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**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Eighth Semester B.Tech Degree Regular Examination June 2023 (2019 Scheme)

**Course Code: CET402**

**Course Name: QUANTITY SURVEYING AND VALUATION**

Max. Marks: 100 Duration: 3 Hours

*Instruction:* Assume any missing data and state the assumptions clearly. Assumptions should be realistic.

**PART A**

***Answer any two full questions, each carries 10 marks.*** Marks

1 a) Explain the difference between the Provisional Sum and Provisional Quantity in BoQ (5)

b) List different type of estimates. (5)

2 Develop unit rate of the work (DSR item No. 4.1.5), providing and laying in position 1:3:6 (1 Cement: 3 Coarse sand (zone-III) : 6 Graded stone aggregate 20 mm nominal size) cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : **MATERIAL** : 0.70cu.m 20mm nominal size of stone aggregate @ Rs.1400/cu.m., 0.24cu.m 10mm nominal size of stone aggregate @ Rs.1350/cu.m., 0.47 cu.m of coarse sand (Zone-III) @Rs.1500/cu.m., 0.15674cu.m Portland cement @ Rs.5000/tonne, **LABOUR** : 0.10 Mason @ Rs.749/day; 1.63 Beldar @ Rs.645/day, 0.70 Bhisti @ Rs.714/day. **CARRIAGE PROVISIONS**: Stone aggregate below 40mm Rs. 163.93/cu.m.; coarse sand @Rs.163.93/cu.m. and for cement @ Rs.145.72/tonne. **HIRE CHARGES** of concrete mixer 0.07@Rs.800/day, Vibrator 0.07@Rs.350/day, **SUNDRIES** , LS, 13.52@Rs.2.12 (10)

3 a) Explain General rule of measurement to be followed as per IS1200 (5)

b) List three important contract documents of Civil Engineering project (3)

c) What is mean by Overhead charges? List any two examples (2)

**PART B**

***Answer any two full questions, each carries 25 marks.***

4 Prepare a detailed measurement of the residential building shown in Figure-1 for the following item of work (use CENTRE LINE METHOD ) (25)
(a) Earth work excavation for foundation
(b) RR Masonry for foundation and basement
(c) Brick Work for wall
(d) RCC for Roof slab ( Adopt 10cm projection for roof slab from wall outside)
(e) Wood work for Door frame (Adopt wood frame size 10cm x 7cm)

5 a) Workout the quantity of material for 10cum Cement concrete of 1:2:4 (5)

b) Determine the quantity of earthwork for the portion of a road between chainage 100 to 110 from the following data (20)

| Chainage | 100 | 101 | 102 | 103 | 104 | 105 |
|---|---|---|---|---|---|---|
| RL or GL | 121.1 | 121.2 | 120.9 | 121.2 | 120.8 | 120.7 |
| Chainage | 106 | 107 | 108 | 109 | 110 | |
| RL or GL | 120.3 | 120.4 | 119.7 | 119.5 | 119.7 | |

Distance between each chainage is 20m, formation level of first chainage is 120 and road is in rising gradient of 1 in 200 , width of formation is 10m and side slope 1.5:1 in embankment and 1:1 in cutting. The lateral slope of ground may be assumed as level .

6 a) Prepare Bar Bending Schedule of the RCC beam shown in Figure-2 (20)

b) List any three items of work with unit of measurement for water supply plumbing system. (5)

## PART C

***Answer any two full questions, each carries 15 marks.***

7 a) Explain the Freehold and Leasehold property (5)

b) A two storied building is located on a plot of area 1000sq.m. with a Rs.5000/- per sq.m. The plinth area of each storey is 500sq.m. The building is of RCC framed structure and the future life may be taken as 70years. The building fetches a gross rent of Rs.10,000/- per month. Work out the capitalised value of the property on the basis of 6% net yield. (10)

Adopt following data for calculation

1. Municipal tax 10% of Gross rent
2. Property tax 5% of gross rent
3. Insurance premium @0.5% of gross rent
4. Miscellaneous charges @ 2% of gross rent
5. Sinking fund per annum Rs. 2000

