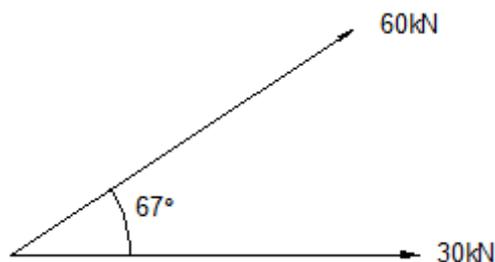


GUJARAT TECHNOLOGICAL UNIVERSITY**BPLAN - SEMESTER- I • EXAMINATION – WINTER 2014****Subject Code: 1015502****Date: 30/05/2016****Subject Name: Fundamentals of Building Structures****Time: 02.30 pm-04.30 pm****Total Marks: 50****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** (1) State the condition for One way slab: _____ **06**
- (a) $L_y/L_x \geq 2$ (b) $L_y/L_x < 2$
 (c) $L_y/L_x = 0$ (d) None of the Above
- (2) Cover dimension provided in beam as per IS 456:2000 is
- (a) 25mm (b) 30mm
 (c) 35mm (d) 40mm
- (3) What does “20” stands for in M20?
- (a) Tensile Strength (b) Compressive Strength
 (c) Quantity of Cement (d) Water Cement Ratio
- (4) Number of coplanar forces passing through one point are
- (a) Parallel forces (b) Concurrent forces
 (c) Spatial forces (d) Perpendicular forces
- (5) It is a scalar quality
- (a) Force (b) Mass
 (c) Moment (d) Couple
- (6) The ratio of Stress and Strain is given as
- (a) Bulk Modulus (b) Modulus of Rigidity
 (c) Modulus of Elasticity (d) Plasticity
- (b)** Define following terms: (Any Four) **04**
- (1) Plasticity
 (2) Elasticity
 (3) Stress
 (4) Strain
 (5) Tension and Compression
 (6) Equilibrium Condition
- Q.2 (a)** Give the magnitude and direction for the given system of force with the help of law of Parallelogram. **05**



- (b) Explain Hooke's Law. Also explain stress-strain curve for mild steel with neat diagram. **05**

OR

- (b) Explain types of loading on beams. **05**

- Q.3** (a) Explain different types of foundations in detail with neat sketch. **05**

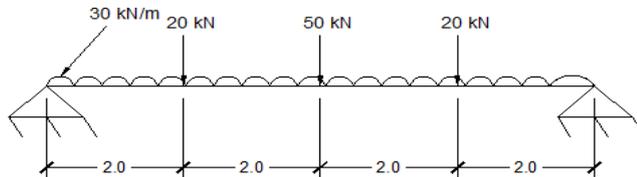
- (b) Explain types of footing for different types of buildings. **05**

OR

- Q.3** (a) Explain Super structure and Sub structure with different components and figures. **05**

- (b) Enlist & Explain different types of beams according to their behavior. **05**

- Q.4** (a) Give the reactions at supports. **05**



- (b) Explain the required considerations for designing of Slab as per IS: 456-2000. **05**

OR

- Q.4** (a) Explain the required considerations for designing of Beam as per IS: 456-2000. **05**

- (b) Explain one way and two way slab with different criteria as per design. **05**

Explain following terms with neat sketches:

- Q.5** (a) (1) Lacing **05**
(2) Battening.

- (b) Explain different types of loads acting on high-rise building in modern world. **05**

OR

- Q.5** (a) Define force. Explain different system of forces. **05**

- (b) Explain Shear wall. Give advantages and disadvantages of shear wall. **05**
