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1

SCHEME OF EVALUATION

(Scoring Indicators)

Revision : 2015

Course Code : 4013

Course Title : QUANTITY SURVEYING - I

Qst. No.	Scoring Indicator	Split up	Sub Total	Total
	<u>PART -A</u>			
I	1 (i) 10 dm3 (ii) 10 dm2			2
	2 It is a detailed estimate for the additional works or changes due to material deviation of a structural nature from original design. It is accompanied by a report stating the necessity, amount of original estimate and the total amount including supplementary estimate.			2
	3 (i) Long wall and short wall method (in-to-in and out-to-out method). (ii) Centre line method. (iii) Partly centre line and partly cross wall method.			2
	4 These are the portions of the original ground which are left at suitable intervals during earthwork cutting, for the purpose of measuring the average depth of excavation.			2
	5 It is the cost for conveyance of materials to the work site.			2
	<u>PART - B</u>			
II	1 He should read the drawings of the project. He should take carefully the measurements from drawings and do the squaring of dimensions. He should prepare the abstract estimate and billing. He should visit the site and assess the quantities of work done. He should value the work done based on agreement rate. He should attend in legal case involving court procedure.			6
	2 (i) During the construction of a project, supervisors, watchmen, guard etc., are employed purely on temporary basis. Their salaries are drawn from LS amount allotted towards workcharged establishment. (ii) These are the incidental expenses of miscellaneous character which cannot be predicted during the preparation of estimate. These are included in LS provision. (iii) While preparing estimate, it is difficult to work out in detail in case of petty items such as site clearance, dewatering, removing roots, architectural features, contingencies, watersupply and sanitary arrangements, electrical installations etc., In such cases, certain % of amount is allotted in the estimate as LS provision.	2 2		
	3 Quantity of RCC = $6 \times 3 \times 0.1 = 1.8 \text{ m}^3$ Quantity of steel = $1.8 \times 0.8/100 \times 7850 = 113.04 \text{ kg}$	3 3		6
	4 Total length = 2 horizontal + 4 vertical = $2 \times 1.5 + 4 \times 1.4 = 8.6$ Quantity of wood work for frame of window = $8.6 \times 0.1 \times 0.07 = 0.06 \text{ m}^3$	3 3		6

(iii) Trapezoidal formula, $V = L/2 (A1 + An)$
 $A1 = 10 \times 2 + 1.5 \times 2 \times 2 = 26$
 $An = 10 \times 3 + 1.5 \times 3 \times 3 = 43.5$
 $V = 120/2 (26 + 43.5) = 4170 \text{ m}^3$

(iv) Prismoidal formula, $V = L/6 (A1 + A2 + 4 Am)$
 $A1 = 26, A2 = 43.5, Am = 34.38$
 $V = 120/6 (26 + 43.5 + 4 \times 34.38) = 4140.4 \text{ m}^3$

(b) $d1 = 71 - 70 = 1$ $d2 = 71.4 - 70.3 = 1.1$
 $d3 = 71.8 - 70.6 = 1.2$ $d4 = 72.2 - 71.1 = 1.1$
 $d5 = 72.6 - 71.3 = 1.3$ $d6 = 73 - 72.2 = 0.8$
 $d7 = 73.4 - 72.5 = 0.9$ $d8 = 73.8 - 71.9 = 1.9$
 $d9 = 74.2 - 72.2 = 2$ $d10 = 74.6 - 73.2 = 1.4$
 $d11 = 75 - 74.3 = 0.7$

$A1 = 9 \times 1 + 2 \times 1 \times 1 = 11$
 $A2 = 9 \times 1.1 + 2 \times 1.1 \times 1.1 = 12.32$
 $A3 = 9 \times 1.2 + 2 \times 1.2 \times 1.2 = 13.68$
 $A4 = 9 \times 1.1 + 2 \times 1.1 \times 1.1 = 12.32$
 $A5 = 9 \times 1.3 + 2 \times 1.3 \times 1.3 = 15.08$
 $A6 = 9 \times 0.8 + 2 \times 0.8 \times 0.8 = 8.48$
 $A7 = 9 \times 0.9 + 2 \times 0.9 \times 0.9 = 9.72$
 $A8 = 9 \times 1.9 + 2 \times 1.9 \times 1.9 = 24.32$
 $A9 = 9 \times 2 + 2 \times 2 \times 2 = 26$
 $A10 = 9 \times 1.4 + 2 \times 1.4 \times 1.4 = 16.52$
 $A11 = 9 \times 0.7 + 2 \times 0.7 \times 0.7 = 7.28$

