FOUNDATION COURSE
CLASS X
PAPER : 18

Time : 2 hrs. **Max. Marks. : 100**

$P_G C_{DD} M_A B_{VR}$

TOPICS COVERED:

PHYSICS : Complete Syllabus.

CHEMISTRY : Complete Syllabus.

MATHS : Height and Distance, Circle, Surface area, Volume

BIOLOGY : Management of Natural Resources

GENERAL INSTRUCTIONS :

1. Paper consist of **4 Section** 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 consist of 5 Marks.

	Physics	**Chemistry**	**Maths**	**Biology**
Marks				
Total				

Name of the Student :_____

Centre :_____

Invigilator's Signature:_____

PHYSICS

1. If a mirror has a focal length of + 15 cm, then it is a

(a) convex mirror (b) concave mirror (c) plane mirror (d) none of these **[1]**

2. Which of the following colours has the least wavelength ?

(a) Red (b) Orange (c) Violet (d) Blue **[1]**

3. Device used for measuring potential difference is known as

(a) Potentiometer (b) Ammeter (c) Voltmeter (d) Metre scale **[1]**

4. Magnetic lines of force

(a) form closed curves (b) have no physical reality

(c) both are true (d) both are wrong **[1]**

5. The main constituent of a biogas is

(a) hydrogen gas (b) methane gas (c) butane gas (d) nitrogen gas **[1]**

6. What is geothermal energy ? **[1]**

7. Define fossil fuels. **[1]**

8. Write two advantages of nuclear energy. **[2]**

9. An electric heater is rated 100 W and 220 V. If it is operated on 110 V, find the power consumption. **[2]**

10. Draw a well labelled diagram of an electric generator. Hence write its working principle. **[3]**

11. Draw a neat diagram of a myopic eye. Also suggest the corrective lens. **[3]**

12. Explain -

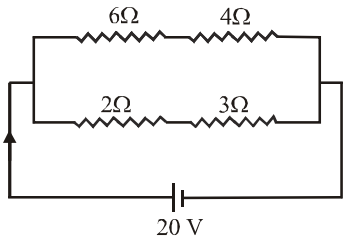
(i) Dispersion of light (ii) Tyndall effect **[3]**

13. Find

(i) the equivalent resistance

(ii) the current passing through the cell **[5]**

(iii) the current through 2 ohm resistance



CHEMISTRY

1. Element X forms a chloride with the formula XCl_2, which is a solid with a high melting point. X would most likely be in the same group of the periodic table as

(a) Na (b) Mg (c) Al (d) Si **[1]**

2. Which of the following is incorrectly matched ?

(a) Vinegar $\rightarrow$ carboxylic acid (b) $C_2H_6 \rightarrow$ alkane

(c) Ethanol $\rightarrow$ alcohol (d) Methanol $\rightarrow$ ketone **[1]**

3. The gas evolved when ethanol reacts with sodium metal is

(a) H_2 (b) CO_2 (c) H_2O (d) CO **[1]**

4. The number of single and double bonds total present in ethanoic acid is

(a) 5 (b) 6 (c) 7 (d) 8 **[1]**

5. The element with atomic number 9 resembles with the element having atomic number

(a) Lithium (b) Chlorine (c) Aluminium (d) Sulphur **[1]**

6. The element with highest electronegativity in the periodic table is **[1]**

(a) Sodium (b) Fluorine (c) Neon (d) Oxygen

7. How many groups and periods are present in the long form of periodic table ? **[1]**

8. In modern periodic table, which are the metal among the first ten elements ? **[2]**

9. Name two elements you would expect to show same kind of chemical reactivity as magnesium. What is the basis for your choices ? **[2]**

10. What are hydrocarbons ? What are the different types of hydrocarbon ? Give structural formula of any two hydrocarbons **[3]**

