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

PARUL UNIVERSITY

FACULTY OF ARCHITECTURE

B.Arch., Summer 2016-17 Examination

Semester: 3 **Date: 08/06/2017**

Subject Code: 01101206 **Time: 2pm to 4pm**

Subject Name: Structural Design & Analysis - I **Total Marks: 50**

Instructions:

1. Each section carries 25marks.
2. **Q1** and **Q2.a** are compulsory questions of each section.
3. **Q2.b** has sub optional questions.
4. Only one question has to be attempted between **Q3** and **Q4** in each section
5. Figures to the right indicate full marks.
6. Write separate sections on separate answer sheets.

SECTION: A

Q:1		Differentiate the following: 1. Centroid & Centre of Gravity 2. Moment & Couple	**(10)**
Q:2	**(a)**	State and explain Lami's theorem.	**(05)**
Q:2	**(b)**	Explain in detail with sketches system of forces.	**(05)**
		OR	
Q:2	**(b)**	Explain with sketches coplanar forces and non coplanar forces in detail.	**(05)**
Q:3		Write difference between Frame structure & Load Bearing Structure	**(05)**
Q:4		Define moment of inertia and radius of gyration.	**(05)**

SECTION: B

Q:1		Define following: (any five) [a] parallelogram theorem [b]Parallel axis theorem [c] perpendicular axis theorem [d] Center of gravity [e] Dead load [f] temporary structure [g] permanent structure.	**(10)**
Q:2	**(a)**	Draw a neat sketch of wall section showing all important components of a masonry or R.C.C. walls.	**(05)**
Q:2	**(b)**	Find the centroid of L- shape having a size of 100 x 100 x 8mm.	**(05)**
		OR	
Q:2	**(b)**	Explain the role of shallow foundation and deep foundation in a multi storey masonry building.	**(05)**
Q:3		Explain the role of structure in architectural field.	**(05)**
Q:4		Explain the following term (any two) (a) Equilibrium of body (b) space diagram (c) free body diagram.	**(05)**