Total number of printed pages: 1 **7th Semester/B.Tech/UCE-701**

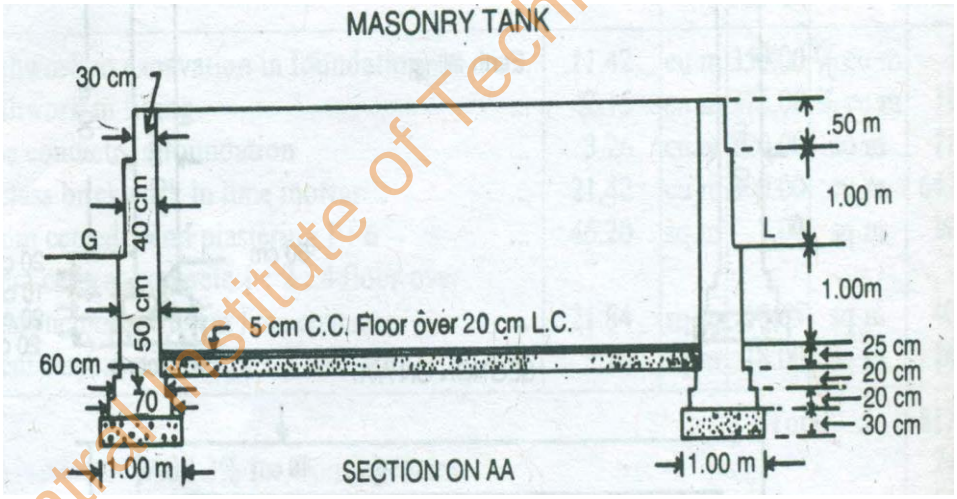
2022
(DECEMBER)

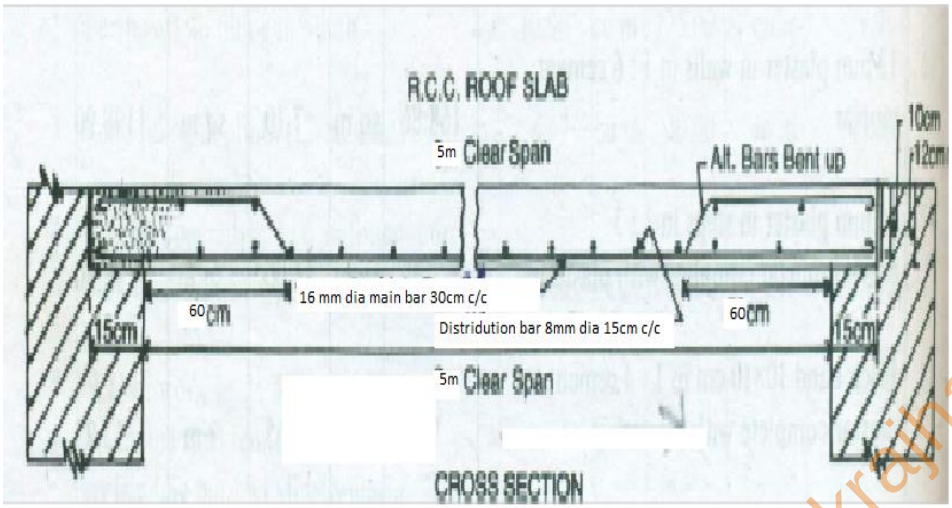
ESTIMATION AND COSTING

Full Marks: 100
Pass Marks: 30
Time: Three hours

The figures in the margin indicate full marks for the questions.
*Answer **all** questions.*

		Question body	Marks
1.	a)	Define : Sinking fund, Scrap value, salvage value, Market value, Book value	5
	b)	Define outgoings. Briefly explain the different outgoings.	1+4=5
	c)	The present value of a machine is Rs. 45000. Workout the depreciation cost at the end of every five year interval by constant percentage method, if the salvage value is 10% of machine value. Assume life of machine is 20 years	10
2	a)	Prepare a preliminary estimate for a framed four storied office building having a carpet area of 300 sqm for each floor. Assume areas occupied by corridors, verandah, lavatories, staircases etc. as 30% of built up area and area occupied by walls and columns as 9.5% of the same. Given i) Built up area for ground floor (excluding foundation) = 1500 per sqm ii) Built up area rate for 1st floor = 1650 per sqm iii) Built up area rate for 2nd and 3rd floor = 1800 per sqm iv) Extra for foundation = 15% of superstructure cost. v) Extra for special structural treatment= 2% of building cost vi) Extra for water supply and sanitary = 8% of building cost vii) Extra for electrical installation = 7% of building cost viii) Extra for contingencies = 3% of overall cost ix) Extra for work charged establishment = 10% of overall cost x) Extra for other sources = 4%	15

		of building cost.	
	b)	Explain the different methods of earthwork with figures	5
3	a)	. Analyse the rates of: (i) I class brickwork in superstructure with 20 cm X 10 cm X 10 cm brick with 1:4 cement sand mortar, unit 1 cum, Take 10 cum (ii) 20 mm cement plastering in 1:6 with coarse sand, Unit 1 sqm, Take 100 sqm	10X2=20
4		Prepare the estimate of the masonry water tank of 7.5m X 4.5 m from the given drawing and specification <u>Specifications</u> Foundation – Lime concrete. Masonry- 1st class brickwork in cement mortar 1:6. Wall finishing- Inside 12 mm cement plastered 1:2 with coarse sand Top and outside 12 mm cement plastered 1:4 with local sand Flooring- 5 cm cement concrete 1:1.5: 3 over 20 cm lime concrete with neat cement finishing.  Rates i) Earthwork in excavation @ Rs.350 per % cum ii) Lime concrete in foundation and floor @ Rs 220per cum iii) 1st class brickwork in 1:6 cement mortar @ Rs 320 per cum iv) 12mm cement plaster 1:2 with coarse sand @ Rs 8.50 per sqm v) 12mm cement plaster 1:4 with local sand @ Rs 8 per sqm vi) 5mm cement concrete 1:1.5:3 floor @ Rs 55 per sqm	20

5		Prepare estimate of a RCC roof slab of 3m clear span and 6 m long from given drawing. Also show the schedule of bars.  	20