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PRESIDENCY UNIVERSITY BENGALURU

SCHOOL OF ENGINEERING

TEST 1

Sem & AY: Odd Sem. 2019-20

Date: 01.10.2019

Course Code: CIV 215

Time: 9:30AM to 10:30AM

Course Name: ESTIMATING, COSTING AND VALUATION

Max Marks: 40

Program & Sem: B.Tech, (CIV) & VII

Weightage: 20%

Instructions:

i. All the questions are compulsory

ii. Scientific calculators are allowed

Part A [Memory Recall Questions]

Answer all the Questions. Each question carries six marks.

(3Qx6M=18M)

1. Define Estimate. Explain the purpose of estimating.

(C.O.NO.1) [Knowledge]

2. Differentiate between revised estimate and supplementary estimate

(C.O.NO.1) [Comprehension]

3. What are the common approximate methods of estimating the building? Explain any one method with details. (C.O.NO.1) [Knowledge]

Part B [Thought Provoking Questions]

Answer all the Questions. Each question carries four marks.

(30x4M=12M)

- Detailed estimates includes the detailed particulars of the quantities, rates and costs
 of all the items involved for satisfactory completion of a project. List the data required
 for preparing detailed estimates. (C.O.NO.1) [Knowledge]
- 5. From the below two examples, pick which one categorized as contingency with a good reason:
 - a. An estimate for cement plastering 1:4 with neat cement finish was included but during execution of work, it was desired to provide nosing at the end of steps for which there was no allocation of funds.
 - b. There was a change of design resulting in increase in volume of work hence deviating original estimate. (C.O.NO.1) [Comprehension]

- 6. What are the units of measurements for the following:
- (C.O.NO.1) [Knowledge]

- a. Thin honey comb walls
- b. Cornices
- c. Pointing
- d. Backfilling of earth after construction of foundation

Part C [Problem Solving Questions]

Answer the Question. The Question carries ten marks.

(1Qx10M=10M)

7. In a Block development meeting you are required to draw up a preliminary estimate of a school building for 500 students in order to assess the amount of fund. The following particulars are collected: Carpet area required per student=1.20sqm with an area of corridor, verandah, lavatories etc be 20% and for the walls 15% to that of plinth area of the building. (C.O.NO.1) [Comprehension]

Consider, plinth area rate= Rs.1100 per sq m.

Cost of water supply= 5% of the building cost

Cost of sanitation= 6% of the building cost

Cost of electrification= 10% of the building cost

Cost of approach road and boundary wall= 3% of the building cost

Contingency and work charged establishment shall be 5% and 2.5% of the total cost respectively.

SCHOOL OF ENGINEERING



Semester: Seventh

Course Code: CIV 215

Course Name: Estimating, Costing and Valuation

Date 1-10-2019

Time: 1 Hour

Max Marks: 40

Weightage: 20%

Extract of question distribution [outcome wise & level wise]

				1	-	
Q.NO	C.O.NO	Unit/Module Number/Unit /Module Title	Memory recall type [Marks allotted] Bloom's Levels	Thought provoking type [Marks allotted] Bloom's Levels	Problem Solving type [Marks allotted]	Total Marks
			K	C	Λ	
					Α	
1	CO 1	1	6			6
2	CO 1	1	6			6
3	CO 1	1	6	• • • • • • • • • • • • • • • • • • • •		6
4	CO 1	1		4		4
5	CO 1	1		4		4
6	CO 1	1		4		4
7	CO 1	1			10	10
1	Total Marks		18	12	10	40

K =Knowledge Level C = Comprehension Level, A = Application Level



Note: While setting all types of questions the general guideline is that about 60%

Of the questions must be such that even a below average students must be able to attempt, About 20% of the questions must be such that only above average students must be able to attempt and finally 20% of the questions must be such that only the bright students must be able to attempt.

[I hereby certify that All the questions are set as per the above guide lines. Ms. Navaneetha ${\sf H}$]

Reviewers' Comments



Annexure- II: Format of Answer Scheme



SCHOOL OF ENGINEERING

SOLUTION (TEST-1)

Semester: VII

Course Code: CIV 215

Course Name: Estimating, Costing & Valuation

Date: 1-10-2019

Time: 9:30 a.m

Max Marks: 40

Weightage: 20%

Part A

(3Q x 6M = 18 Marks)

~	The state of the s	(2Q X OM	- 18 Marks)
Q No	Solution	Scheme of Marking	Max. Time required for each Question
	Sol: Definition: Estimate is defined as the process of calculating the quantities and costs of various items required in connection with the work. Purpose: 1. Estimate give an idea of the cost of the work and hence its feasibility can be determined i.e whether the project could be taken up with in the funds available or not. 2. Estimate gives an idea of time required for the completion of the work. 3. Estimate is required to invite the tenders and Quotations and to arange contract. 4. Estimate is also required to control the expenditure during the execution of work. 5. Estimate decides whether the proposed plan matches the funds available or not.	Definition: 2 marks Purpose: 4 marks (any 4 points)	8 mins
2.	Differentiate between revised estimate and supplementary estimate Sol:	Any 3 differences : 6	8 mins
	Revised Estimate Supplementary Estimate	marks	

