QUIZ NO: 809

TOPIC: MECHANICS

DATE: 21/03/2024

1. **Calculate the force that is required to slide a mass of 980 kg on a guide, when the coefficient of friction between the surfaces is 0.09**

   [A] 11 kg

   [B] 72 kg

   [C] 88 kg

   [D] 96 kg

   Answer: C

2. **What is the direction of frictional force against a motional object?**

   [A] Inclined to the object

   [B] Opposite to the object

   [C] Parallel to the object

   [D] Perpendicular to the object

   Answer: B

3. Which force is directly proportional to the normal reaction between contacting surfaces?

[A] Pulling force

[B] Pushing force

[C] Frictional force

[D] Allied force

Answer: C

4. How coefficient of friction is expressed?

[A] It is expressed as the ratio of force and area

[B] It is the ratio between frictional force and normal reaction

[C] It is the ratio between normal reaction and the mass of the object

[D] It is expressed as the ratio of weight and normal reaction

Answer: B

5. What kind of friction is called if two objects are in contact at rest?

[A] Sliding friction

[B] Rolling friction

[C] Static friction

[D] Angular friction

Answer: C

6. **What is the unit of radius of gyration?**

   [A] m^4

   [B] m

   [C] N

   [D] m^2

   Answer: B

7. **The product of inertia at the principal axes is _____**

   [A] Minimum

   [B] Unit

   [C] Zero

   [D] Maximum

   Answer: C

8. **Moment of inertia of a thin spherical shell of mass M and radius R, about its diameter is:**

   [A] MR^2

   [B] ½ MR^2

   [C] ⅖ MR^2

   [D] ⅔ MR^2

   Answer: D

9. The ratio of the moment of inertia of a rectangular section about its base and an axis parallel to its base and passing through its centre of gravity is

[A] 1.0

[B] 2.0

[C] 3.0

[D] 4.0

Answer: D

10. The moment of inertia of a triangular section of base 'b' and height 'h' about an axis passing through its base is ……. times the moment of inertia about an axis passing through its C.G. and parallel to the base:

[A] 9

[B] 4

[C] 2

[D] 3

Answer: D