

GREENLAWNS HIGH SCHOOL
FINAL EXAMINATION YEAR 2016

SUBJECT :PHYSICS
TIME :11/2 HOURS

CLASS: VIII
MARKS:80

You will not be allowed to write during the first ten minutes. This time is to be spent in reading the question paper. The time given ahead of this is the time allowed for writing the answers.

Answers to this paper must be written on the paper provided separately. This question paper is divided into two sections.

Section A- Compulsory. Attempt all questions.

Section B- Compulsory. Attempt all questions.

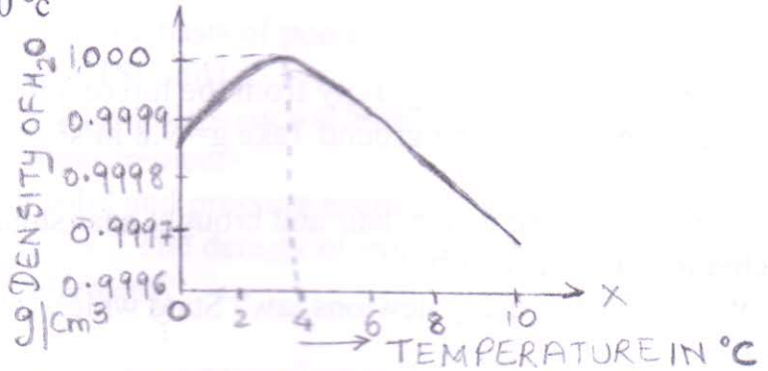
Calculations to be shown on the same page of the numerical.

Section A (40 Marks Compulsory)
Attempt all the questions.

- Q.1[a] State the principle of floatation. (2)
- [b] What do you mean by degradation of energy? (1)
- [c] Will a body weigh more in air or in vacuum when weighed with a spring balance? Give reason for your answer. (2)
- [d] Match The Following: (5)

1Joule		1mm of Hg
1atm		10^5 N/m^2
1torr		$273+ t^\circ\text{C}$
1°K		10^7 erg
1 bar		$1.013 \times 10^5 \text{ Pa}$

Q2 [a] The graph below shows the variation in density of water with temperature in range 0° to 10°C

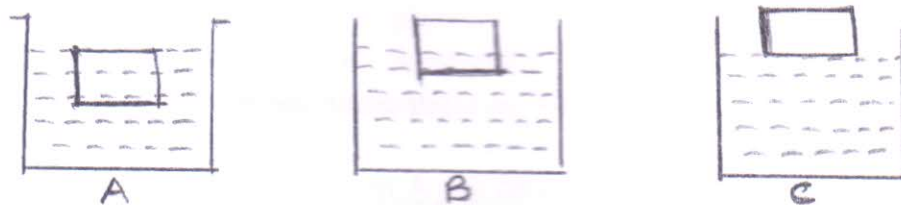


- i) What property of water does the above diagram indicate? (1)
- ii) Define the above behaviour? (1)
- iii) How is this peculiar behaviour of water responsible for destruction of plants during very cold nights? How are the plants protected? (3)

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- [b] When is a barometer faulty? (2)
How is the reading of a faulty barometer different from an accurate one (1)
- [c] State which are the renewable and nonrenewable source of energy (2)
i) Coal , ii) Nuclear fuel , iii) Geothermal Energy , iv) Natural gas.
- Q.3 [a] Define gravitational constant G ? State its unit. (2)
[b] Define Relative density? Also state if it has any SI unit. If so state it. (2)
[c] (i) Define Inertia of Rest? (1)
(ii) Two equal and opposite forces act on a stationary body? Will the body move? Give reason? (2)
[d] Name The Following: (3)
(i) The quantity which tells us the thermal state of the body.
(ii) It is used in aircraft to measure altitude.
(iii) The empty space above the mercury column in the barometric tube.
- Q.4 [a] The level of water in a measuring cylinder was 51ml and it rose to 65ml on immersing a stone of mass 0.028kg. Find its (2)
i) volume in cm^3 .
ii) The body's density in M.K.S unit.
- [b] A block of wood is floating on water with its dimensions 50cm x 50cm x 50cm (2)
inside water. Calculate the buoyant force acting on the block. Take $g=9.8\text{m/s}^2$
- [c] A boy weighing 60Kgf is wearing shoes with heel area 20cm^2 , while girl (3)
weighing 45 Kgf is wearing sandals with heel of area of cross section $1.5.\text{cm}^2$.
Compare the pressure exerted on the ground by their heels when they stand on heel of one foot .
- [d] A car is moving with a uniform velocity of 30m/sec .It is stopped in 2 sec by (3)
applying a force of 1500N . Through its brakes . Calculate
i) The change in momentum of the car.
ii) The retardation produced in the car.
Iii) The mass of the car.
- Q5 { [a] A body is dropped freely under gravity from the top of a tower of height 78.4m (2)
Calculate the time to reach the ground.Take $g= 9.8 \text{ m/s}^2$
- [b] Explain (2)
(i) When a comb is rubbed on dry hair and brought near small bits of paper they are attracted towards the comb. (2)
(ii) The motion of rocket using newtons law? State which law it uses? (2)
- [c] Define (2)
(i) Byoyant force (2)
(ii) One Pascal
- [d] A solid weighs 50gf in air and 44gf when completely immersed in water calculate (2)
the Relative Densityof the solid

- Q6 [a] State true or false. If false correct the statement. (4)
- (i) Larger the volume of body submerged in a fluid, greater is the upthrust.
 - (ii) The Linear momentum of a body is the product of mass and volume.
 - (iii) A wooden block and an iron block of the same dimension have same inertia
 - (iv) The Gravitational forces between two masses is attractive or repulsive.
- [b] Refer to the figure below: (2)



The liquid in which of the above two beakers have higher densities. Explain.

- [c] Explain how a submarine can be made to dive into the water or rise up to the surface of water when desired. (2)
- [d] State Archimedes principle? (2)
- Q7 [a] A glass bead (density of glass = 1.49 g/cm^3) sank in alcohol. (2)
- (i) Does glass or alcohol have lesser density?
 - (ii) Is the upthrust on the bead, less, equal to or more than its weight.
- [b] Give two uses of a barometer. (2)
- [c] A piece of ice floating in a glass of water melts, but the level of water in glass does not change. Give reason. (2)
- [d] What is an ecosystem. What is the source of energy for all ecosystem? (2)
- [e] The Relative density of silver is 10.8. State its density in a) G.G.S unit (2)
b) S.I. Unit.
- Q8 [a] Differentiate between on the basis of points given in bracket (4)
- (i) Heat and Temperature (SI unit)
 - (ii) Renewable and Nonrenewable source (Definition)
 - (iii) Mass and weight (measurement)
 - (iv) Pressure exerted by solid and pressure exerted by liquid (direction)
- [b] Define the term Density? The density of iron is 7800 kg/m^3 . What do you understand by this statement? (2)
- [c]
- i) What length of water column is equivalent to 0.76m of mercury column. (2)
Density of mercury is $13.6 \times 10^3 \text{ Kg/m}^3$. Show the working.
 - ii) Can water be used as a barometric liquid? Give reason. (2)