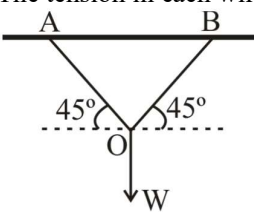


CHAPTER-6

Engineering Mechanics

1. FBD, Equilibrium & System of Forces

1. Two tensile forces, each of magnitude F are acting at a point perpendicular to each other, then their force will be
 (a) $\sqrt{2} F$
 (b) Zero
 (c) \sqrt{F}
 (d) $\sqrt{2F}$ [SSC-JE: 2014 M]
 (e)
2. If the x – component of a force is negative and the y – component is positive, the direction of that force must lie in the :
 (a) Fourth quadrant
 (b) First quadrant
 (c) Second quadrant
 (d) Third quadrant [SSC-JE: 2014 M]
3. What are the equilibrium conditions to be satisfied for a particle applied with a system of non-coplanar, concurrent force
 (a) $\sum F_x = 0, \sum F_y = 0, \sum F_z = 0$ and $\sum M_x = 0, \sum M_y = 0, \sum M_z = 0$
 (b) $\sum F_x = 0, \sum F_y = 0,$ and $\sum F_z = 0$
 (c) $\sum F_x = 0$ and $\sum F_y = 0$
 (d) $\sum F_x = 0, \sum F_y = 0$ and $\sum M_z = 0$ [SSC-JE: 2015]
4. Two wires AO and BO support a vertical load W at O as shown in figure below. The wires are of equal length and equal cross-sectional area. The tension in each wire is equal to:

 (a) $W/2$
 (b) W
 (c) $\sqrt{2}W$
 (d) $W\sqrt{2}$ (SSC -JE (forenoon) 2.3.2017]
5. ties are load carrying members which carry
 (a) torsional loads
 (b) axial compressive e loads

- (c) axial tension loads
 (d) transverse loads

[SSC-JE : (Forenoon) 3.3.2017]

6. the force which moot at one (mint and have thou lines of action in different planes are called
 (a) coplanar non-concurrent forces
 (b) non-coplanar concurrent forces
 (c) non-coplanar non-concurrent forces
 (d) intersecting forces
 [SSC-JE: (Forenoon) 4.3.2017]
7. An object having 10 kg mass weighs 9.81 kg on a spring balance. The value of 'g' at this place is
 (a) 10 m/sec^2 (b) 9.81 m/sec^2
 (c) 10.2 m/sec^1 (d) 9.75 m/sec^2
 [SSC-JE-.(Afternoon) 4.3.2017]
8. Two forces act at an angle of 120° . If the greats' force is 50 N and their resultant is perpendicular to the smaller force, the smaller force is _____ N
 (a) 20
 (b) 25
 (c) 30
 (d) 35 [SSC-JE: (Afternoon) 4.3.2017]
9. Which of the following theorem is used for the equilibrium of the body applied with three concurrent coplanar forces
 (a) Varignon's theorem
 (b) Hamilton theorem
 (c) Pythagoras theorem
 (d) Lami's theorem [SSC-JE: 2015]
10. The tension in the cable supporting a lift is more when the lift is
 (a) moving downward with uniform velocity
 (b) moving upwards with uniform velocity
 (c) stationary
 (d) moving upwards with acceleration
 [SSC-JE: (Forenoon) 2.3.2017]