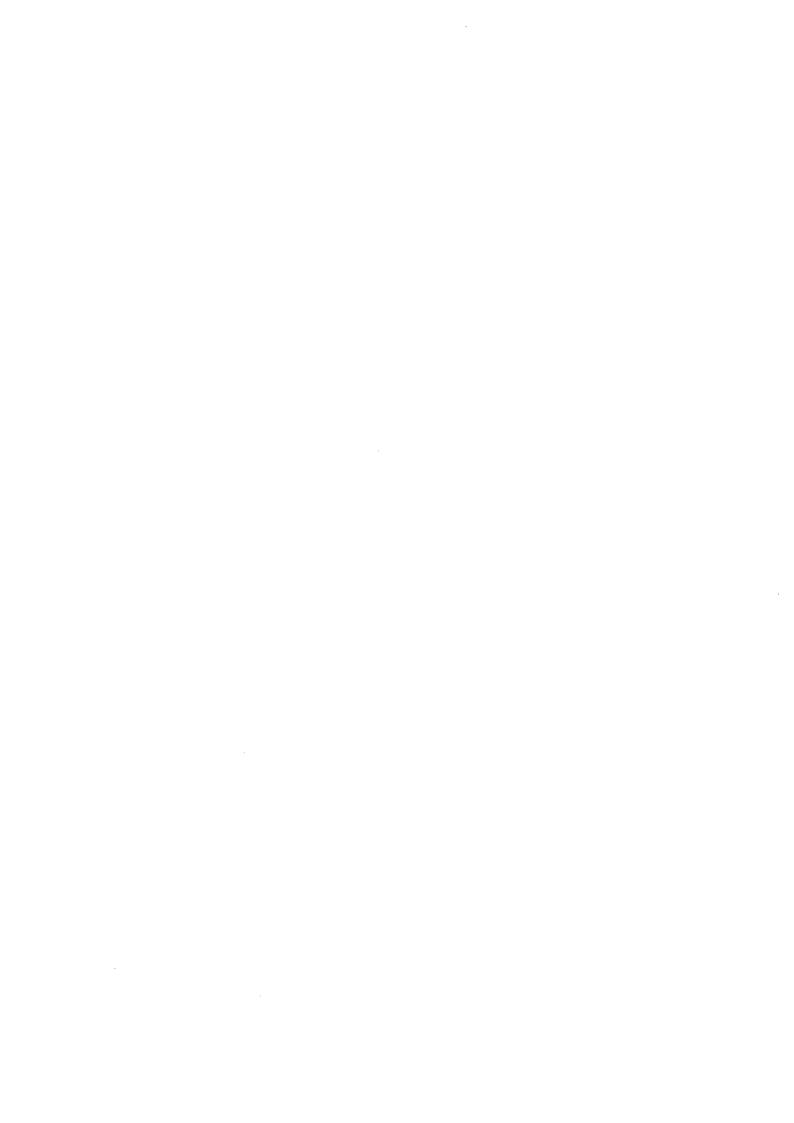


	exceeded due to change or addition of works Revised estimate due to material deviation from the original proposal	supplementary works which are fairly independent of the work at first sanctioned Supplementary estimate is due to material deviation of a structural nature from the		
	It is accompanied with a comparative statement abstract from showing the probable variations for quantity, rate and amount against each item of work involved in the project	design originally approved No comparative abstract form is required. This is an estimate for addition works only. The abstract shows the original estimate and the total amount of the sanction required including		
	Revised estimate is required due to change of rate of quantity of materials, so no additions or revisions of drawings is necessary	Supplementary amount Supplementary estimate is required due to some new works or due to change of design, so additions or revisions of drawings may be necessary		
3	What are the common approx the building? Explain any one Sol: Various methods: a. Plinth area service unit method d. Bay met method f. Cost from materials a	method with details. method b. Cubic rate method c. hod e. Cost comparision	Types: 3 marks Explanation of any one method: 3 marks	8 mins

Part B

 $(3Q \times 4M = 12 \text{ Marks})$

ONIO		(50, 1111	1 = (VIdIKS)
Q No	Solution	Scheme of Marking	Max. Time required for each Question
4.	Data required: a. Drawings b. Specification i. General specifications ii. Detailed specifications c. Rates	No explanation required. Listing: 4 marks	5 mins
5.	CONTINGENCY: An estimate for cement plastering 1:4 with neat cement finish was included but during execution of work, it was desired to provide nosing at the end of steps for which there was no allocation of funds. Reason: Because contingency indicates the incidental expenses of a miscellaneous character which cannot be reasonably predicted during preparation of an estimate. The above example fits the definition	example: 2 marks	5 mins



b. Cornices: m c. Pointing: m2	Units for four : 4 marks	5 mins
d. Backfilling of earth after construction of foundation: m3		
	Colons	

Part C

(1Q x 10M = 10 Marks)

Q No		CI	
	Solution	Scheme of Marking	Max. Time required for each Question
7.	Carpet area for 500 students= 1.2x500= 600sqm P=600+.20P+.15P= 923.08sqm	Plinth area: 3 marks	10 mins
	Cost of the building: 923.08x Rs.1100= Rs. 10.15.3884- Total cost: Rs.12.59.081/-	Cost of the building: 2 marks Adding all the	
e sandanday unang sa		costs: 4 marks Including contingency: 1	
		marks	





PRESIDENCY UNIVERSITY BENGALURU

SCHOOL OF ENGINEERING

TEST - 2

Sem & AY: Odd Sem 2019-20

Course Code: CIV 215

Course Name: ESTIMATION, COSTING AND VALUATION

Program & Sem: B.Tech & VII

Date: 19.11.2019

Time: 9:30 AM to 10:30 AM

Max Marks: 40

Weightage: 20%

Instructions:

(i) Read all the questions carefully before answering.

