

APPLIED MECHANICS – IMPORTANT QUESTIONS

- a. Force is a quantity.
- b. The force which tends to decrease the length of the body is called force.
- c. The angle of friction is always then 90° .
- d. The couple produces motion.
- e. The efficiency of a screw jack may be increased by Its pitch.
- f. Centroid is a term used for the bodies having only.
- g. Axis passing through the centroid of the plane lamina is called axis.
- h. Limiting friction is always then kinetic friction.
- i. In an ideal machine, velocity ratio =
- j. Coefficient of friction is =/.....
- k. The unit of moment in SI system is
- l. In a couple the line of action of the forces are.....
- m. A machine is said to be reversible if its efficiency is then 50%.
- n. One kilogram force is equal to N
- o. Efficiency as the load increases
- p. Differentiate between statics and dynamics.
- q. Explain law of superposition.
- r. What do you mean by concept of rigid body?
- s. Where the C.G. does lies of hemisphere, right circular cone, right circular cylinder?
- t. What is law of machine?
- u. Define friction. Give merits and demerits of friction.
- v. Establish a relation between efficiency, mechanical advantage and velocity ratio of a machine.

1. Define Friction.

2. What is normal reaction and resultant reaction ?

3. What do you mean by ideal machine?

4. Different types of friction.

5. Define mechanical advantage .

6. Find the magnitude and direction of the resultant of the following force system.

i. 10 N due north.

ii. 8 N due north-west.

iii. 5 N due east.

iv. 4 N due 35° west of south

v. 12 N due 65° North West.

7. A string ABCD is suspended from two fixed points A and D. It carries two weights of 800 N and W at B and C respectively. The inclination of DC to vertical is 60° and AB is 30° . Angle ABC is 150° . Find the tension in different parts of the string and magnitude of W.

8. What do mean by force? Explain Force system.

9. Derive an equation for equilibrium of a body lying on a rough inclined plane when the motion is in upward direction and force is acting horizontally.
10. What are the different laws of static friction?
 - f. What are the different methods to reduce friction?
11. What is the condition of reversibility of machine?
12. A body of weight 300N is lying on a rough horizontal plane having a coefficient of friction as 0.3. Find the magnitude of the force which can move the body while acting at an angle of 25 degree with the horizontal.
13. Explain the working of worm and worm wheel with diagram?
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