


Name:- TAHIR-HUSSAIN

I. D:- 7449

Instructor :- ENGR-IMTIAZ ALI

Subject :- QUANTITY SURVEYING

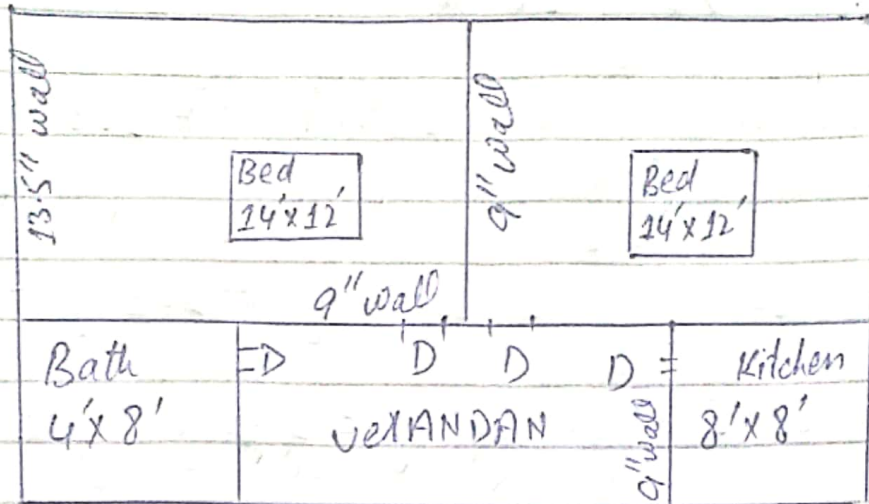
Semester :- 12th

Student signiture:- 

Date:- 28/09/2020/.

Q No 1:-

(i)



Sol:-

(i) External length of building:-

$$= 14 + 14 + 2(1.125) + 0.75$$

External length of building = $\boxed{31 \text{ ft}}$

(ii) External breadth of building:-

$$= 12 + 8 + 2(1.125) + 0.75$$

$$= \boxed{23 \text{ ft}}$$

(iii) Plinth area of building :-

$$= 31 \times 23$$

$$= \boxed{713 \text{ ft}^2}$$

Rate of construction = Rs. 300/SFT

Cost of construction = 713×300

Cost of construction = 213900.

(2)

Cost of water supply and sanitary
is 10 %.

$$\text{Water supply and sanitary} = 213900 \times \frac{10}{100}$$

$$\text{Water supply and sanitary} = 21390/-$$

$$\text{Cost of Electric supply} = 213900 \times \frac{10}{100}$$

$$\text{Cost of Electric supply} = 21390/-$$

$$\text{Cost of Gas supply} = 213900 \times \frac{5}{100}$$

$$\text{Cost of Gas supply} = 10695/-$$

$$\text{Total cost} = 213900 + 21390 + 21390 + 10695$$

$$\text{Total cost} = \text{Rs. } 267375/-$$

$$\text{Contingencies} = 267375 \times \frac{3}{100}$$

$$\text{Contingencies} = \text{Rs. } 8021.25/-$$

$$\text{Grand Total} = 267375 + 8021.25$$

$$\text{Grand Total} = \boxed{\text{Rs. } 275396.25}$$

(3)

Q No 1:-

(ii)

SOL:-

For one Room :-

Step 1:- (Total wall length)

For room one :-

$$= 14 + 14 + 12 + 12$$

$$= 52 \text{ feet} = 15.8496 \text{ m}$$

Step 2:-

Total area of wall, Door

$$\text{Total area of wall} = L \times H$$

$$= 52 \times 3$$

$$= 15.8496 \times 3$$

$$= 47.5488 \text{ m}^2$$

Total area of Door = 2×1

$$= 2 \text{ sq. m}$$

Step 3:-

Plaster area = Area of wall -

Area of Door

$$= 47.5488 - 2$$

$$= 45.5488 \text{ sq. m}$$

$$\therefore 1 \text{ sq. m} = 10.76 \text{ sq. ft}$$

$$\text{So, } 45.5488 \times 10.76 = 490.105 \text{ sq. ft}$$

For second Room :-

Some steps should be followed

(4)

For Bath & Kitchen :-

Step 1:- Total wall length:

$$\text{Bath} = 4+8+4+8 \\ = 24 \text{ feet} = 7.31 \text{ m}$$

$$\text{Kitchen} = 8+8+8+8 = 32 \text{ feet} \\ = 9.75 \text{ m}$$

Step 2:- Total area of wall, Door.

$$\text{Total area of wall for kitchen} = L \times H \\ = 9.75 \times 3 \\ = 29.25 \text{ m}^2$$

$$\text{Total area of wall for bath} = L \times H \\ = 7.31 \times 3 \\ = 21.93 \text{ m}^2$$

Step 3:-

$$\text{Plaster Area for Kitchen} \\ = \text{Area of wall} - \text{Area of Door} \\ = 29.25 - 2 \\ = 27.25 \text{ m}^2 \rightarrow \text{into sq ft}$$

$$\text{Plaster Area for Bath} \\ = 21.93 - 2 = 19.93 \text{ m}^2 \\ 296.1152 \text{ ft}^2$$

By changing m^2 into ft^2 will become
214.4468 ft^2 .

