R18

Code No: 157BM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, February - 2025
ESTIMATION, COSTING AND PROJECT MANAGEMENT
(Civil Engineering)

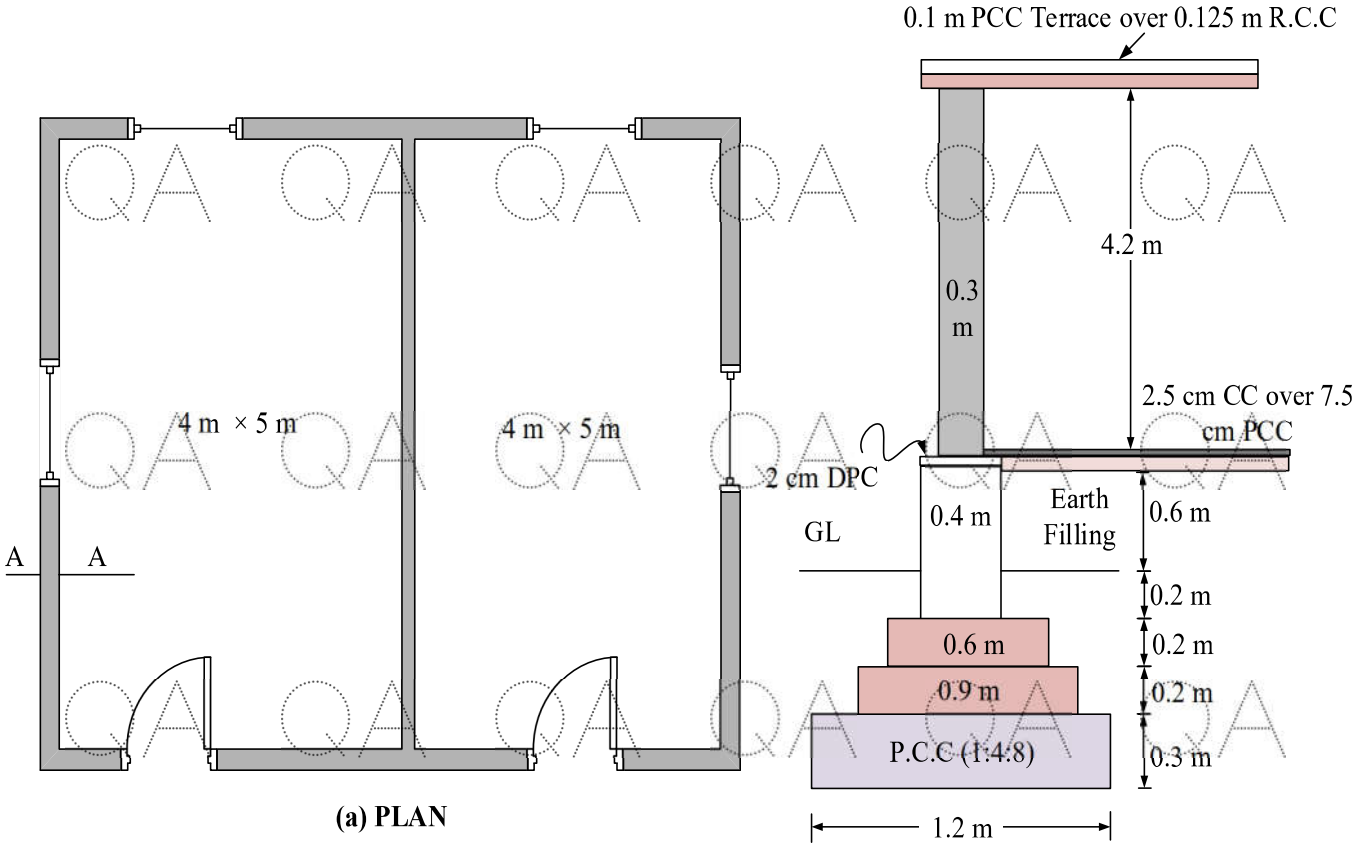
Time: 3 Hours **Max. Marks: 75**

Note: This question paper contains three parts A, B and C. i) **Part- A** for 30 marks, ii) **Part - B** for 15 marks, iii) **Part – C** for 30 marks.
i) Part – A: 1 out of 2 questions from Unit – I for 30 Marks,
ii) Part – B: 1 out of 2 questions from Unit – II for 15 Marks,
iii) Part – C: 3 out of 5 questions from Units – III, IV, V for 30 Marks.
(Assume Suitable data, if necessary)

