KIGALI CITY
KICUKIRO DISTRICT
ES KANOMBE/EFOTEC

PHYSICS' HOLIDAY ACTIVITIES FOR SENIOR ONE (ALL)

Instructions: 1. Attempt all questions
2. From question 1 to question 22, choose the correct answer.

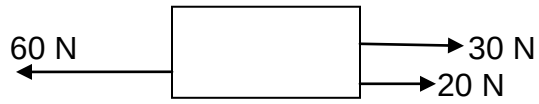
1. A duck flies 60 meters in 10 seconds. What is the duck's speed?
a. 600 m/s
b. 50 m/s
c. 6 m/s
d. 70 m/s

2) A beetle crawls 2 cm/minute for ten minutes. How far did it crawl?
a. 8 centimeters
b. 5 centimeters
c. .20 centimeters
d. 20 centimeters

3) A force is described as...
a. A push only
b. A pull only
c. A push or a pull
d. None of the above

4) What unit do scientists use to measure force?
a. Newton
b. Grams
c. Meters
d. Meter per second per second

5) What is the net force on the box shown below?



a. 10 N to the left
b. 10 N to the right
c. 60 N to the left
d. 50 N to the right

6) When you slide a box across the floor what force must your push be stronger than?
a. Support force
b. Friction force
c. Gravity
d. Air resistance

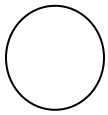
7) The moon has a smaller mass than the Earth. If you were able to travel to the moon your weight would...
a. Increase
b. Decrease
c. Stay the same
d. Vary with day and night

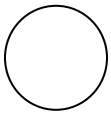
8) Which force always pulls downward on objects?
a. Support force
b. Friction force
c. Gravity
d. Air resistance

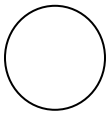
9) This test paper is sitting at rest on your desk. Which of the following statements best describes this situation?
a. There are no forces acting on your paper.
b. Your paper pushes on the desk only.
c. The desk pushes on your paper only
d. The forces acting on the paper are balanced.

10) What forces are acting on a dropped book that falls to the floor?
a. Gravity only
b. Gravity and air resistance
c. Air resistance
d. Friction only

11) Which ball will hit the ground first if dropped at the same time and at the same height in a perfect vacuum?

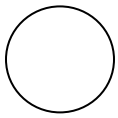

Wood ball


Plastic ball

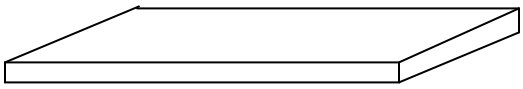

metal ball

a. Metal first, then plastic, then wood last
b. Wood first, then plastic, then metal last
c. They will all hit at the same time.
d. There is no way to tell.

12) Which object will hit the ground first if dropped at the same time at the same height in a perfect vacuum?


A
100g

B 100g



a. Object A because it is round.
b. They will hit at the same time.
c. Object B because it has a large surface area.
d. There is no way to tell.

13) A change to an objects motion is caused by...
a. Balanced forces
b. Unbalanced forces
c. Acceleration
d. Velocity

14) Which one of the following objects has the greatest inertia?
a. ping pong ball
b. a golf ball
c. a soft ball
d. a bowling ball

15) Describe the motion of a person not wearing a seat belt if the car stops suddenly.
a. The person and car will stop together.
b. The person will stop faster than the car because they are lighter.
c. The car will stop and the person will keep moving forward because of inertia.
d. The car will stop and the person will speed up.

16) A falling object is pulled down by the earth. The earth is pulled up toward the object. Why doesn't the earth move?
a. Only the earth has gravity.
b. The Earth has a very large mass and a small acceleration.
c. The Earth has a very small mass and a large acceleration.
d. Air resistance gets in the way.

17) When you walk across the ground and push on it with your feet...
a. There is no effect on the ground.
b. The ground pushes back less strongly than your feet.
c. The ground pushes back more strongly than your feet.
d. The ground pushes back on your feet with equal force.

18) A bowling ball and a tennis ball are dropped off of the Empire State building. Which object will be affected by air resistance?
a. Tennis ball
b. Bowling ball
c. Both the bowling ball and tennis ball
d. Neither the bowling ball or tennis ball

19) Gravity affects projectile motion _____.
a. Vertically
b. Horizontally
c. Sometimes
d. Never

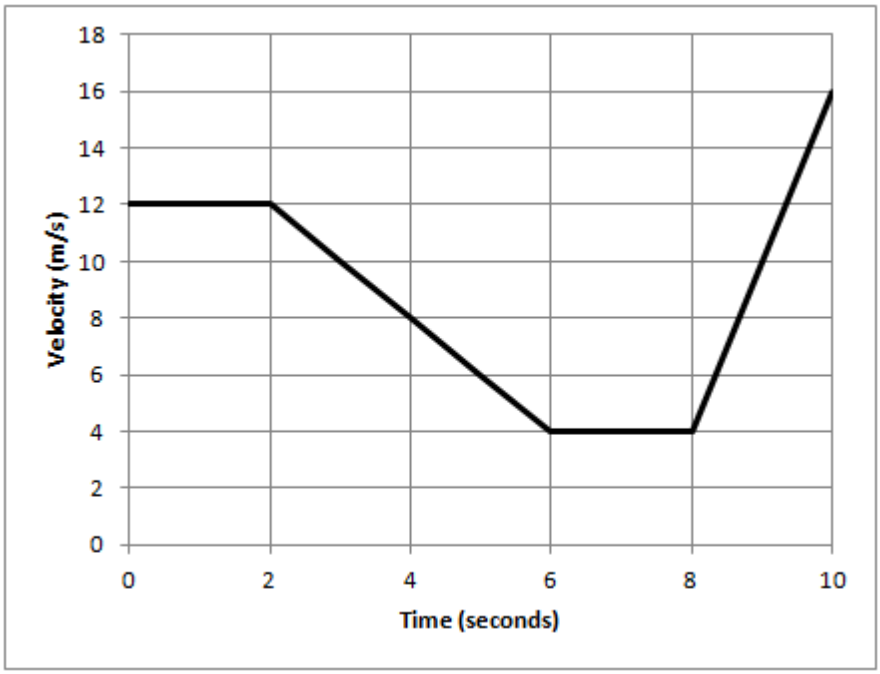
20) Terminal velocity occurs when _____.
a. gravity has pushed the object with too much force.
b. the force of air resistance is greater than the force of gravity.
c. the force of gravity and air resistance are equal.
d. the object reaches 100m per hour.

21) Projectile Motion is described as…
a. an object falling from the sky.
b. the curved path an object follows as it is thrown or propelled near earth's surface.
c. the amount of time an object takes to reach the earth's surface after falling from a certain height.
d. the moment when two forces are balanced and the object is still.

22) Terminal velocity can be described as…
a. the maximum speed an object can travel falling towards earth.
b. the amount matter contained in an object.
c. an unbalanced force acting on the object.
d. the amount of inertia exceeding the force of gravity.

23. An airplane that is initially moving at 320 m/s accelerates at $3m/s^2$ for 20 seconds.
    a) How far does it move during that time period?
    b) What is its final velocity?

24. The graph below shows the velocity of an object that is moving along a straight line.



a) How far does the object move during the first 2 seconds?

b) How fast is the object moving at t=4 seconds?

c) What is the acceleration at i) t=1s?

ii) 4s?

iii) 9 seconds?

d) What is the total displacement of the object during the entire 10 seconds?

END!