Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–VII EXAMINATION – WINTER 2025

Subject Code:3170615 Date:26-11-2025

Subject Name: Engineering Economics, Estimation and Costing

Time:10:30 AM TO 01:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Define provisional quantities, day work and contingencies	**03**
	(b)	Define depreciation and explain its methods in brief.	**04**
	(c)	Estimate the quantities by centre line method of following items of building given in Fig.1 1) Earthwork in excavation and filling in foundation trench 2) Plain Cement Concrete in foundation 3) First class brick work in 1:6 cement mortar in foundation and plinth 4) Brickwork above plinth level	**07**
Q.2	**(a)**	Discuss breakeven point.	**03**
	(b)	Give a brief idea of a) Marginal Cost, b) Sunk Cost	**04**
	(c)	Discuss the difference in evaluating alternatives of private and public organizations.	**07**
		OR	
	(c)	State the law of supply and demand. Draw supply – demand curve. Give brief idea about factors influencing demand and supply.	**07**
Q.3	**(a)**	Write down the essential principle of good specification writing.	**03**
	(b)	Write down a detailed specification for external plaster work in 1:8 CM.	**04**
	(c)	Explain following in brief: a) Earnest Money Deposit b) Liquidated Damage c) Security deposit	**07**
		OR	
Q.3	**(a)**	Mention the factors affect the analysis of rates.	**03**
	(b)	Write detailed specification for RCC work of floor slab having proportion of 1:1.5:3	**04**
	(c)	Describe in detail the process of a scrutiny of tender	**07**
Q.4	**(a)**	Define rate analysis. Give a brief idea of SOR	**03**
	(b)	Carry out the rate analysis of 12 mm thick wall plaster work in 1:3 C:M	**04**
	(c)	Draft a detailed tender notice for the construction of new academic building at Engineering College which estimated cost is Rs.40 cr.	**07**
		OR	
Q.4	**(a)**	Give the rate of a) Brick b) Marble c) Steel d) Granite e) Cement f) sand	**03**
	(b)	Carry out the rate analysis of 1st class brickwork in 1:4 C:M	**04**
	(c)	Explain item rate contract and cost plus percentage contract in detail.	**07**

Q.5 **(a)** Give the difference between Estimation and Valuation **03**

(b) Explain the purpose of valuation. **04**

(c) A property may fetch a net annual income of Rs. 51000/- for next 30 years. Landlord expects a net return of 9% on his /her capital and the sinking fund value for the replacement of capital = 8%. Calculate the value of the property if ROI to redeem the property is 4% **07**

OR

Q.5 **(a)** Define: i) Sinking Fund, ii) Distress value, iii) Scrap value **03**

(b) Explain different types of outgoings. **04**

(c) The present value of a property is Rs. 330000/- out of which land cost Rs. 80,000/-. The owner expects 8% return on the construction cost and 5% return on land cost. Future life of building is 75 years. At the end of useful life, Rs. 400000/- will be required to replace construction cost. Assume sinking fund interest 5%, repair charges 1% of cost of construction. All other outgoings are 25% of net annual income. Take scrap value 10% of present value. Calculate the monthly rent. **07**

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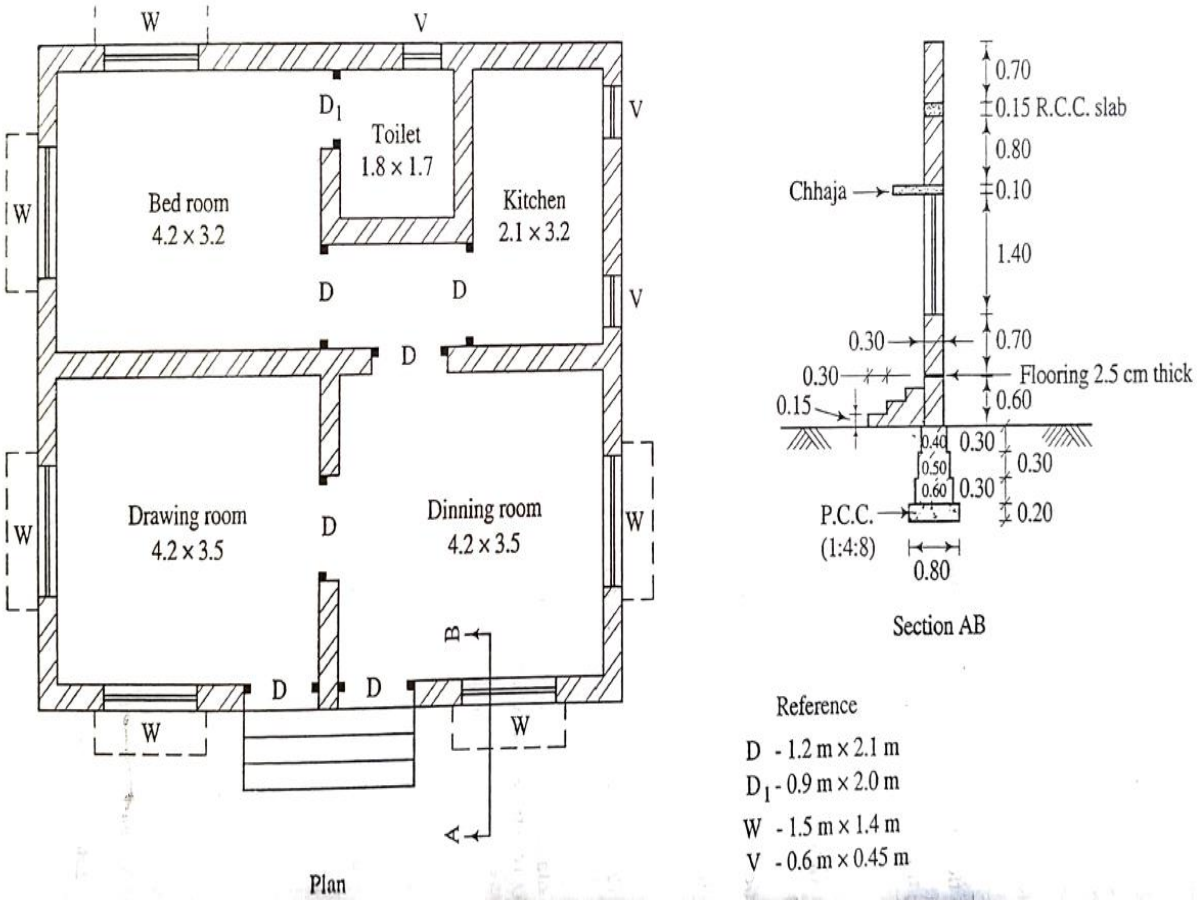

Fig.1