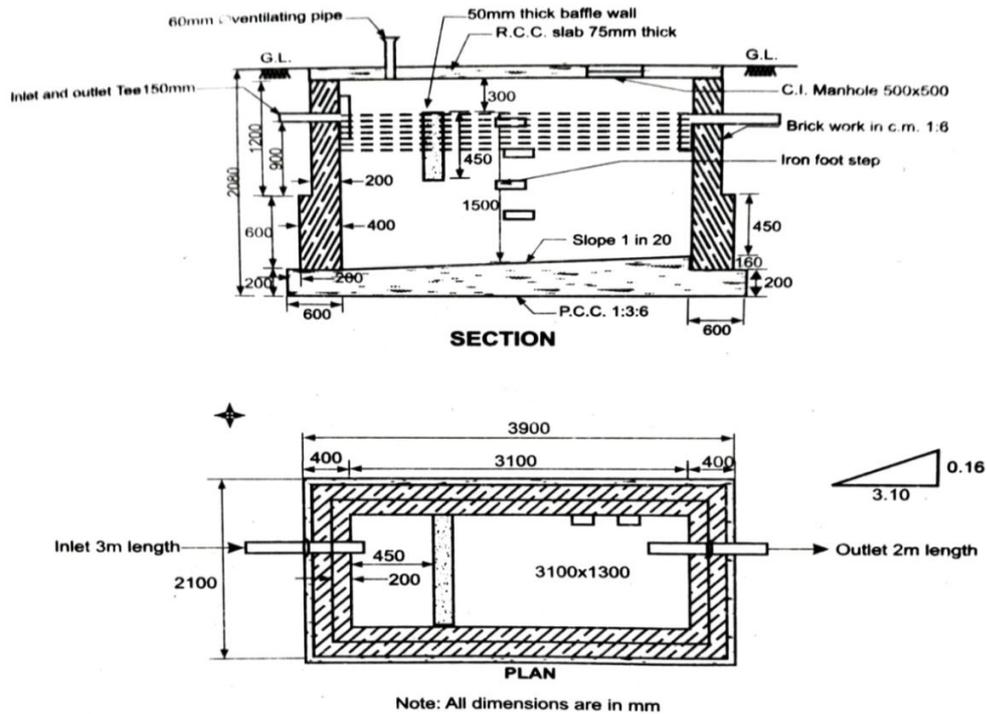
(95 Marks)

7. Prepare detailed estimate of bitumen road of one kilometer length from the given drawing.



(95 Marks)

8. Prepare detailed estimate of small Septic tank from the given drawing.



(95 Marks)

9. Prepare bar bending schedule for the given singly reinforced beam
The following are the details pertained to a singly reinforced simply supported beam.
Size of the beam = 300x 400mm
Clear span = 3.0m
Thickness of walls = 300mm
Clear cover (for all) = 25mm
Reinforcement Details
Tension reinforcement 5 nos of 16mm # Fe415 Steel.
Hanger bars 2 nos 10mm # Fe415 Steel.
Stirrups - 6mm Fe250 @ 200mm c/c. 50% bars cranked 45° at 0.08 L from the face of supports, 50% of bars shall be taken straight.

(95 Marks)

10. Prepare bar bending schedule for the given doubly reinforced beam.
The following are the details of a doubly reinforced beam.
1. Clear span = 4500 mm
2. Width of support = 300 mm
3. Size of beam = 300 x 450 mm
Reinforcement details
MID SPAN
Bottom Tensile reinforcement = 4 Nos 16mmdia Fe415 steel
Top Compressive reinforcement = 2 Nos 16mmdia Fe415 steel
AT SUPPORT
Bottom Tension = 3 Nos # 16mm, Fe415
Top Compression = 2 Nos # 16mm, Fe415
Shear reinforcement = 8mmdia Fe415 bars 2 legged stirrups at 160mm c/c up to a distance of 800mm from the edge of the support on both sides. Beyond this point use these shear stirrups @ 300 mm c/c. Anchorage and curtailment of reinforcement may be adopted with standard values.
Assume any other data required suitably.

(95 Marks)

11. Prepare bar bending schedule for the given one-way slab
The following are the details pertained to a simply supported one way slab:
Clear span: 3500mm.
Width span: 230mm.
Thickness of slab: 150mm.
Clear cover: 15mm.
Reinforcement details:
Main Reinforcement = 12 mm dia. Fe 415 steel @ 110mm C/ C
Distribution bars = 10 mm Fe 415 steel @ 250 mm C/ C
Distributors in both directions = 10 mm Fe 415 @ 250 mm
Adopt standard anchorage and curtailment whatever necessary.

(95 Marks)

12. Prepare bar bending schedule for the given two-way slab
The following are the particulars of a simply supported two-way slab in which corners are not held down.
Size of the room = 4.00 x 6.00 m
Width of support = 300 mm
Thickness of slab = 150 mm
Clear cover = 20 mm
Edge cover = 25 mm
Reinforcement details:
Reinforcement along shorter span = 12 mm Fe 415 @ 230mm C/ C
Reinforcement along longer span = 12 mm Fe 415 @ 200 mm C/ C
Distributors in both directions = 10 mm Fe 415 @ 280 mm
Anchorage and curtailment of reinforcement may be adopted with standard values and any more data required may be assumed suitably.

(95 Marks)

13. Prepare bar bending schedule for the given square column and square footing
Details of column
Size of the column: 300mm x 300mm.
Longitudinal bars: 4 bars of 25mm dia. Fe415 with 40mm Nominal cover.
Lateral ties: 8mm dia. Fe415 at 200mm c/c
Details of the footing
Size of the footing: 3m x 3m
Thickness of footing at edge: 450mm
Thickness of footing at the junction on column: 950mm
Reinforcement: 16mm dia. Fe415 - 9 Nos. in each direction.
Adopt standard anchorage.
Draw the following views to a suitable scale:
(i) Plan showing the details of reinforcement for column with footing.
(ii) Section of column with footing.
(iii) Cross - section of column.
(iv) Prepare a bar bending schedule, for 1m above the top of footing.

(95 Marks)