For total Internal Plaster Area:-

$$= \text{Plaster of one Room} \\ + \text{Plaster of second} + \text{P.A} \\ \text{of Kitchen} + \text{P.A of Bath} \\ = 490 + 106 + 490.105 + 296.1152 + 214.4468 \\ = \boxed{1490.77 \text{ ft}^2}$$

(5)

Q No 2:-

Sol:-

Step 01:-

(Length of bar 12mm bottom bar)

$$\begin{aligned} \text{Length of steel 12mm} &= \\ & (\text{Length of beam} - \text{Cover}) \times \text{No. of} \\ & \text{bar} = (4000 - 2(30)) \times 2 \end{aligned}$$

$$= 7880 \text{ mm}$$

$$\text{or } 7.8 \text{ m.}$$

Step 2:-

(Length of bar 10mm top bars)

$$\begin{aligned} \text{Length of steel 10mm} &= \\ & (\text{Length of beam} - \text{Cover}) \times \text{No. of bar} \end{aligned}$$

$$= (4000 - 2(30)) \times 2$$

$$= 7880 \text{ mm}$$

$$= 7.8 \text{ m.}$$

Step 3:-

(weight of bar 12mm bottom bars)

$$\left(\frac{d^2}{162} \times L \right)$$

$$= \left(\frac{12^2}{162} \right) \times 7.8 = 6.93 \text{ kg}$$

(6)

Step 4:-

(weight of bar 10mm top bar)

$$(d^2/162) \times L$$

$$= (10^2/162) \times 7.8$$

$$= 4.8 \text{ kg.}$$

Step 5:-

for stirrups:-

(No. of stirrup):-

$$\text{Length of beam / spacing} + 1$$

$$= (4000/200) + 1$$

$$= 21 \text{ No's}$$

Step 6:- cutting length

$$(2(x)) + (2(y)) + \text{hook } (10d) - \text{bend}$$

(2d if 90 degree)

$$= 2(2 \times 142) + (2 \times 142) + (2 \times 10 \times 8) - (5 \times 2 \times 8)$$

$$= 284 + 284 + 160 - 80$$

$$= 648 \text{ mm}$$

$$\text{or } 0.648 \text{ m}$$

Step 7:-

(Total length of stirrups)
cutting length \times No. of stirrups

$$= 0.648 \times 21$$

$$= 13.608 \text{ m.}$$

Step 8:- weight of stirrups.

$$= (d^2/162) \times L$$

$$= (8^2/162) \times 13.608$$

$$= \boxed{5.376 \text{ kg}}$$

(7)

Q No 3:-

Sol:- Step 1:-

Effective length :-

$$\text{Effective length (x)} = \text{length} - b/\text{side covers}$$

$$= 2000 - 2 \times 50 = 1900 \text{ mm}$$

$$\text{Effective length (y)} = 2000 - 2 \times 50 = 1900 \text{ mm}$$

Step 02 :-

No. of bars:-

$$\text{No. of Bar (x)} = \text{eff. length} / \text{spacing} + 1$$

$$= (1900/150) + 1 = 13.6 = 14 \text{ bar}$$

$$\text{No. of} = 14.$$

$$\text{No. of bar (y)} = \text{eff. length} / \text{spacing} + 1$$

$$= (1900/150) + 1 = 13.6$$

$$= 14 \text{ No. of}$$

Step 03 :-

Cutting length :-

$$\text{Along (x)} = \left[\text{eff. length} + (\text{bends}) \right] -$$

bend deductions.

$$1900 + 2(300 - 50 - 50) - (2(2 \times 12))$$

$$= 2252 \text{ mm}$$

or 2.5 m.

(8)

$$\text{Along } (y) = (\text{ebb length} + (\text{bends})) - \text{bend deduction} \\ (2d)$$

$$= 1900 + 2(300 - 50 - 50) - (2(2 \times 12))$$

$$2252 \text{ mm}$$

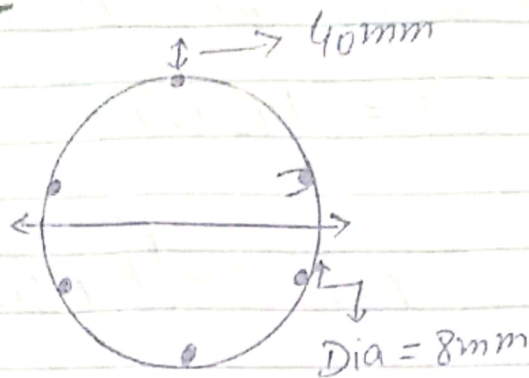
$$= 2.5 \text{ m}$$

S.No	Type of box	Dia (mm)	No.	Length m	Total Length	weight (kg/m)	Total weight (kg/m)	Total weight
1	x-direct	12	14	2.25	22.5	0.89	20	$12^2 / 162 = 0.89$
2	y-direct	12	14	2.25	22.5	0.89	20	$12^2 / 162 = 0.89$
	Total						42 kg	
	Add 5% wastes						2%	
	Gross weight							44 kg

