



## ENGINEERING MECHANICS

- 1) Two vectors are equal if they have :
  - (A) Same dimension
  - (B) Same magnitude
  - (C) Same dimension, magnitude, direction
  - (D) Same directions
- 2) If forces S and T acting at a point O can be represented in magnitude and direction by the two adjacent sides OA and OB of a parallelogram OACB. Then their resultant is represented in magnitude and direction by :
  - (A) BC
  - (B) AB
  - (C) OB
  - (D) OC
- 3) Coefficient of friction is :
  - (A) The ratio of the maximum frictional force and the normal reaction
  - (B) The ratio of static frictional force and the normal reaction
  - (C) The ratio of frictional force and the normal reaction
  - (D) The ratio of frictional force and weight of body
- 4) The motion of wheel and axle is :
  - (A) Parabolic
  - (B) Curvilinear
  - (C) Rotary
  - (D) Translatory
- 5) If the velocity of a moving body changes from u to v after 't' second. The acceleration of the body is :
  - (A)  $(v - u)/t$
  - (B)  $(v + u)/t$
  - (C)  $(v - u) t$



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- (D)  $(v - u) t^2$
- 6) If a body moves in such a way that its equation of motion is  $S = t^3 + 8t^2 - 5$ . then the distance it will travel in one second is :
- (A) 4  
(B) 3  
(C) 8  
(D) 14
- 7) The forces whose line of action do not lie in the same plane are called :
- (A) Non concurrent forces  
(B) Co planar forces  
(C) Concurrent forces  
(D) Non co planar forces
- 8) Joule is the unit of :
- (A) Force  
(B) Work  
(C) Energy  
(D) Power
- 9) Moment of inertia of a triangular section about an axis passing through its centre of gravity is :
- (A)  $B(h^2)/12$   
(B)  $B(h^2)/36$   
(C)  $B(h^3)/36$   
(D)  $B(h^3)/12$
- 10) When the number of forces acting on a particle is said to be in equilibrium, then
- (A) Their resultant force is not equal to zero  
(B) Their resultant force is equal to zero  
(C) Their equilibrant is not equal to the resultant  
(D) None of the above
- 11) A force P is acting at a distance l about a point A, the moment of force about a is



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- (A)  $P \times I$   
(B)  $P/I$   
(C)  $P \times L \times A$   
(D)  $P \times I/2$
- 12) The point through which the whole weight of that body acts is known as :  
(A) Ortho centre of the body  
(B) Circum centre of the body  
(C) Centre of gravity of the body  
(D) Centre of pressure of the body
- 13) The unit of force in C.G.S. system of units is called  
(A) Dyne  
(B) Newton  
(C) Kg  
(D) All the above
- 14) The ratio of the limiting friction and the normal reaction is called  
(A) Static friction  
(B) Coefficient of friction  
(C) Limiting friction  
(D) Angle of friction
- 15) If an object moving along a straight line covers equal distance in  
(A) Rectilinear motion  
(B) Uniform motion  
(C) Simple harmonic motion  
(D) Periodic time
- 16) In the classification of simple lever, when fulcrum is in between load and effort, it is classified as  
(A) Class 1<sup>st</sup> lever  
(B) Class 2<sup>nd</sup> lever  
(C) Class 3<sup>rd</sup> lever



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- (D) None of the above
- 17) Leverage is the ratio of
- (A) Resistance arm and effort arm
  - (B) Effort arm and total length of lever
  - (C) Effort arm and resistance arm
  - (D) Total length of lever and effort arm
- 18) A smooth cylinder lying on concave surface remains in
- (A) Stable equilibrium
  - (B) Unstable equilibrium
  - (C) Neutral equilibrium
  - (D) None of the above
- 19) The centre of gravity of right circular cone lies in its axis of symmetry at a height of
- (A)  $h/2$
  - (B)  $h/3$
  - (C)  $h/4$
  - (D)  $h/5$
- 20) The moment of inertia about a principle axis is called
- (A) Mass moment of inertia
  - (B) Second moment of inertia
  - (C) Principal moment of inertia
  - (D) Any of the above