Code No: 157BM **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, July/August - 2023
ESTIMATION, COSTING AND PROJECT MANAGEMENT
(Civil Engineering)

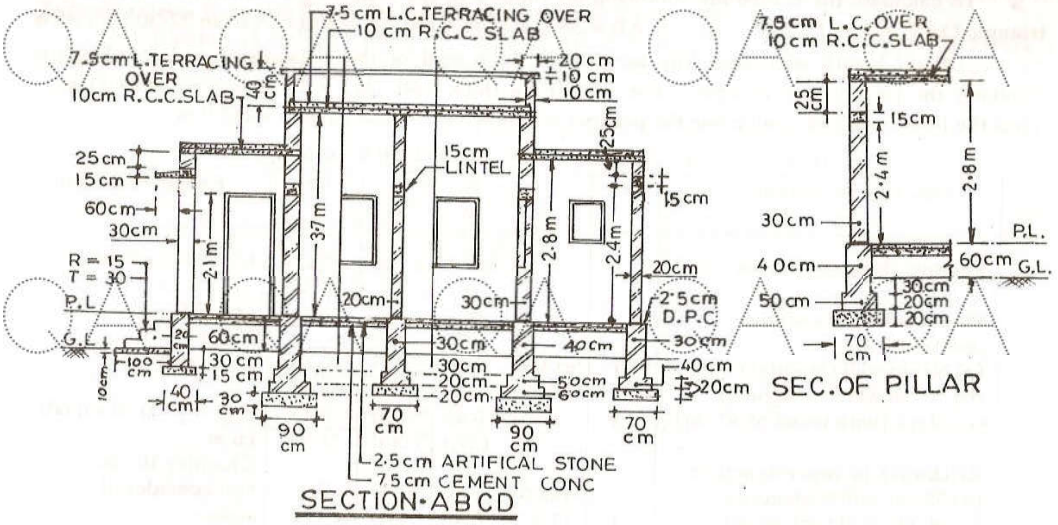
Time: 3 Hours **Max. Marks: 75**

Note: This question paper contains three parts A, B and C.
i) Part – A: Answer 1 out of 2 questions.
ii) Part – B: Answer 1 out of 2 questions.
iii) Part – C: Answer any 3 out of 5 questions.
(Assume Suitable data, if necessary)

PART - A

(1 × 30 = 30 Marks)

1. Estimate the quantities for the following items for Figure 1 shown below:
a) Earth work excavation in foundation
b) Cement concrete (1:3:6) in foundation
c) I class brick work in superstructure
d) RCC (1:2:4) excluding bending but including centering. [30]



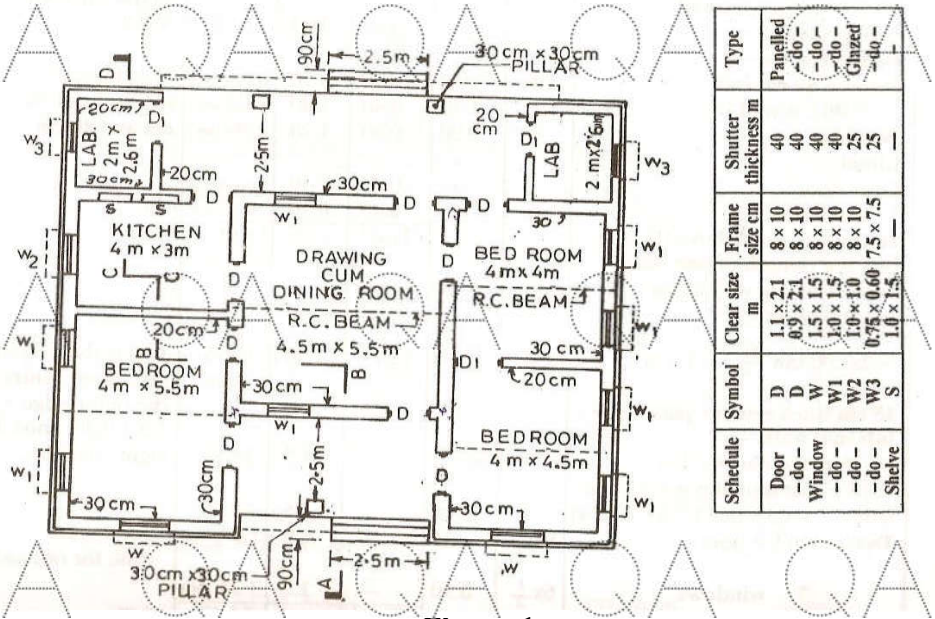


Figure 1

OR

2. Estimate the quantities for the following items for Figure 2 shown below:
   a) Earth work excavation in foundation
   b) Cement concrete (1:3:6) in foundation
   c) I class brick work in superstructure
   d) RCC (1:2:4) excluding bending but including centering. [30]

