



**JBG-161001010105**

Seat No. \_\_\_\_\_

**B. Arch. (Sem. I) Examination**

**December - 2019**

**Structure - I**

Time : 2 Hours]

[Total Marks : 50

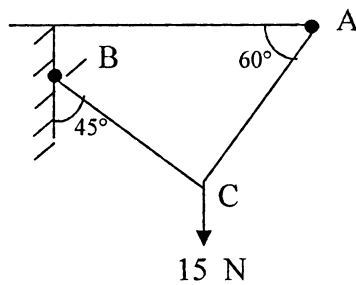
- Instructions :** (1) Attempt all questions.  
(2) Make suitable assumptions where ever necessary.  
(3) Figures to the right indicate full marks.

- 1 (a) Select the appropriate option from below : **5**
- (1) Dead load of 35 cm thick, 5.0 mt. long and 3.5 mt. height brick masonry wall is  
(a) 1760 Kg. (b) 11760 Kg.  
(c) 21760 Kg.
- (2) An electrical light fixture of 5 kg. is hung using 6mm dia. rod. The nature of stress developed in rod is  
(a) Compressive (b) Tensile  
(c) Bending
- (3) Lami's theorem is valid for  
(a) Three forces (b) two forces  
(c) Four forces
- (4) Pound is unit of  
(a) F.P.S. System (b) M.K.S. System  
(c) Both Systems
- (5) A weight of 350 Kg. is hung by 8 mm dia. steel rod, tensile stress will be  
(a) 700 Kg/Cm<sup>2</sup> (b) 70 Kg/Cm<sup>2</sup>  
(c) 7000 Kg/Cm<sup>2</sup>
- (b) State whether it is true or false. **5**
- (1) Plinth in building is called Substructure  
(2) Law of parallelogram is valid for four forces  
(3) As per I.S. 875 Part-III, the Basic wind speed for Rajkot is 49 m/sec.  
(4) Unit of force called fundamental unit.  
(5) N. B. C. means Notional Building Code of India.

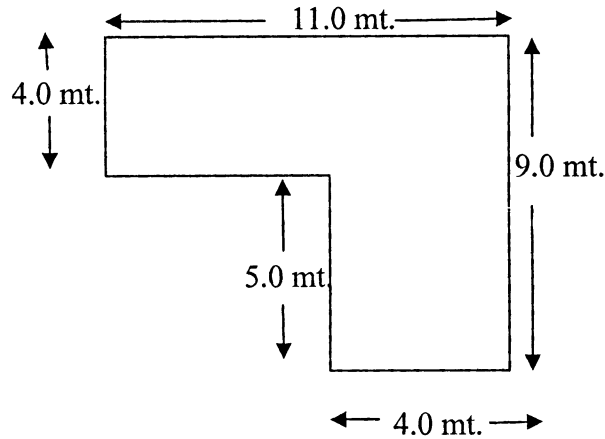
- (c) Draw neat sketch showing Structural and non-structural components of load bearing building structure. 10

2 Answer any two : 20

- (a) Give the detailed classification of building structures as per National Building Code of India.
- (b) An electric light fixture weighing 15 N hangs from point C by two strings AC & BC. Shown in figure, determine forces and stresses in the strings AC & BC. Take diameter of all strings 8mm.



- (c) A plan of a building at Rajkot is shown in figure. Height of Building is 7 mt. Calculate,
- (i) Dead load of R. C. C. slab. Thickness of slab is 125 mm.
- (ii) Live load if used as School building.
- (iii) Wind load on short side of building.



- 3 Discuss different types of loads on structures and its different major structural actions on building structures. 10