PY9201

FIRST TERMINAL EVALUATION 2017-18
PHYSICS

Standard: IX

Time: 1½ h
Score: 40

Instructions:

1. First 15 minute is given as cool off time. This time is to be used for reading and understanding the questions.
2. Answer the questions based on instructions.
3. Answer the questions according to the score and time.

One score each for questions 1 to 5. Answer any 4 from among them.

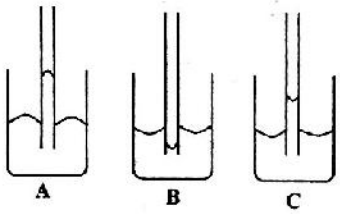
1. Which of the following does not belong to group and write down the reason behind?

   Excavator, hydraulic press, hydrometer, hydraulic jack

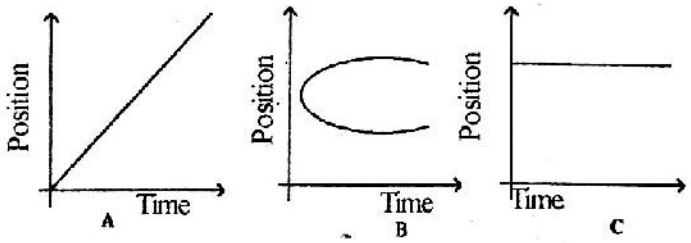
2. Find out the relation from the first pair and complete the other.

   momentum: kgm/s :: impulse : .....

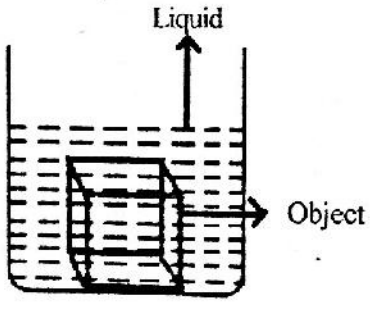
3. Which of the following figure is correct with respect to capillartiy?



4. Which of the following cannot be a position – time graph?



5. Observe the given figure. It shows a body fully immersed in a liquid.



Find out the correct statement from those given below, by analysing the figure.

a) The buoyancy from the liquid is greater than the force of gravitation.

b) The buoyancy from the liquid is less than the force of gravitation.

c) The buoyancy from the liquid is equal to the force of gravitation.

Two score each for questions 6 to 10. Answer any 4 from among them.

6. Match the terms in column A against those in column B.

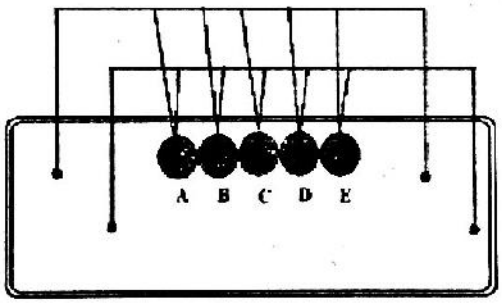
A	B
Resultant force acting on a book kept on a table	Centripetal force
A large force acting for very short time	Unbalanced force
Lifting a sack of cement	Balanced force
The force experienced by a hammer while whirling it before a hammer throw.	Impulsive force

7. On immersing a hydrometer in a liquid the reading was observed as 1.025.

Denstiy of water is 1000 kg /m3

a) What does the reading 1.025 indicate?

b) A hydrometer is depicted. Among X and Y which one represents the reading 1.025 in the hydrometer?



8. Observe the Newton's cradle.

a) What will happen if the balls A, B and C are pulled back and then released to hit on D?

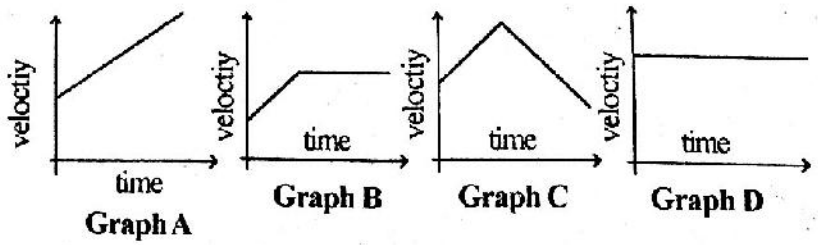
b) Which is the law associated with this activtiy?

9. Any object will experience buoyancy on immersing in a fluid. What are the factors affecting the buoyancy?

10. A car started from rest and travelled with uniform acceleration. The car covered 25 m distance along a straight line in 5 second. Calculate the acceleration of the car.

