

Date:

M T W T F S

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ID = 7936

Sec = B

Paper = Estimation

Submitted to = Engr- Imtiaz Khan

$$Q = 07 :-$$

Sol

$$\begin{aligned} \text{External length of building} \\ &= 14' + 14' + 2(1.125) + 0.75 \\ &= \underline{31\text{ft.}} \end{aligned}$$

$$\begin{aligned} \text{External Breadth of building} \\ &= 12' + 8' + 2(1.125) + 0.75 \\ &= \underline{23'} \end{aligned}$$

$$\begin{aligned} \text{Plinth area of the} \\ \text{Building} &= 31 \times 23 \\ &= \underline{713\text{ft}^3} \end{aligned}$$

$$\begin{aligned} \text{Rate of construction} &= \text{RS } 300/\text{ft}^3 \\ \text{Cost of Construct} &= 713 \times 300 \\ &= \underline{\text{RS } 213900} \end{aligned}$$

Water Supply and Sanitary 10%

$$\begin{aligned} &= 213900 \times 10/100 \\ &= \underline{\text{RS } 21390} \end{aligned}$$

$$\begin{aligned} \text{Cost of electric supply } \text{is } 10\% \\ &= 213900 \times 10/100 \\ &= \underline{\text{RS } 21390} \end{aligned}$$

Date:

(2)

M T W T F S

$$\begin{aligned}\text{Cost of gas} &= 5\% \\ &= 213900 \times \frac{5}{100} \\ &= \underline{\text{RS } 10695}\end{aligned}$$

$$\begin{aligned}\text{Total cost} &= 213900 + 213900 + 213900 \\ &\quad + 10695 \\ &= \underline{\text{RS } 267375}\end{aligned}$$

Contingencies 3% of total cost

$$\begin{aligned}&= 267375 \times \frac{3}{100} \\ &= \underline{8021.25}\end{aligned}$$

$$\begin{aligned}\text{Grand total} &= 267375 + 8021.25 \\ &= \boxed{275396.25} \text{ Ans.}\end{aligned}$$

Part = B:-

for one Room:-

⇒ Step 01:- (Total wall length)

For Room one:-

$$14 + 14 + 12 + 2 = 52 \text{ feet} = \boxed{15.8496 \text{ m}}$$

⇒ Step 02:- (Total area of wall, Door)

$$\begin{aligned} \text{Total area of wall} &= L \times h \\ &= 52 \times 3 \\ &= 15.8496 \times 3 \\ &= \boxed{47.5488 \text{ m}^2} \end{aligned}$$

$$\begin{aligned} \text{Total area of Door} &= 2 \times 1 \\ &= \boxed{2 \text{ sqm}} \end{aligned}$$

⇒ Step 03:-

$$\begin{aligned} \text{Plaster Area} &= \text{Area of wall} - \text{Area of Door} \\ &= 47.5488 - 2 \\ &= \boxed{45.5488 \text{ sqm}} \end{aligned}$$

$$\boxed{1 \text{ sqm} = 10.76 \text{ sqft}}$$

So

$$45.5488 \times 10.76 \\ = \boxed{490.1058881}$$

for second room:-

Same Steps should  
be followed in Room 12

for Bath & kitchen:-

⇒ Step = 1 :-  
(Total wall length)

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

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

⇒ Step = 2 :-  
(Total area of wall, Door)

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

(5)

$$\begin{aligned} \text{Total Area of wall of Bath} &= L \times h \\ &= 7.31 \times 3 \\ &= \boxed{21.93 \text{ m}^2} \end{aligned}$$

