# 1393

April 2025

Time – Three hours
(Maximum Marks: 100)

[*N.B.* 1. Answer all questions under Part-A. Each question carries 3 marks.

2. Answer all the questions either (a) or (b) in Part-B. Each question carries 14 marks.]

## PART – A

1. List out the types of approximate estimate.
2. Compute the material requirements for Cement Concrete 1:2:4 - $1m^3$(using 20mm aggregates) using thumb rule.
3. Write short notes on Lump sum provision.
4. Write about wall plastering.
5. Prepare detailed quantity for 150 mm thick RCC roof slab of room size 5m×4m.
6. Write short notes on contingencies.
7. Write any three abbreviations in group system.
8. Write about the columns in dimension paper.
9. What is sinking fund?
10. Define standard rent.

## PART – B

11. (a) The actual expenditure incurred in the construction of a single storey residential building of plinth area $98m^2$ is found to be Rs. 28,55,000 in which 55% towards the cost of materials and remaining is towards the cost of labour. It is now proposed to construct a similar building of same height and specification with the plinth area of $74m^2$ at the place where the cost of materials are 13% more and cost of labour is 19% less. Estimate approximately the cost of proposed building.

*(Or)*

(b) Explain the steps involved in writing standard specification.

[Turn over.....

12. (a) Prepare the data for RCC beam of size 300 x 450mm with CC 1:2:4 mix using 20mm hard broken stone with reinforcement at 150 kg of steel/$m^3$ including centering, shuttering etc. complete - 1 $m^3$.

**RCC beam of size 300 x 450mm with CC 1:2:4 mix using 20mm hard broken stone with reinforcement at 150kg of steel/$m^3$ including centering, shuttering etc. complete - 1 $m^3$.**

| | | |
|---|---|---|
| Cement concrete 1:2:4 | - | 1 $m^3$ |
| Steel | - | 150kg |
| Binding wire | - | 1% of reinforcement |
| Bar bending/cutting bending and tying grills | - | 150 kg |
| Centering or shuttering | | 8.89 $m^2$ |

**Materials and labour required:**

**CC 1:2:4 using 20mm hard broken stone - 10$m^3$**

| | | |
|---|---|---|
| Broken stone 20mm size | - | 9.00 $m^3$ |
| Sand | - | 4.5 $m^3$ |
| Cement | - | 3240 kg |
| Mason I class | - | 3.5 Nos. |
| Mazdoor category I | - | 21.2 Nos. |
| Mazdoor category II | - | 35.3 Nos. |

**Cost of materials and labours at site (In Rupees)**

| | | |
|---|---|---|
| Cement | - | 6500.00/tonne |
| Steel | - | 60000.00/ tonne |
| Binding wire | - | 62.00/kg |
| Broken stone 20mm size | - | 960/$m^3$ |
| Sand | - | 1000.00/$m^3$ |
| Mason I class | - | 850.00 each/day |
| Mazdoor category I | - | 650.00 each/day |
| Mazdoor category II | - | 600.00 each/day |
| Cutting, bending and tying grills | - | 3000/ 100 kg |
| Centering or shuttering charges | - | 150.00/$m^2$ |
| Mortar mixing charges | - | 100.00/$m^3$ |

*(Or)*

(b) **Prepare the data for Pointing with C.M 1:3 for R.R masonry - 10 $m^3$**
**Pointing with C.M 1:3 for R.R masonry - 10 $m^3$**

| | | |
|---|---|---|
| Cement | - | 34 kg |
| Sand | - | 0.09 $m^3$ |
| Mason II class | - | 1.60 Nos. |
| Mazdoor I class | - | 0.50 Nos. |
| Mazdoor II class | - | 1.10 Nos. |
| Mixing charge | - | 10$m^3$ |

**Cost of materials and labour**

| | | |
|---|---|---|
| Cement | - | Rs. 5200/tonne |
| Sand | - | Rs. 520/ $m^3$ |
| Mason II class | - | Rs. 480 each per day |
| Mazdoor I class | - | Rs. 400 each per day |
| Mazdoor II class | - | Rs. 380 each per day |
| Mixing charges | - | Rs.300/ $m^3$ |

13. (a) Take out the quantities for the RCC works with CC 1:2:4 mix using 20mm HBS for "Community hall with RCC columns & T-beams" from Sketch-1 by Trade system. Assume any other data if necessary.

*(Or)*

(b) Take out the quantities for the Brickwork with CM 1:5 in super structure for "Community hall with RCC columns & T-beams" from Sketch-1 by Trade system. Assume any other data if necessary.

14. (a) Prepare the detailed estimate of quantities for ceiling plastering with C.M 1:3 for "A small residential building with three rooms with R.C.C roof" given in Sketch -2 by Group system.

*(Or)*

(b) Prepare the detailed estimate of quantities for wall plastering with C.M 1:5 for "A small residential building with three rooms with R.C.C roof" given in Sketch -2 by Group system.

15. (a) Write a typical report to accompany the estimate for the construction of Foot over bridge.