(ii) Answer all the theory questions point wise.

Part A [Memory Recall Questions]

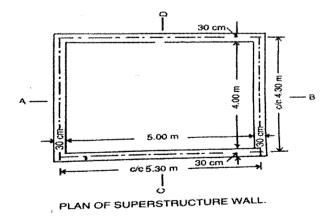
Answer both the Questions. Each Question carries five marks.

(2Qx5M=10M)

- 1. Briefly explain all the clauses related to deduction in wall plastering quantity as per IS 1200 Part 12. [5M] (CO.2) [Comprehension]
- 2. Estimate the quantity of following items of work for a building plan shown in **Fig.1** using "Long wall short wall method of estimation"
 - a) Earthwork in excavation.
 - b) Brickwork in superstructure

[5M]

(CO.2) [Application]



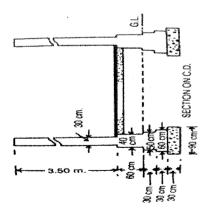


Figure.1

Part B [Thought Provoking Questions]

Answer the Question. The Question carries ten marks.

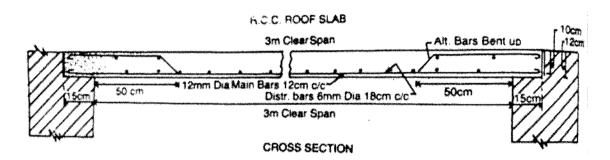
(1Qx10M=10M)

3. Prepare a detailed bar bending schedule of reinforcement steel for the RCC slab of 3m*6m clear span as shown in Fig.2. (Represent shape of all type of bars with breakup of Dimensions)

Technical notes:

- i. Cover on sides of the slab is 40mm, Cover on top and bottom of slab is 10mm each.
- ii. Hook length should be 9 times of the diameter of the rod.
- iii. Bent up angle is 45 degrees.
- iv. Bearing of slab on all 4 sides is 15cm.

[10M] (CO.2) [Application]



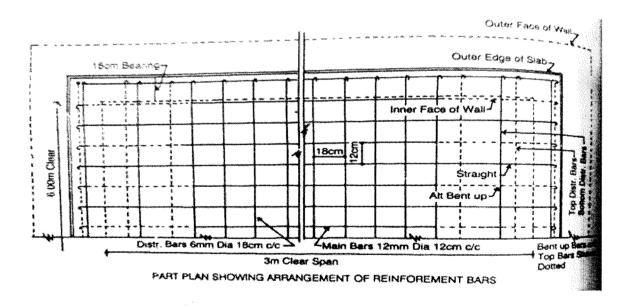


Figure.2

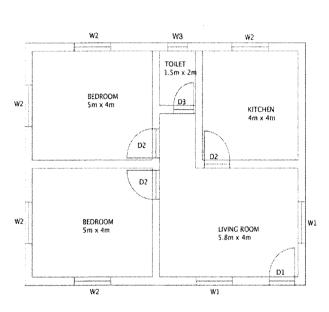
Part C [Problem Solving Questions]

Answer the Question. The Question carry twenty marks.

(1Qx20M=20M)

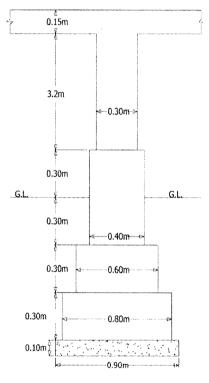
- 4. Prepare a detailed estimate of a 2 BHK residential building from the given plan and section (Refer Fig.3) for the following items of work.
 - a) Earthwork in excavation in foundation.
 - b) Plain cement concrete (PCC) in foundation.
 - c) Brickwork in foundation and plinth in 1:6 cement mortar.
 - d) First class brickwork in super structure in 1:6 cement mortar, along with deductions for all the openings mentioned in the drawing and lintels over all the openings.

Note: All walls are of 30cm thickness, Thickness of lintel is 15cm and bearing of lintel on either side can be taken as 15cm.



Plan of a 2BHK residential building

[20M] (CO.2) [Application]



Section of a typical 30cm thick wall

Schedule of doors	Schedule of windows
D1 – 1.2m * 2.1m	W1 – 1.5m * 1.2m
D2 – 1.0m * 2.1m	W2 – 1.2m * 1.2m
D3 – 0.7m * 2.1m	W3 - 0.7m * 0.6m

Figure.3

SCHOOL OF ENGINEERING

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Date: 19-11-2019

Semester: 7th Time: 09:30 AM to 10:30 AM

Course Code: CIV 215 Max Marks: 40

Course Name: ESTIMATION COSTING AND VALUATION Weightage: 20%

Extract of question distribution [outcome wise & level wise]

Q.NO	C.O.NO	Unit/Module Number/Unit /Module Title	[Ma	om's l	prov [Mar	m's L	type otted]		olem So type rks allo	Total Marks
·				K		С			Α	
1	1	1	5							5
2	1	1						5		5
3	1	1						10		10
4	1	1						20		20
	Total Marks		18		12				10	40

K =Knowledge Level C = Comprehension Level, A = Application Level

Note: While setting all types of questions the general guideline is that about 60%

Of the questions must be such that even a below average students must be able to attempt, About 20% of the questions must be such that only above average students must be able to attempt and finally 20% of the questions must be such that only the bright students must be able to attempt.