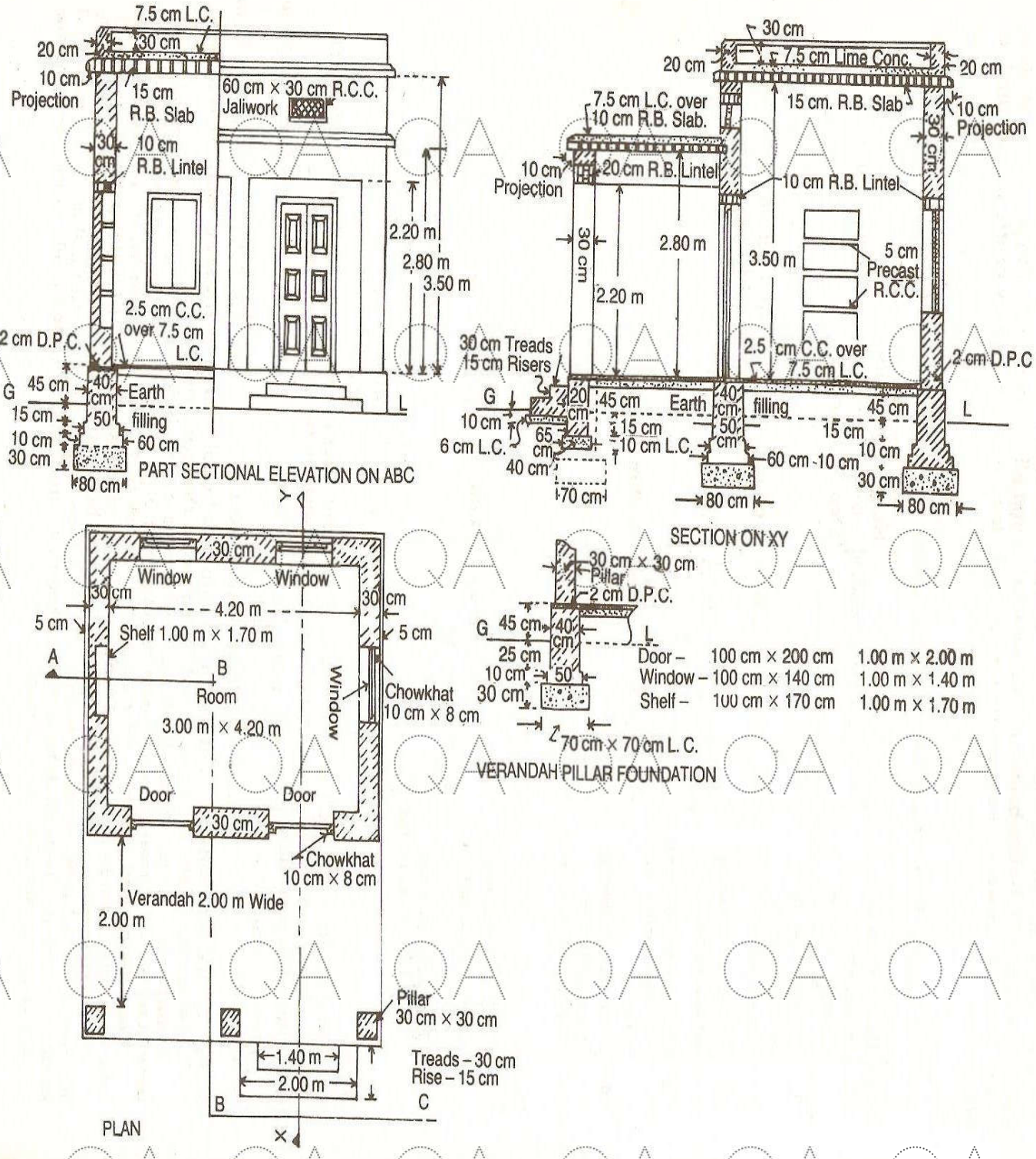


Figure 2

PART – B

(1 × 15 = 15 Marks)

3. Calculate the quantity of earthwork of a channel with the following data:
Bed width = 3m; Free board= 4.4m; slope of cutting 1:1; slope of banking 1.5:1; Full Supply depth=1m; Top width=1.5 m. [15]

Road width(m)	Ground level(m)	Proposed bed level(m)
0	225.24	224
30	224.8	223.94
60	224.43	223.88
90	224.12	223.82
120	224.5	223.76
150	224.98	223.7

OR

4. Prepare the schedule of reinforcement, estimate the quantity of steel for a simply supported rectangular beam with the following data:
Specifications:
Clear span of beam =3500mm
Bearing on either side=200mm
Width of beam=300mm
Overall depth of beam=450mm
Reinforcement details:
Bars in tension 5 bars of 20mm out of which 2 bars are cranked at 45^0 at distance of 400mm from the face of the support. Anchor bars are 2 bars of 12mm, stirrups 8mm dia 2 legged@250mmc/c. Take the all covers 40mm. [15]

PART-C

(3 × 10 = 30 Marks)

5. Prepare rate analysis for the following.
a) RCC work in columns 1: 1 ½: 3.
b) Reinforced brick work in slab CM (1:3). [5+5]

6. Write short notes on contracts and types of contracts. [10]

7. A project has eleven activities. The expected time of each activity is given below. Draw the project network diagram and identify the critical path. Draw the tabular form showing EST, LST, EFT, LFT and Float. [10]

Activity	1-2	2-3	2-4	2-5	3-6	5-6	5-7	4-7	6-8	7-8	8-9
Duration	4	3	5	6	4	7	8	8	5	7	9

8. Calculate the rate analysis for 40 mm thick glazed window of Indian teak wood. [10]

9. Discuss in detail about the purpose of valuation and Process of development of plans and schedules. [10]

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