FOUNDATION COURSE
Class VII (Science and Mathematics)
PAPER : 04

Time : 1 hr 30 min. **Max. Marks. : 50**

SCIENCE

1. What are the laws of reflection ? Draw a diagram to support your answer ? **[3]**

2. What are the properties of images formed by convex mirror ? Draw a diagram to suppor your answer. **[2]**

3. An object is placed at a distance of 50 cm from a concave mirror of focal length 20 cm. What should be the position and properties of the image formed. **[3]**

4. Why does painting of an iron gate prevent it from rusting ? Explain giving reason. **[2]**

5. An object was originally of copper colour. After being exposed to the air, it turned greenish in colour. What kind of change happened ? Explain your answer. **[2]**

6. Anaerobic bacteria digest animal waste and produce biogas (change A). The biogas is then burnt as fuel (change B). The following statements pertain to these changes. Choose the correct one. **[1]**

   (a) A is a chemical change whereas B is a physical change.

   (b) B is a chemical change whereas A is a physical change

   (c) Both A and B are physical changes

   (d) Both A and B are chemical changes

7. When carbon dioxide is passed through lime water it turns milky. Explain the reason. Identify the type of change. **[2]**

8. Classify the changes involved in following processes as physical or chemical changes **[1]**

   (a) dissolving salt in water

   (b) digestion of food

   (c) Spoiling of food

   (d) Beating silver to make silver foil

9. End products of aerobic respiration are **[1]**

   (a) Sugar and oxygen

   (b) Water and energy

   (c) Carbon dioxide and energy

   (d) Carbon dioxide, water and energy

10. Mammalian lung contains enormous number of alveoli. This is to allow **[1]**

    (a) More spongy texture of lungs

    (b) More nerve supply

    (c) More surface area for diffusion of gases

    (d) More space for inspired air

11. What is diaphragm? **[1]**

12. Explain the mechanism of breathing in short. **[3]**

13. What are the different fates of glucose in respiration. **[3]**

MATHS

1. Two circles are of congurent if they have same

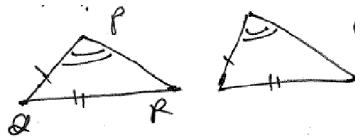
   (a) radius (b) shape (c) both (d) none

2. Two rectangles are congruent if they have the same

   (a) length (b) breadth (c) both (d) none

3. Which of the following pair of triangle are congruent by SAS congurence condition ?

   (a) 

   (b) 

   (c) both (d) none

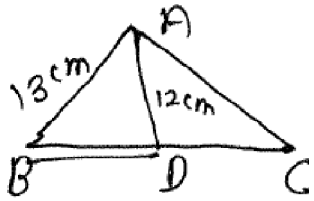
4. In the given figure, $AB = CD$, $AB \perp BC$, and $DC \perp CB$ and . BC is bisected by AD at O. is

   (a) $OA = OD$ (b) $OA = BC$ (c) $OA = OC$ (d) none

5. If ΔABC is congurent tringle with ΔRQP, then $\angle P$ is

   (a) $\angle R$ (b) $\angle P$ (c) $\angle Q$ (d) none

6. In the given figure, AD is the median as well as altitude on side BC from A. Given that AB = 13 cm and AD = 12 cm find the length of BC.



7. If $\Delta ABC \cong \Delta FED$ under the correspondence $ABC \leftrightarrow FED$ write the parts that corresponds to

   (i) $\angle B$ (ii) BC (iii) $\angle A$ (iv) AB

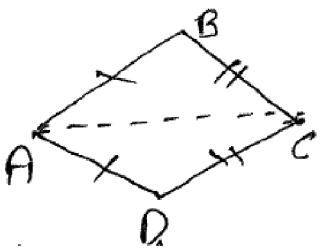
8. In the given figure $AB = AD$ and $BC = DC$

   (i) is $\Delta ABC \cong \Delta ADC$

   (ii) State the three pairs at the matching parts

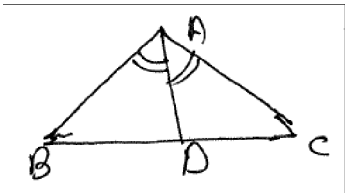
   (iii) Name the congrunce condition

   (iv) Does $\overline{AC}$ bisects $\angle BAD$ give reason.



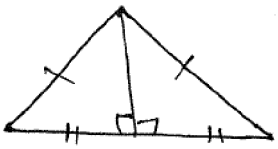
9. (i) *ABCD* is a square. Show that the two triangles *ABC* and *ADC* are congurent to each other.

(ii) In the given figure *AB* = *AC* and *AD* is the bisectors of $\angle BAC$. Then *are cunguraent*

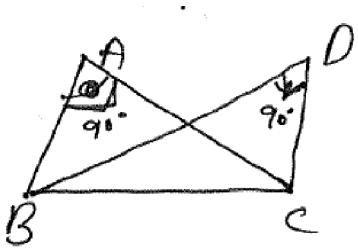


10. *AD* is the median of ΔABC on base *BC* if $\angle ADC = 90°$. Prove that ΔABC is an isoceles.

11. (i) ΔABC is an isoceles triangle such that *AB* = *AC* and altitude *AD* from *A* on *BC* bisects *BC*. Show that $\Delta ADB \cong \Delta ADC$



(ii) In the given figure, ΔABC and ΔDCB are right angled at A and D, respectively and *AC* = *DB* prove that $\Delta ABC \cong \Delta DCB$



C (90)

12. In the given figure, BD and CE are altitudes of ΔABC and $BD = CE$.

(i) is $\Delta BCD \cong \Delta CBE$

(ii) State the three pairs of matching parts used to arrive at the answer in (i).