Annexure- II: Format of Answer Scheme



SCHOOL OF ENGINEERING

SOLUTION

Date: 19-11-2019

Semester: 7th Time: 09:30 AM to 10:30 AM

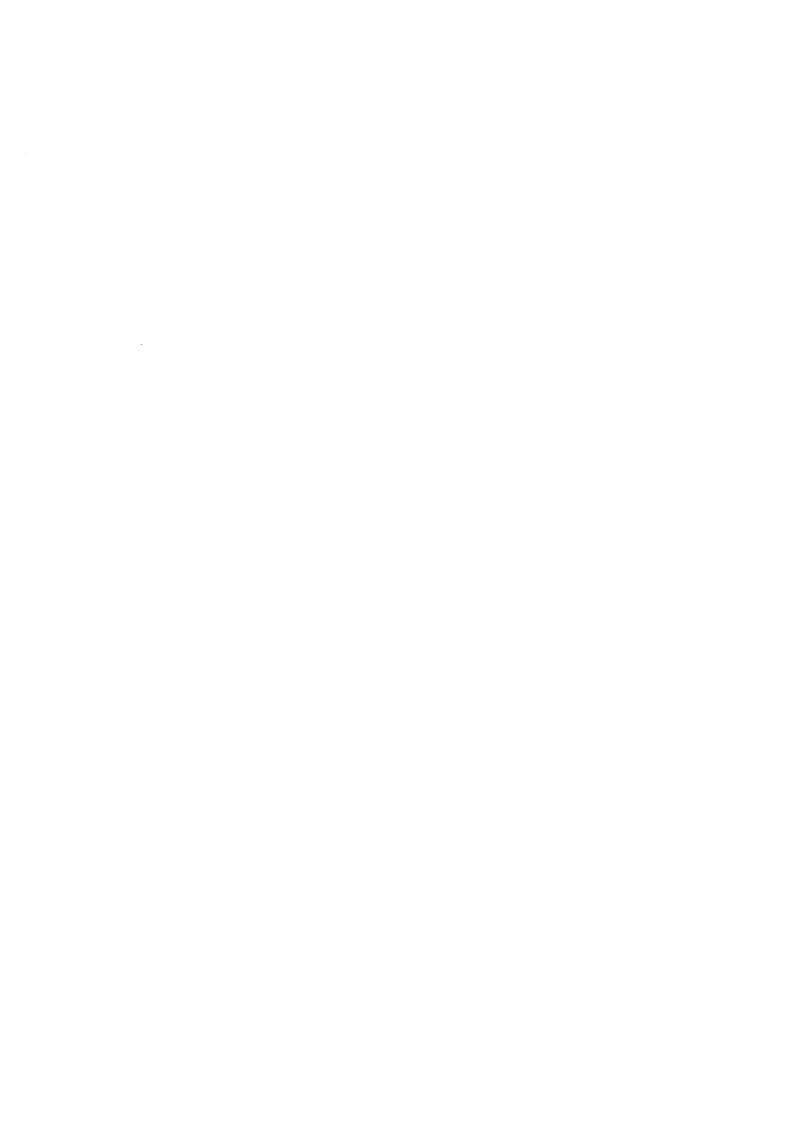
Course Code: CIV 215 Max Marks: 40

Course Name: ESTIMATION, COSTING AND VALUATION Weightage: 20%

Part A

 $(20 \times 5M = 10 \text{ Marks})$

	Part A	$(2Q \times 5M = 10 M)$	arks)
Q No	Solution	Scheme of Marking	Max. Time required for each Question
1	No deductions shall be made for ends of joists, beams, posts, etc, and openings not exceeding 0.5m^2 each and no addition shall be made for reveals, jambs, soffits, sills, etc, of these openings nor for finish to plaster around ends of joists, beams, posts, etc. Deductions for openings exceeding 0.5m^2 but not exceeding 3m^2 each shall be made as follows and no addition shall be made for reveals, jambs, soffits, sills, etc. of these openings. a) When both faces of wall are plastered with same plaster, deduction shall be made for one face only. b) When two faces of wall are plastered with different types of plaster or if one face is plastered and other pointed, deductions shall be made from the plaster or pointing on the side on which width of reveals is less than that on the other side but no deduction shall be made on the other side. Where widths of reveals on both faces of wall are equal deduction of 50% of area of opening on each face shall be made from areas of plaster and/ or pointing as the case may be. c) When only one face is plastered and the other face is not full deduction shall be made from plaster if width of reveal on plastered side is less than that on unplastered side but if widths of reveal on both sides are equal or width of reveal on plastered side is more. No deduction shall be made. d) When width of door frame is equal to thickness of wall or is projecting beyond thickness of wall, full deduction for opening shall be made from each plastered face of wall. In case of openings of area above 3m^2 each, deduction shall be made for opening on each face but jambs, soffits and sills shall be measured.	5 marks	7 min



