

Physics (New)

10th (Fresh/Reappear)

- ۱۔ ہر سوال کے سامنے چار دائرے دیئے گئے ہیں، صرف صحیح جواب والا دائرہ بھریں۔
 ۲۔ دائروں کو شیڈ (بھریں) کے لیے یا کالے رنگ کا کارڈ استعمال کریں۔
 ۳۔ جواب میں ایک سے زائد دائرے بھرنے سے جواب غلط تصور ہوگا۔

Time: 15 Minutes

SECTION-A

Marks: 12

Q1: Choose the correct option i.e, A,B,C or D?

- When an object oscillates with a frequency of 0.2HZ, its time period is.
☐ 1s ☒ 2s ☐ 5s ☐ 10s
- The quantity among the given which remain unchanged during reflection of wave is.
☐ Speed ☒ Frequency ☐ Wavelength ☐ Direction
- Pitch of sound waves depends on wave's.
☐ Amplitude ☐ Energy ☒ Frequency ☐ Speed
- A ray passing through the centre of curvature of a concave mirror is reflected.
☐ At an equal angle to the axis ☒ Back on itself
☐ Parallel to the principal axis ☐ Through the focal point
- The speed of light in diamond having refractive index 2.41 is.
☐ $1.24 \times 10^8 \text{ m/s}$ ☐ $2.21 \times 10^8 \text{ m/s}$
☐ $3 \times 10^8 \text{ m/s}$ ☐ $7.23 \times 10^8 \text{ m/s}$
- The direction of the electric field at a point due to negative charge is.
☐ Radially inward ☐ Radially outward
☐ Tangent to the charge ☐ Circular around the charge
- When two resistors of 3Ω and 12Ω are connected in parallel the total resistance is.
☐ 15Ω ☐ 12Ω ☒ 2.4Ω ☐ 0.4Ω
- In step-down transformer.
☐ $N_p = N_s$ ☒ $N_p < N_s$ ☐ $N_p > N_s$ ☐ $N_p = 0$
- The device that uses the deflection of an electron beam in a magnetic field is.
☐ Transformer ☒ Cathode ray oscilloscope
☐ DC Motor ☐ AC generator
- Software that allows users to interact with computer system is termed as.
☐ Application software ☒ Operating system
☐ Information system ☐ Utility software
- The number of neutrons in a nucleus of $^{141}_{56}\text{Ba}$ is.
☐ 56 ☒ 85 ☐ 141 ☐ 205
- In nuclear fission, uranium remains in intermediate excited state

that lasts for.

☒ 10^{-8}s

☐ 10^{-10}s

☐ 10^{-12}s

☐ 10^{-14}s

PHYSICS 10th (Fresh/Reappear)

Note: Time allowed for Section-B & Section-C is 2:45 Hours.

SECTION-B

Marks: 32

Q2: Answer any EIGHT parts. Each part carries 4 marks?

1. What is the difference between echo and reverberation?
2. Find the speed of sound in air at 15°C ?
3. What are the symptoms and causes of long sightedness and how can it be corrected by using lenses?
4. Explain the law proposed by coulomb about electric force between stationary point charges?
5. Explain electrical power and derive three equations for it using ohm's law?
6. A current of 6A is used to boil a kettle in 15 minutes using $4.32 \times 10^5 \text{ J}$ of energy. Find the potential difference across the kettle?
7. What is induced EMF and identify three factors that influence its magnitude?
8. Define logic gates and describe the operation of NOR gate by drawing its symbol and truth table?
9. Define information storage devices and describe the use of CD and DVD?
10. Write the nuclear reaction for the alpha decay of ${}_{106}^{263}\text{X}$ and ${}_{84}^{218}\text{X}$. (X represents parent and Y represents daughter nuclei)?
11. What are radioisotopes? Describe any two medical uses of radioisotopes?

SECTION-C

Marks: 21

Q3: Attempt any THREE questions. All questions carry equal marks?

1. (a) What is simple pendulum? Show that time period of simple pendulum is independent of its mass and amplitude?
(b) Find the time period of a pendulum with a length of 0.6m, that swings on mercury where gravitational field strength is 3.73m/s^2 ?
2. (a) How does total internal reflection occur, what is the method to calculate the critical angle, and what conditions are necessary for it to occur?
(b) An optical fiber made of flint glass (refractive index 1.66) is surrounded by crown glass (refractive index 1.52), find the critical angle?
3. (a) What is meant by capacitance? Derive the formula for the effective capacitance when capacitors are connected in parallel?
(b) Two capacitors of $6\mu\text{F}$ and $8\mu\text{F}$ are connected in parallel through a voltage source of 100V. Calculate the total capacitance and charge on each capacitor?
4. (a) How does AC generator work? Explain its construction and working principle?
(b) If the current through the primary coil changes from -63A to +7A in 0.02s, such that the induced emf is 1.4V. Find the mutual inductance?