Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S7 (Special Examinations) (FT/S5PT) January 2026 (2015 Scheme)

Course Code: CE409
Course Name: QUANTITY SURVEYING AND VALUATION

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any two full questions, each carries 10 marks.

Mark

1 a) What do you mean by the terms (a) Contigencies (b) Centage charge (c) Work charge establishment (6)

b) Discuss the basic principles of Quantity surveying (4)

2 a) Briefly explain general rules of measurement with reference to IS 1200 (6)

b) Explain the general specification for fourth class building (4)

3 Develop rate analysis for Reinforced cement concrete work with 1:1.5:3 (3 graded stone aggregate 20 mm nominal size) in beams, suspended floors, roofs having slope up to 15° landings, above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement. (10)

Material : 20 mm Aggregate 0.57 m^3 @ ₹1300/m^3 , 10 mm 0.28 m^3 @ ₹1300/m^3 ,coarse sand (Zone III) 0.425 m^3 @ ₹1200/m3 , Portland cement 400 kg @ ₹5700/tonne.

Labour: Mason 0.24 @₹467/day, Beldar 2.75 @₹368/day, Bhisti 0.90 @₹407/day,Coolie1.88@₹368/day
Carriage provisions: Stone aggregate below 40 mm 0.85 m^3 @ ₹103.77/m^3 ,Coarse sand 0.425 m^3 @ ₹ 103.77/m3 , Portland cement 0.40 tonne @₹.92.24/tone.

Hire Charges for concrete mixer 0.08 @ ₹800/day, Vibrator needle type ₹0.08 @ 350/day,Sundries(LS)14.30@₹1.73.
Adopt water charges, contractor profit and overheads as per the CPWD DSR 2021 provisions.

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) (a) Earth work excavation for (25)

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)

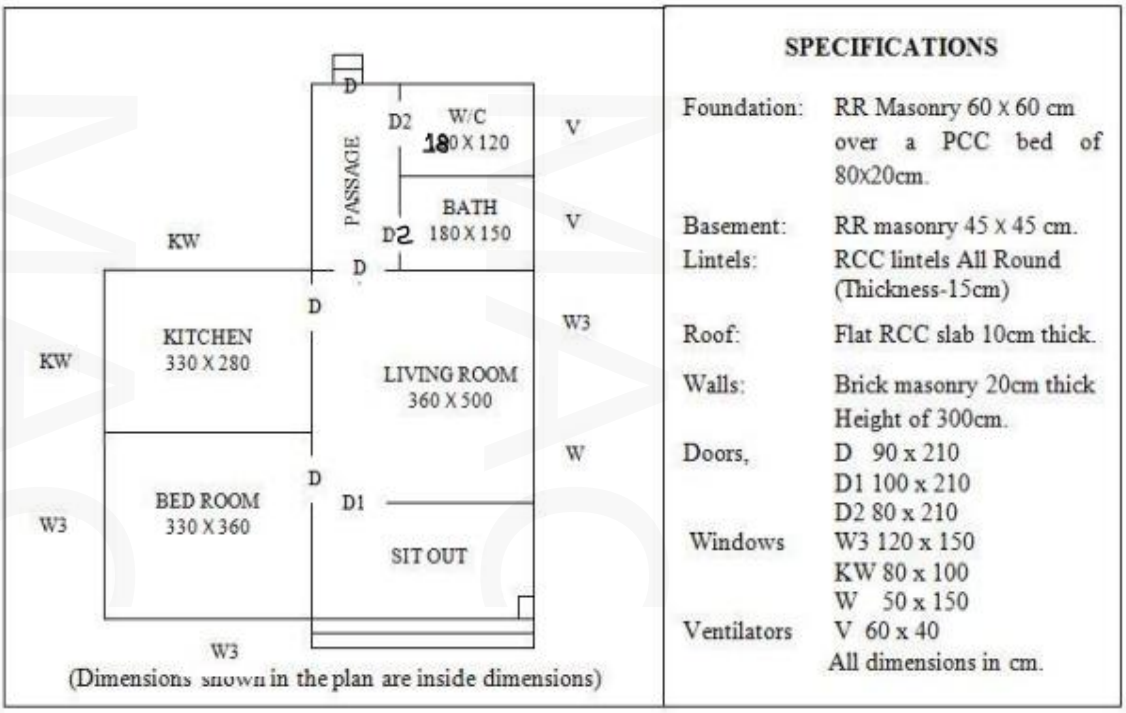
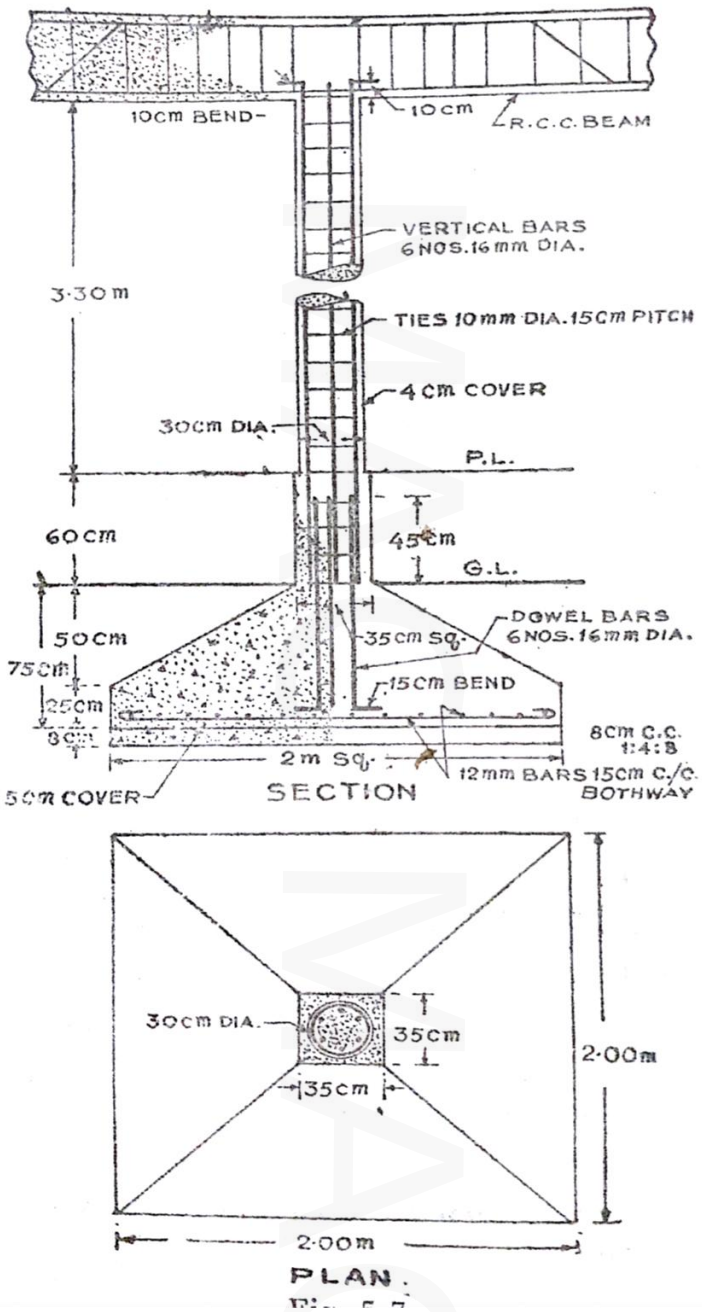


