FIRST TERMINAL EVALUATION 2023 – 24
STANDARD 9 PHYSICS ANSWER KEY (EM)

1. Kg m/s^2
2. Hydrometer
3. Viscous force
4. Displacement

5. (a) Principle of Flotation
   (b) Lower density
6. (a) Principle of Flotation
   (b) Buoyancy is equal to the weight of the object.
7. (a) Figure (a)
   (b) The capillary depression occur in mercury.
8. Gaining information using a graph is more simple than obtaining it by mathematical calculation.
   The equations can be formulated from the graph..
9. (a) Reading decreases
   (b) When density increases buoyancy increases
10. Relative density of kerosene = Density of kerosene / Density of water
    = 810 kg m^3 / 1000 kg/m^3
    = 0.81
11. (a) 10 m/s
    (b) 6 th second
12. $v = u + at$ u = initial velocity v = final velocity a = acceleration
    $s = ut + {}^1/_2 at^2$ s = displacement t = time
    $v^2 = u^2 + 2as$ (any two)
13. (a) surface tension
    (b) Capillary rise is inversely proportional to the diameter of the tube. (when the diameter of the tube increases the capillary rise decreases)

14. (a) Q
    (b) Q the buoyancy experienced by it will be equal to the weight of the fluid displaced by it.
15. (a) u = 20 m/s v = 0 m/s t = 4 s
    $a = (v - u) / t = (0-20)/4 = -5$ m/s^2
    (b) $s = ut + {}^1/_2 at^2 = 20x4 + {}^1/_2 x\text{-}5x4^2 = 40$ m
16.

Position of the object in the graph	Nature of the motion
From A to B	Velocity increases
From B to C	Uniform Velocity
From C to D	Velocity decreases

17. (a) F1/A1 = 2000 Pa A2 = 1 m^2
F1/A1 = F2/A2
F2 = 2000 x 1 = 2000 N
(b) Pascal's Law
The pressure applied at any point of a liquid at rest in a closed system will be experienced equally at all parts of the liquid

18.

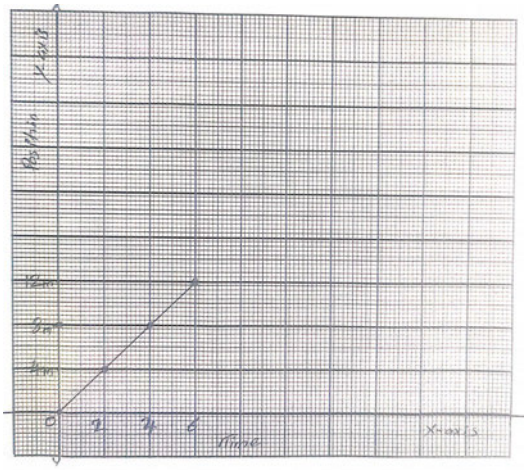
Cohesive force	Adhesive force
(b)	(a), (c)

19. (a) s = 40 m u = 10 m/s a = 10 m/s^2 t = 1 s
v = u + at = 10 + 10x1 = 20 m/s
(b) $v^2 = u^2 + 2as = 10^2 + 2x10x40 = 900$
v = 30 m/s

20. (a) Honey
(b) To heat
(c) The body temperature of a person who gets an electric shock falls suddenly. As a result, the viscosity of the blood increases, causing hindrance to the flow of blood, resulting in a heart attack. When massaged, the body becomes warm and the viscosity of the blood reverts to normal level. The person thus overcomes the dangerous situation.

21. (a) Weight loss = Weight in air – Weight in water
(b) Buoyancy
(c) Yes. When an object is immersed partially or completely in a fluid, the buoyancy experienced by it will be equal to the weight of the fluid displaced by it.

22. (a) X axis 1 cm = 2 s Y axis 1 cm = 4 m
(b)



(c) Uniform motion