



**ANNUAL EXAMINATIONS 2022**

**(MODEL PAPER)**

**PHYSICS-X**

**(Science Group)**

**Total Duration: 02 Hours**

**Total Marks: 60**

**Section "A" Multiple Choice Questions (M.C.Os)**

**Time Allowed: 30 Minutes**

**Max Marks: 24**

**Q1. Choose the correct answer for each from the given option and shade the circle in the answer**

**copy:**

**Note: This Section consists of 24 questions, attempt all questions each questions carries 01 marks.**

**i. The distance between two consecutive crests or troughs of a wave is known as:**

- a. Frequency
- b. Wavelength
- c. Time period
- d. Phase

**ii. When light rays strike a mirror surface, they always:**

- a. Reflects light rays
- b. Refract light rays
- c. Only absorbs light rays
- d. Diffract light rays

**iii. A converging lens behave like a diverging lens when object is placed:**

- a. Between F And 2F
- b. Between f and optical center of lens
- c. Beyond 2F
- d. At 2F

**iv. What does planks quantum theory confirm:**

- a. Wave nature of light
- b. Particle nature of light
- c. Electromagnetic wave nature of light
- d. Dual nature of light

- v. **A device used to store electric charge is called:**
- Generator
  - Resistor
  - Electric motor
  - Capacitor
- vi. **The direction of magnetic lines of forces around a wire and the direction of current flowing through it was given by:**
- Newton
  - Ohm
  - Maxwell
  - Oersted
- vii. **A charge particle moves perpendicular to the magnetic field:**
- Moves straight
  - Deviates from its path
  - Moves on circular path
  - Moves on parabolic path
- viii. **The opposition in the flow of electric current is known as:**
- Current
  - Potential difference
  - Electric power
  - Resistance
- ix. **A device formed by P-type and N-type Semiconductors is known as:**
- Resistor
  - Semiconductor
  - Diode
  - Motor
- x. **The Process of omission of invisible radiation from Nucleus of an Atom is known as:**
- Rectification
  - Amplification
  - Radioactivity
  - Fission
- xi. **In S.I. Units the value of g (gravity) on the surface of moon is:**
- 9.8 m/s
  - 1.613 m/s<sup>2</sup>
  - 32 ft /s<sup>2</sup> m/s<sup>2</sup>
  - 980 m/s<sup>2</sup>

- xii. Like pole of magnet always:**
- Repel
  - Attract
  - Both
  - Don't interact
- xiii. Light consists of:**
- Gamma rays
  - Electromagnetic waves
  - Atoms
  - X-rays
- xiv. The shortest wavelength visible to human eye is:**
- Violet
  - Red
  - Blue
  - White
- xv. Image formed in a plane mirror is:**
- Real
  - Inverted
  - Virtual and erect
  - Erect
- xvi. The waves which require a medium for propagation is called:**
- electromagnetic waves
  - Mechanical waves
  - c)long waves
  - Period
- xvii. Isotopes are atoms of same element with different:**
- Atomic mass
  - Atomic Number
  - Number of protons
  - Number of Neutron
- xviii. What happen to the atomic number of an element which emits one alpha particle?**
- Increase by 1
  - Stays the same
  - Decrease by 2
  - Decrease by 1

**xix. Release of energy by the sun is due to**

- a. Nuclear fission
- a. Nuclear fusion
- b. Burning of gases
- c. Chemical reaction

**xx. Unidirectional motion is used for which of the following?**

- a. Alternating current
- b. Direct current
- c. Alternative current
- d. Continuous current

**xxi. In a circuit having electronic current electrons flow from:**

- a. +ve to +ve
- b. -ve to -ve
- c. -ve to +ve
- d. +ve to -ve

**xxii. Indium diffuses through a small part of which of the following germanium?**

- a. P-type
- b. V-type
- c. N-type
- d. NP-type NP

**xxiii. A P-N junction diode is an electronic device formed from a \_\_\_\_\_ and a \_\_\_\_\_ semiconductor**

- a. V-type, n-type
- b. P-type, n-type
- c. PN-type, NP-type
- d. PNP-type, NPN type

**xxiv. A p-type substance is formed when a semiconductor crystal is doped with a \_\_\_\_\_ element:**

- a. Trivalent
- b. Tetravalent
- c. Hexavalent
- d. Pentavalent.

Time: 01 Hours 30 minutes

Total Marks: 24

**SECTION 'B' (SHORT-ANSWER QUESTIONS)**

- ❖ Write the Question in the space provided in Section B in the answer copy and write the answer below:

**NOTE: Attempt any 06 questions from this section. Each question carries 04 marks.**

Q2A. Define the following:

- i. Wavelength
- ii. Frequency
- iii. Time period
- iv. Amplitude

**OR**

Q2B. Differentiate between regular and irregular reflection of light.

Q3A. Find the resistance of electric bulb if 0.60A current is passing through it and the potential difference across the bulb is 90V.

**OR**

Q3B. Distinguish between combination of resistance in Series and Parallel respectively.

Q4A. Write the similarities between magnetism and electricity.

**OR**

Q4B. What is meant by Electrostatic Potential? Describe it and name its units.

Q5A. Explain resistance in your own words.

**OR**

Q5B. Calculate the potential difference between the two terminals of a battery if 100 joules of work are required to transfer 20 coulombs of charge from one terminal of the battery to the other.

Q6A. An object is placed at a distance of 10cm from a convex mirror of focal length 15 cm. Find the position and nature of image

**OR**

Q6B. Prove that:  $-1/q = 1/p - 1/f$

Q7A. What is critical angle? Describe total internal reflection and conditions necessary for it.

**OR**

Q7B. Define capacitor? What happens to the flow of electrons if the capacitor weakens? What is its effect?

**SECTION "C" (DETAILED-ANSWER QUESTIONS)**

**Max Marks: 12**

**Note: Attempt any 2 questions from this section. Each question carries 6 marks.**

- ❖ **Write the Question in the space provided in Section C in the answer copy and write the answer below**

Q8A. Describe the changes in the position, nature and size of the image formed by a convex lens. When the object is brought from infinity towards the lens. Illustrate your answer with diagram.

**OR**

Q8B. Describe the construction and action of the following. Illustrate your answer with a diagram:

- i) Compound Microscope ii) Telescope

Q9A. Describe the phenomenon of waves with the help of experiment.

**OR**

Q9B. What are semiconducting materials? Describe P-type and N-type materials.