Particulars of			1	Height	4		a) 2.5 + b) 2.5 =	7 m
Items	No.	Length	Breadth	or Depth	Quantity	Explanatory note	5 marks	, 111
Earthwork in								
foundation —			Ī					
Long walls	2 2	6.20 m 3.40 m		.90 m	10.04 5.51	Length = 5.30 + 90 = 6.20 m Breadth = 4.3090 = 3.40 m		
SHOTT HAME	•	3.40 m	,90 111		15.33	Diction 1130		
				Total	cu m			
Concrete in					1			
foundation — Long walls	2	6.20 m	90	.30 m	3.35	Length same as for excavation		
Short walls			.90 m	.30 m	1.83	Quantity = 1/3 of excavation		
				Total	5.18			
		1	and the same of th		cu m			
Brickwork in foundation and						and the state of t		
plinth —				1.				
Long walls —	_	6.00	ZA	.30 m	2.13	Length = 5.30 + .60 = 5.90 m		
1st footing 2nd footing		5.90 m	.60 m	.30 m		Length = $5.30 + .50 = 5.80 \text{ m}$		
Plinth walls	1 -					Length = $5.30 + .40 = 5.70 \text{ n}$		
Short wals -		2 20	1	.30 m	1.33	Length = $4.3060 \approx 3.70 \text{ n}$		
1st footing 2nd footing		3.70 m 3.80 m						
Plinth walls								
				Tota	1 10.95			
					cum			
Brickwork in	1		1	1				
superstructure Long walls	2	5,60 n	n 30 n	3.50	n 11.70	Length = $5.30 + .30 = 5.60$		
Short walls								
				Tota	1 20.1	5		
					cu n	1		

Part B

 $(1Q \times 10M = 10 \text{ Marks})$

Q No		So	olution				Scheme of Marking	Max. Time required for each Question
3		* ** =		1			10 marks	15 min
	DESCRIPTION OF BARS	SHAPE OF BENDING DIMENSIONS IN om.	LENGTH OF EACH m	NO.	TOTAL LENGTH M	WEGAN		
	MAIN STRAIGHT BARS 12 mm, DIA MAIN BENT UP BARS 12mm, DIA	322 	3.44 3.52	27 26	92.88 91.52 184.40	164 12		
	BOTTOM DISTRI- BUTING BARS 6mm. DIA	622	6.33	18	113.94			
	TOP DISTRIBUTING BARS 6 mm. DIA		6.33	6	37.98 151.92	204		



						Pal	rt C			$(1Q \times 20M - 20 Mark)$.3)
Q No				So	olutio	n				Scheme of Marking	Max. Time required for each Question
4	SI no	Description of work	No.	Length (m)	Breadth (m)	Height or Depth (m)	Quantity	Unit of measurement	Explanatory notes	20 marks with 2marks for centerline and junction	
	1	Earthwork in excavation in foundation.	1	60.7	0.9	1	54.63	m3	L = 64.3 - 8*0.5*0.9	calculation, 1), 2) 3 marks each and 3), 4) 6 marks each	30 min
	2	Plain cement concrete (PCC) in foundation.	1	60.7	0.9	0.1	5,46	m3	L=64.3-8*0.5*0.9	2 + 3+ 3+	
		Brickwork in foundation and plinth in 1:6 cement mortar.			in the second se					6+ 6+ =20 marks	
	3	1st footing	1	61.1	0.8	0.3	14.66	m3	L=64.3-8*0.5*0.8		
	1	2nd footing	1	61.9	0.6	0.3	11.14	m3	L = 64.3 - 8*0.5*0.6		
		Plinth	1	62.7	0.4	0.6	15.05	m3	L=64.3-8*0.5*0.4		
	l L					Total	40.85	m3			
		First class brickwork in super structure in 1:6 cement mortar	1	63.1	0.3	3.2	60.58	m3	L = 64.3 - 8*0.5*0.3		
		Deductions									
		Doors, D1	1	1.2	0.3	2.1	0.76	m3			
	4	Doors, D2	3	1	0.3	2.1	0.63	m3	<u> </u>		
		Doors, D3	1	0.7	0.3	2.1	0.44	m3			
		Windows, W1	2	1.5	0.3	1.2	0.54	m3			
		Windows, W2	5	1.2	0.3	1.2	0.43	m3			
	!	Windows, W3	1	0.7	0.3	2.1	0.44	m3			
					96 M M M M M M	Total	57.34	m3	**********		





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PRESIDENCY UNIVERSITY BENGALURU

SCHOOL OF ENGINEERING

END TERM FINAL EXAMINATION

Semester: Odd Semester. 2019 - 20

Date: 27 December 2019

Course Code: CIV 215

Time: 9:30 AM to 12:30 PM

Course Name: ESTIMATING, COSTING AND VALUATION

Max Marks: 80

Program & Sem: B.Tech (CIV) & VII

Weightage: 40%

Instructions:

(i) Read the all questions carefully and answer accordingly.

(ii) Only scientific calculators allowed

Part A [Memory Recall Questions]

Answer all the Questions. Each Question carries 05 marks.

(4Qx5M=20M)

1. Define the terms i) Contingencies ii) Work charged establishment

(C.O.No.1) [Knowledge]

2. List various types of estimate and explain the most reliable type of estimate.

(C.O.No.2) [Knowledge]

3. Prepare rate analysis for cement concrete 1:2:4 for 10m³

(C.O.No.3) [Knowledge]

4. Explain sinking fund and depreciation

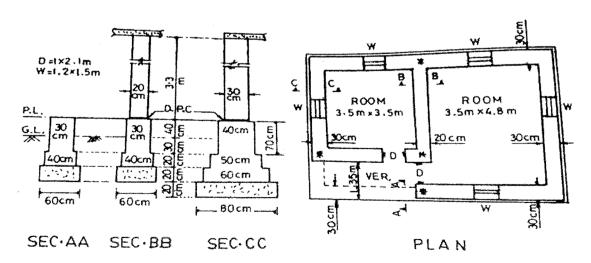
(C.O.No.4) [Knowledge]

Part B [Thought Provoking Questions]

Answer all the Questions. Each Question carries 10 marks.

