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7966

SECTION-B

QUANTITY ESTIMATION

SIR IMTIAZ

FINAL EXAM

Question no 1 Part (A)

Solution:

External length of building
$= 14' + 14' + 2(1.125) + 0.75$
$= 31 ft$

External breadth of building
$= 12' + 8' + 2(1.125) + 0.25$
$= 23 ft$

Plinth area of building $= 31 \times 23$
$= 713 ft^2$

Rate of construction $= Rs\ 300 / sft$

Cost of construction $= 713 \times 300$
$= Rs\ 213900$

Water supply and sanitary $= 213900 \times 10/100$
$= Rs\ 21390$

Cost of electric supply $= 213900 \times 10/100$
$= Rs\ 21390$

Cost of gas supply $= 213900 \times 5/100$
$= Rs\ 10695$

Total cost $= 213900 + 21390 + 21390 + 10695$
$= Rs\ 267375$

Contigencies $= 267375 \times 3/100$
$= Rs\ 8021.25$

Grand total $= Rs\ 267375 + Rs\ 8021.25$
$= Rs\ 275396.25$ Ans.

Q1 Part (B)

for one room:- Step 01 (Total wall length)

= 14+14+12+12

= 52ft = 15.8496m.

Step 02:- (Total area of wall, door)

Total area of wall = L×H

= 52×3

= 15.8496×3

= 47.5488m²

Total area of door = 2×1 => 2sqm

Step 03:- Plaster area = Area of wall - Door (area)

= 47.5488-2 => 45.5488 sqm

∵ 1sqm = 10.765sqft

So = 45.5488×10.76

= 490.105 sqft

Second room:- Same steps will be placed.

For bath & kitchen:-

Step 01:- (Total wall length)

Bath = 4+8+4+8

= 24feet = 7.31m

kitchen = 8+8+8+8

= 32feet = 9.75m

Step 02:- (Total area of wall, door)

Total area of wall of kitchen = L x H

= 9.75 x 3

= 29.25 m^2

Total area of wall of ~~door~~ Bath = L x H

= 7.31 x 3

= 21.93 m^2

Step 03:- Plaster area for kitchen.

= Area of wall - Area of door

= 29.25 - 2 → into sqft 296.1152 ft^2

= 27.25 m^2

Plaster area for bath

= 21.93 - 2 => 19.93 m^2

Changing m^2 into ft^2 become 214.44 ft^2

For total Internal plaster area

= plaster area of one room + Second room + R.A of kitchen + P.A of bath

= 490.106 + 490.105 + 296.1152 + 214.44 +

=> 1490.772 ft^2

Question #02

Calculate the bar bending schedule of given beam .....?

Step 1:- (Length of bar 12mm Bottom bars)

Length of steel 12 mm

= (Length of beam - cover x no. of bars)

= (4000 - 2(30) x 2)

= 7880mm or 7.88m

Step 2:- (Length of bar 10mm Top bars)

Length of steal 10mm = (4000 - 2(30) x 2)

= 7880mm or 7.8m.

Step 3: (Weight of bar 12mm bottom bars)

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

= $(12^2/162) \times 7.88$

= 7.004 kg

Step 4:- (Weight of bar 10mm Top bars)

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

= $(10^2/162) \times 7.88$

= 4.864 kg

Step 5: (No. of Stirrups)

No of stirrups = length of beam / spacing + 1

= (400/200) + 1

= 21 No's

Step 6:- (cutting length of stirrups)

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

$= \{2(132)+2(132)+(2\times10\times8)-\{5\times8\}\}$

$= 264+264+160-80$

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

Step 7:- (Total length of stirrups)

⇒ Cutting length x no. of stirrups

$= 0.608 \times 21$

$= 12.768\text{m}$

Step 8:- (Weight of stirrups)

$= d^2/162 \times l$

$= \frac{8}{162} \times 12.768$

$= 5.044\text{ kg}$

Step 9:- Unit weight of steel 10mm

Weight of steel $= d^2/162$

$= (10^2)/162 \Rightarrow 0.61\text{kg/m}$

Step 10:- Unit weight of steel 12mm

$= d^2/162$

$= (12)^2/162$

$= 0.89\text{kg/m}.$

wt/L

location	Bar NO	No of bars	cut length	~~spacing~~	T.L	T.W	Note.	Spacing
12mm Bottom bar	12mm	2	3940 mm 3.94 m	0.89kg/m	7880 mm	7.004	$12^2/162 = 0.89$	—
10mm Top bar	10mm	2	3.94 m	0.611kg/m	7.88m	4.86	$10^2/162 = 0.61$	—
Stirrups	8mm	21	0.605m	0.395	12.768m	5.044	$8^2/162 = 0.395$	200c/c
						16.9084kg		
Total								
Addl. wastage						0.8454		
						17.7534		
Grass weight								

Question #03

Answer. **Step 01:** Effective length.

