

**Time: (4 Hours)**

**Marks: 80**

- (1) Question No 1 is compulsory.
- (2) Attempt any three questions out of remaining five questions.
- (3) Figures to the right indicate full marks.
- (4) Neat illustrations and legible handwriting will be appreciated.
- (5) Answer should be brief and to the point.
- (6) Assume suitable data if required and specify the same clearly.

**Q.1)** Work out the quantities from given plan and section in figure (1) **20M.**

- a) UCR masonry in cement mortar 1:2 in foundation up to plinth.
- b) First class brick masonry in cement mortar 1:3 in superstructure (including plinth steps)
- c) External plastering 25 mm thick in two coats in C.M (1:4) adding water proofing compound. (Including plinth steps)
- d) Prepare an abstract of cost for the items of works specified above.

**Q 2)**

- a) Prepare rate analysis for M20 R.C.C concrete with 1% steel including centering and shuttering. **8M**
- b) Draft a tender notice for construction of hospital building by CIDCO Navi Mumbai (Executive Engg) with an estimated cost of Rs one crore and duration of project is 24 months. **8M.**
- c) Differentiate between void and voidable contract. **4M.**

**Q 3)**

- a) Prepare approximate estimate for G+6 R.C.C residential building consisting of four flats per floor and each flat has a carpet area of 80 sq mt. Assume area occupied by walls and columns etc as 8.5 % of built up area and area of circulation as 25% of built up area. Assume cost of construction of superstructure as Rs 10,000/- per sq mt. Assume suitable percentages for services, contingencies and work establishment charges. **8M.**

- b) Explain the different types of specifications for items of construction work? Also explain the various principles of specification writing. **8M.**

- c) What is pre-bid conference and pre-qualification of tenderer? **4M.**

**Q 4)**

- a) Calculate the quantity of earthwork in cutting and in banking for the portion of road with the following data.

GL	120.5	120.10	119.7	119.2	118.5	118.2	117.7	117.3	117.5
Chainage	0 (A)	1	2	3	4	5	6	7	8 (B)

The road is uniform down gradient from point 'A' with formation level of 118.90, to a point 'B' with formation level of 118.10. Distance between two points is 320 meters. The formation width in cutting is 5.5 meters and in banking is 6.0 meters. Side slope in cutting is 1.5:1 and in banking is 2:1. Estimate the cost of earthwork by considering existing District Schedule Rates. **10M.**

- b) Differentiate between :- **10M.**
- i) Price Escalation and Price variation. ii) BOT and BOOT contract
  - iii) Rules for deduction in plastering as per IS 1200
  - iv) Work Charged Establishments and Contingencies.

**Q 5) a)**

Work out the quantity of steel in a 7.0 meter long simply supported beam of size 300x700 mm overall. Bottom bar: 4 – 20 mm. diameter out of which two bars are bent up at 45 degree at supports. Anchor bar: 2–12mm diameter, stirrups 8mm diameter @ 200 mm c/c throughout the length of the beam.

Refer figure 2.

b) Write short notes on:-

- i) Termination of contract.ii) Retention Money.
- iii) Defect liability period.iv) Extension of contract period

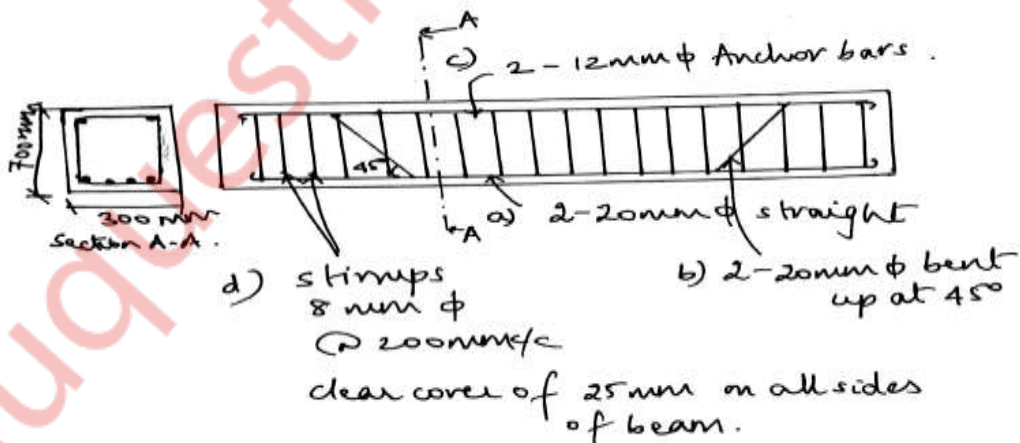
**Q6)**

a) A newly constructed building cost Rs 70 lakhs on a plot of valuation Rs 100 lakhs. Ten Flats of 120 sq mt each are constructed. Fix the monthly rent per flat from the following data.