(4Qx10M=40M)

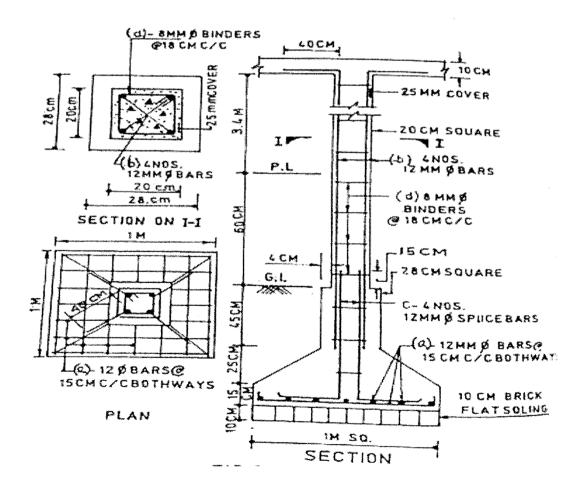
5. Estimate the quantities of the following item of works of a two roomed building from the given plan and section shown in figure by long wall and short wall method i) earth work in excavation in foundation ii) lime concrete in foundation (C.O.No.2) [Comprehension]



6. Reduced level (R.L) of ground along the center line of a proposed road from chainage 10 to chainage 20 are given below. The formation level the10th chainage is 107 and the road is down ward gradient of 1 in 150 upto the chainage 14 and then the gradient changes to 1 in 100 downward. Formation width of road is 10 meter and side slopes of banking are 2:1(horizontal: Vertical). Length of the chain is 30 meter. Draw the longitudinal section of the road and a typical cross section and prepare an estimate of earth work at a rate of Rs. 275 per cubic meter. R.L of formation is 107 meter. (C.O.No.3) [Comprehension]

Chainag	je	10	11	12	13	14	15	16	17 .	18	19	20
R.L	of	105	105.6	105.44	105.9	105.42	104.3	105	104.1	104.62	104	103.3
ground meter	in											
Gradien	t	Dow	n gradie	nt 1 in 15	50		Down	gradie	nt 1 in 1	100		

7. Figure shows the plan and cross section of the footing slab with a square R. C column 20cm outside with following particulars. Area at the base of the slab slab=1mx1m. Area of base of column =28cmx28cm. Depth of slab at column face =40cm. Depth of slab at outer edge =15cm. reinforcement in the slab= 12mm diameter bars both the ways at 15cm c/c and a weight of 0.89 kg/m. Reinforcement in the column 4nos. 12mm dia bars with 8mm dia binders at a spacing of 18cm c/c with a weight of 0.39kg/m and for slab is 50mm and for column is 25mm. Other particulars as per drawings. Bent up length of the bar in the roof slab is 10mm. Only prepare schedule of bars (C.O.No.2) [Comprehension]



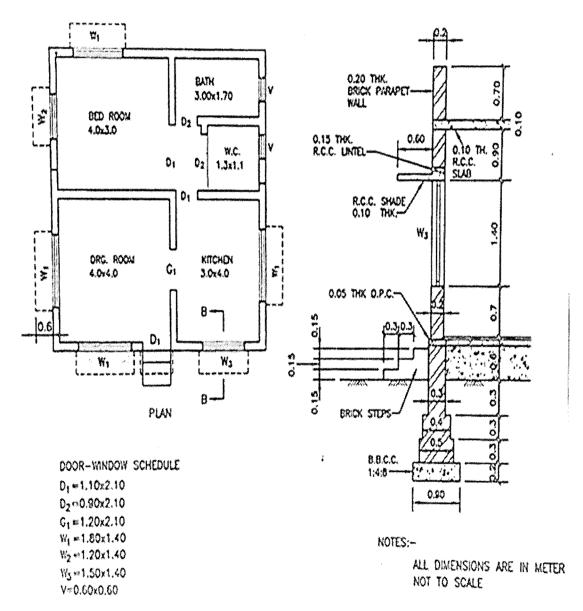
8. A three storied building is standing on a plot of land measuring 800 sq.m. The plinth area of each storey is 400 sq.m. The building is of R.C.C framed structure and the future life of the building is taken as 70 years. The building fetches a gross rent of Rs.1500 per month. Workout the capitalized 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 per sq.m. Other data required may be assumed suitably. (C.O.No.4) [Comprehension]

Part C [Problem Solving Questions]

Answer the Question. The Question carries 20 marks.

(1Qx20M=20M)

- 9. Estimate the quantities of the following items of a residential building from the given plan and section shown in the figure by center line method. (C.O.No.2) [Application]
 - A) Earth work in excavation in foundation
 - B) Lime concrete in foundation
 - C) I class Brickwork in 1:6 cement mortar in foundation and plinth
 - D) 2.5 cm thick Damp proof course





SCHOOL OF ENGINEERING

END TERM FINAL EXAMINATION

Extract of question distribution [outcome wise & level wise]

			Memory recall	Thought provoking type		
Q.NO	C.O.NO		type		Problem Solving	Total
	(% age	Number/Unit	[Marks allotted]	[Marks allotted]	type	Marks
	of CO)	/Module Title	Bloom's Levels	Bloom's Levels	[Marks allotted]	
			К	С	A	
1	1	1	5	-	-	5
2	2	2	5	-	-	5
3	3	3	5	-	-	5
4	4	4	5	_	-	5
5	2	2	-	10	~	10
6	3	3	-	10	-	10
7	2	2	——————————————————————————————————————	10	——————————————————————————————————————	10
8	4	4	-	10	-	10
9	2	2	-		20	20
	Total Ma	ırks	20	40	20	80

