

## SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR (AUTONOMOUS)

Siddharth Nagar, Narayanavanam Road - 517583



## **OUESTION BANK (DESCRIPTIVE)**

Subject with Code: Estimation, Costing and Valuation (20CE0121) Course & Branch: B.Tech (CE)

Year & Sem: III & II

**Regulation:** R20

# UNIT –I ESTIMATING AND ESTIMATE OF BUILDINGS







#### UNIT –II ROAD ESTIMATING AND EARTH WORK FOR CANALS

			NOF	ID ES							<b>K</b> CAI	ALD		
1	a) Define Lead and Lift. Explain how Lead and Lift are accounted in arriving the rate for earthwork								[L1][CO2]	[4M]				
	<ul> <li>b) Draw a typical trapezoidal cross section of a road in banking and in cutting and</li> </ul>								[L2][CO2]	[8M]				
	driving the equation for computing area and volume if the length is L.									[22][002]	[0112]			
2	Explain how the quantity of earthwork is estimated for a road section having regular									[L2][CO2]	[12M]			
	trapezoidal cross section with formulae and necessary tables:													
	(a) Mid-section area method													
	$(\mathbf{D})$	Prismoid	al form	ula met	thod									
3	A road	portion o	of 200 1	n leng	th is ha	ving h	eights	1.0 m	and 1.	6 m in	bankir	ng at the	[L4][CO2]	[12M]
	two en	ls. Road	portion	is an	uniform	n grou	ind wit	h a fo	rmation	n with	10 m a	and side		
	slopes l	eing 2:1	(Horizo	ontal : `	Vertical	l). Assi	ume th	at there	is no t	ransfer	slope.			
	(i) Cal	culate the	e quan	tity of	earth	vork u	ising l	Mid Se	ection	Area	Methoo	l, Mean		
	Section	al Area N	lethod a	and Pri	lsmoida h Drign	l Iorm	ula me	thod. In Matl	nod and	1 ronor	t tha di	fforance		
	of quan	tities in p	ercenta	ge.	11 1 11511	loiuai	r onnu.			i iepoi		incicie		
	(iii) If	the side	slopes	ought	to be p	orovide	ed with	a sto	ne pitc	hing o	f 15 ci	m thick,		
	calculat	e the cost	of pitc	hing at	t the rat	e of R	s.220/-	per cu.	m.					
4	Reduce	d level (F	RL) of g	ground	along	the cen	tre line	e of a p	oropose	d road	from c	chainage	[L3][CO2]	[12M]
	10 to cl	ainage 20	) are gi	ven be	low. Th	150 m	nation	level at	the $10$	ond th	age 1s	107 and		
	change	to 1 in	waru g 100 do	wnwar	d Forn	130 u	p to m width	of road	age 14 1 is 10	m and	side s	lopes of		
	banking	are $2:1$	(H:V).	Length	of the	chain	is 30 1	n. Drav	w long	itudina	l sectio	on of the		
	road an	d a typic	al cros	s-sectio	on and	prepar	e an e	stimate	of ear	rthworl	c at the	e rate of		
	Rs.275	% cu.m.							-					
				C	hainag	e RI	L of G	round						
					10		105.0	)0	_					
					11		105.6	50						
					12		105.4	14						
					13		105.9	<del>)</del> ()						
					14		105.4	12	_					
					15		104.3	<u>30</u>						
					16		105.0	<u>)0</u>						
					1/		104.	10	_					
					18		104.0	02						
					20		104.0	20	_					
					20		105	50						
5	The tab	le below	shows	RL of	ground	along	the ce	ntre lin	e from	chaina	ige 110	) to 120.	[L3][CO2]	[12M]
	The for	mation le	vel at t	he $110$	$^{\text{m}}$ chain $4$ and t	age 1s	107 and a gradi	d the r	oad is	downw	ard gra	adient of		
	Format	on width	of road	d is 10	m and	side sl	lopes o	of bank	ing are	2:1 (H	[:V). L	ength of		
	chain is 30 m. Draw longitudinal section of the road and typical cross section and find													
	the area of side slopes and the cost of turfing the side slopes at the rate of Rs.60 %													
	sq.m.													
	Chainag	110	111	112	113	114	115	116	117	118	119	120		
	RL of Ground	105.00	105.60	105.44	105.90	105.42	104.30	105.00	104.10	104.62	104.00	103.30		

