

Name : Jam Murad Ghani

ID : 7440

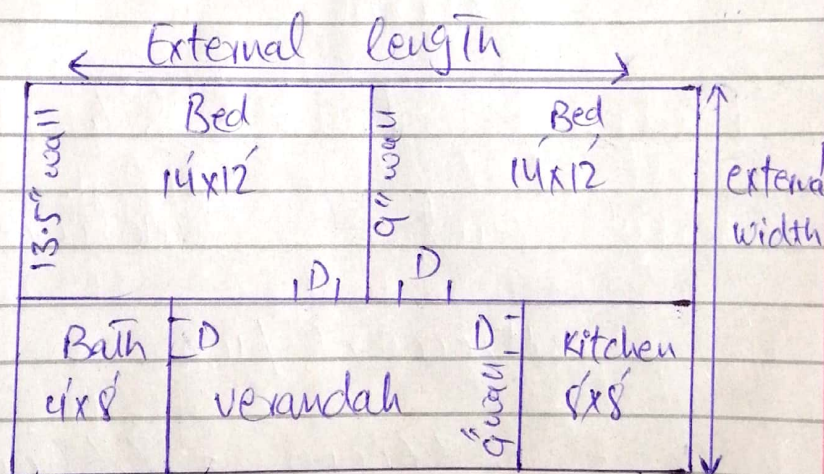
Semester : Batch-14

Paper : QS & Estimation

Submitted To: Engr. Imtiaz Khan

X ————— X ————— X

Q No : 1 Part (a)



Sol: (i) External length of building

$$= 14' + 14' + 2(1.125') + 0.75' = 31 \text{ ft}$$

(ii) External breadth of building

$$= 12' + 8' + 2(1.125') + 0.75'$$
$$= 23 \text{ ft}$$

(iii) Plinth area of the building.

$$= 31 \times 23 = 713 \text{ ft}^2$$

→ Rate of construction = Rs. 300/SFT

$$\begin{aligned} \rightarrow \text{Cost of construction} &= 713 \times 300 \\ &= 213900 \end{aligned}$$

→ cost of water supply and sanitary is 10%.

$$\begin{aligned} \rightarrow \text{water supply \& sanitary} &= \\ &= 213900 \times 10/100 = 21390 \end{aligned}$$

→ cost of Electric supply.

$$= 213900 \times 10/100 = 21390$$

→ cost of gas supply.

$$= 213900 \times 5/100 = 10695$$

$$\begin{aligned} \Rightarrow \text{Total Cost} &= 213900 + 21390 \\ &+ 21390 + 10695 \end{aligned}$$

$$= 267375$$

$$\text{Contingencies} = 267375 \times 3/100 = 8021.25$$

$$\text{Grand Total} = 267375 + 8021.25 = 275396.25$$

Q No: 1 Part (2)

Solo:-

Step: 1

(For one Room)

Total wall length

For one Room:

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

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

Step: 2

(Total area of wall door)

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
 $= 2 \text{ sqm}$

Step # 3

Plaster Area = Area of wall

$$\begin{aligned}\text{Area of door} &= 47.5488 - 2 \\ &= 45.5488 \text{ sq m}\end{aligned}$$

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

For Second Room.

Same step. should be followed.

For both. of Kitchen.

=> Step # 1 (Total wall length)

$$\begin{aligned}\text{Both} &= 4+8+4+8 \\ &= 24 \text{ ft} = 7.31 \text{ m}\end{aligned}$$

$$\begin{aligned}\text{Kitchen} &= 8+8+8+8 \\ &= 32 \text{ ft} = 9.75 \text{ m}\end{aligned}$$

=> Step # 2

(Total area of wall, door)

$$\begin{aligned}\text{Total area of wall for Kitchen} &= 9.75 \times 3 \\ &= 29.25 \text{ sq m}\end{aligned}$$

$$\begin{aligned} \text{Total area of wall for} \\ \text{Kitchen } L \times h &= 9.75 \times 3 \\ &= 29.25 \text{ sqm} \end{aligned}$$

$$\begin{aligned} \text{Total area of wall for} \\ \text{bath} = L \times h &= 7.31 \times 3 \\ &= 21.93 \text{ sqm} \end{aligned}$$

