Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ARCHITECTURE& PLANNING

B.Arch./ B. ID. Winter 2019-20Examination

Semester: 5 **Date: 06/12/2019**
Subject Code: 01101306 **Times: 10:00 am to 12:00 pm**
Subject Name: Structural Design & Analysis - III **Total Marks: 50**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever required.
4. Draw suitable sketches wherever required.

Q.1 Demarcate the Structural Grid/ Pattern (Scale 1:200) and Sketch / Draw the Wall Section, Size of Columns, Beams & Slab Depth with respect to the material used for construction according to the Site and Context (Scale: 1: 20). Choose any of the following climate out of the following three: Jaisalmer (Hot & Dry), Leh (Cold & Dry) &Trivandrum (Warm & Humid) Please refer the Figure No. 01. **(10)**

Q.2 **Attempt any five out of the following six: (suitable sketches)** **(20)**

1) Filling the Blanks:
- a) _____ % of reduction in imposed load is done for constructing over 05-10 floors.
- b) _____ is the UDL per m^2& _____ concentrated load generated by Living & Bed Room.
- c) _____ per m^3 dead load is generated by Timber.
- d) _____ is the UDL per m^2& _____ concentrated load generated by Corridors / Passages / Staircases in Educational Institutional and Assembly Buildings.

2) Define the Following with relevant sketches:
- a) Spatial Fir
- b) Lateral Force System
- c) Truss
- d) Radial Grid

3) Differentiate any one of the following:
- a) Structural Design & Structural Analysis
- b) Determinate & Indeterminate Structure.

4) What is truss? Enlist and Explain the various types of truss.

5) Draw / Sketch the demarcation of Load Transfer System (Load Accumulation) from Rooftop to Foundation as a Brick – Reinforced Concrete Cement Composite Building Material.

6) State the difference between Regular & Irregular Grids along with relevant sketches and one built structure for each of them.

Q.3 Brief any five types of spatial composition of Structural Grids / Patterns out of the following six with necessary sketches. **(10)**
1. Irregular Grids
2. Contrasting Orientation
3. Tartan Grids
4. Large-scale Spaces
5. Radial Grids
6. Shared Grids

Q.4 Answer the following: (any two) **(10)**
1. Explain the Fundamentals of Spanning System and give a briefexplanation on One Way & Two Way Spanning with necessary sketches.
2. Enlist and Explain the fundamentals importance of Grid Modification with necessary Sketches.
3. Explain the Structural Principals with respect to Architecture (Conceptual, Experimental and Contextual Ordering of Architecture with one relevant examples and sketches.

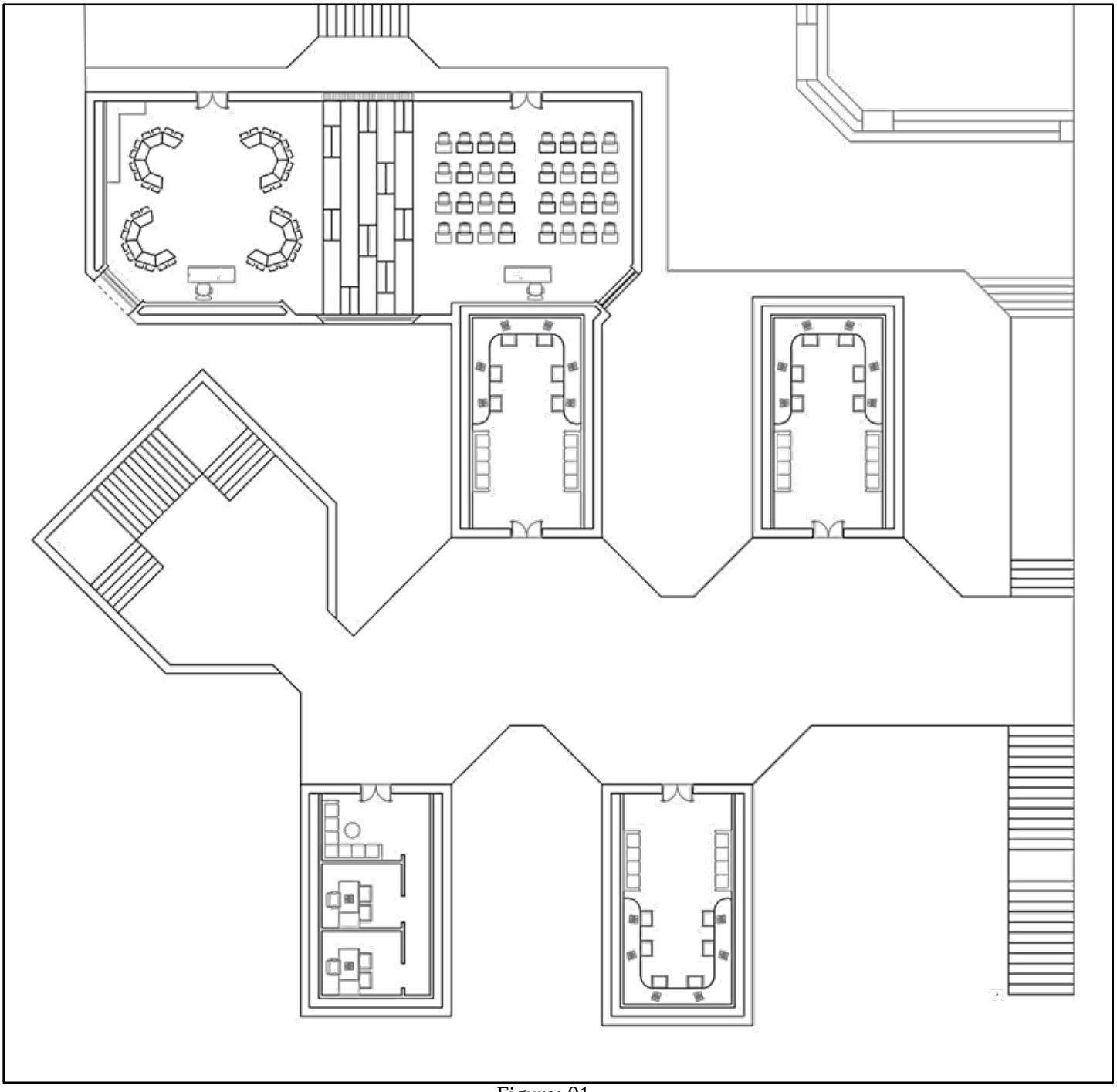

Figure: 01