⇒ Step = 3 :-

$$\begin{aligned} \text{Plaster Area for kitchen} &= \text{Area of wall} - \text{Area of Door} \\ &= 29.25 - 2 \\ &= 27.25 \text{ m}^2 \end{aligned}$$

or

$$\boxed{296.1152 \text{ sq ft}}$$

$$\begin{aligned} \text{Plaster Area for Bath} &= 21.93 - 2 = 19.93 \text{ m}^2 \end{aligned}$$

or

$$\boxed{214.4468 \text{ sq ft}}$$

Total internal plaster Area :-

= Plaster Area of one Beam  
+ Plaster Area of Second  
+ RA of kitchen + P.A of Bath

$$= 490.105 + 490.105 + 296.1152 + 214.4468$$

$$= \boxed{1490.772 \text{ sq ft}}$$

Ans

$$\underline{\underline{Q = 2 :-}}$$

Sol :-

⇒ Step = 01 :-

(Length of bar 12mm bottom bars)

$$\begin{aligned} \text{Length of steel 12mm} &= \\ &= (\text{Length of beam} - \text{cover}) \times \text{No. of bars} \\ &= (4000 - 2(30)) \times 2 \\ &= 7880 \text{ mm} \\ &= 7.8 \text{ m.} \end{aligned}$$

⇒ Step = 02 :-

(Length of bar 10mm top bars).

$$\begin{aligned} \text{Length of steel 10mm} &= \\ &= (\text{length of beam} - \text{cover}) \times \text{No. of bars} \\ &= (4000 - 2(30)) \times 2 \\ &= 7880 \text{ mm} \\ &= 7.8 \text{ m.} \end{aligned}$$

⇒ Step = 3 :-

(weight of bar 12mm bottom bars)  
( $d^2/162 \times L$ )

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

⇒ Step = 04 :-

(weight of bar 10mm top bars)  
 $= (d^2/162) \times L$

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

$$= \del{4.81} \text{ kg}$$

⇒ Step = 05 :-

for stirrups :-

(No of stirrups)

(Length of beam / spacing) + 1

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

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

⇒ Step = 06 :- (Cutting length)

$(2(x) + 2(y)) + \text{hook (10d) - bend}$   
(2d if 90 degree)

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

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

$$= 648 \text{ mm}$$

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

⇒ Step = 07 :-

(Total length of stirrups)

Cutting length  $\times$  No of stirrups

$$= 0.648 \times 21$$

$$= 13.608 \text{ m}$$



Step = 08 :-  
(weight of stirrups).

$$\begin{aligned} & (d^2/162) \times L \\ & = (8^2/162) \times 13.608 \\ & = 5.376 \text{ kg.} \end{aligned}$$

~~Step = 08 :-~~

~~$$\begin{aligned} & = (d^2/162) \times L \\ & = (8^2/162) \times 5.376 \end{aligned}$$~~

S.No.	Type of Bar	Dia (mm)	No's	Total length (m)	Unit weight (kg)	Total weight (kg)
1	X-dir	12	2	7.89	0.89	7kg
2	y-dir	10	2	7.88	0.61	4.86kg
	Stirrups	8	21	10.768	0.39	5
	<b>Total</b>					<b>16.86</b>
	Add 5% waste					<b>0.843</b>
	<b>Gross Tq</b>					<b>17.70kg.</b>

Q = 3 :-

⇒ Step = 01 :-

Effective length :-

Eff. length (x) = Length - b / side covers.

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

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

Step = 02 :-

No's of Bar :-

No's of Bar (x) = eff. length / spacing + 1

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

$$= \boxed{14 \text{ No's}}$$

No's of bar (y) = eff. length / spacing + 1

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

$$= \boxed{14 \text{ No's}}$$

Date: 

(10)

M T W T F S

⇒ Step = 3 :-

Cutting Length :-

Along (x) = [eff. length + (bends)] -  
bent deductions

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

$$= 2252 \text{ mm}$$

$$\text{or } \boxed{2.5 \text{ m}}$$

Along (y) = [eff. length + (bends)] -  
bent deduction (2d)

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

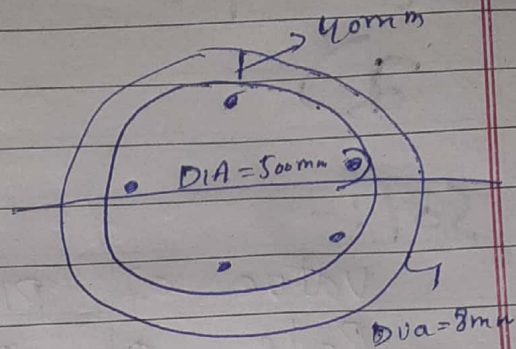
$$2252 \text{ mm}$$

$$= \boxed{2.5 \text{ m}}$$

S.No	Type of bar	Dia (mm)	No.	Length m	Total length	weight (kg/m)	Total weight (kg)	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								
Add 5% waste								42 kg
Gross weight								44 kg