No other outgoing to be consider for calculation

8 a) Explain the purpose of valuation (5)

b) Explain the terms (a) Obsolescence (b) Year's Purchase (5)

c) A builder purchased a leasehold property for Rs. 2500000/- which will generate a net annual income of Rs. 150000/-. The lease is for 28yrs. Calculate the sum that the builder should place annually in a sinking fund which will accumulate at 4% compound interest. So that the builder can redeem the purchase money at the termination of the lease. (5)

9 a) What are outgoings? List any three outgoings (5)

b) Explain with suitable example the terms Cost, Price and Value? (5)

c) What is mean by depreciation? Explain the methods for calculating the depreciation. (5)

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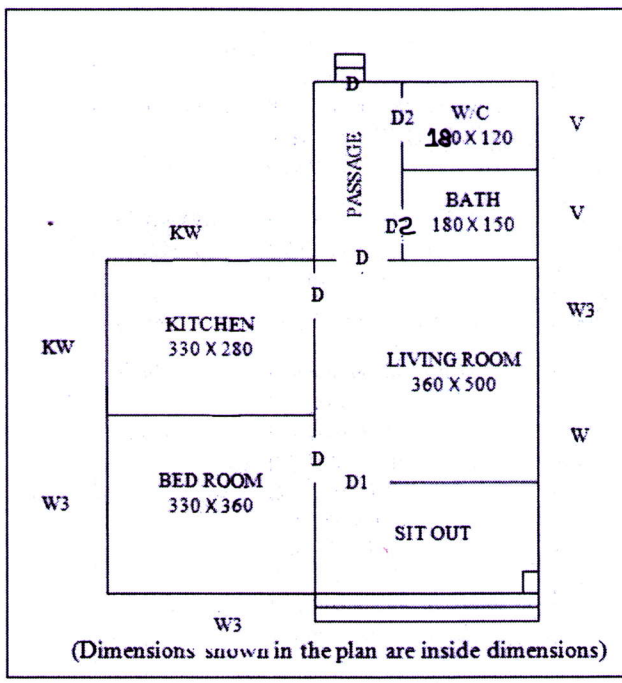


**SPECIFICATIONS**

| | |
|---|---|
| Foundation: | RR Masonry 60 x 60 cm over a PCC bed of 80x20cm. |
| Basement: | RR masonry 45 x 45 cm. |
| Lintels: | RCC lintels All Round (Thickness-15cm) |
| Roof: | Flat RCC slab 10cm thick. |
| Walls: | Brick masonry 20cm thick Height of 300cm. |
| Doors, | D 90 x 210<br>D1 100 x 210<br>D2 80 x 210 |
| Windows | W3 120 x 150<br>KW 80 x 100<br>W 50 x 150 |
| Ventilators | V 60 x 40 |
| | All dimensions in cm. |

**Figure-1 Residential Building Plan**

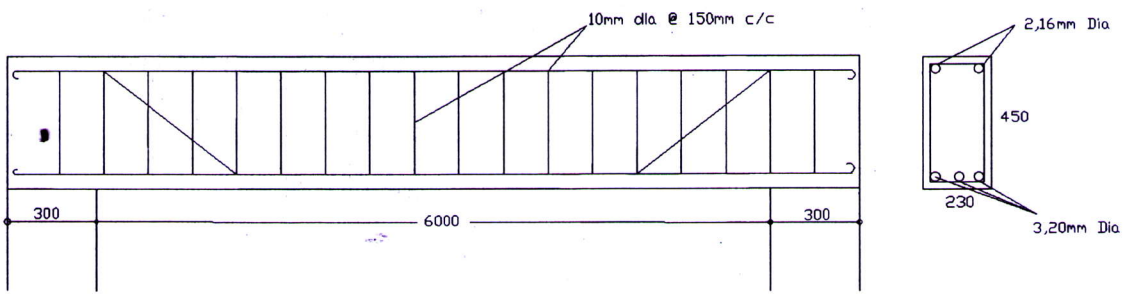


**Figure-2 RCC Beam**