Prismoidal formula

$V = d/3 [(A1+An)+2(A3+A5+...An-2)+4(A2+A4+.....An-1)]$
 $= 200/3 [(11+7.28)+2(13.68+15.08+9.72+26)+$
 $4(12.32+12.32+8.48+24.32+16.52)$
 $= 200/3 (18.28+128.96+295.84) = 29538.67 \text{ m}^3$

V (a) c/c length calculation

LW - $5+2.8+.4 = 8.2$ (3 nos)
 SW - $3+.2 = 3.2$ (3 nos)
 SW - $3.5+.2 = 3.7$ (3 nos)

Total c/c length = 45.30

No. of 'T' junctions = 6

Long & Short wall method

Details	No	L	B	H/D	Qty	Remarks
LW	3	9.1	0.9	0.8	19.66	$8.2+0.9=9.1$
SW	3	2.3	0.9	0.8	4.97	$3.2-0.9=2.3$
SW	3	2.8	0.9	0.8	6.05	$3.7-.9=2.8$
Total					30.67 m ³	

Centre line method

corrected c/c length = $45.30 - 6 \times 0.9/2 = 42.60$

1	42.6	0.9	0.8	30.67 m ³
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VI (a)	(b)	Details	No	L	B	H/D	Qty	Remarks																																									
	D	1	5.2	0.12	0.08	0.05		2x2.1+1=5.2																																									
	D1	4	5.1	0.12	0.08	0.20																																											
	W	2	11	0.10	0.08	0.18																																											
	W1	4	9	0.10	0.08	0.29																																											
	W2	1	8.2	0.10	0.08	0.07																																											
	Total						0.79 m3			7	7	15																																					
	For foundation																																																
	<u>Long & Short wall method</u>																																																
	<table border="1"> <thead> <tr> <th>Details</th> <th>No</th> <th>L</th> <th>B</th> <th>H/D</th> <th>Qty</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>LW</td> <td>3</td> <td>8.8</td> <td>0.6</td> <td>0.6</td> <td>9.50</td> <td>8.2+0.6=8.8</td> </tr> <tr> <td>SW</td> <td>3</td> <td>2.6</td> <td>0.6</td> <td>0.6</td> <td>2.81</td> <td>3.2-0.6=2.6</td> </tr> <tr> <td>SW</td> <td>3</td> <td>3.1</td> <td>0.6</td> <td>0.6</td> <td>3.35</td> <td>3.7-0.6=3.1</td> </tr> <tr> <td colspan="6">Total</td> <td>25.55 m3</td> </tr> </tbody> </table>												Details	No	L	B	H/D	Qty	Remarks	LW	3	8.8	0.6	0.6	9.50	8.2+0.6=8.8	SW	3	2.6	0.6	0.6	2.81	3.2-0.6=2.6	SW	3	3.1	0.6	0.6	3.35	3.7-0.6=3.1	Total						25.55 m3	4	
Details	No	L	B	H/D	Qty	Remarks																																											
LW	3	8.8	0.6	0.6	9.50	8.2+0.6=8.8																																											
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<table border="1"> <tbody> <tr> <td>LW</td> <td>3</td> <td>8.65</td> <td>0.45</td> <td>0.50</td> <td>5.84</td> <td>8.2+0.45=8.65</td> </tr> <tr> <td>SW</td> <td>3</td> <td>2.75</td> <td>0.45</td> <td>0.50</td> <td>1.86</td> <td>3.2-0.45=2.75</td> </tr> <tr> <td>SW</td> <td>3</td> <td>3.25</td> <td>0.45</td> <td>0.50</td> <td>2.19</td> <td>3.7-0.45=3.25</td> </tr> <tr> <td colspan="6">Total</td> <td>25.55 m3</td> </tr> </tbody> </table>												LW	3	8.65	0.45	0.50	5.84	8.2+0.45=8.65	SW	3	2.75	0.45	0.50	1.86	3.2-0.45=2.75	SW	3	3.25	0.45	0.50	2.19	3.7-0.45=3.25	Total						25.55 m3	4	8								
LW	3	8.65	0.45	0.50	5.84	8.2+0.45=8.65																																											
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1 43.5 0.60 0.60 15.66																																																	
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corrected c/c length = $45.3 - 6 \times 0.45 / 2 = 43.95$																																																	
1 43.95 0.45 0.50 9.89																																																	
Total						25.55 m3																																											
VII (a)	(b)	Details	No	L	B	H/D	Qty	Remarks																																									
	For roof slab	1	8.8	7.5	0.12	7.92			3																																								
	For lintel-LW	3	8.4	0.2	0.15	0.76	8.2+0.2=8.4																																										
	SW	3	3	0.2	0.15	0.27	3.2-0.2=3																																										
	SW	3	3.5	0.2	0.15	0.32	3.7-0.2=3.5																																										
	Total						9.27 m3			3																																							
	<u>Outside plastering for wall</u>																																																
	1 31 - 3.1 96.10 2(7.1+8.4)=31												2																																				
	<u>Inside plastering</u>																																																
	Hall 1 16 - 3.1 49.60 (3+5)2=16																																																
Bed 1 11.6 - 3.1 35.96 (3+2.8)2=11.6																																																	
Kitchen 1 15.6 - 3.1 48.36 (3.5+4.3)2=15.6																																																	
Bed 1 14 - 3.1 43.40 (3.5+3.5)2=14												3																																					
Total						273.42																																											