11. What happens when ethyl alcohol is heated with concentrated sulphuric acid at 160°C ? **[3]**

12. State newland's law of octaves and explain it. **[3]**

13. How does the metallic character and atomic size changes down the group and across a period **[5]**

MATHS

1. Two cubes each of volume 64 cm^3 are joined end to end. Then the surface area of the resulting cuboid is

(a) 120 cm^2 (b) 160 cm^2 (c) 180 cm^2 (d) None of these **[1]**

2. From a point Q, the length of the tangent to a circle is 24 cm and the distance of Q from the centre is 25cm. Find the radius of the circle

(a) 5 cm (b) 6 cm (c) 7 cm (d) 8 cm **[1]**

3. The radii of the ends of a bucket of height 24 cm are 15 cm and 5 cm. Then volume of the bucket is

(a) 725.32 cm^3 (b) 817.42 cm^2 (c) 8874.59 cm^3 (d) None of these **[1]**

4. If a circle and a line have two common points or a line intersect a circle in two distinct points, then line is called

(a) secant (b) diameter (c) tangent (d) None of these **[1]**

5. If a line and a circle have only one point common or a line intersect the circle in only one point, then it is called

(a) Secant (b) Diameter (c) Tangent (d) none of these **[1]**

6. Circunference of the edge of hemispherical bowl is 132 cm. Find the capacity of the bowl. **[1]**

7. If tangent PA and PB from a point P to a circle with centre O, are inclined to each other at an angle of 80°, then find $\angle POA$. **[1]**

8. The tangent at any point of a circle is perpendicular to the radius through point of contact. Prove it **[2]**

9. How many spherical bullets can be made and of a dolid cube of lead whose edge measures 44cm each and bullet being 4cm in diameter. **[2]**

10. Radius of a cone is 4cm. Find the height of the cone so that its volume may be equal to that of a sphere of 4cm in diameter. **[3]**

11. A straight highway leads to the foot of a tower of height 50 m. From the top of the tower, angles of depression of two cars stading on the highway are 30° and 60°. What is the distance between two cars. **[3]**

12. Two poles of equal heights stand vertically opposite to each other on either side of a road, which is 100 m wide. From a point on the road between the poles, the angles of elevation of the tops of the poles are 30° and 60°. Find the height of the poles. Also find the distance of the point from the feet of the poles. **[3]**

13. The angle of elevation of a cloud from a point 60 m above a lake is 30° and the angle of depression of the reflection of cloud in the lake is 60°. Find the height of the cloud. **[5]**

BIOLOGY

1. Non-biolegradable pollutants are

(a) Market garbage (b) Polythene bags (c) Animal wastes (d) Soft drinks cans **[1]**

2. Khuls are

(a) Canal irrigation system (b) Air pollutants

(c) Green house effect (d) None **[1]**

3. 'Chipko' movement was related to

(a) Forest conservation (b) Noice pollution

(c) Water monagement (d) None **[1]**

4. Frog ⟵ grasshopper ⟵ grass. Here, frog is

(a) Primary producer (b) Herbivore (c) Carnivore (d) Primary consumer **[1]**

5. Biosphere is made of

(a) Living beings and their remains

(b) Living beings + lithosphere + hydrosphere + atmosphere

(c) Living beings + lithosphere

(d) Living organisms + lithosphere + hydrosphere **[1]**

6. Why is the ozone layer important to our health ? **[1]**

7. Carbon dioxide is necessary for plants. Why do we consider it as a pollutant ? **[1]**

8. What would be the advantages of exploiting resources with short term aims ? **[2]**

9. Why do you think there should be equitable distribution of resources ? **[2]**

10. Suggest some approaches towards the conservation of forests. **[3]**

11. Write two advantages and disadvantages for building the dams of electricity production ? **[3]**

12. What do you think by sustainable management and how it is effective for utilisation for natural resources ? **[3]**

13. How can you give an individual contribute or make a difference to the management of **[5]**

(a) Forests and wildlife

(b) Water resources and

(c) Coal and petroleum