

FIRST TERM EVALUATION 2018
STANDARD 9 – PHYSICS
ANSWER KEY

1. Viscous liquid
2. Density of the liquid is equal to that of the object
3. Impulsive force
4. Mass
5. 2
6. a) 2.4 N
b) 1.6 N
c) 5 N
d) 1.2 N
7. a) Correct definition
b) Due to difference in volume of substances Or
Density of substances
8. a) Zero
b) moving with uniform velocity
9. a) 20 kg
b) kg m/s
10. **A man jumps from a boat to shore**
A bullet is fired from the gun
A boat is rowed
Walking: While walking we push ground backwards, as a result the ground push us forward.
11. **Swimming:** We push water backwards while swimming, and then water takes us forward.
a) water
12. b) Viscous force between the layers of water is very low. So it can flow very easily
a) 2400 N/m^2
b) 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.
13. c) Excavator, Hydraulic press
14. a) Liquid B
b) Cohesion : The force of attraction between molecules of same type
Adhesion : The force of attraction between molecules of different types of substances
c) inversely proportional
a) $v=0$
 $u=40 \text{ m/s}$
 $a=-5 \text{ m/s}^2$
 $v=u+at$
 $0=40+-5t$
 $t=8 \text{ s}$
b) $S=ut+1/2 at^2$



$$\begin{aligned} &= 40 \times 8 + \frac{1}{2} \times 5 \times 8 \times 8 \\ &= 160 \text{ m} \end{aligned}$$

15. a) E moves forward
b) D and E moves forward
c) law of conservation of momentum
16. a) Hydrometer
b) 1

Density of kerosene

c) Relative density of kerosene = $\frac{\text{Density of kerosene}}{\text{Density of water}}$

$$\text{Density of kerosene} = 0.81 \times 1000 = 810 \text{ kg/m}^3$$

17. a) No change in density
b) When the foil is made into a vessel it displaces water equal to its weight because it has more volume. When it is folded its volume becomes very low. So it cannot displace water equal to its weight.
c) Density of liquid is higher than aluminium.

18. a) zero
b) 30 m/s
c) Displacement = Area
$$= \frac{1}{2} \times 10 \times 50$$
$$= 250 \text{ m}$$

19. a) Centripetal force
b) velocity changes
c) Yes, It moves along a circular path and covers equal distance in equal intervals of time

20. a) Gravitational constant
b) Henry Cavendish
c) $F = \frac{Gm_1m_2}{r^2}$
$$= \frac{6.67 \times 10^{-11} \times 50 \times 60}{2^2}$$
$$= 750 \times 6.67 \times 10^{-11}$$
$$= 5.0025 \times 10^{-8} \text{ N}$$