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Grade 9Th Physics practice Questions from unit 4& 5 in 2016 E.C

From The Given Alternatives Choose The Best Answer

1. The work done by a force:

   A. may be positive B. may be negative C. may be zero D. All are answers

2. Which one of the following is wrong about force ?

   A. Force is not a property of one object. B. Force is not energy.

   C. Force is not a measure of an object's motion.

   D. Force is a property of one object

3. In which of the following work is being not done?

   A. Shopping in the supermarket B. Standing with a basket of fruit on the head

   C. Climbing a tree D. Pushing a wheel barrow

4. A body of mass 10 kg is travelling with uniform speed of 5 m/s. Its kinetic energy is:

   A. 25 J B. 125 J C. 1250 J D.1000 J

5. Which one of the following statements is true regarding Newton's third law of motion?

   A. Action and reaction force pairs are equal in magnitude and opposite in direction, so they always cancel each other.

   B. Action and reaction forces always act on different bodies.

   C. Action force has the possibility to be larger than reaction force.

   D. Reaction force has the possibility to be larger than the action force.

6. A quantity of work of 1000 J is done in 2 seconds. The power utilized is:

   A. 998 W B. 1002W C. 2000W D. 500 W

7. A woman driving a 2000 kg car along a level road at 30m/s takes her foot off the gas to see how far her car will roll before it slows to a stop. She discovers that it takes 150m. What is the average force of friction acting on the car?

   A. 9000N B. 6000N C. 3000N D. 400N

8. The speed of a mass is increased by two fold. By what factor does the kinetic energy change? A. 2 B. 4 C. 8 D. 16

9. A crane raises 75 Kg bricks from the ground to a height of 45m in52 sec. a constant speed. The average power of the crane is:

   A. 649 W. B. 14.4 W. C. 3,375W. D. 144W

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10. Which of the following must be known in order to determine the power output of an automobile? A. Final velocity and height B. Mass and amount of work performed
    C. Force exerted and distance of motion D. Work performed and elapsed time of work
11. The potential energy of a long spring when stretched by 2 cm is U. If the spring is stretched by 8 cm the potential energy stored in it is:
    A. U/4 B. 4 U C. 8 U D. 16 U
12. Which one of the following quantities cannot be increased by any machines?
    A. Distance B. Speed C. force D. Energy
13. What is the MA if the pitch of the screw is 0.8cm and the effort applied at the end of the spanner describes a circle of radius 10cm? A. 39 B. 78.5 C. 157 D. 234
14. 6. A simple machine has an efficiency of 75% and VR of 12. If an effort applied to the machine is 100N, then what is MA of the machine? A. 9 B. 4 C. 0. 9 D. 3
15. If the Load of a simple of machine is greater than effort, then the simple machine is called A. Speed multiplier B. Force multiplier
    C. Distance multiplier D. Power multiple
16. Usually the purpose of using a bicycle is:
    A. To multiply force C. To multiply power
    B. To multiply energy D. To multiply speed
17. An inclined plane of height 4m and a length of 10m are used to raise a 100N a load. If the surface is smooth, what is the effort required. A. 20N B. 30N C. 40N D. 50N
18. What is the purpose of using an inclined plane
    A. Multiplying distance C. Multiplying energy
    B. Multiplying force D. Multiplying speed
19. The difference in 1st, 2nd, and 3rd class levers is
    A. The order the fulcrum, load and effort C. The amount of effort used
    B. The size of the load D. The distance between the effort and the load
20. A simple wheel and axle is used to lift a bucket of water out of a well. The radii of the wheel and axle are 20cm and 4cm, respectively. What is the theoretical effort required to lift a load of 300N when it is applied on the wheel, assuming no energy losses?
    A. 600N B. 150N C. 30N D. 60N
21. Which one of the following is NOT the purpose of machines?
    A. Multiplying force B. Transferring energy

C. Multiplying speed D. Multiplying energy

22. Which of the following devices is always a speed multiplier?

A. 1st class of lever B. 3rd class of lever

C. 2nd class of lever D. Wheel and axle

23. If the mechanical advantage of a simple machine is 10, then the

A. output force is 10 times the effort B. effort is 10 times the output force

C. efficiency is 10% D. the work output is 10times the input

24. A block of weight 4000N is pushed up a slope by a force of 400N. Assume there is no friction then calculate the velocity ratio A. 5 B. 10 C. 15 D. 20

25. On a 2.5m long first class lever a load is placed 0.5m away from the fulcrum. How large is the velocity ratio of the lever? A. 0.5 B. 2.5 C. 4 D. 5

26. An inclined plane is used to lift an object that weighs 360N by using 60N effort along a slope of length 20m and at 60° with the horizontal. What is the velocity ratio of this machine? (use $\cos 60° = 0.5$, $\sin 60° = \sqrt{3}/2$

A. $2\sqrt{3}$ B. $\sqrt{3}/3$ C. $3\sqrt{2}$ D. 1

27. Scissors are a combination of what two machines?

A. lever and wedge C. wheel and axle

B. lever & inclined plane D. wedge and inclined plane

28. A wheelbarrow is an example of what simple machine?

A. Class 1 lever B. Class 2 lever C. Class 3 lever D. Wheel and Axle

29. An effort is applied on a block to raise a body on rough inclined plane of sloping at an angle of θ with the horizontal. If the object is moving up with uniform velocity which one of the following is the expression of its efficiency?

A. $\tan\theta$ B. $\frac{1}{\sin\theta + \mu\cos\theta}$ C. $\mu g\cos\theta$ D. $\frac{\sin\theta}{\sin\theta + \mu\cos\theta}$

30. A lever used with the fulcrum at one end and the effort at the other is 3m long. A load of 600N is 60cm from the fulcrum and is raised by an effort of 200N .What is the efficiency of the lever? A. 60% B. 75% C. 40% D. 25%