Students of Kashmir

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Srinagar, J&K

Guess Paper/ Important Questions

Based on updated Syllabus, session 2024-25

10th Class

Science

By: Students of Kashmir

1.Physics

Unit 1: Light - Reflection and Refraction (Marks: 08)

1. Define the laws of reflection. Explain image formation by a concave and convex mirror with ray diagrams.
2. Derive the mirror formula if {1/f=1/v-1/u}
3. What are the sign conventions for spherical mirrors?
4. A concave mirror of focal length 15 cm forms an image 30 cm away from the mirror. Find the object distance.
5. Explain refraction through a glass slab and derive the formula for lateral displacement.
6. Define the refractive index. What are the conditions for no refraction?
7. Write the lens formula and derive it.
8. A convex lens has a focal length of 20 cm. Where should an object be placed to get an image at 60 cm?

Unit 2: The Human Eye and the Colorful World (Marks: 05)

1. Explain the power of accommodation of the human eye.
2. Name and explain any two defects of vision and their correction with ray diagrams.
3. Why does a glass prism disperse light but a glass slab does not?
4. Why do stars twinkle? Explain using the concept of atmospheric refraction.
5. Why does the Sun appear red at sunrise and sunset?

Unit 3: Electricity (Marks: 06)

1. Define electric current, potential difference, and resistance. Write their SI units.
2. State and explain Ohm's law with an experiment.
3. Derive the formula for the equivalent resistance of resistors in series and parallel.
4. Two resistors of 4Ω and 6Ω are connected in parallel. Find the total resistance.
5. What is the heating effect of electric current? Derive the formula for electric power.
6. A heater of 1000W operates on a 220V supply. Find the current drawn and resistance of the heater.

Unit 4: Magnetic Effects of Current (Marks: 07)

1. State Oersted's experiment and explain its significance.
2. Draw the magnetic field lines for a straight current-carrying conductor and a solenoid.
3. Explain the force on a current-carrying conductor in a magnetic field.
4. Describe the working of domestic electric circuits with a neat diagram.
5. What happens when a current-carrying conductor is placed in a magnetic field? Explain with Fleming's left-hand rule.

2.Chemistry

Unit 1: Chemical Reactions and Equations (Marks: 06)

1. Define a chemical reaction. What are the characteristics of a chemical reaction?
2. Write the steps involved in balancing a chemical equation. Balance the following equation: Fe+H2O→Fe3O4+H2Fe + H_2O \rightarrow Fe_3O_4 + H_2
3. Explain different types of chemical reactions with examples:
    - Combination reaction
    - Decomposition reaction
    - Displacement reaction
    - Double displacement reaction
    - Oxidation and reduction
4. What is corrosion? Write its effects and methods of prevention.
5. What is rancidity? How can it be prevented?

Unit 2: Carbon and Its Compounds (Marks: 08)

1. Explain the covalent bonding in carbon with an example.
2. What are the allotropes of carbon? Write a short note on diamond and graphite.
3. Differentiate between saturated and unsaturated hydrocarbons. Give examples.
4. What is a homologous series? List its characteristics.
5. Explain the chemical properties of carbon compounds:
    - Combustion
    - Oxidation
    - Addition reaction
    - Substitution reaction
6. What are the properties and uses of ethanol and ethanoic acid?
7. Explain the cleansing action of soaps and detergents.

Unit 3: Metals and Non-metals (Marks: 07)

1. List the physical properties of metals and non-metals.
2. Explain the chemical properties of metals with respect to:
    - Action of water
    - Action of air
    - Reaction with acids
    - Reaction with salts
3. What is the reactivity series of metals? How does it help in predicting reactions?
4. Explain why metals are reactive in terms of their atomic structure.
5. What are ionic compounds? List their properties.
6. Describe the process of extraction of metals from their ores.
7. What is corrosion? How can it be prevented?

Unit 4: Acids, Bases, and Salts (Marks: 05)

1. Define acids and bases with examples.
2. Explain the chemical properties of acids and bases, including:

- Reaction with metals
- Reaction with metal carbonates
- Reaction with metal hydrogen carbonates
- Reaction with metallic and non-metallic oxides

3. How do acids and bases react with water? Explain with equations.
4. What is pH? Why is it important?
5. What are salts? Give examples and their uses.
6. Write the chemical formulas of:
   - Sodium hydroxide
   - Baking soda
   - Washing soda
   - Plaster of Paris

3.Biology

Unit 1: Life Processes (Marks: 08)

1. What are life processes? Name the basic life processes in living organisms.
2. Differentiate between autotrophic and heterotrophic nutrition. Give examples.
3. Explain the process of nutrition in human beings with a labeled diagram of the digestive system.
4. Describe the process of respiration in humans. Differentiate between aerobic and anaerobic respiration.
5. Explain the transportation of water and nutrients in plants.
6. How does the human circulatory system work? Explain with a diagram.
7. Describe the process of excretion in human beings and plants.

Unit 2: Control and Coordination (Marks: 06)

1. What is reflex action? Explain with an example.
2. Describe the structure and function of the human brain with a labeled diagram.
3. How does nervous tissue cause action in the body?
4. What are plant hormones? How do plants respond to stimuli?
5. Explain the role of hormones in animals.

Unit 3: How Do Organisms Reproduce (Marks: 06)

1. Why do organisms not create exact copies of themselves? Explain the role of variation.
2. Describe the different modes of asexual reproduction in unicellular organisms with examples.
3. Explain sexual reproduction in flowering plants with a labeled diagram.
4. Describe the male and female reproductive systems in humans.
5. What happens when the egg is not fertilized in humans? Explain menstruation.
6. What are sexually transmitted diseases (STDs)? How can they be prevented?

Unit 4: Heredity (Marks: 03)

1. What is heredity? Explain the accumulation of variation during reproduction.
2. Explain Mendel's experiments with pea plants and his contribution to genetics.
3. How are inherited traits expressed? Explain sex determination in humans.

Unit 5: Our Environment (Marks: 05)

1. How does human activity contribute to environmental pollution?
2. What happens when we add waste to the environment? How can we manage it?
3. What is an ecosystem? Explain its components with examples.
4. What are food chains and food webs? Explain with a diagram.
5. What is the ozone layer? How is it getting depleted? What are its effects?