		<u>Deductions</u>							
	D	1	1	-	2.1	2.10			
	D1	4	0.9	-	2.1	7.56			
	W	2	1	-	1.5	3			
	W1	4	1.5	-	1.5	9			
	W2	1	1.5	-	1.3	1.95			
					Total deduction	23.61			
					Total less deduction	249.81 m2	2		
							1		8
(b)	<u>Details</u>	<u>No</u>	<u>L</u>	<u>B</u>	<u>H/D</u>	<u>Qty</u>	<u>Remarks</u>		
	For D	1 x 2.25	1	2.1	-	4.73			
	D1	4 x 2.25	0.9	2.1	-	17.01			
	W	2 x 1	1	1.5	-	3			
	W1	4 x 1	1.5	1.5	-	9			
	W2	1 x 1	1.5	1.3	-	1.95			
					Total	35.69 m2			
VIII (a)	<u>Details</u>	<u>No</u>	<u>L</u>	<u>B</u>	<u>H/D</u>	<u>Qty</u>	<u>Remarks</u>	7	7
	(i) For RR Masonry								15
		1	3.14x4.4	0.4	1.5	8.29 m3	L= π D		
	(ii) For DR Masonry							3	
	1st step	1	3.14x4.6	0.6	1.5	13			
	2nd step	1	3.14x4.5	0.5	1.5	10.60			
					Total	23.60 m3			
(b)	<u>Details</u>	<u>No</u>	<u>L</u>	<u>B</u>	<u>H/D</u>	<u>Qty</u>	<u>Remarks</u>	5	8
	Hall	1	3	5	-	15			
	Bed	1	3	2.8	-	8.4			
	Kitchen	1	3.5	4.3	-	15.05			
	Bed	1	3.5	3.5	-	12.25			
	Roof projection-	1	31.8	0.2	-	6.36	2(7.3+8.6)=31.8	5	
					Total	57.06 m2			
IX (a)	<u>Description</u>	<u>Qty</u>	<u>Unit</u>	<u>Rate</u>	<u>Amount</u>				
	<u>Materials</u>								
	Blasted Rubble	1	m3	650	650.00				
	Dry sand	0.3	m3	850	255.00				
	Cement	72	kg	9000/1000	648.00			2	
	<u>Labour</u>								
	Mason	0.7	E	475	332.50				
	Man	0.35	E	300	105.00				
	Woman	0.70	E	250	175.00			2	
	<u>Conveyance</u>								
	Rubble	1	m3	20 x 15	300.00				
	Sand	0.3	m3	12 x 20	72.00				
	Cement	72	kg	14 x 8/1000	8.06			2	
				Total	2545.56				
				Add 10 % CP	254.56				
				Total	Rs. 2800.12/m3			2	8

