

BACHELOR OF ARCHITECTURE EXAMINATION, 2024
(2nd year B. Arch. 2nd Semester)

SUBJECT: STRUCTURE FOR ARCHITECTS

Time : Three hours

Full Marks: 100

Instructions: Answer for 100 marks. Use sketches wherever necessary.

- 01** Describe why an Architect should have adequate senses and understanding concerning Structural behaviour of different structural systems.

Describe how Nature acts as a store-house of learning on structural principles that can very well be utilized in building and other structures. Elucidate with appropriate examples **25**
- 02** With appropriate examples and relevant sketches describe the different types of loads including their effects that a building structure is often subjected to. **25**
- 03** With suitable examples and appropriate sketches describe the typologies, properties and behavior of various natural and artificial materials used for building structures **25**
- 04** In reference of structural behavior of various structural systems and classical and modern examples of Architecture, describe the purpose of optimization of a structural system when an Architect attempts to arrive at a judicious balance among apparently conflicting issues including equilibrium, stability, strength, aesthetics and economy. **25**
- 05** With suitable sketches describe in brief: (a) Tension, (b) Compression, (c) Shear, (d) Torsion and (e) Simple Bending. Using appropriate sketches describe detailing for tensile structures using tensile fabric and stranded wire rope structures at foundation, at supports, at the interface of the cables and the fabric. Furnish a few sketches on variations of Tensile cable structures. **25**
- 06** Describe the structural principles of (a) Trabeated and (b) Arcuated constructions. Describe the behavior of (a) Beams, (b) Vierendeel girders, (c) Trusses, (d) Arches, (e) Vaults, (f) Domes. **25**
- 07** Describe the structural typologies usually adopted for high rise and skyscraper buildings in light of the principles propounded by Dr. Fazlur Rahman Khan **25**