BE C CIVIL) \ SEM VII \ R-19 \ SH-22 \ 12-12-22

Time 4 Hours   **Marks: 80**

QP CODE: 10016147

N.B. : **(1)** Question No.1 is compulsory
        (2) Attempt any **THREE** questions from the remaining 5 Questions
        (3) Figures to the right indicate full marks
        (4) Assume suitable data if necessary

Q1   Figure No 1 shows the plan and sectional details of a Framed Structure.   **20**
Work out the quantities of the following items of work from **Figure No -1**

    a) Total volume of Concrete in all footings
    b) Flooring Quantity
    c) Damp Proof Course
    d) 1st Class Brick Work in Super Structure.
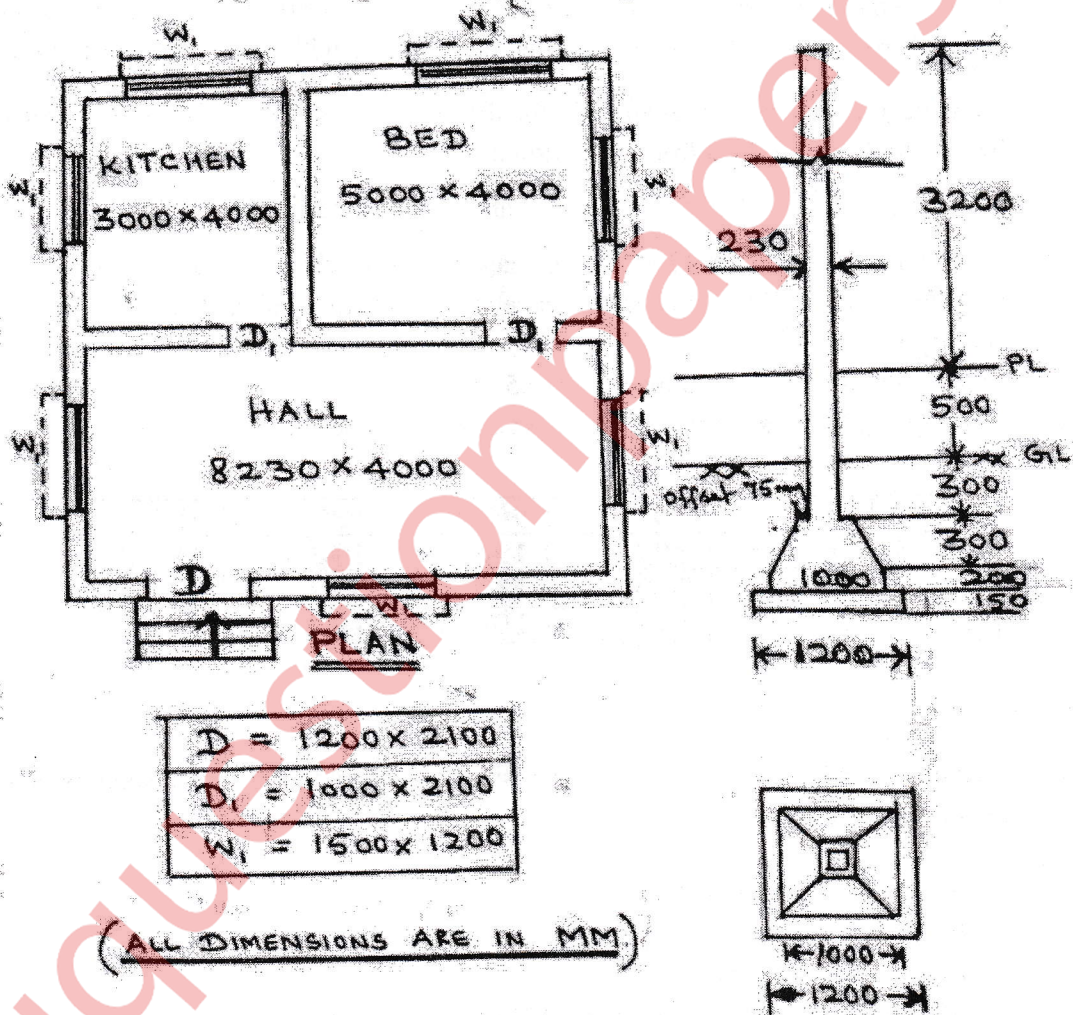

FIGURE No. 1

FOOTING DETAILS

| D = 1200 × 2100 |
| D₁ = 1000 × 2100 |
| W₁ = 1500 × 1200 |

(ALL DIMENSIONS ARE IN MM)

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Q2 (a) Prepare an Abstract of cost for all items in Question Number 1   8

(b) Prepare the Bar bending schedule of a simply supported R.C.C. Lintel from the following 12
specification:
Size of lintel 300 mm wide 200 mm depth.
Main bars in tension zone of Fe 250 (grade I) 3 bars of 16 mm dia., one bar is cranked
through 450 at 170 mm from each end 2 No. anchor bars at top 8 mm dia.
Two legged stirrups@150mm c/c of 6mm dia. throughout.
Clear span of the lintel is 1150 mm. Bearing on either side is 150 mm.

Q3 (a) What are the points to be observed while framing the specification of the items? Draft the 8
detailed specification for three coat internal plastering with synthetic enamel paint

(b) Estimate the quantity of earthwork for a portion of a road to be constructed by **Mid** 12
Sectional Area Method from the following data.

Formation width = 10 m. Side slope in banking = 2:1, and in cutting 1:1.

Downward gradient 1 in 120 from chainage 0 to 120 while it remains in same formation
level from 120 to 180 chainage and have again upward gradient 1 in 90 from 180 to 300
chainage.
Formation level at zero chainage is 210.5 m.
Chainage and corresponding ground levels are given below.

0	30	60	90	120	150
210.5	200.85	199.9	198.65	196.4	199.3
180	210	240	270	300	
198.1	196.33	197.26	196.55	197.28	

Q4 (a) Prepare an Approximate Estimate for Residential Building in western suburbs of Mumbai 10
(RCC framed structure).

     a) Plot Area- 60 m x 30 m
     b) FSI- 1.5
     c) Building is G + 6
     d) Consider foundation cost as 20 % of superstructure cost.
     e) Allow 20% of building cost for all services.
     f) Allow 2.5% of overall cost for consultant fees.
     g) Consider 5 % provision for contingencies.

b) i) Draft a tender notice for a construction of a library building by CIDCO, Navi Mumbai   5
with an estimated cost of Rs. 12,54,67,475 and duration of project is 12 months.

ii) Write short notes on Mass Haul Diagram
                                                                                           5

Q5   (a)   Prepare Rate Analysis for   12

a) RCC Work 1:1.5:3 for beam with 2% steel
b) 1st Class Brickwork in Superstructure with CM 1:6

(b)   A person has purchased a plot of land costing of Rs. 120000 and has constructed a building   8
there on at a cost of Rs. 500000 including w/s. Sanitary and Electrical installations.
Allowing a net return @ 7% cost of construction and 5 % net return on cost of land.
Workout the standard rent of the property with the following data.

i)   Sinking Fund on 4% basis for the future life of 70 years = 0.0022
ii)   Annual maintenance @ 0.5% cost of construction
iii)   Municipal taxes and other outgoings 28% of Gross rent.

Q6   Write short notes on any **FOUR** of the following: 20

a) IS 1200
b) Price Escalation clause of Contract
c) Earnest Money Deposit
d) Easement Rights
e) Factors affecting Rate Analysis
f) Valid, Void and Voidable Contracts