

BACHELOR OF ARCHITECTURE EXAMINATION, 2023
(B. Arch. 2 nd Year, 2 nd Semester)

SUBJECT: STRUCTURE FOR ARCHITECTS

Time: Three hours
Full Marks: 100

Instructions: Answer for 100 marks. Use sketches wherever necessary

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| 01. Compare the role of an Architect with that of an Engineer in respect of Building Design and Construction. | 25 |
| 02. Discuss the different types of loads which a structure is usually subjected to. Explain these loads and their actions using sketches wherever necessary. | 25 |
| 03. Discuss the properties of materials in light of selection of the same for use in different types of structures and parts thereof in architecture. | 25 |
| 04. Elucidate with examples how Architecture has obtained its inspiration from Nature. | 25 |
| 05. Discuss the effects of wind and seismic forces on a building or a structure. Discuss the structural design considerations and systems propounded by the eminent designer Dr. Fazlur Rahman Khan in respect of skyscrapers. | 25 |
| 06. Discuss equilibrium, stability, strength, functionality, economics and aesthetics in light of structural requirements. | 25 |
| 07. Using appropriate sketches and examples, describe Tensile Structures. Show various fixing details at foundation, holding and fixing arrangement for sheeting, etc. | 25 |
| 08. Write short notes on (any five) | 5 X 5 = 25 |
| (i) Felix Candela | |
| (ii) Synclastic and Anticlastic surfaces | |
| (iii) Why haunching in Beams is made? | |
| (iv) Shear | |
| (v) Bending and Torsion | |
| (vi) Outrigger beams | |
| (vii) Sketches of elevations of a typical Cable stayed bridge and Suspension bridge | |
| (viii) Stranded wire ropes --- sketch only | |