Cours	se Code: 200	CE0121				R	20			
6	Estimate th	he cost of earthwe	ork for a portion of	road for 400 m length from the	he	[L3][CO2]	[12M]			
	following o	following data:-								
	Formation	width of the road is	1							
	Station		KL of ground in m	KL of formation						
	23	1040	50.00	-						
	26	1040	50.90							
	27	1080	50.50							
	28	1120	50.80							
	29	1160	50.60	RL of formation is 52.00.						
	30	1200	50.70	Downward gradient of 1in 200						
	31	1240	51.20							
	32	1280	51.40							
	33	1320	51.30							
	34	1360	51.00							
	35	1400	50.60							
	centre and is 4.20 m. slope of gr 1.5:1 (H:V Area and P	cross slope of grou The depth of cutti round is 10:1 (H:V ). Estimate cost o rismoidal Method i	12 oss ng nal							
	14:1	8:1 3.60 - 14:1 K- 10.00 - 14:1	12:1 3.00m/15 14:11 14:10.00m)	10:1 4.20 m H=10.00mm						
	Sectio	on at 10th Chainage	Section at 11th Chainage	Section at 12th Chainage						
	Prepare an cm wide track	estimate for one k acks 1.50 m center is given in figure	tilometer length of a c to centre over 15 cm below. Assume suitabl	cement concrete trackway with ( rammed kankar. The cross-section e rates.	60 on	[L3][CO2]	[12 <b>M</b> ]			

Rammed Kankar

60cm

90cm

١¢-Rammed Kankar Detailed dimensioned sketch cross-section of a city street having mettled portion of 8

m for the carriageway is shown in figure. Prepare an estimate for constructing 500 m

10cm C.C.

15cm Kankar

[L3][CO2]

[12M]

10cm Thick C.C. Track

150cm

2999999

60cm

90cm

length of this street. Indicate also quantities of materials.

9



UNIT –III R.C.C WORKS









### UNIT –IV ANALYSIS OF RATES

		ANALYSIS OF KATES							
1	Me	ntion the labour requirements for the following works as recommended by	[L1][CO5]	[12M]					
	Nat	tional Building Organization:							
	(a)	Earthwork per 28.3 cu. m							
	(b)	Cement concrete work per 2.83 cu. m							
	(c)	c) R.C.C work							
	(d)	(d) Brickwork per 2.83 cu. m							
	(e)	Flooring							
2	a)	Prepare the rate per cu. m for 1:2:4 cement concrete.	[L3][CO5]	[6M]					
	b)	Arrive the rate for I-class brickwork in superstructure with 20 x 10 x 10 cm brick with 1:6 cement sand mortar.	[L3][CO5]	[6M]					
3	Wo con	ork out rate per cu. m for RCC work in beams and slabs with 1:1 <sup>1</sup> / <sub>2</sub> :3 cement acrete.	[L3][CO5]	[12M]					
4	a)	Prepare the rate per cu. m for random rubble stone masonry in superstructure in 1:6 cement sand mortar.	[L3][CO5]	[6M]					
	b)	What is the rate per sq. m for constructing 12 mm thick cement plastering in ceiling with 1:3 cement sand mortar?	[L3][CO5]	[6M]					
5	Cal nor	culate the rate per cu. m for providing and laying plain cement concrete (M10) ninal mix in foundation trenches including compacting and curing.	[L3][CO5]	[12M]					
6	a)	Prepare rate per cu. m for exaction over are for a basement in hard soil, depth 1.5 m and removing the material through a distance of 50 m.	[L3][CO5]	[6M]					
	<b>b</b> )	Prepare rate per sq. m for laying Mosic or Terrazo title floor.	[L3][CO5]	[6M]					
7	a)	Perform rate analysis for arrive rate per sq. m for 1:2 cement mortar in pointing.	[L3][CO5]	[6M]					
	<b>b</b> )	What is the rate per sq. m for providing white washing one coat?	[L3][CO5]	[6M]					
8	a)	Prepare rate per cu. m for constructing rubble stone masonry in superstructure 1:6 cement sand mortar.	[L3][CO5]	[6M]					
	<b>b</b> )	Prepare rate per sq. m for painting one coat over a coat of priming.	[L3][CO5]	[6M]					
9	a)	Prepare rate for ashlar masonry in superstructure in 1:6 cement sand mortar.	[L3][CO5]	[6M]					
	b)	Calculate rate per sq. m for laying 2 cm thick damp proof course with 1:2 cement mortar	[L3][CO5]	[6M]					
10	<u>a)</u>	Prenare earthwork in banking or in exaction in road or canal work in layer of 20	[1,3][CO5]	[6M]					
10	<i>a)</i>	cm including ramming dressing etc. up to 30 m load and 1.5 m lift		[AILT]					
	<b>b</b> )	Arrive rate per sq. m for laying 2.5 cm thick 1.1.5.3 cement concrete as damp	[] 3][CO5]	[6M]					
		proof course.		[014]					

