

A+GRADE SUMMATIVE ASSESSMENT - II 2025-26

VP 202	PHYSICS	Score : 40
STD X		Time : 1½ hrs

Instructions

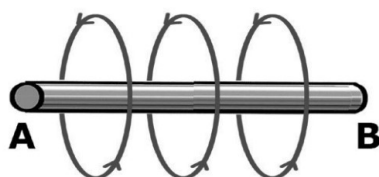
- This question paper includes 18 questions in section A, B, C and D.
- Answer all the questions. But questions 6, 8, 14, 15 and 18 contain choices.
- You need to answer only one of the options provided for each of these choice - based questions.

SECTION A

Write the correct answer by choosing from the given options for questions 1 to 4.
Each question carries 1 score. (4×1=4)

- Some appliances work on electricity are given
 A) Electric Bulb B) Electric Kettle
 C) Fan D) Electric Iron
 Which are the appliances works on the heating effect of electricity? (1)
 (a) only B (b) A and C
 (c) Both B & D (d) only D
- Which of the following is not correct for a current carrying solenoid? (1)
 (a) Magnetic strength can be varied (b) Magnetism is temporary
 (c) Polarity cannot be changed
 (d) When number of turns increases magnetism also increases
- Find the relation of second by using the first relation. (1)
 Short sightedness : Concave lens
 Long sightedness :
 (a) convex lens (b) concave lens
 (c) plane lens (d) biconcave lens

4. Observe the figure.



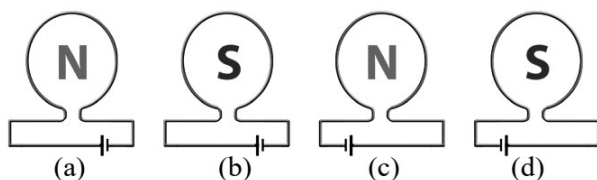
In which direction will the current flow? (1)

- (a) A to B (b) B to A
(c) clockwise (d) Anticlockwise

Section B

Write the answer to questions 5 to 11. Questions 6 and 8 have choices. Each question carries 2 score. (7×2=14)

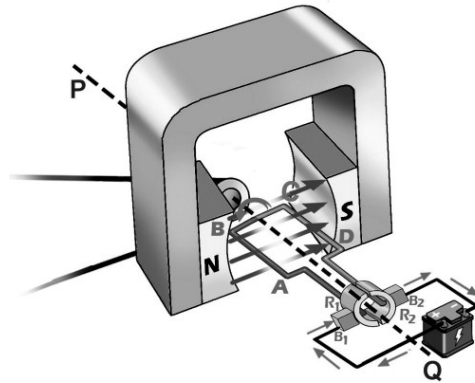
5. If 2400 J of heat is produced in 3s in a conductor having $200\ \Omega$ resistance, what is the current through the conductor? (2)
- 6A. Observe the figures of current carrying conducting loops.



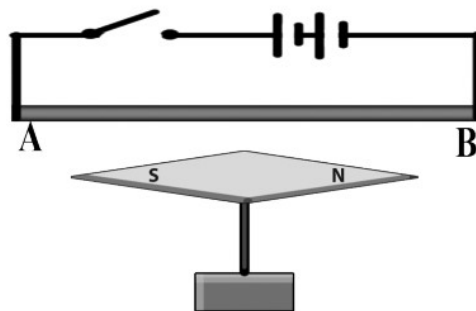
- (a) Which of the figures are correct? (1)
- (b) What will happen the polarity of a current carrying solenoid when the direction of current is reversed? (1)

OR

6B. Observe the figure.



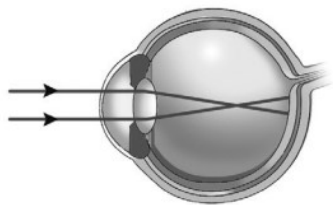
- (a) Identify the device. (1)
 - (b) What is the energy change in this device? (1)
7. Light is essential for survival of life on Earth, but light pollution harmfully affect the natural habitat of the biosphere.
- (a) What is light pollution? (1)
 - (b) Write any consequence of light pollution. (1)
- 8A. Observe the figure.