Three score each for questions 11 to 15. Answer any 4 from among them.

11. Observe the velocity – time graphs given below.



Graph A **Graph B** **Graph C** **Graph D**

Analyse the graphs and complete the table.

Specialtiy of motion	Graph
moves with uniform acceleration	graph A
veloctiy increases first and then decreases	..... (a).....
moves with constant veloctiy	..... (b).....
Veloctiy increases first and moves with constant veloctiy thereafter	..... (c).....

12. A drop of kerosene and a drop of honey are kept on a glass plate in the same straight line.
    a) When the glass plate is tilted, what difference is felt in their motion?
    b) Two beakers are taken. One beaker is filled with kerosene and the other with honey. Iron blocks of same weight and same size are immersed in each liquid. In which liquid, the iron block feels maximum loss of weight?
    c) Which of the following is the correct figure showing the liquids kept in the same beaker?

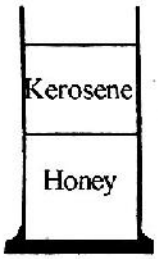


Fig. 1

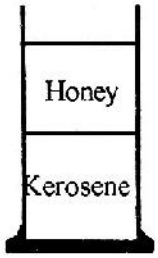


Fig. 2

13. Based on the given table, draw the position time graph.

Time(s)	0	4	8	12	16	20
Position (m)	0	10	20	30	40	50

14. A stone weighs 5 N in air and 3 N in water.
    a) Calculate the buoyancy exerted by water on the stone.
    b) Which of the following can be the weight of the stone on dipping it in saline water?
    (10 N, 4 N, 3 N, 2 N)
    c) Calculate buoyancy exerted by the saline water on the stone.
15. a) Classify the following situations into those applicable for inertia of motion and inertia of rest
    i) When a running bus is suddenly stopped, passengers standing in the bus show a tendency to fall forward.
    ii) On striking a hanging carpet with a stick the dust particles gets detached and falls down.

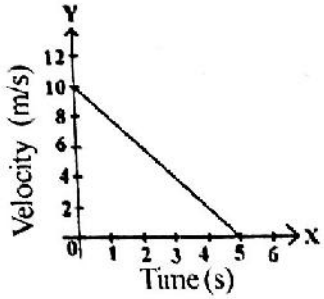
iii) When a working fan is switched off the leaves continue to rotate for some more time.

iv) On shaking the branch of a mango tree, mango in that branch gets detached and falls down.

b) How do the mass of a body influence its inertia?

Four score each for questions 16 to 20. Answer any 4 from among them.

16. The velocity time graph of a sphere of mass 2 kg rolling on a level ground is given below.



a) What is the initial momentum of the sphere?

b) What is the change in momentum of the sphere?

c) Calculate the force exerted by the ground on the sphere to bring it to rest.

17. Write down the reasons for the following statements.

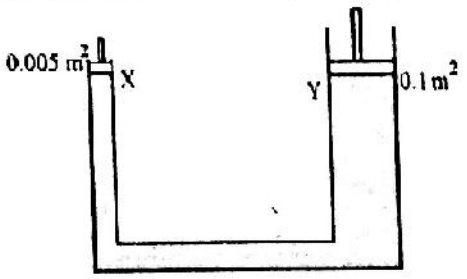
a) A ship entering from sea to fresh water lake sinks more

b) A blotting paper can absorb ink

c) When a shot is fired from a gun , the gun recoils.

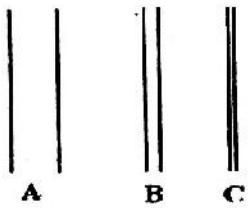
d) A person counting currency notes often wets his hands.

18. The area at the end X of hydraulic jack is having a cross section area 0.005 m^2 and at Y it is 0.1 m^2



If a force of 10 N is applied at the end X, what is the force felt at Y?

19. Capillary tubes of different diameters are depicted.



If all of them are partially immersed in water,

a) In which one will be the rise in level maximum?

b) Write down the relation between the capillary rise and the diameter of the tube.

c) Which force is responsible for the capillary rise?

d) Write down an example for a liquid that shows capillary depression.

20. We use rockets for launching artificial satellites.

a) Write down the law associated with the motion of a rocket.

b) Write down two examples related to this law of motion.

c) Write down a class room activtiy to prove this law of motion.