ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

MODEL PAPER, 2023

Subject: Physics	Grade-X	M. Marks: 60	Time: 3 Hours

SECTION "A"

(MULTIPLE CHOICE QUESTIONS)

Q1. Choose the correct answer for each from the given options: (12)

(i) The direction of magnetic field inside the bar magnet is:

(a) From N to S (b) From S to N

(c) From side to side (d) No magnetic field

(ii) Two capacitor of 8μf are connected in series the Re is:

(a) $^1/_4\ \mu f$ (b) 2 μf

(c) 3 μf (d) 6 μf

(iii) A magnifying glass also known as:

(a) Endoscope (b) Compound microscope

(c) Simple microscope (d) Telescope

(iv) Lenses forms image through:

(a) Dispersion (b) Refraction

(c) Diffraction (d) Reflection

(v) The colour that is least deviated by a prism:

(a) Red ray (b) Violet ray

(c) Green ray (d) Yellow

(vi) The velocity of light in a air is:

(a) 3×10^{-8} m/s (b) 3×10^{8} m/s

(c) 3×10^{8} km/s (d) 3×10^{8} m/s

(vii) The range of wave length of UV-B is:

(a) 315 – 399m (b) 280 – 314 nm

(c) 100 – 279 nm (d) None of them

(viii) The separation between two consecutive compressions of the sound wave is:

(a) Time period (b) Amplitude

(c) Frequency (d) Wave length

(ix) The device which used in air traffic control and vehicle speed detection is:

(a) Sonar (b) Radar

(c) Lidar (d) All of them

(x) The frequency of bats between:

(a) 20 Hz to 20 KHz (b) 1 KHz to 150 KHz

(c) 16 Hz to 12 KHz (d) None of them

(xi) In an oscillating pendulum, the K.E at extreme position is:

(a) Maximum (b) Minimum

(c) Zero (d) Both a and b

(xii) Formula of oscillation is $F = kx^n$, where "n" should be:

(a) Even (b) Odd

(c) Prime (d) Natural

SECTION "B"

Note: Attempt any eight questions from this section. (3 x 8 = 24)

Q2. Write down the characteristics of wave?

Q3. State Snell's law.

Q4. Write difference between mechanical wave and electromagnetic wave?

OR

Write difference between sound and noise.

Q5. What are radio waves and microwaves and how they produced? Write their one uses.

Q6. What is capacitor and write down the capacitance of capacitor.

Q7. Write difference between analogue electronics and digital electronics.

Q8. Ruby laser emits the beam of red light having a wavelength of 694.3nm. Calculate its frequency.

Q9. A boy clapped his hands near a wall and heard the echo after 1.6s. What is the distance of the wall from the boy? If the speed of sound is taken as 340 m/s?

Q10. A concave mirror forms a real image at 25cm from the mirror surface along the principal axis. If the corresponding object is at a 10 cm distance. What is the focal length of the mirror?

Q11. A simple of Ac-225 originally contained 8 x 10^{24} nuclei. After 960 hour. How much of the original sample remains un-decayed the half life of the isotopes is few days.

Q12. How much voltage will be dropped across a 50 Ω resistance whose current is 300 μAmp?

Q13. If two wires placed parallel, when current following in same direction, what will be happen?

SECTION "C"

Note: Attempt any four questions from this section. (6 x 4 = 24)

Q14. What is Galvanometer? How Galvanometer can be converted into Ammeter and Voltmeter?

Q15. Derive the expression for mirror equation?

Q16. What are electromagnetic waves? Write down the characteristics of electromagnetic waves.

Q17. State Coulomb's law and derived its equation?

Q18. With the help of ray diagram given the magnifying power of the following:

(i) Simple microscope (ii) compound microscope

Q19. Write force on a current carrying wire in a uniform magnetic field.

OR

Write turning effect on a current carrying coil in a magnetic field.