

Physics 10 1st Midterm (200 pts MAX.) – TEST D
Fall 2004

1. Unless acted upon by an unbalanced force, an object will (a) remain at rest (b) remain in motion with a constant velocity (c) either (a) or (b) depending on initial conditions (d) change its inertia.
2. Suppose your physics book is lying on a table. How many forces are acting on it? (Neglect air pressure and extraterrestrial forces) (a) One (b) Two (c) Three (d) Four
3. Which of the followings are the fundamental properties used to describe motion: (a) Length and weight (b) Length and time (c) Weight and height (d) Weight and speed
4. The action and reaction forces of Newton's third law always (a) Act on different bodies (b) Are equal in magnitude (c) Are opposite directions (d) Are all of the above
5. Work is done on an object when it is (a) moved (b) stationary (c) acted upon by a balanced force (d) none of the preceding
6. Kinetic energy is the energy of (a) position (b) motion (c) work (d) power
7. Mechanical energy is (a) always conserved (b) the same as total energy in all cases (c) the sum of kinetic and potential energies (d) none of the preceding
8. The form of energy in which mass conversion is significant is (a) electrical (b) gravitational (c) nuclear (d) chemical
9. When the efficiency of a machine is increased (a) the work output increases (b) the work input is increased (c) perpetual motion occurs (d) the total energy is not conserved
10. With constant mass, the conservation of momentum is essentially stated in which of Newton's Laws? (a) First (b) Second (c) Third (d) Gravitation
11. Automobile air bags protect passengers during collisions by (a) reducing the impulse (b) decreasing the impulse time and increasing the impulse force (c) increasing the impulse time and decreasing the impulse force (d) decreasing both the impulse time and force
12. Momentum is (a) a vector quantity (b) dependent on mass (c) a function of velocity (d) all of these
13. For a system of constant mass, the conservation of momentum is essentially stated in (a) Newton's first law (b) Newton's second law (c) Newton's third law (d) Newton's law of gravitation
14. For a projection at an angle, the common factor for the x- and y-components of motion is (a) acceleration (b) speed (c) time (d) direction
15. Earth has its greatest orbital speed and is closest to the Sun in our (a) summer (b) winter (c) spring (d) fall
16. An object in uniform circular motion has constant (a) velocity (b) tangential acceleration (c) momentum (d) speed
17. A vertically projected object (a) has zero acceleration at maximum height (b) has a constant velocity (c) returns to its starting point with the same initial speed (d) has a greater acceleration than a horizontally projected object
18. Ocean tides occur (a) once daily (b) exactly 12 hours apart (c) only in the Southern Hemisphere (d) because of lunar gravitation
19. The acceleration due to gravity, g , (a) is a universal constant (b) increases with altitude (c) does not depend on the mass of the Earth (d) does not depend on the mass of an object
20. To be truly weightless would require (a) micro gravity (b) zero gravity (c) a g of force (d) a gravitational field
21. The weakest fundamental force is the (a) electromagnetic force (b) gravitational force (c) weak nuclear force (d) strong nuclear force
22. If every particle of a body has the same instantaneous velocity, it is (a) in translational motion (b) in rotational motion (c) in rolling motion (d) at rest
23. The moment of inertia is a measure of (a) rotational speed (b) angular acceleration (c) torque (d) rotational inertia
24. A marble in a bowl is in (a) stable equilibrium (b) unstable equilibrium (c) both (a) and (b) (d) neither (a) nor (b)
25. The time rate of change of angular velocity is known as angular (a) momentum (b) rotational velocity (c) acceleration (d) inertia