Q No = 4:-

1)



Circular column:-

Dia of column = 500 mm

Dia of stirrup c/c =

$$500 - (2 \times 40) - (4 + 4) = \underline{412 \text{ mm}}$$

Parameter of stirrup =

$$\pi d = 3.142 \times 412 = \underline{1294.50 \text{ mm}}$$

Hook length = 10D

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

Cutting length of stirrup =

Parameter of stirrup + Hook L

$$= 1294.50 + 160 \text{ mm} = \underline{1454.50 \text{ mm}}$$

$$\rightarrow \underline{1454.50}$$

1000

$$= \underline{1.4546 \text{ m}}$$

Date:

(13)

M T W T F S

$$Q = 42$$

2)

Sol:-

$$\begin{aligned} \text{Value of plot} &= 350000/- \\ \text{Rate of rent} &= 6\% \end{aligned}$$

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

$$\begin{aligned} \text{Value of building structure} &= 420000 \\ \text{Rate of rent} &= 8\% \end{aligned}$$

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

$$\begin{aligned} \text{Total Annual rent} &= 21000 + 33600 \\ &= 54600 \\ &= \frac{54600}{12} = \boxed{4550} \end{aligned}$$

$$\text{One day rent} = \frac{4550}{30} = \boxed{151.66}$$

Q = 5ADR :-

Alternate dispute resolution is often referred to as ADR.

#

Type Arbitration :-

Arbitration utilizes the help of a neutral third party and informal trial. After hearing each side the hearing the third party issues a decision that the disputing parties may have agreed to be binding or non-binding. When binding the decision can be enforced by a court and is considered final. Although the arbitrator is an active facilitator and will pronounce a decision.

Date: 

15

## # Arbitration Act - 1996 S.1

- a) The object of arbitration is obtant the fair resolution of disputes by an impartial tribunal (Equality) with out unnecessary delay or expense.
- b) The parties should be free to agree how their disputes are resolved subject only to such safeguard as are necessary in the public interest.
- (c) in matters governed by this part the court should not interveance except as provided by this part.

## # Arbitration Act - 1996 S.9

when a party tries to ignore an arbitration clause agreed in the contract the court in



he. or she is  
 trying to make this  
 claim will order a  
 stay of proceeding  
 so that the matter  
 may be referred arbitration  
 as agreed in the  
 contract.

## # Arbitration Act-1996 - S. 18

Act section 18 is not  
 yet made in more  
 section is 17-30, 42  
 etc.

## more type of ADR:-

### # Mediations:-

At first  
 glance mediation and  
 arbitration are incredibly  
 similar. one of the  
 main difference is that  
 a mediator or impartial  
 third party cannot force  
 the parties to agree  
 and is not allowed  
 to decide the out-  
 come of the dispute.

# # MED-ARB:-

This form of ADR is one in which the mediator starts as a mediator but should be binding decision maker. Med-ARB is a mixture of mediation and arbitration that pulls from the benefits of the two.

# # Mini trial:-

A mini trial is not so much a trial as it is a settlement process. Each party presents their highly summarized case. At the end of mini trials the representatives attempt to settle the issue.

## # Advantage & Disadvantage of ADR:-

- ⇒ Are less costly and easily accessible to the poor.
- ⇒ Resolve disputes at grassroots level and enhance to go justice.
- ⇒ Promote economic development more flexibility
- ⇒ More flexibility
- ⇒ Produce good result settlement rates of up 85 percent.
- ⇒ Increased compliance with agreed solution

## # Disadvantage of ADR:-

- ⇒ it can be used as a stalling tactic
- ⇒ parties are not compelled to continue negotiations or mediation
- ⇒ Does not produce legal precedents.

- ⇒ Exclusion of Preemptive Parties in final agreement
- ⇒ Parties may be limited bargaining power
- Parties do not have much of a say
- ⇒ may not protect parties legal right
- ⇒ These are limits to the discovery process.