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

= 2000 - 2x50 = 1900mm

Eff length (y) = 2000 - 2x50 = 1900mm

Step 02: No. of bars.

No. of bars (x) = eff length/spacing + 1

= (1900/150) + 1 = 13.6

= 14 NO.s

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

= (1900/150) + 1 = 13.6

= 14 NO's

Step 03: cutting length.

Along (x) = {eff length + (bends)} - bend deductions

= (1900 + 2(300 - 50 - 50) - (2x12))

= 2252mm or 2.5m.

Along (y) = (1900 + 2(300 - 50 - 50) - (2x12))

= 2252mm

= 2.5m.

Step 4 :- T.L of 12mm bar

⇒ Cut length x No. of bars

: 2.25 x 14

: 31.5 m

Step 5 :- T.W of 12mm bar

⇒ 31.5 x 0.89

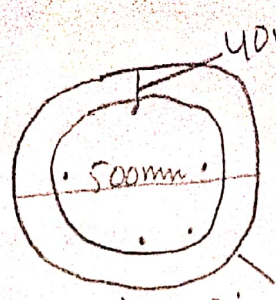
Spacing, ⇒ 28.035 kg.

Location	Bar No	No. of bars	cut length	wt/L	T.L	T.W	Note	Spacing
x-direction	12mm	14	2.25 m	0.89	31.5 m	28.035 kg	$12^2/162$ = 0.89	150mm
Y-direction	12mm	14	2.25 m	0.89	31.5 m	28.035 kg	$12^2/162$ = 0.89	150mm
Total						56.07kg		
Add 5% wastage						2.8035kg		
Gross Weight						58.87 kg		

(2)

Question # 034

Answer: Circular column.



Dia of column = 500mm

Dia of stirrup c/c = 500 - (2x40) - (4+4) Dia = 8mm

= 420mm

Parameter of stirrup => $\pi d = 3.142 \times 420 = 1319.64$mm

Hook length = 100

10x8 = 80x2 = 160mm

Cutting length of Stirrup = parameter of stirrup + Hook L

= 1319.64 + 160mm

= 1479.64 mm

= 1.4796m.

Part b:

Solution:-

Value of plot = 350000

Rate of rent = 6%

Annual rent for plot = $\frac{350000 \times 6}{100}$ => 21000.

Value of building structure = $\frac{420000 \times 8}{100}$

= 33600

Total Annual rent = 21000 + 33600

= 54600

Mothly rent = $\frac{54600}{12}$ = **4550**

One day = 4550/30 = **151.66**

Question #05

Answer: TYPES of ADR:

Following are the types of (ADR) alternate dispute resolution

① Arbitration ② Mediation ③ Med-Arb
④ Mini trail ⑤ Summary Jury Trial (SJT)
⑥ Negotiation.

Arbitration and Mediation are the most compulsory types of (ADR).

→ **Arbitration:** It utilizes with help of a neutral third party and is similar to an Informal trial. After hearing each side, the third party issues and decision that the disputing parties may have agreed to binding or non-binding

→ **Mediation:** Similar to Arbitration, One of the main differences is that a mediater cannot force a party to agree and is not allowed to decide the outcome of the dispute. The mediater works with the parties to make a solution and the agreements are non-binding.

→ **Med-Arb**:- This form of ADR in which the arbitor starts a mediator but, should the mediation fail, the arbitor will impose a binding decision Med-Arb

→ **Minitrial**:- It is a settlement process. Each party presents their summarized case.

→ **(SJT)** :- It is similar to minitrial. However the case is presented to mock jury. It produces and advisory verdict.

→ **Negotiation**:- There is no impartial party to assist the parties in their negotiation so the parties work together to come into a compromise.

Act 1996 Section 1 :-

1) This act may be called the Arbitration and conciliation Act 1996.

(2) It extends to the whole of India Provided that parts I, III and IV shall extend to state of Jammu and Kashmir

(3) It will come into force on such date as the central govt may, by notification into Official gazette.

Section: 09

① for the appointment of a guardian for a minor unsound the purposes of arbitral proceeds.

Section - 18:-

(01) Equal treatments of parties. each party shall given a full oppurtunity to represent his case.

Advantages	Disadvantages
① Bringing up of solutions through ADR, tend to minimize uncertainty and improve working relations.	1) No one guarantee for trustworthies blw parties which can effect the progress of construction work.
② Bringing up of solutions without wastage of time which is also Beneficial for construction.	2) Unfavourable circumstance blw both parties results in ruining of project