9.12.19   TT - Mathematics

STD: IX   Marks:25

I. Answer the following: 4x1=4

1. AD is the median of $\triangle ABC$. Then ratio of areas of $\triangle ABD$ and $\triangle ACD$
 is -------------

2. Two triangles on the same base and between the same parallels are
equal in -------------

3. A ------------- of a triangle divides it into two triangles of equal area.

4. Triangles on the same base and having equal areas lie between the
same-----------

II. Answer the following: 2x2=4

5. Prove that median of a triangle divides it into two triangles of
equal area.

6. The area of $\triangle ABC$ is 400cm². If AD is a median of $\triangle ABC$. Find the
area of $\triangle ABD$.

III. Answer the following: 3x3=9

7. Given ar($\triangle ABC$) = 48cm², AD is median of $\triangle ABC$ and BE is median
of $\triangle ABD$ if BO is median of $\triangle ABE$, then find the area of $\triangle BOE$.

8. Show that a median of a triangle divides it into two triangles of
equal area.

9. ABCD is a parallelogram. If ar(AOD) = 10cm². Find the
area(ABCD).

IV. Answer the following: 2x4=8

10. Show that the diagonals of a parallelogram divide it into four
triangles of equal area.

11. ABCD is a parallelogram in which DC= 6cm and AE $\perp$ DC,
AE = 4cm. Then find the area($\triangle DCF$).

9.12.19   TT - Physics

STD: IX   Marks:25

I. Answer the following: 5x1=5

1. What do you mean by free fall?

2. Mass of boy on earth is 40kg, What is the mass on moon?

3. In what direction does the buoyant force of an object immersed in a liquid act?

4. Acceleration due to gravity of an object is ---------- at the poles and ---------- at the equator.

5. Assertion: A sheet of paper fall slower than one that is crumpled into a ball.

   Reason: A greater Surface area offers greater resistance

       a)[A] is correct [R] is wrong   b)Both [A] and [R] are correct
       c)[A] is wrong [R] is correct   d)Both [A] and [R] are wrong

II.Answer in brief: 5x3=15

6. Calculate the gravitational force between the earth and the sun, given that the mass of the earth = 6×10^{24}kg and of sun=2×10^{30}kg. The average distance between the two is 1.5×10^{11}m.

7. a) Why does a block of plastic released under water come up to the surface of water?

   b) What is buoyant force?

8. a) Define pressure.

   b) How is thrust different from pressure?

9. Define density and relative density.

10. A stone is thrown vertically upward with an initial velocity of 40 m/s. Taking g= 10 m/s^2. Find the maximum height reached by the stone. What is the net displacement and the total displacement covered by the stone?

III. Answer in detail: 1x5=5

11. a) Gravitational force on the surface of the moon is only 1/6 as strong as gravitational force on the earth. What is the weight in newton of a 10kg object on the moon and on earth.

    b) State Archimedes Principle.

    c) Write the value of acceleration due to gravity.