K = Knowledge Level C = Comprehension Level, A = Application Level

Note: While setting all types of questions the general guideline is that about 60%

Of the questions must be such that even a below average students must be able to attempt, About 20% of the questions must be such that only above average students must be able to attempt and finally 20% of the questions must be such that only the bright students must be able to attempt.

hereby certify the	at all the question	s are set as per	r the above guidelines
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Faculty Signature:

Reviewer Commend:

Format of Answer Scheme



SCHOOL OF ENGINEERING

SOLUTION

Semester:

Odd Sem. 2019-20

Date:

27.12.2019

Course Code: CIV 215

Time:

3 HRS

Course Name: ESTIMATING, COSTING AND VALUATION

Max Marks: 80

Weightage: 40%

Program & Sem: B.Tech.(CIVIL)

Part A

 $(4Q \times 5M = 20Marks)$

Q No	Solution	Scheme of Marking	Max. Time required for each Question
1	Contingencies: During the preparation of an estimate, some expenses are miscellaneous and can not be predicted to meet unforeseen expenses. About 3 to 5% of the total expenses is fixed as contingencies Work charged establishment: During the construction of a project considerable number of skilled supervisors, work assistance, watch men etc., and are employed on temporary basis. The salaries of these persons are drawn from the L.S. amount allotted towards the work charged establishment. That is, establishment which is charged directly to work. a L.S.amount of 1½ to 2% of the estimated cost is provided towards the work charged establishment.	2.5+2.5	10
2	Types of estimate: 1) A Detailed estimate 2) A preliminary or rough estimate 3) A quantity estimate or quantity survey 4) Revised estimate 5) Supplementary estimate 6) Revised and supplementary estimate due to reduction of cost 7) A complete estimate 8) Annual maintenance or repair estimate. The more reliable estimate is detailed estimate. A detailed particulars for the quantities, rates and costs of all the items of work involved for satisfactory completion of thea project. Quantities of all items of work are calculated from their respective drawings on a measurement sheet. Multiplying these quantities by their rates in a separate sheet, the cost of all items of work are worked out individually and then summarized. All other expenses required for satisfactory completion of the project are added to the above cost.	3+2	10
3	Analysis of rate for cement concrete 1:2:4 for 10 m ³ Quantity of cement for 10 m ³ = $10/(1+2+4) = 1.43 \text{ m}^3$ (wet concrete)	2.5+2.5	10

Quantity of cement= 1.43x 1.54=2.2 m³

Quantity of sand= 2.2x2=4.4 m3

Quantity of Aggregates= 4.4x2=8.8 m3

Material cost

Sl.No.	Description	Unit	Quantity	Rate	Amount
1	Stone ballast 40mm gauge	СМ	8.8	1300	11,440
2	Sand	CM	4.4	1350	5,940
3.	Cement	CM	2.2	3,431	7,548

Total material cost=24,928

Labor Cost

Sl.No.	Description	Rate	Nos	Amount
1	Mistri (Head mason)	738/day	1/3	246
2	Mason	679	2	1358
3	Mazdoor	558	12	6696
4	Coolie	558	20	11160
5	Bhisti	617	6	3702
6	Form Work	L.S		2000
7	Sundries (tools and equipment)	L.S		2100

Total labor cost=27,262

Total material cost + Total labor cost=24,928+27262=52190

Water charges (1% of Total cost) =522

10% Contractors profit = 5219

Total cost for 10 m3 = 57931

4	Sinking Fund:- A fund which is gradually accumulated and aside to reconstruct the property after the expiry of the period of utility is known as sinking fund	2.5+2.5	10
	The forumula used for sinking funds= $I=Si/[(1+i)^n-1]$		
	Where I = Annual instalment required		
	N = Number of years required to create sinking fund.		
	I = Rate of interest expressed in decimal		
	S = Amount of sinking fund.		
	Depreciation is the gradual exhaustion of a usefulness of a property. Decrease or loss in the value of a property due to its structural deterioration use, life wear and tear, decay and obsolescence.		

Part B

 $(4Q \times 10M = 40 \text{ Marks})$

Q No	Solution	Scheme of Marking	Max. Time required for each Question
5	(b) Long and Short wall method: - Centre to centre lengths of different walls have been worked below— For main walls 30 cm — Entire back or entire front, Long walls = $(3.5 \times 2 + 0.20) + 2 \times \frac{0.30}{2}$ = 7.50 Entire right or left, Short walls = $4.8 + 2 \times \frac{0.30}{2}$ = 5.10 m For partition, Short wall = $3.5 + 2 \times \frac{0.30}{2}$ = 3.80 m Verandah front, Long - Short wall = $(3.5 + 0.20 + 0.30 + 0.05) - \frac{0.30}{2} - \frac{0.30}{2}$ = 3.75 m Verandah left side, Short wall = $1.35 - \frac{0.30}{2} + \frac{0.30}{2}$ = 1.35 m	5+5	20

