

BACHELOR OF ARCHITECTURE THIRD YEAR SECOND SEMESTER -2024

QUANTITY SURVEYING & SPECIFICATIONS

Time : 3:00 Hrs.

Full Marks: 100

Answer any four questions

1. (a) What is the purpose of estimating?

(b) Calculate the required materials for 10 cu.m. volume of cement concrete (1:2:4) and find Dry quantity of Cement in Bags, Sand in Cum & Stone chips in Cum.

(c) What are the sub-heads to be estimated to calculate the rate per unit an item?

(d) Carpet area of a 4-storied (framed structure) office building is 480 sqm. per floor. Assume areas occupied by corridor, verandah, lavatories, staircase etc., as 20% of Built-Up area and that occupied by walls and columns as 10% of the BU area. Now calculate the total Built-Up area of the office building?

(e) Also prepare a preliminary estimate of the same building in Table format. Given –

(i) Built-up area rate for ground floor (excluding foundation) = Rs 24,000/- per sq m.

(ii) Build-up area rate for 1st. & 2nd, floor = Rs. 25,000/- per sq m.

(iii) Build-up area rate for 3rd. floor = 26,000/- per sq m.

(iv) Extra for foundation = 20% of super-structure cost.

(v) Extra for special Architectural treatment = 1% of Bldg. Cost.

(vi) Extra for Water supply and sanitary = 7% of Bldg. cost.

(vii) Extra for Electrical installation = 8% of Bldg. cost.

(viii) Extra for Contingencies = 4% of overall cost.

(ix) Extra for Work Charged establishment = 10% of overall cost.

(x) Extra for other source = 5% of building cost.

4+6+3+4+8= 25

2. Define Specification. Why this is necessary in construction industry? Describe advantages & disadvantages of open specifications. Write down the name of 5 items which are considered for a standard building and specify those 5 items.

