Model Question Paper

Physics

Class: X going to XI

Time: 22.5 mints   **Marks: 60**

SECTION I

This section contains **2** (**Two**) Questions   **8**

- The answer to each question is a SINGLE DIGIT INTEGER ranging from **0** to **9**, that you have to choose the correct one (ONLY ONE) from options given.
- Correct answer : **+ 4**, No answer : **0** and Incorrect answer : **- 1**

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1. The ratio of radius of curvature of a spherical mirror to its focal length

(A) 3   (B) 4

(C) 2   (D) 1

2. The minimum value of the ratio of the equivalent resistance in series combination and parallel combination of any two resistors is

(A) 4   (B) 8

 (C) 2   (D) 1

SECTION II

This section contains **3** (**Three**) Questions   **12**

- Each question has **4** (**Four**) options : A, B, C and D. **One or more than one** of these four option(s) is(are) correct answer(s).
- Correct answer : **+ 4**, No answer : **0** and Incorrect answer : **- 1**

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3. Electric current flows in the sense as per

(A) the direction from higher to lower electric potential outside cell

(B) the direction from higher to lower electric potential within cell

(C) the direction opposite to the flow of electrons

(D) none of the above

4. When light enters from one medium to another following character(s) of light do(es) not change

 (A) frequency   (B) speed

 (C) wavelength   (D) colour

5. The strength of an electromagnet depends on

 (A) strength of current   (B) number of turns

 (C) core material   (D) none of the above
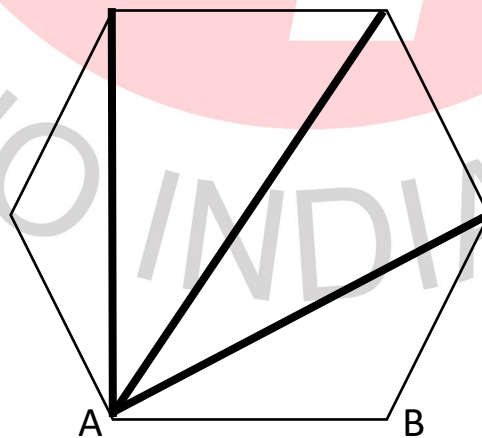
SECTION III

This section contains **10 (Ten)** Questions   **40**

- Each question has **4 (Four)** options : A, B, C and D. **One** of these four options is correct answer.
- Correct answer : **+ 4**,   No answer : **0** and Incorrect answer : **- 1**

6. The equivalent resistance in between A and B, when each thin line represents 3 ohm and each fat line represents 6 ohm, is

 (A) 6   (B) 2

 (C) 3   (D) 9

7. The angle of emergence 'e' as shown in figure [ABC is a glass prism with critical angle 42^0, with AB is a plane mirror internally with respect to prism, $\angle BAC = 30^0$]
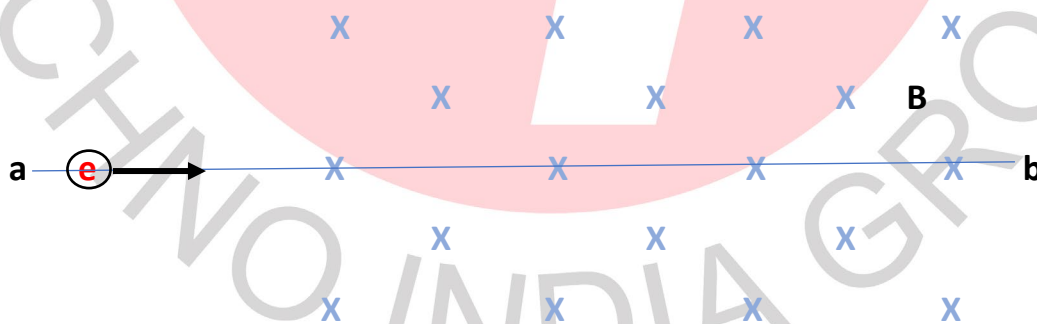
(A) 60^0

(B) 45^0

(C) 90^0
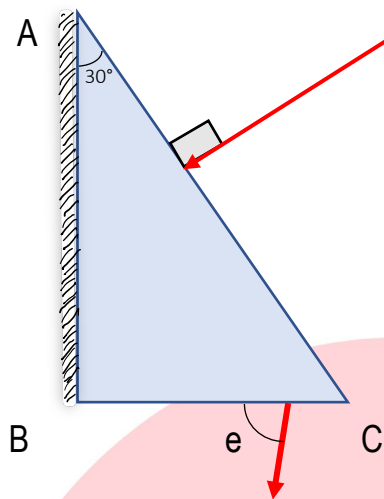
(D) 30^0

8. An object 4 cm in size is placed at 25 cm in front of a concave mirror of focal length 15 cm. The size of the image is

(A) 6 cm erected

(B) 6 cm inverted

(C) 3 cm erected

(D) 3 cm inverted

9. The direction of deflection of electron entering into the uniform magnetic field, perpendicular into the plane of the paper will be

(A) upward from line ab on the plane of the paper

(B) downward from the line ab on the plane of the paper

(C) upward from the line ab perpendicular off the plane of the paper

(D) downward from the line ab perpendicular into the plane of the paper

10. The speed of yellow light (600 nm) in vacuum is 3×10^8 ms^{-1}. Its wavelength in glass (refractive index = 1.5)

(A) 300 nm

(B) 350 nm

(C) 400 nm

(D) 450 nm

11. In a crystal clear morning a person sees the mountain range blurred. His problem in vision is called

(A) myopia

(B) presbyopia

(C) glaucoma

(D) hypermetropia

12. At the condition of minimum deviation for a prism, which one is incorrect out of the options given?

(A) Refracted ray within the prism is parallel to the baseline of the prism

(B) Angle of emergence is equal to angle of incidence

(C) Occurs only at the angle of incidence of 45^0

(D) A polychromatic light resolves into monochromatic components

13. A rectangular coil of copper wire is rotated in a magnetic field. The direction of induced current changes in each of

(A) two revolutions

(B) one revolution

(C) half revolution

(D) one-fourth revolution

14. Two electric bulbs each of rating 240V-120W are connected separately in series (a) and in parallel (b) across a supply voltage 440V.

(A) Both the bulbs will glow in (a) and both will be fused in (b)

(B) Both the bulbs will glow in (a) and both will glow in (b) also

(C) Both the bulbs will be fused in (a) and both will be fused in (b) also

(D) Both the bulbs will be fused in (a) and both will glow in (b)

15. Match the rules for sensing current and magnetic field through a phenomenon, given in two columns:

	RULE		PHENOMENON
A	Fleming's left hand rule	P	Direction of induced current due to motional emf
B	Fleming's right hand rule	Q	Deflection of a magnetic needle placed near a current carrying conductor
C	Right hand thumb rule	R	Orientation of magnetic field lines around a current carrying conductor
D	Ampere's swimming rule	S	Direction of current in a Ohmic circuit
		T	Direction of force on a current carrying conductor in a magnetic field

Correct Answer:

(A) A-T, B-P, C-R, D-Q

(B) A-T, B-S, C-R, D-Q

(C) A-Q, B-P, C-T, D-S

(D) A-P, B-Q, C-T, D-S