

BISE Lahore — 10th Class Physics — Annual 2024 — Group I — Question Paper

English medium. Objective: 12 MCQs, 12 marks, 15 minutes. Subjective: 48 marks, 1 hour 45 minutes — Part-I: Q.2, Q.3, Q.4 (attempt any 5 of 8 short questions each); Part-II: Q.5, Q.6, Q.7 (attempt any 2; each has parts (a) and (b)).

Question stems below are transcribed from the board paper scans. The full MCQ option sets are as printed on the board paper itself (see the scan sources in sources.md); the answer key with reasons is in solutions.md. Where a question refers to a figure, the figure is part of the printed paper; solutions.md describes it.

Objective (Q.1 — 12 MCQs)

Q.1. The relation between v , f and λ of a wave is:

Q.2. The loudness of a sound is most closely related to its:

Q.3. Image formed by a camera is:

Q.4. Capacitance is defined as:

Q.5. What happens to the intensity or the brightness of the lamps connected in series as more lamps are added:

Q.6. The turn ratio of a transformer is 10. It means:

Q.7. The logical operation performed by this gate is: (figure: an AND-shaped gate with a small circle at its output)

Q.8. From which of the following we can get information almost about everything:

Q.9. The half-life of a certain isotope is one day. What is the quantity of isotope after two days:

Q.10. Which compound is used for diagnosis of brain tumor:

Q.11. Which refers to computer programmes and the manuals that support them:

Q.12. To make burglar alarm we use:

Subjective — Part-I (short questions)

Q.2

(i) Define time period and frequency.

(ii) If 100 waves pass through a point of a medium in 20 seconds, what is the frequency of the waves?

(iii) Think of several examples of motion in everyday life that are simple harmonic motion.

(iv) Write some uses of capacitors.

(v) Write two characteristics of series combination of capacitors.

(vi) What is the difference between fixed capacitor and variable capacitor?

(vii) What is the difference between cell and battery?

(viii) Define resistance and write its unit.

Q.3

(i) Define loudness of sound. How does it change with the increase in amplitude?

(ii) How can you reduce the level of noise pollution?

(iii) What is meant by SONAR (Sound Navigation and Ranging)?

- (iv)** What is the difference between data and information?
- (v)** How are light signals sent through optical fibre?
- (vi)** What is the difference between hardware and software?
- (vii)** Define atomic number and mass number.
- (viii)** How can the scientist estimate dead tree age by C-14?

Q.4

- (i)** Define power of lens, also write its formula.
- (ii)** According to sign conventions, when are object distances taken positive and negative in a spherical mirror?
- (iii)** Describe the principal focus of a convex lens by ray diagram.
- (iv)** Write two uses of logic gates.
- (v)** Draw the symbol of NOT gate and also write its truth table.
- (vi)** Define the term thermionic emission.
- (vii)** Write working principle of electric motor.
- (viii)** What is right hand rule to determine the magnetic poles of a current carrying coil?

Q.5(a) What is meant by refraction of wave? Explain the refraction of water waves diagrammatically by using ripple tank. (4)

Q.5(b) Two capacitors of capacitances $6\ \mu\text{F}$ and $12\ \mu\text{F}$ are connected in series with a $12\ \text{V}$ battery. Find the equivalent capacitance of the combination. Find the potential difference across each capacitor. (5)

Q.6(a) Explain transmission of radio waves through space. (4)

Q.6(b) A sound wave has a frequency of $2\ \text{KHz}$ and wavelength $35\ \text{cm}$. How long will it take to travel $1.5\ \text{km}$? (5)

Q.7(a) What is an electron gun? How does it work in CRO? (4)

Q.7(b) A step up transformer has turn ratio $1:100$. An alternating supply of $20\ \text{V}$ is connected across the primary coil. What is the secondary voltage? (5)

Note: Q.5, Q.6, Q.7 long-question prompts appear above under their part headings. This file lists every question in the paper; no question has been added or removed.