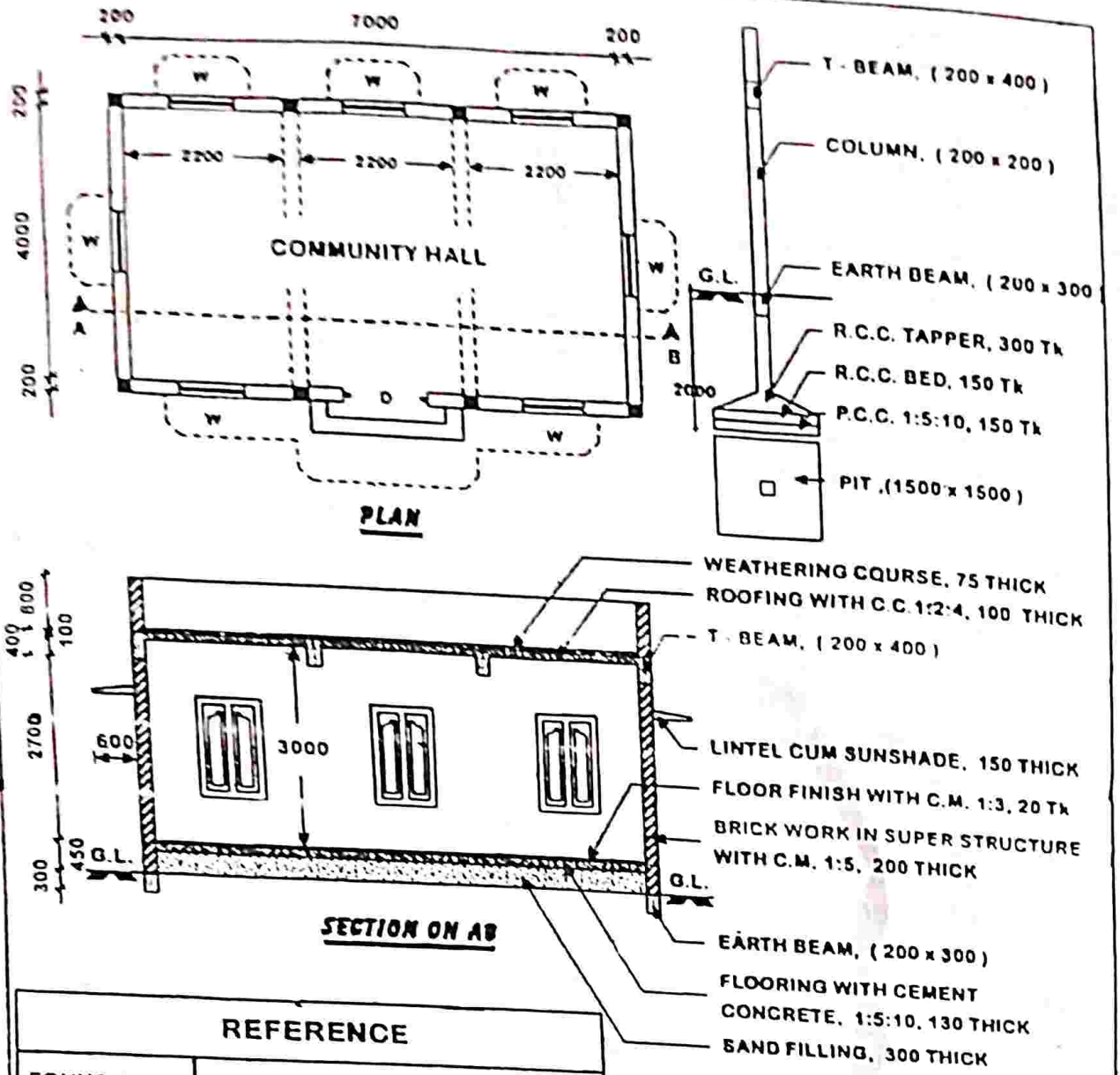
*(Or)*

(b) A newly constructed building stands on a plot costing Rs.20 lakhs. The construction cost of the building is Rs.30 lakhs and the estimated life of the building is 65 years. The investor desires to have 10 % return on the construction cost and 6 % return on the land cost. Assuming annual repairs to be at 0.3 % of the construction cost and other outgoings at 25% of the gross rent. Calculate the monthly rent that will have to be charged for the building. Interest on sinking fund is 2 %.



[Turn over....