Step #3

(Plaster area for Kitchen)

Area of wall

Area of door

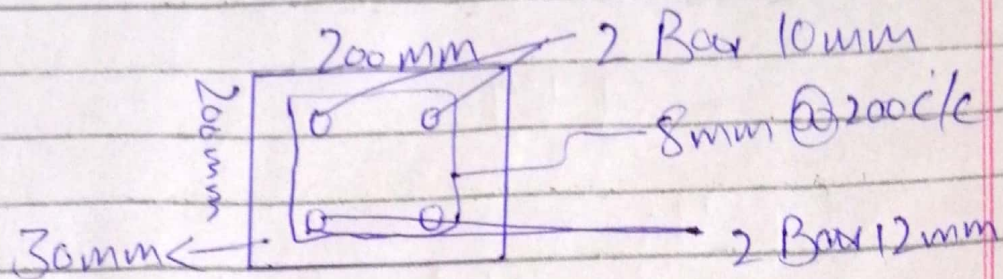
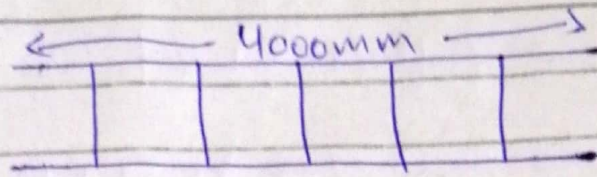
$$= 29.25 - 2$$

$$= 27.25 \text{ sq.m}$$

OR

$$= 296.1152 \text{ ft}^2$$

Q No: 2



Sol: step 1:

length of steel 12mm

length of Beam cover x No of bars

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

$$= 7880\text{mm or } 7.88\text{m}$$

step 2:

length of Top bars

Top bars length (10mm) =

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

$$= 7880\text{mm or } 7.88\text{m}$$

step 3:
 (weight of 12mm bar)
 $= (d^2/162) \times L$
 $= (12^2/162) \times 7.88$
 $= 7 \text{ Kg}$

step 4:
 (weight of 10mm bar)
 $= (d^2/162) \times L$
 $= (10^2/162) \times 7.88$
 $= 4.86 \text{ Kg}$

step 5:
 No of stirrups.
 (length of beam/spacing) + 1
 $= (4000/200) + 1$
 $= 21 \text{ No's}$

step 6:
 cutting length of stirrup

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

$$= (2 \times 132) + 2(132) + (2 \times 10 \times 8) - (5 \times 2 \times 8)$$

$$= 264 + 264 + 160 - 80$$

$$= 608 \text{ mm or } 0.608 \text{ m}$$

$$\begin{aligned} \Rightarrow \text{Total length of stirrups} \\ &= 0.608 \times 21 \\ &= 12.768 \text{ m} \end{aligned}$$

→ weight of stirrups.

$$\begin{aligned} &= (d^2/162) \times L \\ &= (8^2/162) \times 12.768 \\ &= 5 \text{ kg} \end{aligned}$$

Type of bars	Dia (mm)	No.s	Total length (m)	unit wt (kg)	Total wt (kg)
bottom	12	2	7.88	0.89	7 kg
Top	10	2	7.88	0.61	4.86
Stirrups	8	21	12.768	0.39	5
					16.86
Total 5% wastage					<u>0.843</u>
Grand Total					17.70 kg

Q No: 3.

Sol:- Step 1:

Effective length.

Eff length (x) = length b/sides

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

$$\begin{aligned} \text{eff length (y)} &= 2000 - 2 \times 50 \\ &= 1900 \text{ mm} \end{aligned}$$

Step 2:

No of bars.