PART - A

(1 × 30 = 30 Marks)

1. Estimate the quantities and cost of earthwork in excavation in foundation, earthwork in filling under the floor, Cement concrete (1:4:8) in foundation and first-class brick work in foundation and plinth with cement mortar (1:6) for the following items of a two roomed building from the plan and section as shown in Figure. 1. [30]



(a) PLAN

All Walls are of same section.
Lintels are over Doors.
Windows are of 0.15 m thick

Windows W – 1 m × 1.5 m
Doors D – 1.2 m × 2.1 m

Cross section of wall A-A

(b) SECTION

Figure.1

OR

2.a) What constitutes an estimate, and how do various methods of estimation differ? Provide a detailed explanation of each method.

b) Distinguish between approximate and detailed method of estimates with suitable examples.

c) Discuss the principle of working out quantities in a building. [10+10+10]

PART - B

(1 × 15 = 15 Marks)

3. Prepare the bar bending schedule for the R.C.C. beam as shown in Figure 2. [15]

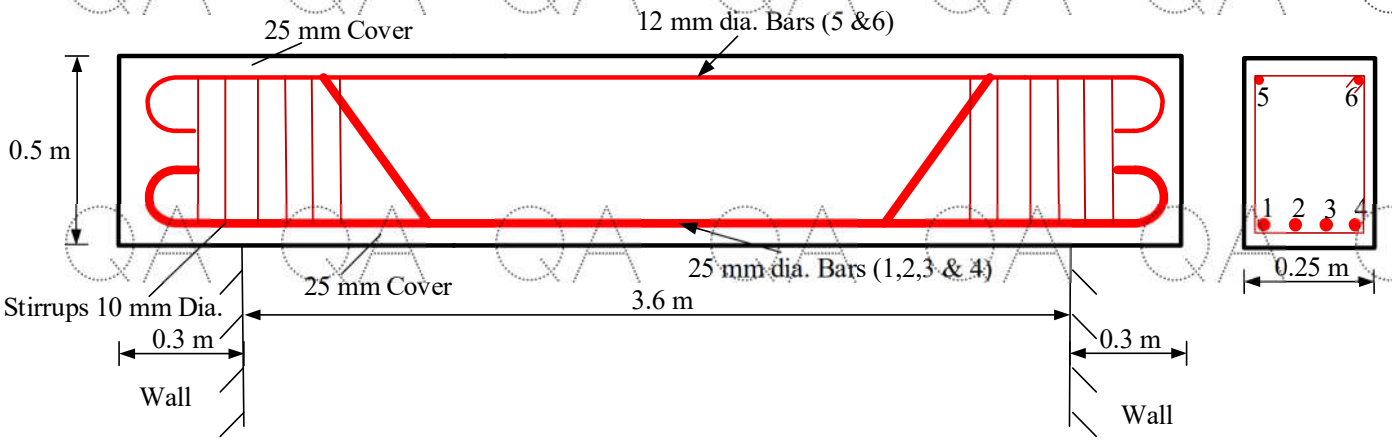


Figure. 2

OR

4. Determine the quantity of earthwork of a portion of a canal with the following data: Bed width 6 m, Free board 0.6 m, side slope 1:2, Full supply depth 1.8 m, top width of both bunds 2.0 m. [15]

Chainage (m)	0	100	200	300	400	500	600
Ground Level (m)	31.0	30.6	30.3	30.0	30.3	30.8	30.9
Bed Level (m)	30.0	Downward slope 1 in 2500					

PART-C

(3 × 10 = 30 Marks)

5. Determine the unit rate for 12 mm thick mosaic flooring over 125 mm thick cc (1:4:8). [10]

6. Discuss the role of valuation in contracts and the importance of adhering to standard specifications for different construction activities. [10]

7. Outline the conditions of contract and standard specifications for different items of building construction. [10]

8. Explain the assumptions underlying PERT analysis and the process of determining three-time estimates and calculation of the probability of completion. [10]

9. Construct a network for each of activities and their precedence relationship are given below: [10]

Activities	A	B	C	D	E	F	G	H	I	J	K
Ground Level (m)	-	-	A	A	I,J,K	B,D	B,D	F	A	G,H	F

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