- (a) What may be the reason for the deflection of the magnetic needle? (1)
- (b) When the direction of current reversed what will happen to the deflection? (1)

OR

8B.



- (a) Identify the eye defect. (1)
 - (b) Write the reasons for this defect. (1)
9. Heating coil is the main part in the heating appliances where the heat energy is produced.
- (a) Which metal alloy is commonly used to make heating coil? (1)
 - (b) Write any two properties of this alloy. (1)
10. Explain the reasons.
- (a) Red light is used as indicator in all situations. (1)
 - (b) Sun appears red in colour during sunrise and sunset. (1)
11. (a) Define electric power. (1)
- (b) Calculate the quantity of heat produced when an instrument of power 400 W works for 5 minutes. (1)

Section C

Write the answer to questions 12 to 17. Questions 14 and 15 have choices. Each question carries 3 score. (6×3=18)

12. Observe the figure.

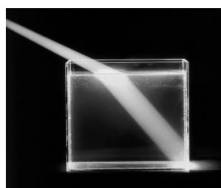


- (a) Identify the instrument. (1)
 - (b) What is the use of this instrument? (1)
 - (c) What is the commercial unit of electric energy? (1)
13. An insulator wound in a spiral shape is a solenoid.
- (a) Which effect of electricity is used in solenoid? (1)
 - (b) What are the factors affecting the magnetism produced in the solenoid? (2)
- 14A. An electric heater works on a potential difference 230 V has a resistance of $100\ \Omega$. If this heater works for an hour,
- (a) How much heat energy will be generated? (1)
 - (b) What is the current through the heater? (1)
 - (c) Which law is helped here to find the heat generated? (1)

OR

- 14B. An electric heater produced 30000 J of heat when operated for 5 minutes.
- (a) What would be the power of this heater? (1)
 - (b) If the resistance of this heater is $100\ \Omega$, then what will be the current through the heater? (1)
 - (c) Write any one method to reduce electricity consumption at home. (1)

15A.



- (a) Identify the phenomenon shown in the figure. (1)
- (b) Explain this phenomenon. (1)
- (c) Write any other example for this phenomenon. (1)

OR

15B. Powercuts and load shedding are implemented by KSEB due to the energy crisis suffered during summer.

(a) What is energy crisis? (1)

(b) What are the benefits of installing solar panels? (2)

16. Some statements regarding Hypermetropia and Myopia are given. Classify and tabulate them. (3)

- Caused due to small size of eye ball.
- Near objects cannot be seen clearly.
- Rectified using concave lens.
- Caused due to large size of eyeball.
- Distant objects cannot be seen clearly.
- Rectified using convex lens.

Hyper metropia	Myopia

17. MRI scanner is an instrument used in the field of medical diagnosis.

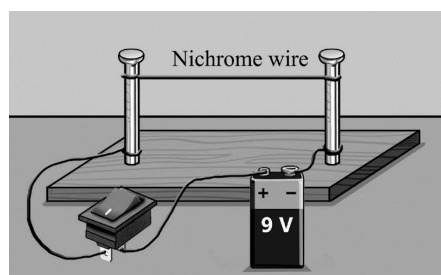
(a) What effect of current is used in the MRI scanner? (1)

(b) Patients are asked to remove all ornaments made of metals before undergoing MRI scan. Why? (2)

Section D

Answer anyone of the two questions. Each question carries 4 score. (1×4=4)

18A. Observe the figure.



- (a) When switch is turned on what will happen to the nichrome wire? (1)
- (b) What may be the reason for this change? (1)
- (c) What is the name of this process? (1)
- (d) Write any one property of nichrome wire made this change. (1)

OR

- 18B.(a) State Joule's law. (2)
- (b) Name the devices which produce heat without having a heating coil. (1)
- (c) Calculate the heat produced by an electric kettle of resistance $100\ \Omega$ connected to a potential difference 230 V works for 10 minutes. (1)