Seat No.: _____                                    Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY
## B.Arch- SEMESTER– VI  EXAMINATION – SUMMER 2023

**Subject Code: 2X65005**                              **Date:03-07-2023**

**Subject Name:Estimating And Costing**

**Time:10:30 AM TO 12:30 PM**                          **Total Marks:50**

**Instructions:**
1. **Question 1 is compulsory & attempt any other four.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

|  |  | **Marks** |
|---|---|---|
| **Q.1** | Prepare detailed estimate of given requirements for figure-01. | **10** |

1. Excavation for the foundation.
2. CC BED
3. Brick Masonry for footing up to Plinth.
4. Refilling of soil in foundation trenches.

**Q.2** **(a)** Calculate the required materials for the quantity of Brick Masonry of footing of Q.1.   **05**

**(b)** Prepare abstract sheet for Q.1.   **05**

**Q.3** **(a)** State the equation for area of curved surface, area of base circle, total surface area and volume of right circular cone. Also determine volume and curved surface area of the cone if cone has 0.6m and height 1.6m.   **07**

**(b)** Find area of ellipse with major axis 5cm and minor axis 3cm.   **03**

**Q.4** **(a)** State the unit of measurement of followings,   **05**
1. Form work
2. Hand rails
3. Door handles
4. Plastering
5. DPC

**(b)** Explain Cost, Price and Value.   **05**

**Q.5** **(a)** Explain Specification and also state the principle should be adopted while writing the specification.   **05**

**(b)** Write down the factors affecting rate analysis.   **05**

**Q.6** **(a)** Give the rate analysis for $1^{st}$ class brickwork in superstructure in CM (1:4) for $10m^3$.   **07**

**(b)** Give the current market rates of the following:   **03**
1. Cement
2. Brick
3. Mild Steel Bar

**Q.7** A simply supported beam of 400mm X 750mm resting on two wall supports of 200mm thick with clear distance between supports 6000mm. the reinforcement provided in the beam is as follows. Take top/bottom/side cover = 25mm.   **10**

TOP BARS: - 2Nos-12mmø
BOTTOM BARS: - 4Nos-25mmø
BENT UP BARS: - 2Nos-25mmø
STIRRUPS: - 6mmø @ 300mm c/c
Calculate,
1. Quantity of form work (2 mark)
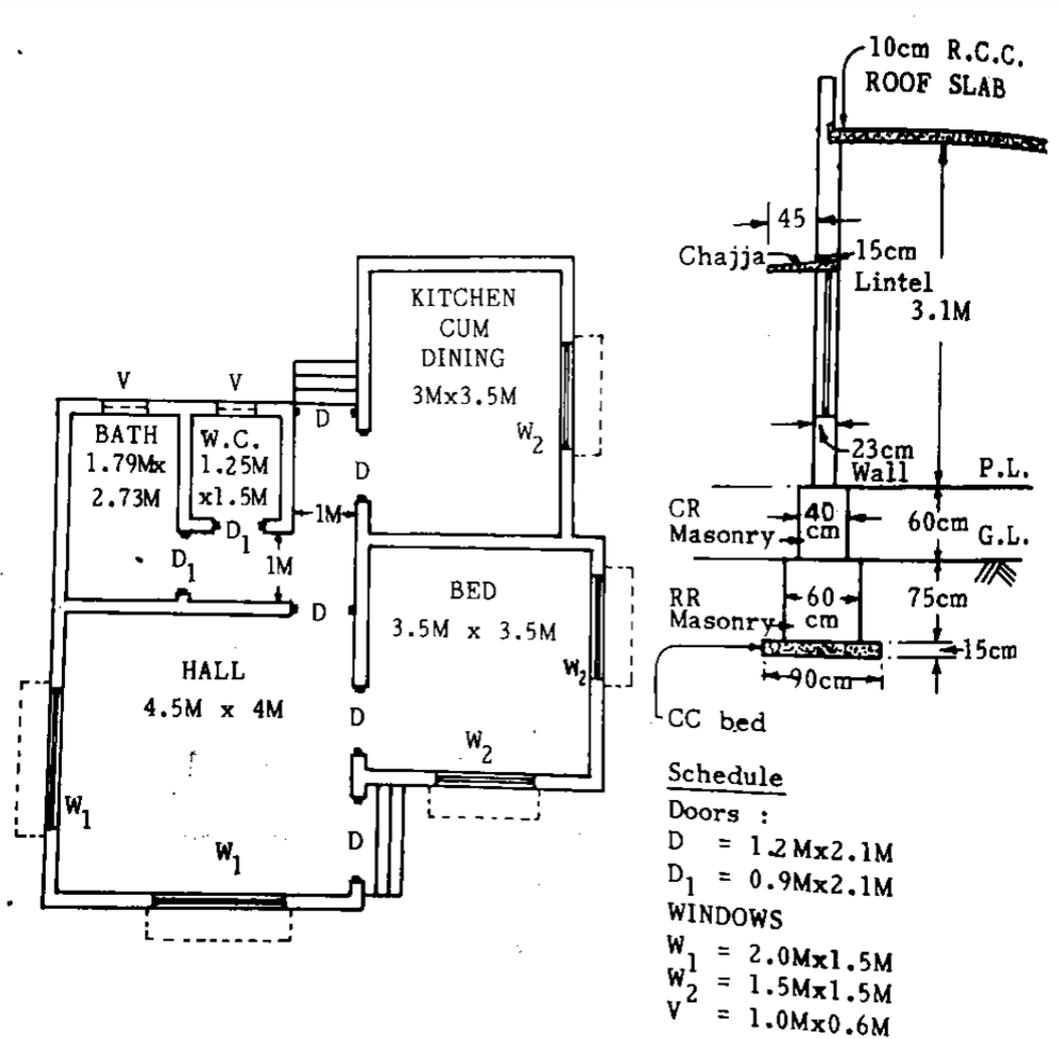2. Quantity of concrete work (2 Mark)
3. Quantity of steel (6 mark)



FIGURE-01

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*