

FOUNDATION COURSE

CLASS X

Max. Marks. : 100

Time : 2 hrs.

PAPER : 14

P_{SS} C_S M_P B_P

TOPICS COVERED:

- PHYSICS : Human Eye (Complete)
CHEMISTRY : Carbon and Its compounds
MATHS : Circles
BIOLOGY : Evolution

GENERAL INSTRUCTIONS :

1. Paper consist of 4 Sections each for **Physics, Chemistry, Maths** and **Biology**. Answers for each question should be given in the space provided in the question paper itself.
2. Each section contains 13 questions, all questions are compulsory.
3. Question 1 - 5 are **objective type questions** of 1 Mark each.
4. Question 6 - 7 consist of 1 Marks each.
5. Question 8 - 9 consist of 2 Marks each.
6. Question 10 - 12 consist of 3 Marks.
7. Question 13 consists of 5 Marks.

	Physics	Chemistry	Maths	Biology
Marks				
Total				

Name of the Student : _____

Centre : _____

Invigilator's Signature: _____

9. Why do different colours deviate through different angles on passing through a prism ? [2]
10. Why does sun appear reddish at sunrise ? [3]
11. Why does sky look blue on a clear day ? [3]
12. Stars twinkle but planets do not, explain. [3]

13. Explain the construction and working of a human eye with the help of a labelled diagram.

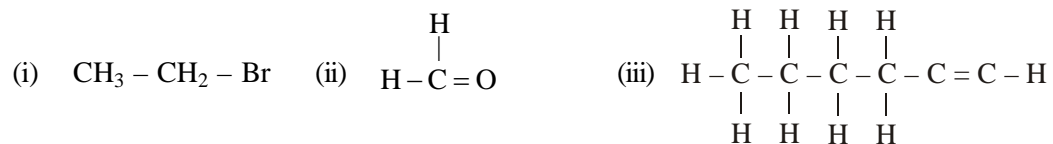
[5]

8. Draw the structural formula of ethane and count the number of single covalent bonds. [2]

9. Why have detergents replaced soaps as a washing agent ? [2]

10. Why is the conversion of ethanol to ethanoic acid an oxidation reaction ? [3]

11. How would you name the following compounds ? [3]

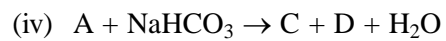
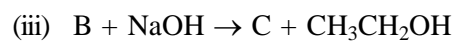
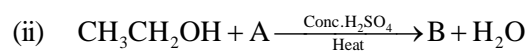
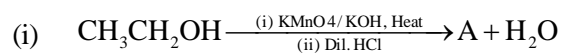


12. Draw the electron dot structures for (a) ethanoic acid (b) H₂S (c) Propanone (d) F₂.

[3]

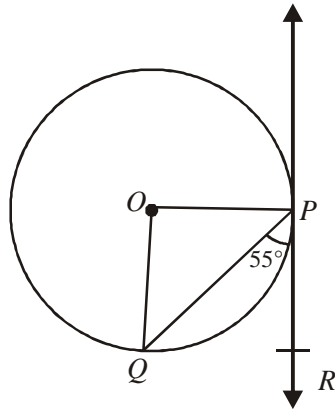
13. Identify the compound (A → D) in the following reaction sequence

[5]



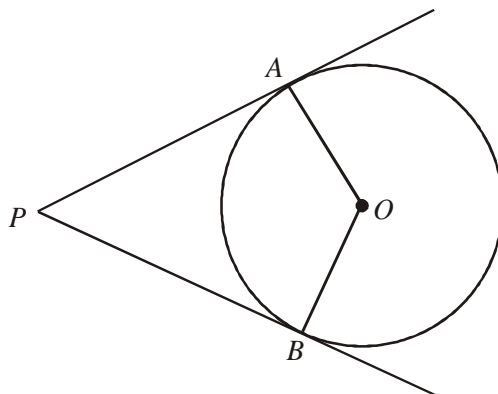
9. In two concentric circles, prove that all chords of outer circle which touch the inner circle are of equal length ? [2]

10. In a given figure O is the centre of a circle, PQ is the chord and the tangent PR at P makes an angle of 55° with PQ , then find $\angle POQ$. [3]

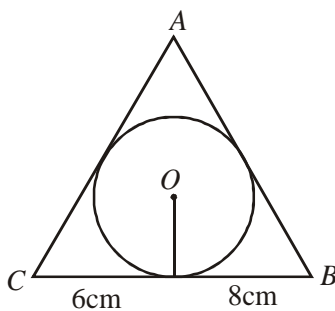


11. Two tangent segments BC and BD are drawn to a circle (O, R) such that the angle $CBD = 120^\circ$. Prove that $BO = 2BC$? [3]

12. PA and PB are tangents from a point P to a circle with centre O and $APB = 90^\circ$, show that quadrilateral $OAPB$ is a square. [3]



13. A triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments BD and DC into which BC is divided by the point of contact D are of length 8 cm and 6 cm respectively (see given figure) find the sides AB and AC ? [5]



BIOLOGY

1. If a round, green seeded pea plant (RRyy) is crossed with wrinkled, yellow seeded pea plant (rrYY) the seeds produced in F₁ generation are
(a) Round and yellow (b) Round and green
(c) Wrinkled and green (d) Wrinkled and yellow [1]

2. The maleness of a child is determined by
(a) the X-chromosome in the zygote
(b) the Y-chromosome in the zygote
(c) the cytoplasm of germ cell which determines the sex
(d) sex is determined by chance [1]

3. If the fossil of an organism is found in the deeper layers of earth, then we can predict that
(a) the extinction of organism has occurred recently
(b) the extinction of organism has occurred thousands of years ago
(c) the fossil position in the layers of earth is not related to its time of extinction
(d) time of extinction cannot be determined [1]

4. A basket of vegetables contains carrot, potato, radish and tomato. Which of them represent the correct homologous structures ?
(a) Carrot and tomato (b) Radish and carrot
(c) Carrot and potato (d) Radish and potato [1]

5. The theory of evolution of species by natural selection was given by
(a) Mendel (b) Darwin (c) Lamarck (d) Morgan [1]

6. Define gene or unit factor. [1]

7. What do you mean by evolution ? [1]

8. State laws of heredity proposed by Mendel. [2]
9. Define the terms : [2]
(a) Homozygous (b) Heterozygous
10. What are homologous and analogous organs ? Give examples. [3]
11. What are fossils ? Explain the evidences of evolution on the basis of fossils. [3]
12. Explain the evolutionary relationship of human, beings. [3]

13. Who wrote the book “The origin of species” ? Illustrate the mechanism of evolution with proper examples [5]