# SKETCH - 1

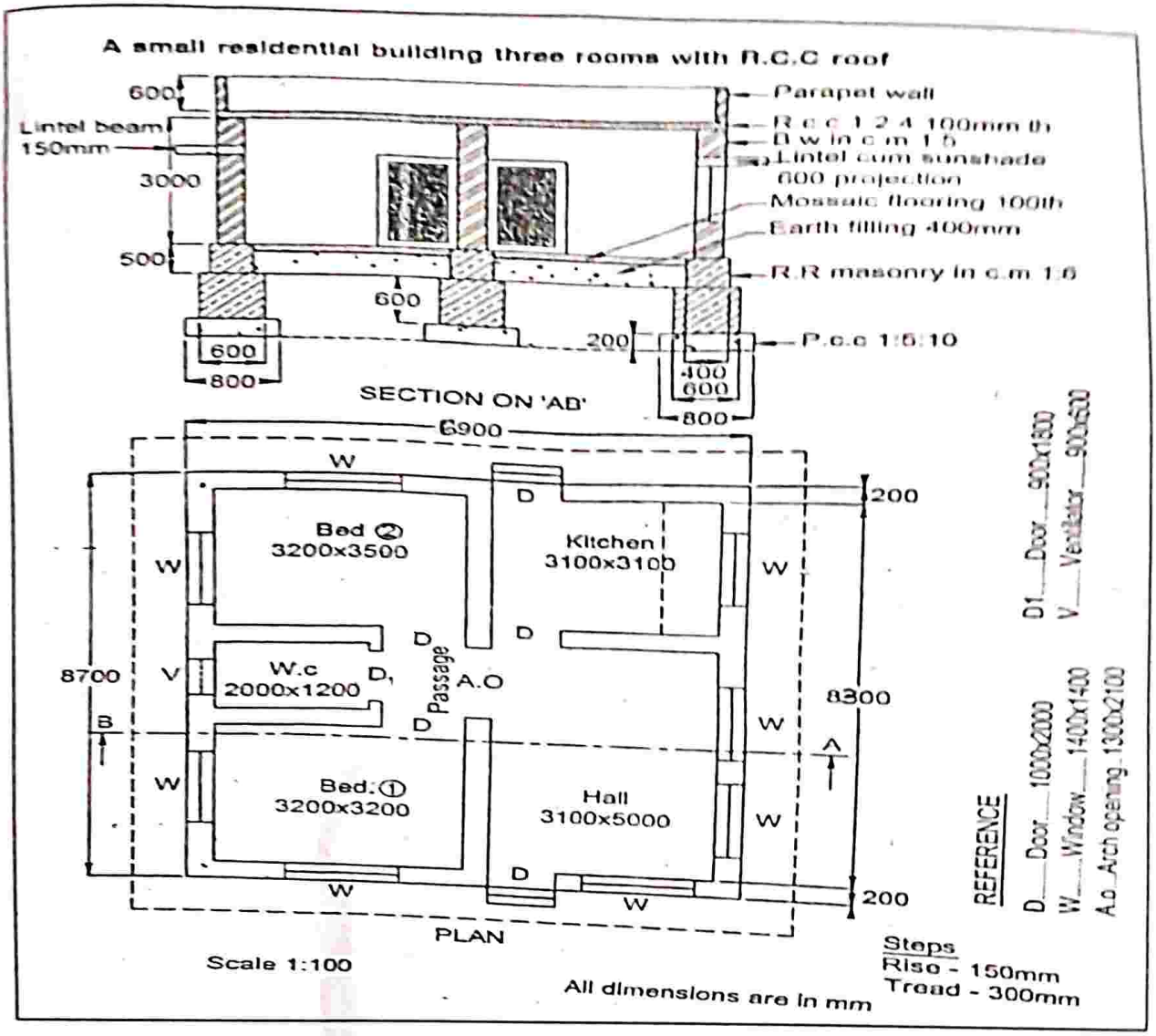



| REFERENCE | |
|---|---|
| FOUNDATION | P.C.C. 1:5:10, 150 Tk |
| | R.C.C. ( BED ) 1:2:4, 150 Tk |
| | R.C.C. ( TAPPER ) 1:2:4, 300 Tk |
| | R.C.C.COLUMN, 200 x 300 |
| DOORS | D - 1200 x 2200 ,FULLY PANELLED |
| WINDOWS | W - 900 x 1500 ,FULLY PANELLED |
| STEPS | TREAD - 300 , RISE - 150. |

**COMMUNITY HALL WITH COLUMNS AND T - BEAMS**

ALL DIMENSIONS ARE IN MM.

## SKETCH – 2


A small residential building three rooms with R.C.C roof
600
Lintel beam 150mm
3000
500
600
600
800
Parapet wall
R c c 1 2 4 100mm th
D w in c m 1 6
Lintel cum sunshade 600 projection
Mossaic flooring 100th
Earth filling 400mm
R R masonry in c m 1 6
200
P.c.c 1:5:10
400
600
800
SECTION ON 'AB'
6900
8700
W
D
Bed ② 3200x3500
Kitchen 3100x3100
W.c 2000x1200
D1
Passage
A.O
V
B
Bed:① 3200x3200
Hall 3100x5000
8300
200
PLAN
Scale 1:100
All dimensions are in mm
REFERENCE
D Door 1000x2000
W Window 1400x1400
A.O Arch opening 1300x2100
D1 Door 900x1800
V Ventilator 900x600
Steps
Rise - 150mm
Tread - 300mm

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