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MARKING SCHEAME

MONTHLY TEST – OCTOBER 2024

1. (a) High pressure, low temperature 1
2. (c) true solution and suspension 1
3. a) Uniform motion 1
4. b. Must act on different objects. 1
5. (c) 0.45 kg m/s 1
   OR (a) Mass
6. (a) sclerenchyma 1
7. (b) Voluntary 1
8. (c) A is true but R is false 1
9. (a) Both A and R are true and R is the correct explanation of A 1
10. **Evaporation** is a natural process that occurs when a liquid turns into a gas at its surface. 1
    The rate of evaporation is affected by : **Temperature, Surface area,**. **Humidity**, **Wind speed**.
    1
11.

Acceleration	Distance
$v = u + at$ $a\,t = v - u$ $a = (v - u)/t$ $a = (16 - 6)/10$ $a = 10/10$ $a = 1$ m/s 1	$v^2 = u^2 - 2aS$ $2a\,S = v^2 - u^2$ $S = (v^2 - u^2)/2a$ $S = (16^2 - 6^2)/2*1$ $S = (256 - 36)/2$ $S = 220/2$ $S = 110$ m 1

OR

Uniform motion: An object is in uniform motion when it moves at a constant speed or velocity. Example, a vehicle traveling at a constant speed of 10 meters per second is in uniform motion. 1.5

Non-uniform motion: An object is in non-uniform motion when it moves at a variable speed or velocity. For example a vehicle traveling in traffic. 1.5

12. A **mixture** is a combination of substances that are formed through a physical process. 1
    The main difference between homogeneous and heterogeneous mixtures is that homogeneous mixtures have a uniform composition and appearance throughout, while heterogeneous mixtures have a non-uniform composition and visibly different substances or phases. Or any other differences. 2
13.

Basis for comparison	Solution	Colloidal solution	Suspension
Definition	In this, the solute and solvents are properly mixed in the liquid phase.	In this, the solute (tiny particles or colloids) is uniformly distributed in the solvent (liquid phase).	It is a mixture, where the solute does not get dissolved, it gets suspended in the liquid and settles in the medium.
Example	Sugar solution in water.	Starch dissolved in water.	Sand dissolve in water
Nature	Homogenous	Heterogeneous	Heterogeneous.
Appearance	Transparent	Translucent	Opaque

Size	<1 nm.	1-1000 nm.	>1000 nm. 1 x3=3

14. Neurons, or nerve cells, 1
    Figure 1
    Labelling 1

    OR

    (a) Vessels and Tracheids. 1
    (b) Xylem parenchyma 1
    (c) Xylem fibres, tracheids and vessels. 1

15. **First law:** An object will remain at rest or in motion with a constant velocity unless an external force acts upon it. This law is also known as the law of inertia. 1
    Second law: The force on an object is equal to its mass times its acceleration. This law explains how much an object will accelerate. 1
    Third law: When two objects interact, they apply forces to each other of equal magnitude and opposite direction. 1

Magnitude of force can be calculated by taking the product of mass and acceleration of the body. Let us consider an object of mass m, moving along a straight line with an initial velocity of u. Let us say, after a certain time t, with a constant acceleration, the final velocity becomes v. Here we see that, the initial momentum is: $(p1) = m \times u$

The final momentum, $(p2) = m \times v$

The change in momentum can be written as,

$(p2) - (p1) = (m \times v) - (m \times u) = m \times (v-u)$

As we know, the rate of change of momentum with respect to time is proportional to the applied force. The applied force,

$F \propto (m \times (v-u)/t$

$F \propto m \times a$ (As acceleration (a) = rate of change of velocity with respect to time.)

$F = k \times m \times a$ 2

16. **(a) Muscular Tissues** **1**

    (b) Striated (Skeletal) Muscles

    1. These muscles are longs, cylindrical un branched and multi nucleated
    2. They are responsible for creating movement and are under voluntary control.

    Unstriated (Smooth) Muscles

    1. The muscles are long, spindle shaped, unbranched and uni nucleated
    2. Muscles are involuntary.

    Cardiac Muscles

    1. These muscles are longs, cylindrical, branched and uni nucleated
    2. It is responsible for contracting and relaxing the pumping of the blood around your body. This muscle is only found in the heart and are involuntary 2

17. (i) Diffusion (ii) Particles of matter continuously moving. (iii) Solid and Gas (iv) False 1x4=4

18. (i) (d) less than or equal to 1
    (ii) (a) If the car is moving on straight road
    (iii) (d) 2r
    (iv) (a) Distance is scalar, displacement is vector. 1x4=4