Friction important questions……

1. **Define Friction?**

Ans. – It may be defined as the force which comes into play along the surface b/w two bodies , when one body moves or tends to move over surface of another body.

2. **What are types of friction?**

Ans. – Static friction and dynamic friction.

3. **Name types of dynamic friction?**

Ans – sliding friction and dynamic friction.

4. **Define coefficient of friction?**

Ans – It is the ratio of limiting friction to the normal reaction , b/w the two surfaces in contact.

5. **Define angle of repose?**

Ans – The minimum angle which an inclined surface makes with the horizontal , when a body placed on it is on the point of moving down , is called angle of repose.

6. **What is cone of friction?**

Ans. – It is defined as right circular cone with vertex at point of contact of the two bodies , axis in the direction of normal reaction , semi vertical angle equal to the angle of friction.

7. What are harmful effects of friction?

Ans. – 1. It causes wear and tear of the moving parts.
2. it causes loss of energy which turns into heat energy.
3. It decreases the efficiency of machinery as extra power is required to overcome friction.

8. What are methods of reducing friction?

Ans. – 1. Polishing
2. lubricants
3. Use of ball bearings
4. Streamlining
5. Avoiding moisture
6. Proper selection of materials.

9. On which factor coefficient of factors depends?

Ans. – It depends on smoothness or roughness of two surfaces in contact smoother the surfaces , lesser the value of it.

10. Why rolling friction is lesser than the sliding friction?

Ans. – Rolling friction is always lesser than sliding , because area of contact in case of rolling is much less than the area of contact in case of sliding of a body over another.

11. Name example of rolling friction and sliding friction?

Ans. – Sliding friction examples are movement of piston in the cylinder , ..
Rolling friction examples are rolling of cylinder over ground.

12. Define limiting friction?

Ans. – It is the maximum value of static friction which comes into play when a body just begins to slide over the surface of another body.

Centre of gravity Questions

1. **What is called gravitation?**

Ans. - Gravity, also called gravitation, is a force that exists among all material objects in the universe. For any two objects or particles having nonzero mass, the force of gravity tends to attract them toward each other.

2. **What is Centre of gravity simple definition?**

Ans. - A point, near or within a body, through which its weight can be assumed to act when considering forces on the body and its motion under gravity. This coincides with the center of mass in a uniform gravitational field.

3. **Define centroid or centre of area?**

Ans. – It is defined as the point where the whole area of a plane figure is assumed to be concentrated.

4. **What is difference between centre of gravity and centroid?**

Ans. – The term centroid is used only for plane figures which have only area but no mass , whereas the term COG is used for solid bodies having mass.

5. **Where is center of gravity in human body?**

Ans. - Centre of Gravity in the Human Body - In the anatomical position, the COG lies approximately anterior to the second sacral vertebra. However, since human beings do not remain fixed in the anatomical position, the precise location of the COG changes constantly with every new position of the body and limbs.

6. **Can you change your center of gravity?**

Ans. - By changing the shape of your body, you can change the position of your center or gravity relative to your body.
However, if you learn to feel your foundation, you can feel where your center of gravity is located, no matter what shape you make your body.

7. **Who discovered Centre of gravity?**

Ans. - The concept of "center of mass" in the form of the center of gravity was first introduced by the great ancient Greek physicist, mathematician, and engineer Archimedes of Syracuse.

8. **Why is center of gravity important?**

Ans. - Gravity is this invisible force that pulls objects toward one another. And one of the things that gravity does is pull us toward the earth. So it's important to know that's what gravity is. And then center of gravity is sort of this middle point where all of a body's weight or an object's weight is.

9. **What is the center of gravity of a rocket?**

Ans- As a rocket flies through the air, it both translates and rotates. The rotation occurs about a point called the center of gravity. The center of gravity is the average location of the weight of the rocket.

10. How does center of mass change?

Ans. - The velocity of the system's center of mass does not change, as long as the system is closed. The system moves as if all the mass is concentrated at a single point. If we throw a tennis racquet, the racquet rotates around its center of mass.

11. What is the center of mass of two bodies?

Ans. - The center of mass is a position defined relative to an object or system of objects. It is the average position of all the parts of the system, weighted according to their masses. For simple rigid objects with uniform density, the center of mass is located at the centroid.

SIMPLE MACHINES

1. **Define simple machine?**
   Ans. – In which there is only one point of application of effort and one point for lifting the load. Example – pulley , screw jack etc.

2. **Define compound machine?**
   Ans. – combination of simple machine is compound machine. E.g – lathe , railway , shaper etc.

3. **Lifting machine?**
   Ans- It is a device which enalbles us to lift heavy load by applying smaller effort .

4. **Use of machines?**
   Ans. – 1.to lift heavy loads ,
   2. to convert energy
   3. to increase speed
   4. to change the direction of force
   5. to transfer energy from one place to another….

5. Define the term velocity ratio?

Ans. - Ratio of distance moved by the effort to the distance moved by load is called velocity ratio.

6. Define the term lever?

Ans. Staright rigid bar which can rotate freely or turn about a fixed point , called fulcrum , is known as lever.

7. Define screw jack?

Ans. – It is a device which is used for lifting loads by applying comparatively smaller effort at the end of the handle.

8. Is screw jack a lever?

Ans. - The screw jack consists of two simple machines in series; the long operating handle serves as a lever whose output force turns the screw. ... However, most screw jacks have large amounts of friction which increase the input force necessary, so the actual mechanical advantage is often only 30% to 50%

9. How many types of screw jacks are there?

Ans. - There are 3 main types of screw jacks: machine/worm gear screw jacks, ball screw jacks, and bevel gear jacks

10. What is self locking screw?

Ans. - Self-locking screws are defined by the angle of their threads. The threads of self-locking screws are precisely angled so that, once the screw is placed, they will not slip or move unless some additional force is applied.