Calculate the standard rent of the property assuming:
(a) Rate of interest for sinking fund is 5%.
(b) Annual repairs cost 1% of the cost of construction.
(c) All other outgoing taxes shall be 30% of the net annual income of the property.
(d) The scrap value of building at the expiry of its useful life is estimated as 10% of its present value.

Q.6 Attempt any two:

i. Write a short note on pre and post qualification of contractors. **5**

ii. Write a short note on global tendering and E tendering. **5**

iii. Explain 3 bid/ 2 bid and single bid system of tendering. **5**

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Total No. of Questions: 6 *Total No. of Printed Pages:4*

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2022

CE3CO15 Quantity Surveying & Estimation

Programme: B.Tech. Branch/Specialisation: CE

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. Full form of SOR- **1**
(a) Scale of rates (b) Schedule of rates
(c) Saving of rates (d) Shortage of rates

ii. Provisional sum is a amount- **1**
(a) Kept for any specialized work in building
(b) Spent on construction
(c) spent on other works excluding construction
(d) budget allocation

iii. The expected out turn of plain cement concrete 1:1.5:3 per mason per day is- **1**
(a) 1.5 m^3 (b) 2.5 m^3 (c) 3.5m^3 (d) 5.0 m^3

iv. Weight of 1cum of steel- **1**
(a) 78.5 kg (b) 785 kg (c) 7850kg (d) 8500 kg

v. Length of a bar increased for standard hook is- **1**
(a) 9 dia. (b) 12 dia. (c) 16 dia. (d) 20 dia.

vi. 1 cum of cement is approximately- **1**
(a) 18 bags (b) 24 bags (c) 29 bags (d) 35 bags

vii. Which of the following is not a method of determining value of property? **1**
(a) Rental Method (b) Profit Based method
(c) Plinth area method (d) Sinking fund

viii. The year's purchase is- **1**
(a) The amount invested to receive Rs. 1/- as yearly interest
(b) Purchase made yearly
(c) Capacity of a person to purchase in a year
(d) The amount deposited for renewal of the property

ix. Contract is- **1**
(a) Filling of tender form
(b) Offer of work
(c) An agreement between owner and contractor
(d) Tender document

x. Tenders are always called sealed- **1**
(a) So that rate offered can't be known to any other
(b) To safeguard the earnest money draft
(c) To save the documents placed inside the envelop
(d) It depends on person to person

Q.2 i. Explain the following terms: **4**
(a) Contingencies (b) Work charge establishment

ii. Explain types of estimates in detail. **6**

OR iii. Write short note on abstract sheet and measurement sheet. **6**

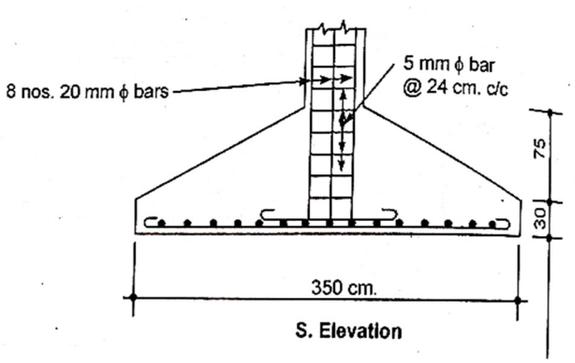
Q.3 i. Explain various factors which affect rate analysis of an item of work. **4**

ii. Workout the rate analysis for one cubic meter of 1:1.5:3 RCC work in beams. **6**

OR iii. Workout the rate analysis of the I-class brickwork in superstructure with 20x10x10 cm brick with 1:4 cement sand mortar for one cubic meter. **6**

Q.4 i. List out the methods for calculating earthwork with formula used. **3**

ii. Given figures show the details of reinforcement of a column and its footing. The length of the column from the bottom level of the footing is 605 cm. Prepare the estimate of the total quantity of the reinforcement. **7**



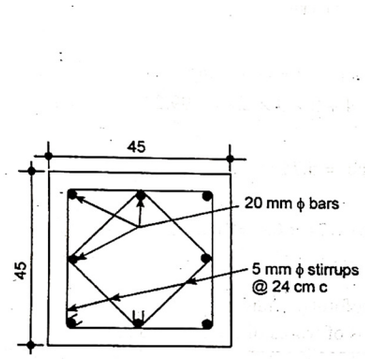


Fig. Plan of column reinforcement.

