

PHYSICS PAPER – 10<sup>th</sup> – FULL BOOK

PHYSICS Time Allowed: 15 Minutes  
Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

|                                                                                                                                                      |                            |     |                            |     |                               |     |                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----|----------------------------|-----|-------------------------------|-----|----------------------------|
| i. A large ripple tank with a vibrator working at a frequency of 30Hz produces 25 complete waves in a distance of 50cm, the velocity of the wave is: |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | $53\text{cms}^{-1}$        | (b) | $60\text{cms}^{-1}$        | (c) | $750\text{cms}^{-1}$          | (d) | $1500\text{cms}^{-1}$      |
| ii. The speed of sound in Air at 100 °C is:                                                                                                          |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | $331\text{ms}^{-1}$        | (b) | $346\text{ms}^{-1}$        | (c) | $386\text{ms}^{-1}$           | (d) | $398\text{ms}^{-1}$        |
| iii. Which type of image is formed by plane mirror?                                                                                                  |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | real                       | (b) | Virtual                    | (c) | Real and virtual              | (d) | None of these              |
| iv. If the length of simple pendulum is halved, its time period will be:                                                                             |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | $\sqrt{2} T$               | (b) | $\frac{T}{\sqrt{2}}$       | (c) | $2T$                          | (d) | $\frac{T}{2}$              |
| v. The index of refraction depends on:                                                                                                               |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | The focal length           | (b) | The speed of light         | (c) | The image distance            | (d) | The object distance        |
| vi. The S.I unit of coulomb constant is:                                                                                                             |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | $\text{Nm}^2\text{c}^{-2}$ | (b) | $\text{Nm}^2\text{c}^2$    | (c) | $\text{Nm}^{-2}\text{c}^{-2}$ | (d) | $\text{Nm}^{-2}\text{c}^2$ |
| vii. Electric potential and e.m.f.                                                                                                                   |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | Are the same terms         | (b) | Are the different terms    | (c) | Have different units          | (d) | Both (b) and (c)           |
| viii. The turn ratio of a transformer is 10. Its means:                                                                                              |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | $I_S = 10 I_p$             | (b) | $N_S = \frac{N_p}{10}$     | (c) | $N_S = 10 N_p$                | (d) | $V_S = V_p/10$             |
| ix. The output of NAND gate is “0” when?                                                                                                             |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | Both of inputs are “0”     | (b) | Both of its inputs are “1” | (c) | Any of its inputs is “0”      | (d) | Any of its inputs is “1”   |
| x. The basic operation performed by a computer are:                                                                                                  |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | Arithmetic operations      | (b) | Non-arithmetic operation   | (c) | Logical operation             | (d) | Both (a) & (c)             |
| xi. Which of the following is not same as watt:                                                                                                      |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | $\frac{J}{S}$              | (b) | $AV$                       | (c) | $A^2\Omega$                   | (d) | $\frac{A}{V}$              |
| xii. The half-life of $^{235}\text{U}$ is:                                                                                                           |                            |     |                            |     |                               |     |                            |
| (a)                                                                                                                                                  | $7.1 \times 10^8$ years    | (b) | $7.1 \times 10^9$ years    | (c) | $7.1 \times 10^{10}$ years    | (d) | $7.1 \times 10^{11}$ years |

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Session: \_\_\_\_\_

Roll No. \_\_\_\_\_ Subject: \_\_\_\_\_ Test No. \_\_\_\_\_ Date: \_\_\_\_\_

|    |         |    |         |    |         |    |         |    |         |
|----|---------|----|---------|----|---------|----|---------|----|---------|
| 1  | A B C D | 2  | A B C D | 3  | A B C D | 4  | A B C D | 5  | A B C D |
| 6  | A B C D | 7  | A B C D | 8  | A B C D | 9  | A B C D | 10 | A B C D |
| 11 | A B C D | 12 | A B C D | 13 | A B C D | 14 | A B C D | 15 | A B C D |
| 16 | A B C D | 17 | A B C D | 18 | A B C D | 19 | A B C D | 20 | A B C D |



# **PHYSICS PAPER – 10<sup>th</sup> – FULL BOOK**

**PHYSICS**

**PAPER - (Essay Type)**

**Time Allowed: 1 hr 45 mins**

**Maximum Marks: 28**

## **SECTION-I**

**Q.2 Write answers of any five questions.**

**(5 × 2 = 10)**

- (i) What is restoring force?
- (ii) Draw a labelled diagram of Ball and Bowl system.
- (iii) Differentiate between compression and rarefaction.
- (iv) Explain principle focus of concave mirror.
- (v) What is Snell's law?
- (vi) Under what condition will a converging lens form a virtual image?
- (vii) Make symbol diagram of AND gate, Write down its truth table.
- (viii) Write the uses of CRO.

**Q.3 Write answers of any five questions.**

**(5 × 2 = 10)**

- (i) Define Quality of sound. Draw the graph of Tuning fork and flute sound.
- (ii) What is meant by echo?
- (iii) Define intensity level of sound.
- (iv) What is meant by electric field and electric intensity?
- (v) Define one farad capacitance.
- (vi) With the help of electroscope how can you detect the type of charge?
- (vii) Write the elements of a communication system.
- (viii) What is Fax machine? Write its purpose.

**Q.4 Write answers of any five questions.**

**(5 × 2 = 10)**

- (i) What is SI unit of resistance? Define it.
- (ii) What is ammeter? How is it connected in a circuit?
- (iii) What is the difference between DC and AC.?
- (iv) Write right hand grip rule for a coil.
- (v) Write the principle of AC generator.
- (vi) How does ATM machine read bank credit card?
- (vii) Explain Gamma decay with the help of example.
- (viii) Find the no. of protons and neutrons in the nuclide defined by  $^{13}_6\text{X}$

## **SECTION-II (ESSAY TYPE)**

**Note: Attempt any two questions.**

**Q. 05**

- (a) Prove that motion of simple pendulum is simple Harmonic motion. (4)
- (b) The power of a convex lens is 5D. At what distance the object should be placed from the lens that its real and 2 times larger image is formed. (5)

**Q. 06**

- (a) How does electrostatic air cleaner work? Explain. (4)
- (b) A sound wave has a frequency of 2 kHz and wavelength 35cm. How long will it take to travel 1.5 km. (5)

**Q. 07**

- (a) Discuss the main features of parallel combination of resistors. (4)
- (b) If a transformer is used to supply voltage to a 12v model train which draws a current of 0.8 A. Calculate the current in the primary if the voltage of the A.C source is 240V. (5)