## UNIT –V SPECIFICATIONS & VALUATION

1	List and explain general specifications of a first class building.	[L1][CO6]	[12M]
2	Write detailed specification for earthwork excavation.	[L1][CO6]	[12M]
3	Give detailed account on specifications of 1:2:4 cement concrete.	[L1][CO6]	[12M]
4	What are different specifications for first class brick work.	[L2][CO6]	[12M]
5	a) Write detailed specifications for white washing and colour washing.	[L2][CO6]	[6M]
	b) Mention detail specifications for doors and windows.	[L2][CO6]	[6M]
6	List and explain various methods of calculating depreciation.	[L2][CO6]	[12M]
7	Give detailed account on different methods of valuation.	[L2][CO6]	[12M]
8	A three-storied building is standing on a plot of land measuring 800 sq.m. The plinth	[L4][CO6]	[12M]
	area of each storey is 400 sq.m. The building is of RCC framed structure and the		
	future life may be taken as 70 years. The building fetches a gross rent of Rs.1500.00		
	per month. Work out the capitalized value of the property on the basis of 6% net		
	yield. For sinking fund 3% compound interest may be assumed. Cost of land may be		
	taken Rs.40.00 per sq m. Other data as required may be assumed suitably.		
9	In a plot of land costing Rs.20,000.00 a building has been newly constructed at the	[L4][CO6]	[12M]
	total cost of Rs.80,000.00 including sanitary and water supply works, electrical		
	installation, etc. The building consists of four flats for four tenants. The owner		
	expects 8% return on the cost of construction and 5% return on the cost of land.		
	Calculate the standard rent for each flat of the building assuming:-		
	(1) The life of the building as 60 years and sinking fund will be created on 4% interest		
	$\begin{array}{c} \text{Dasis.} \\ \text{(ii)}  A \text{ margely marging a set of 10% of the sect of second method.} \end{array}$		
	(ii) Annual repairs cost at 1% of the cost of construction		
10	(iii) Other outgoings including taxes at 50% of the net return on the building.		[12]
10	from the following date	[L4][C00]	
	(i) Cost of land $\mathbf{R}_{s}$ 10 000 00		
	(i) Cost of construction of the building $-$ Rs 40 000 00		
	(iii) Cost of roads within the compound, and fencing $-$ Rs 20 00 00		
	(iv) Cost of sanitary and water supply works – 8% of the cost of building		
	(v) Cost of electric installation including fans $-10\%$ of the cost of building		
	(vi) Municipal House tax – Rs.400.00 per annum		
	(vii) Water tax – Rs.250.00 per annum		
	(viii) Property tax – Rs.140.00 per annum		

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