Effective length spacing + 1

$$\begin{aligned} (1900/150) + 1 &= 13.6 \\ &= 14 \text{ No's} \end{aligned}$$

No's of Bar (y) =

eff length / spacing + 1

$$\begin{aligned} (1900/150) + 1 &= 13.66 \\ &= 14 \text{ No's} \end{aligned}$$

Step 3:

Cutting length.

$$\begin{aligned} \text{Along (x)} &= (\text{eff length} - (\text{bends})) \\ &= 1900 + 2 [300 - 50 - 50] - 2(2 \times (12)) \\ &= 2252 \text{ mm or } 2.252 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Along (y)} &= (\text{eff length} - (\text{bends})) \\ &= 1900 + 2 (300 - 50 - 50) - 2(2 \times 12) \\ &= 2252 \text{ mm or } 2.252 \text{ m} \end{aligned}$$

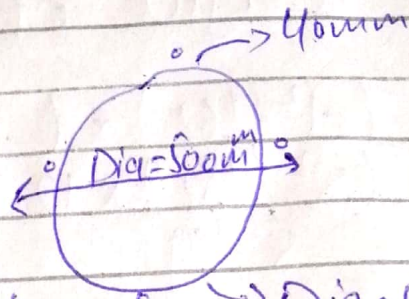
Types of bars	Dia (mm)	No	Length (m)	Total length	weight (kg/m)	Total wt (kg)
(x) direction	12	14	2.25	22.5	0.89	20
y (direction)	12	14	2.25	22.5	0.89	20
						40
Total 5% wastage						2
Gross weight						42 kg

Q No: 4 (Part 1)

Sol:-

Circular column.

→ Dia of column
= 500 mm



→ Dia of stirrup c/c =
 $500 - (2 \times 40) - (4 + 4) = 412 \text{ mm}$

→ Parameter of stirrup = πd

$$= 3.142 \times 412 = 1294.504 \text{ mm}$$

→ Hook length = $10 D$

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

→ cutting length of stirrup = Parameter of stirrup + Hook length

$$= 1294.504 + 160 = 1454.504 \text{ mm}$$

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

Now we convert mm to m

$$= 1454.504 / 1000 = 1.454504 \text{ m}$$

required Answer = 1.454504 m

Q No: 4 (Part 2)

Sol:-

Value of Plot = 35000

Rate of rent = 6%

Annual rent for Plot =

$$\Rightarrow \frac{35000 \times 6}{100} = 21000$$

Value of building structure

$$= 420000$$

Rate of Rent = 8%

Annual rent of structure

$$= 420000 \times 8 / 100$$

$$= \frac{3360000}{100} = 33600$$

Total Annual Rent = 21000 + 33600

$$= 54600 / 12$$

$$= 4550$$

Q No: 5

Ans: Types - ADS:-

1) 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 make suggestion and actually imposes a decision on the parties. Arbitration is binding. The arbitration is governed by the arbitration act 1996.

2) Mediation:

Parties in a dispute may refer their Third Party who act as a go blue. Mediation involves an impartial Third Party who listen and direct discussion but does not suggest outcome. Mediation is not binding.

3) Negotiation:-

Negotiation require Parties to bargain without outside assistance exchanging compromise to reach a solution. In this approach parties can

can begin bargaining of a dispute without the presence of legal representation. Negotiation is also not binding.

4) Conciliation:-

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

Conciliation is not binding.

(Arbitration Act 1996 s-1)

a) The object of arbitration to obtain the fair resolution of dispute by an impartial tribunal (equality) with unnecessary delay or expense.

b) The Parties should be free to agree how their dispute are resolved, subject only to such safeguard as are necessary in the public interest.

c) in matters governed by this Part in court should not intervene except as provided by this Part.

(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 stay

of proceeding so that
the matter may be
referred to arbitration
as agreed in the contract.
(Arbitration act - 1996 s-18)
The parties are free to
agree what is to happen
in the event of a failure
of a procedure for the
appointment of the arbitral
tribunal. There is no failure
if an appointment is duly
made under section (17)
(Power in case of default
to appoint sole arbitrator
unless that appointment is
set aside.)