(9)

Q No 4 :-

(i)



Sol:-

Cutting length for the circular strips:-

$$\text{Circular column} = 500 \text{ mm}$$

$$\text{Dia of strip } \phi/c = 500 - (2 \times 40) - (4 + 4)$$

$$= 500 - 80 - 8$$

$$= 412 \text{ mm}$$

$$\text{Parameter of strip stirrup} = \pi d$$

$$= 3.1415 \times 412 = 1294.504 \text{ mm}$$

$$\text{Hook Length} = 10 D = 10 \times 8 = 80 \times 2 = 160 \text{ mm}$$

$$\text{Cutting length for stirrup} = \text{parameter of stirrup} + \text{hook length}$$

$$= 1294.504 + 160$$

$$= 1454.504 \text{ mm}$$

$$1 \text{ m} = 1000 \text{ mm}$$

(10)

Now we convert mm to m

$$= \frac{1454.504}{1000} = 1.45454 \text{ m}$$

Required Answer = $\boxed{1.45454 \text{ meter}}$

Q No 4:-

ii):- Sol:-

value of plot = 350000/-
Rate of Rent = 6%

$$\begin{aligned} \text{Annual rent for plot} &= \frac{350000 \times 6}{100} \\ &= 21000 \end{aligned}$$

value of building structure = 420000
Rate of rent = 8%

$$\begin{aligned} \text{Annual rent for structure} &= \frac{420000 \times 8}{100} \\ &= 33600 \end{aligned}$$

$$\begin{aligned} \text{Total Annual Rent} &= 21000 + 33600 \\ &= 54600 \end{aligned}$$

$$= \frac{54600}{12} = \boxed{4550}$$

Q No 5:-

(11)

Main Types of Alternative Dispute Resolution :-

Arbitration:-

Arbitration is the adjudication of a dispute by one or more specially-appointed experts or lawyers.

Arbitration involves an independent third party who actually makes suggestions and actually imposes a decision on the parties.

People who work as arbitrators often belong to the Chartered Institute of Arbitrators.

Arbitration is governed by the Arbitration Act 1996.

Arbitration is binding.

Arbitration Act - 1996, S.1 :-

a):- The object of arbitration is to obtain the fair resolution of disputes by an impartial (Equality) without necessary delay or expense.

b):- The parties should be free to agree how their dispute are resolved. Subject only to such safeguards as are necessary in public interest.

c):- In matters governed by this part the court should not intervene ~~except~~ except as provided by this part.

CHOOSING - An Arbitrator :-

Parties are free to decide b/w themselves whom they will appoint as an arbitrator.

where there is no agreement a party can apply to a court under the Arbitration Act 1996 s.18 to have an appointed by the court.

Arbitration - By Contract :-

Arbitration by contract is when the parties have signed a contract and there is a clause in the contract where they agree to refer any dispute over the terms of the contract to an arbitrator.

Arbitration Act - 1996 s.9 :-

where a party tries to ignore an arbitration clause agreed in a contract the court in which he or she is trying to make his claim will order to 'stay' (ie a stop) of proceedings so that the matter may be referred a arbitration as agreed in contract.

Mediation :-

Parties in a dispute may refer their dispute to an independent third party who will act as a go between.

Mediation involves an impartial third party who listens and directs discussion but does not suggest outcomes.

The mediator will help the parties discuss their dispute in order to try to settle it.

Mediation is not binding.

Conciliation :-

Similar to mediation but the conciliator may suggest a way to settle to the dispute.

If parties in litigation refuse an offer of conciliation without good reason then even if they win their case, the judge can refuse to award them some or all of their legal costs.

Conciliation is not binding.

Negotiation :-

Negotiation requires parties to bargain without outside assistance exchanging compromises to reach a solution. In this approach parties can begin bargaining discussion at the beginning of a dispute without the presence of legal representation.

(14)

Like mediation settlement discussions within a negotiation context are controlled entirely by the parties. Negotiation is also not binding.

Advantages of ADR :-

Alternative dispute resolution (ADR) procedures have several advantages:

- Reduced time in dispute - It takes less time to reach a final decision.
- Reduced costs in ~~relating~~ relating to the dispute resolution - It requires less money i.e. it is cheap.
- Flexibility - parties have more flexibility in choosing what rules will be applied to the dispute. They have the freedom to do so.
- Produce good results - settlement rates of up to 85 percent.
- Improved satisfaction with the outcome or manner in which the dispute is resolved among disputants.

Date: ___/___/___

(16)

- Increased compliance with agreed solutions.
- A single procedure [4] - parties can agree to resolve in a single procedure a dispute involving intellectual property.
- party autonomy Because of its.

Disadvantages of ADR :-

- It can be used as a stalling tactic.
- parties are not compelled to continue negotiations are mediation.
- Does not produce legal precedents.
- Exclusion of parinent parties ~~weakens~~ final agreement.
- ~~parties~~ parties may have limited bargaining power. parties do not have much of a say.
- Little are no check on power imbalances between parties.
- May not protect parties' legal rights. The rights of the parties may not be protected by alternative dispute resolution.