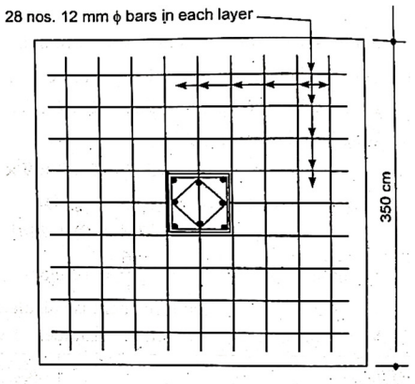


Fig. Reinforcement details of footing.

OR iii. Reduced levels of ground along the centre line of a proposed road from chainage 0 to 200 m are given below. The formation level at the 40 m chainage is 102.75. The formation of road from chainage 0 to 80 m has rising gradient 1 in 40. The formation level has falling slope of 1 in 100 from chainage 40 m to 200 m. The formation width of the road at top is 12.0 m and the side slopes of banking are 2: 1. **7**
Draw Longitudinal section of the road and a typical cross-section and prepare an estimate of the earthwork for the road the rate of Rs.30/ m³.

Chainage (m)	0	20	40	60	80	100	120	140	160	180	200
RL of ground	101.50	100.90	101.50	102.00	102.85	101.65	101.95	100.70	101.25	99.90	100.60
RL of foundation			102.75								
Gradient	←Rising Gradient 1 in 40→					← Falling Gradient 1 in 100 →					

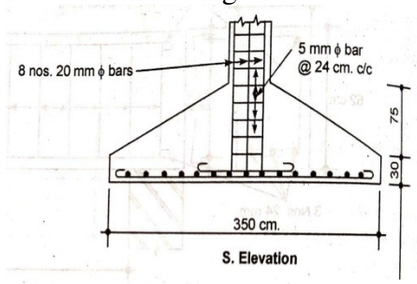
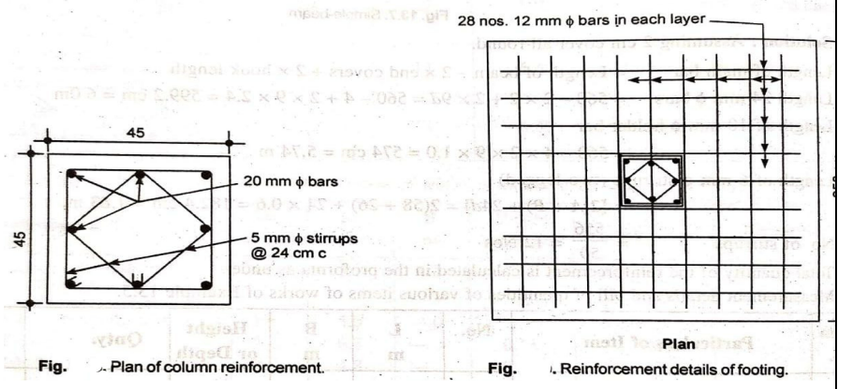
Q.5 i. Explain various factors affecting the value of the property. **4**

ii. Explain various methods of determining valuation of the property. **6**

OR iii. The present value of a property is 1,15,000 out of which the cost of land is 25,000. The owner of the property expects 7.5% return on the cost of construction and 6.5% return on the cost of land. If the future life of the building is estimated as 80 years and at the end of its useful life, 1,35,000 will be required for replacing the construction. **6**

P.T.O.