No.	Description of item	No.	Length m	Breadth m	Height m	Quantity	Explanatory not		
1.	Earthwork in excavation in foundation Main walls —					***************************************			
	Long walls	2	8.30	0.80	0.90	11.95	$8.30 = 7.50 + 2 \times 0.8$		
	Short walls	2	4.30	0.80	0.90		$4.30 = 5.10 - 2 \times 0.8$		
	Partition walls —						2.10 - Z X U.0		
	Short wall	l ı	3.00	0.60	0.70	1.26	$\begin{vmatrix} 3.00 = 3.80 - 2 \times 0.8 \end{vmatrix}$		
	Verandah dwart wall —			0.00	0	*****	2.00 - 2.00 - Z X U.8		
	Front, Long-Short wall	1	3.70	0.60	0.70	1.56	270-276 - 0-0		
	Left side, Short wall		0.60	0.60	0.70		3.70 = 3.75 + 0.70/2 = 0		
	362		0.00	0.00	Total	21.21 cu m	0.60=135-0.70/2-0		
2.	Lime concrete in foundation Main walls —								
	Long Walls	2	8.30	0.80	0.20	2.66	970 - 770 - 500		
	Short walls	2	4.30	0.80	0.20		$8.30 = 7.50 + 2 \times 0.80$ $4.30 = 6.10 = 2 \times 0.80$		
	Partition wall -				1	1149	4.30 = 5.10 = 2 × 0.80		
	Short wall	1	3.20	0.60	0.20	0.39	3,20 = 3.80 - 2 × 0.60		
	Verandah dwarf wali -			I		ور.0	3,20 - 3,00 - 3,00		
	Front, Long-Short wall	1	3.75	0.60	0.20	0.45	3.75=3.75+0.60/2-0.6		
	Left side —			l					
	Short wall	1	0.75	0.60	0.20	0.09	Lime conc. levels with 60 of main wall 0.75 = 1.3: 0.60/2 = 0.60/2		
					Total	1.97 cu m	1,8012 - 4		
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7	Bars a-	a, Lei	ngth = 1 m - 50 mm (cover) = 90 cm -	had to) /n				10	20
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	Dam's	0	$\frac{2 \times 0.05}{1.15} + 1 = 7$ nos. in one way. For bo	th ways 7	x 2 =	14 nos.				
	2 cm (within roof) = 447 cm = 447 cm = 447 cm									
	$\frac{15 \text{ cm} - 2 \times 12 \text{ mm}}{45 \text{ cm} + 15 \text{ cm}} = 02.60 - 02.41$									
	Bars d-	d.L.*	2(14 cm + 14 cm) + 24 x 8 mm = 75	.2cm. Nos	250	m + 45cm +	60cm + 3.4m	+1=27nos		
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)ia. vim	Shape Of Bending Dimensions Cm	Length M	No.	Total Length M	Weight	Total Weight		
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	64	8	4 4		27	20.03	7.92 kg	42.95 kg =0.43 qtl		
				and the second				1-0.4740		
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8	AME GILL	Z P	come per year = 1500 × 12 = Rs. er annum assuming suitable data	8,000.00					5+5	20
	'*'		vicinal to 2005 and an income		3000 ×		Rs. 1500,00 Rs. 3600.00			
			perty tax 5% of gross rent							
	' '			1 1		•				
		S. O.	rrance premium @ 14% of ss rent	= 18 ==================================	8000 ×		Rs. 90.00)		
	(v)	Mar gros	iagement charges @ 6% of s rent	= ##	8000 × 8000 ×	100 100 6	Rs. 90.00 Rs. 1080.00			
	(v)	Mar gros Oth	iagement charges @ 6% of s rent ier miscellaneous charges @ 2% o he gross rent	= 18 : : : = 18	8000 ×	$\frac{.5}{100}$ $\frac{6}{100}$)		
	(v) (vi)	Mar gros Oth of t Sir the	iagement charges @ 6% of s rent ter miscellaneous charges @ 2% of the gross rent aking fund required to accumulant cost of the building (which is at	= 18 = 18		$\frac{.5}{100}$ $\frac{6}{100}$	Rs. 1080.00)		
	(v) (vi)	Mar gros Oth of t Sir the the plic	sagement charges @ 6% of s rent ter miscellaneous charges @ 2% of the gross rent aking fund required to accumulant cost of the building (which is at trate of Rs. 150.00 per sq m of the area = 400 × 3 × 150 = 180000.00) in 72 years @ 3%	= 18 = 18	8000 ×	100 6 100 2 100	Rs. 1080.00			
	(v) (vi)	Mar gros Oth of t Sir the the plic	aggement charges @ 6% of s rent ter miscellaneous charges @ 2% of the gross rent aking fund required to accumulate cost of the building (which is at trate of Rs. 150.00 per sq m of the area = 400 × 3 × 150 = 180000.00) in 72 years @ 3% erest	= 18 f = 11 = 180	8000 × 8000 × 9000 ×	5 100 6 100 2 100 0.0043 =	Rs. 1080.00 Rs. 360.00 Rs. 774.00)) n = Rs. 8304.00		
	(v) (vi) (vii)	Mar gros Oth of t Sir the the plic Rs int	aggement charges @ 6% of s rent ter miscellaneous charges @ 2% of he gross rent aking fund required to accumulate cost of the building (which is at trate of Rs. 150.00 per sq m of th area = 400 × 3 × 150 = 180000.00) in 72 years @ 3% erest	= 18 f = 18 = 180 To Net annu	8000 × 8000 × stal of al retu	$\frac{.5}{100} = \frac{.5}{100} = .$	Rs. 1080.00 Rs. 360.00 Rs. 774.00 s per annun 0 8304.00	n = Rs. 8304.00 0 = Rs. 9696.00		
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Part C

 $(1Q \times 20M = 20Marks)$

Q No	Solution	Scheme of Marking	Max. Time required for each Question
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