2+4+4+ (5x3) = 25

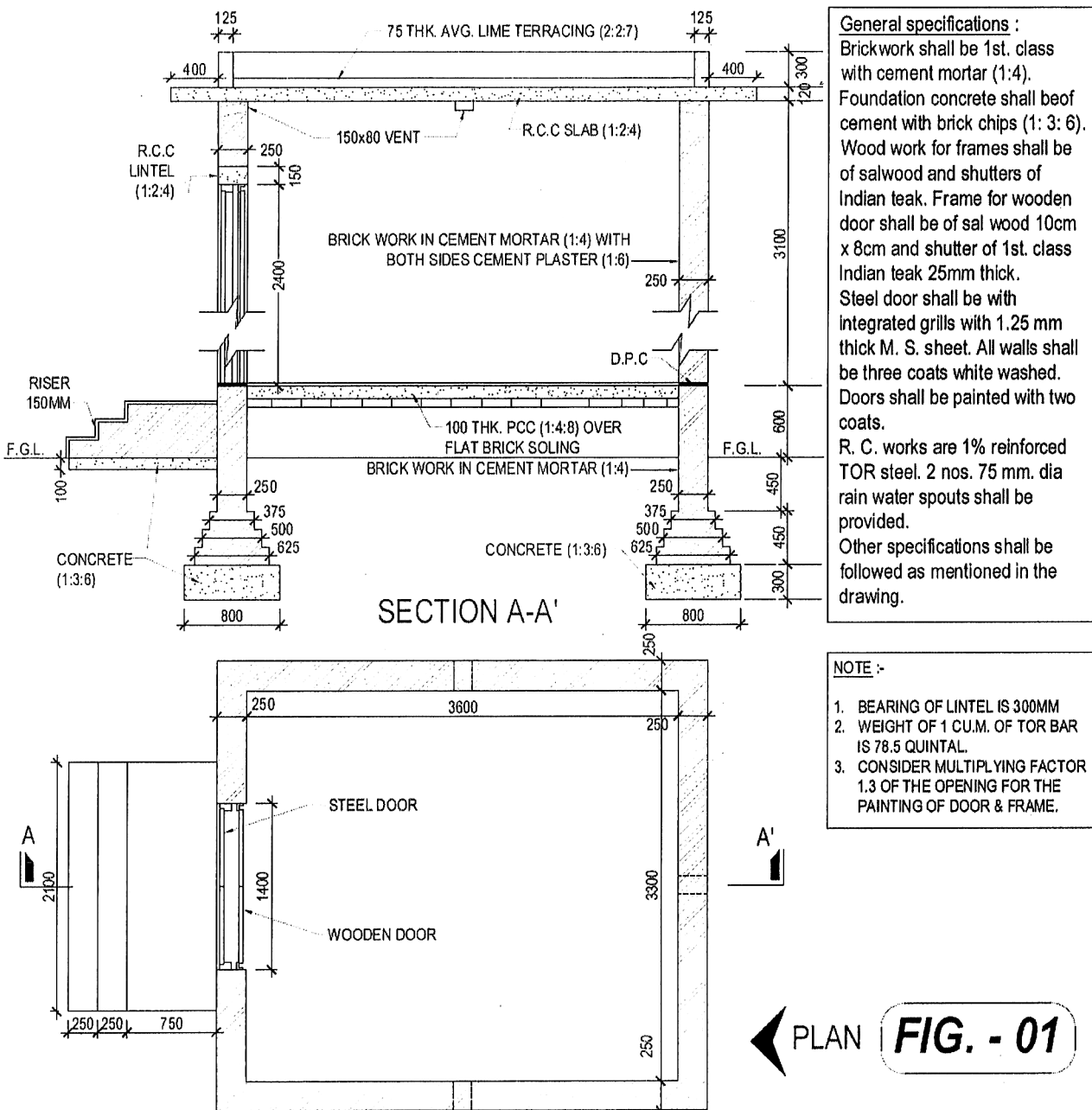
3. Describe in brief the rule for measurement as per IS-1200. What are the different Heads & sub-heads of a Complete Estimate for a Residential & Commercial Building in a Site of 8 acres (approx.) at New Town, Kolkata. Also write down different 'Items of work' (Heads & Sub-heads) which are required for Detailed Quantity Estimate of the Building (as stated above) in Table format.

5+10 +10 = 25

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4. Study the Plan, Section & brief specifications of the building as given below in the Fig.- 01 (All dimensions are in mm unless otherwise mentioned. Find the quantities (in CuM/SqM/M) of the 'Item of works' showing the every details of measurements following the standard measurement rules as written below - (a) Earthwork in excavation, (b) Earthwork in filling, (c) Cement concrete (1:3:6), (d) Brickwork in cement mortar (1:4) in foundation & Plinth, (e) 2.5 cm thick D.P.C (1:2:4), (f) Brickwork in superstructure, (g) RCC work excluding reinforcement & shuttering . Also prepare a summary table showing quantity with appropriate unit (in CuM/ SqM/RM) of all 7 items.

$$4+3+3+3+2+4+3+3 = 25$$



5. Calculate various materials required for 10 CuM of Brickwork. Find Dry quantity of IS standard Brick in numbers, Cement in Bags and Sand in Cum.

Drawings & brief specifications of Boundary wall provided in the Fig- 02.

How many brick columns to be constructed? Find the quantity of 'Item of works' - (i) Earthwork in excavation for foundation, (ii) Earthwork in filling, (iii) 2nd class brick flat soling, (iv) Cement concrete (1:4:8) in foundation with overburnt brick chips, (v) 1st class brickwork in cement mortar (1:6) in foundation, (vi) 1st class brickwork in cement mortar (1:6) in superstructure of brick columns, (vii) 100mm thick 1st class brickwork in cement mortar (1:6). Also prepare a summary table showing quantity with appropriate Unit (in CuM/ SqM/RM) of all 7 items. 5+20 = 25