Marking Scheme
CE3CO15 Quantity Surveying & Estimation

Q.1	i	Full form of SOR **B)Schedule of rates**	**1**
	ii	Provisional sum is a amount **A) Kept for any specialized work in building**	**1**
	iii	The expected out turn of plain cement concrete 1:1.5:3 per mason per day is **D) 5.0 m3**	**1**
	iv	Weight of 1cum of steel **C) 7850kg**	**1**
	v	Length of a bar increased for standard hook is **A) 9 dia.**	**1**
	vi	1 cum of cement is approximately **C) 29 bags**	**1**
	vii	Which of the following is not a method of determining value of property **D)Sinking fund**	**1**
	viii	The year's purchase is **A) the amount invested to receive Rs. 1/- as interest**	**1**
	ix	Contract is **C) an agreement between owner and contractor**	**1**
	x	Tender are always called sealed **A) so that rate offered can't be known to any other**	**1**
Q.2	I	Explain i) Contingencies ii) Work charge establishment **For each correct definition give 2 marks**	**4**
	ii	Explain Types of Estimates in detail. **For each correct type give 1.5 marks**	**6**
OR	iii	Write short note on Abstract sheet and Measurement sheet. **For each correct definition with table give 3 marks**	**6**
Q.3	I	Explain various factors which affect rate analysis of an item of work. **For each correct factor give 1 marks**	**4**
	ii	Workout the rate analysis for one cubic meter of 1:1.5:3 RCC work in beams **For each correct step give 1.5 marks**	**6**
OR	iii	Workout the rate analysis of the I-class brickwork in superstructure with 20x10x10 cm Brick with 1:4 Cement Sand Mortar for one cubic meter **For each correct step give 1.5 marks**	**6**
Q.4	I	List out the methods for calculating earthwork **For correct 3 Methods give 1 mark for each method**	**3**
	ii	Given Figures show the details of reinforcement of a column and its footing. The length of the column from the bottom level of the footing is 605 cm. Prepare the estimate of the total quantity of the reinforcement. Table 1 mark Column bar 2 marks Stirrups 2 marks Main steel in footing 2 marks   Fig. Plan of column reinforcement. Fig. Reinforcement details of footing. **For correct solution provide full marks**	**7**
OR	iii	Reduced levels of ground along the centre line of a proposed road from chainage 0 to 200 m are given below. The formation level at the 40 m chainage is 102.75. The formation of road from chainage 0 to 80 m has rising gradient 1 in 40.The formation level has falling	**7**

slope of 1 in 100 from chainage 40 m to 200 m. The formation width of the road at top is 12.0 m and the side slopes of banking are 2: 1.
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RL of ground	101.50	100.90	101.50	102.00	102.85	101.65	101.95	100.70	101.25	99.90
RL of foundation			102.75							
Gradient	←Rising Gradient 1 in 40→					← Falling Gradient 1 in 100				

For correct solution provide full marks
R.L. of formation **3 marks**
Calculation in tabular format **4 marks**

Q.5	I	Explain various factors affecting the value of the property. **For each correct factor provide 1 mark**	**4**
	ii	The present value of a property is 1,15,000 out of which the cost of land is 25,000. The owner of the property expects 7.5% return on the cost of construction and 6.5% return on the cost of land. If the future life of the building is estimated as 80 years and at the end of its useful life, 1,35,000 will be required for replacing the construction. Calculate the standard rent of the property assuming: 1. Rate of interest for sinking fund is 5%. 2. Annual repairs cost 1% of the cost of construction. 3. All other outgoing taxes shall be 30% of the net annual income of the property. 4. The scrap value of building at the expiry of its useful life is estimated as 10% of its present value. **For correct solution provide full marks**	**6**
OR	iii	Explain various methods of determining valuation of the property. **For each correct method give 1.5 marks**	**6**
Q.6	I	Write a short note on pre and post qualification of contractors	**5**
		For each explanation give 2.5 marks	
	ii	Write a short note on Global tendering and E tendering **For each explanation give 2.5 marks**	**5**
	iii	Explain 3 bid/ 2 bid and single bid system of tendering **For correct answer give 5 marks** **Each item 1.5 marks and overall 5 marks**	**5**