Figure-1 Residential Building Plan

5 Prepare the detailed estimate for Earthwork excavation, CC 1:4:8 in base, RCC 1:2:4 in footing, and RCC 1:2:4 in column for the given column section (plan and section given below). Also prepare the bar bending schedule. (25)



6 a) Estimate the quantity of earthwork for a portion of a district road for 400 m length with following data. Formation width 10 m, side slopes in banking 2:1, side slopes in cutting 1.5:1, Downward gradient is 1 in 200. Formation level at chainage 0 is 150.00 (20)

Chainage	0	40	80	120	160	200	240	280	320	360	400
RL	149.0	148.90	148.50	148.80	148.60	148.70	149.20	149.40	149.30	149.0	148.60

b) In a simply supported beam of depth 450mm is provided with a 3, 20mm diameter bar at bottom, in this one bar is provided as bendup bar near both the supports. 10mm stirrups are provided with top and bottom cover 25mm. Calculate the additional length provided for bend up in both end. If the (i) bendup angle is 45^o and (ii) bendup angle is 30^o . (5)

PART C

Answer any two full questions,each carries 15 marks.

7 a) Define Valuation and list the factors affecting valuation of a property or building? (5)

b) In a plot of land costing Rs. 50000, building has been newly constructed at total cost of Rs. 120000 including sanitary and water supply works, electrical installations etc. Building consists of 4 flats for 4 tenants. The owner expects 7% return on cost of construction and 5% return on cost of land. Calculate standard rent for each flat of building assuming life of building as 60 years, sinking fund 4% interest, 1% of construction cost as annual repairs and 30% of outgoings of net return. Take scrap value of building as 10%. (10)

8 a) A building of replacement value of about Rs. 70000 stands on a main road on a leasehold plot. The ground rent to be paid per annum for the use of land is Rs. 295/-. Building has a future life of 70 years. Rent of building is Rs. 400/- per month. The taxes payable are 18% of gross rent and insurance premium is 0.5% of gross rent. Assume other repair expenses are 10 % of gross rent, management charges as 5% of gross rent and light charges as 2% of gross rent. Assume 3% interest rate for sinking fund calculation. Determine capitalized value of property on basis of 5 % net yield (10)

b) Differentiate between salvage value and scrap value (5)

9 a) Explain freehold and leasehold property (5)

b) A two storied building is located on a plot of area 1000sq.m. Cost of land is 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.15,000/- 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. 3000

No other outgoing to be considered for calculation.

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