

Final Term Examination 2011

Physics X Paper – I

Time allowed: 35 minutes

Max. Marks: 25

Student's Full Name: _____

Roll No: _____ **Section:** _____ **Invigilator's signature:** _____

Marks Obtained: _____ **Examiner's Signature:** _____

Re-checker's signature: _____ **Date:** _____

INSTRUCTIONS:

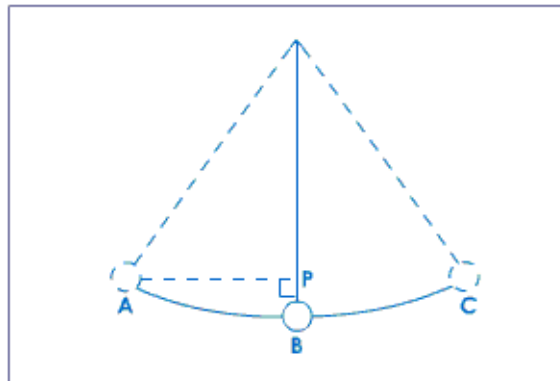
1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 25 answer numbers on the answer sheet. Use answer numbers 1 to 25 only.
4. In each question there are four choices A, B, C and D. Choose ONE. On the answer grid black out the box for your choice with a pencil as shown below.

Correct Way				Incorrect Way					
1	A	B	C	D	1	A	B	C	D
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					2	A	B	<input checked="" type="checkbox"/>	D
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					3	A	B	C	D
						<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					4	A	B	C	D
						<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new box.

6. Do NOT write anything in the answer grid. The computer only records what is in the boxes.

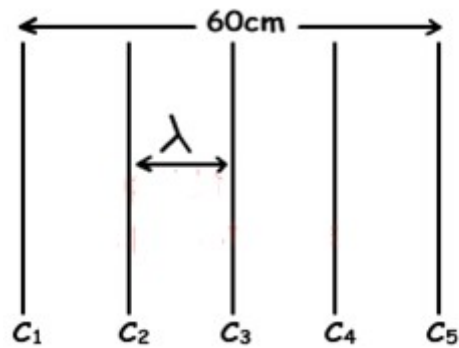
1. In the given diagram the motion of a simple pendulum is shown, if the time taken by the bob from B to C is 0.5 Sec then the time for one complete vibration will be:



- a. 1.0 Sec

- b. 2.0 Sec
- c. 1.5 Sec
- d. 2.5 Sec

2. In the given diagram the wavelength is shown, if the frequency of the wave source is 3Hz, the velocity of wave will be:



- a. 20 cm /s
 - b. 45 cm/s
 - c. 10 cm/s
 - d. 25 cm/s
 - e.
3. Sound energy flowing per second through a unit area held perpendicular to the direction of sound waves is termed as:

- a. Loudness of sound
- b. Intensity of sound
- c. Intensity level

d. Sound level

4. **Four different whistles, when blown, emit pure notes with the frequencies shown: 0.1 k Hz, 1 k Hz, 10 k Hz, 100 k Hz. Which of the following frequencies are above the normal audible range:**

a. 4

b. 3

c. 2

d. 1

5. **A student uses a converging lens to produce an enlarged virtual image of a scale she wishes to read accurately. The focal length of the lens is 20cm. The suitable distance between the scale and the lens is:**

a. 40 cm

b. 30 cm

c. 20 cm

d. 10 cm

6. **The focal length of a spherical mirror which produces an image one-sixth the size of an object located 12 cm from the mirror will be:**

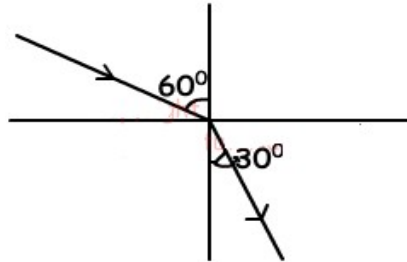
a. 1.7 cm

b. 2.4 cm

c. 10.3 cm

d. 4.0 cm

7. If the ray follows following path while passing from one medium to another, find the refractive index of medium:

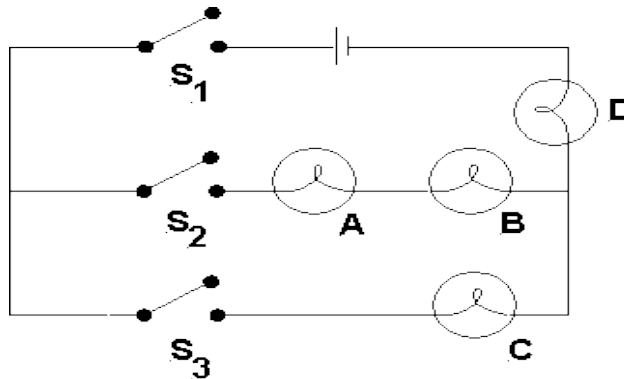


- a. 1.732
- b. 1.500
- c. 2.401
- d. 1.999

8. The magnifying power of plane mirror is:

- a. Half
- b. One
- c. Zero
- d. Four times

9. Consider the circuit below, which shows four identical lamps A, B, C and D in a circuit, controlled by switches S_1 , S_2 and S_3 . Which lamp would light when the switches S_1 and S_2 are closed:



- a. Lamp D
- b. Lamp A & B
- c. Lamp A, B & D
- d. Lamp A, B, C & D

10. Two capacitors are of $2 \mu\text{F}$ and $8 \mu\text{F}$ are connected in series their combined capacitance will be:

- a. $10 \mu\text{F}$
- b. $12 \mu\text{F}$
- c. $1.6 \mu\text{F}$
- d. $6.0 \mu\text{F}$

11. In the presence of a charged body, an insulated conductor has like charges at one end and unlike charges at the other end due to the phenomena of:

- a. Electromagnetic stimulation
- b. Paranormal Induction
- c. Electric charge
- d. Electrostatic induction

12. **A metal case is earthed. The plug to the fan contains a 5 A fuse. There is a current of 4A when the fan works normally. The cable to the fan becomes so worn that the live wire makes electrical contact with the metal case then:**

- a. The current flows to earth and the fuse is not affected
- b. The fuse melts and switches off the circuit
- c. The metal case becomes live and dangerous
- d. The metal case becomes very hot

13. **Which of the following will prove that a metal bar is a permanent magnet:**

- a. It attracts another magnet
- b. It attracts both ends of a compass needle
- c. It conducts electricity
- d. It repels another magnet

14. **The force acting on a current carrying conductor is at right angle to: of current and magnetic field.**

- a. Current & magnetic field

- b. Current
- c. Magnetic field
- d. Conductor

15. **When a strong magnet is moved towards or away from a coil, the it is associated with the change in magnetic flux which produces:**

- a. Induce E.M.F
- b. Electric Flux
- c. Electrostatic Induction
- d. Resistance

16. **The unit of mutual inductance is:**

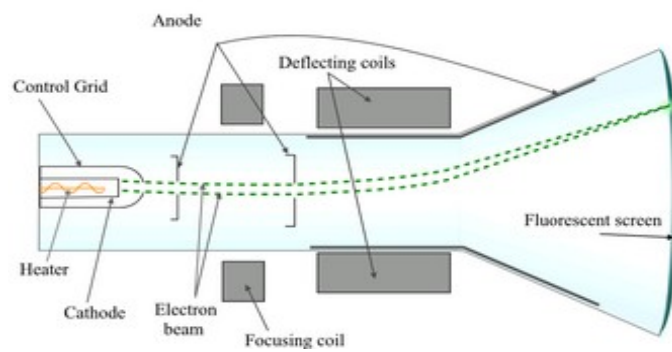
- a. Ohm
- b. Henry
- c. Volt
- d. Farad

17. **The truth table represents the:**

Inputs		Output
0	0	1
0	1	1
1	0	1

1	1	0

- a. AND logic gate
- b. OR logic gate
- c. NAND logic gate
- d. NOR logic gate



18. Identify the apparatus shown in the figure:

- a. Electron Gun
- b. Cathode Ray Oscillator
- c. Radioactive Radiations Detector
- d. Coil

19. **There is a charged region between two plates such that the positive is in north (upwards) and negative is in the south (downwards). If a horizontal beam of electrons enter the region, in which direction of electrons will be:**

- a. West
- b. Sideways
- c. Downwards
- d. Upwards

20. **A typical display on the screen of a CRO is a plot of:**

- a. Voltage against time
- b. Frequency & time
- c. Amplitude & time
- d. Velocity against time

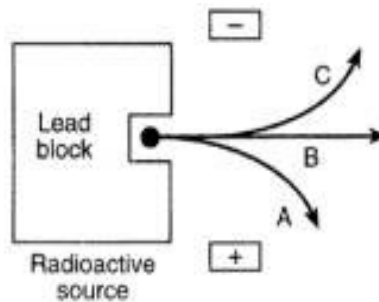
21. **The Internet is a global system of interconnected computer networks that uses to serve billions of users worldwide by using:**

- a. Standard Internet Protocol
- b. Arpanet
- c. User Interface
- d. Remote Application Servers

22. A floppy drive can store a data of about:

- a. 0.2 MB
- b. 650 MB
- c. 1.44 MB
- d. 1.45 MB

23. The diagram below represents radiation passing through an electric field:



The arrow labeled A most likely represents:

- a. A positron
- b. An electron
- c. Alpha radiation
- d. Gamma radiation

24. Which type of radiation is most similar to high-energy X-rays:

- a. Alpha
- b. Beta
- c. Neutron
- d. Gamma

25. The isotope Np-238 has a half-life of 2.0 days. If 84 grams are produced on Monday, calculate the mass of isotope after 4.0 days:

- a. 18 gram

b. 21 gram

c. 35 gram

d. 42 gram