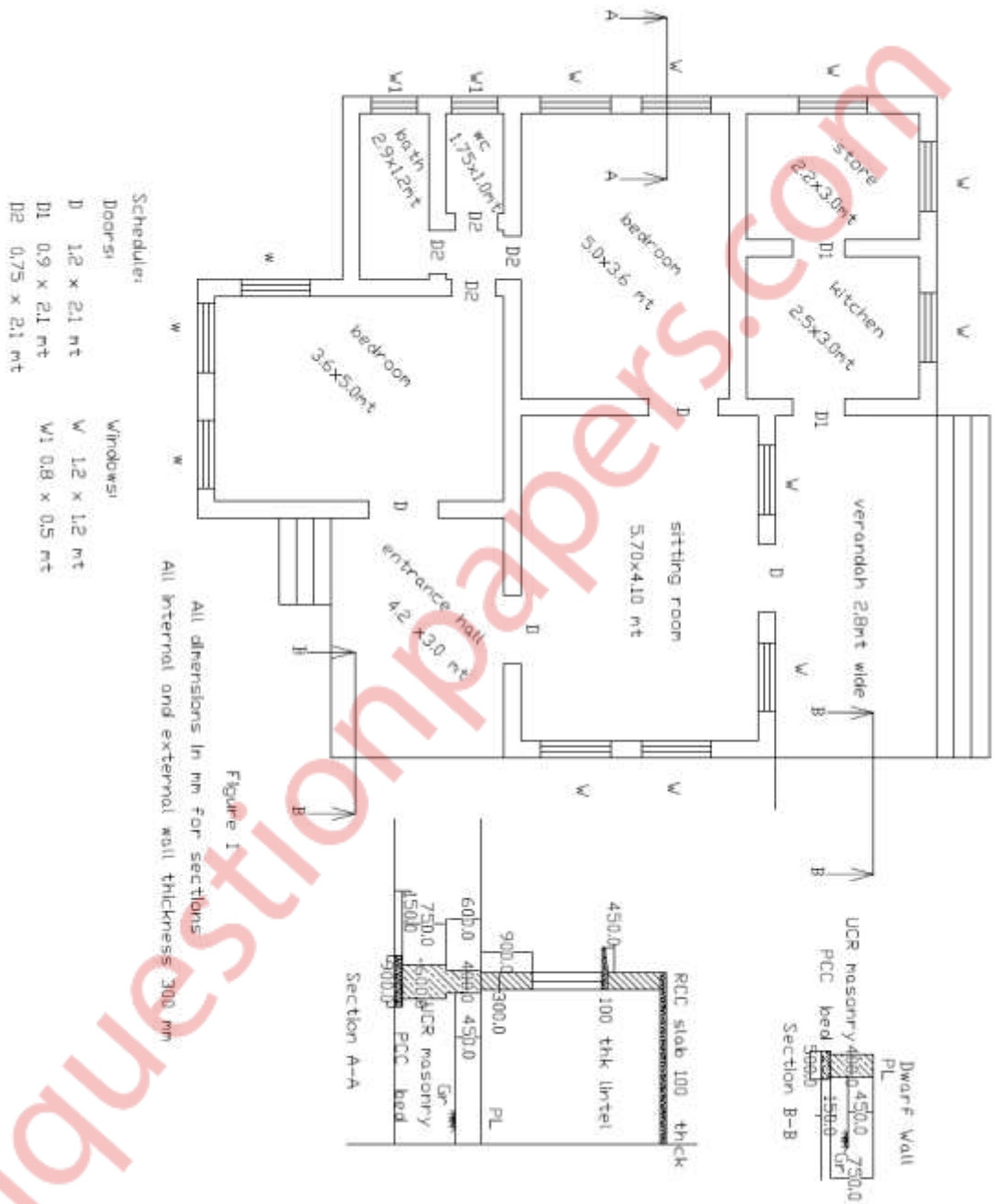
- i) Net return on land and building = 10%.
- ii) Life of building = 50 years.
- iii) Interest rate on Sinking Fund= 6% .
- iv) Salvage Value= 10% of cost of building.
- v) Repairs and Maintenance= 3% of building cost.
- vi) Taxes and other expenses= 20 % of Gross rent.

b) Write short notes on

- i) Advances to contractor ii) Settlement of disputes
- iii) Economic haul distance iv) Easement Rights.



**Figure 2.**



**Figure 2.**