Summative Assessment – Term III - 2025-26

SET - B

Sample Question paper

Physics

Class : X **Time : 1 ½ hour**

Total Score : 40

- The first **15 minutes** is **cool-off time**. This time is meant for **reading the questions** and **planning your answers**.
- This question paper contains **18 questions.**
- In sections **A, B, C, and D**. **Choices** have been provided for questions **6, 8, 12, 15 and 18.**
- For questions with a choice, you only need to answer **one** of them.

SECTION A

Answer all questions from 1 to 4. Each question carries 1 score.

1. What is the voltage at which electricity is generated in power stations in our country? (1)

(230 V, 230 kV, 11V, 11 kV)

2. What do you mean by the magnetic effect of electric current? (1)

3. A statement of Assertion (A) is given, followed by a corresponding statement of Reason (R). (1)

Assertion (A) : Some people can see distant objects clearly, but they cannot see near objects clearly.

Reason (R) : The eyeball of such persons is too long with respect to the power of the eye lens.

Choose the correct option from the following :

(a) Both A and R are true, and R is the correct explanation of A.

(b) Both A and R are true, but R is not the correct explanation of A.

(c) A is correct but R is not correct

(d) A is not correct but R is correct.

(e) Both A and R are not correct.

4. Some statements associated with a longitudinal wave are given. Choose the correct statements. (1)

i) compressions and rarefactions are formed alternately

ii) crests and troughs are formed alternately

iii) the direction of vibration of particles is parallel to the direction of propagation of the wave.

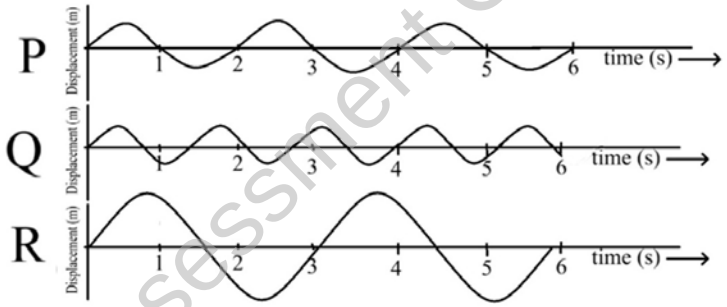
iv) the direction of vibration of particles is perpendicular to the direction of propagation of the wave

a) i and ii b) i and iii c) ii and iv d) ii and iii

SECTION B

Answer all questions from 5 to 11. Each question carries 2 score.

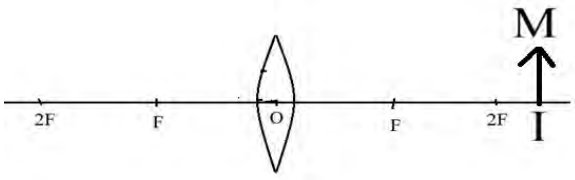
5. Observe the sound waves depicted below.



a) Which wave has the highest frequency? Why? (1)

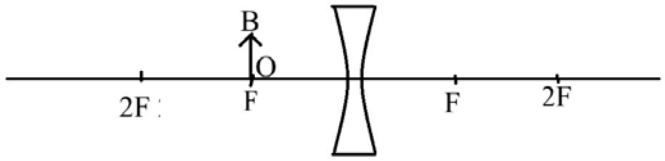
b) Which wave has the highest amplitude? Justify. (1)

6 A. Complete the ray diagram and show how the image is formed. Here IM is the real image of an object. (2)



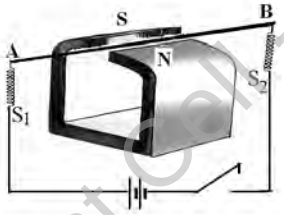
OR

6 B. Complete the ray diagram and show how the image is formed. Here OB is an object. (2)



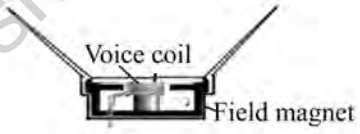
7. The colour of a shirt seems to be blue in cyan light. It appears to be magenta colour when illuminated by magenta light. What is its colour in day light? Give reason. (2)

8A. The figure shows a copper rod held between two poles of a magnet and connected to a DC circuit. In which direction will the rod AB move, when the circuit is switched on? State the rule applied. (2)



OR

8 B. a) Which device is shown below? (1)



b) State the principle of its working. What is the energy change that takes place when it works. (1)

9. The figure shows nichrome wires kept at the same temperature.

a) Which has higher resistance? Why? (1)

b) Of these, P has the highest resistivity. Write down your comments about this statement. Describe the reason. (1)

10. Write down two differences between a step-up transformer and step-down transformer. (2)

No	Step-up transformer	Step-down transformer
1		
2		

11. A metal rod 1 m long acts as a first order lever. An effort of 150 gwt acting at one end balances a load of 350 gwt at the other end. Find the length of the effort arm and the load arm. (2)

SECTION C

Answer all questions from 12 to 17. Each question carries 3 score.

12 A. A tuning fork of frequency 256 Hz is excited and its stem is placed on a table. The table vibrated and produced a sound. When a tuning fork of frequency 288 Hz is excited and its stem is placed on the same table, the table gave a sound of maximum loudness.

a) What is the frequency of vibration of the table in the first case? Give the reason. (1)

b) What is the natural frequency of the table? Why do you think so? (1)

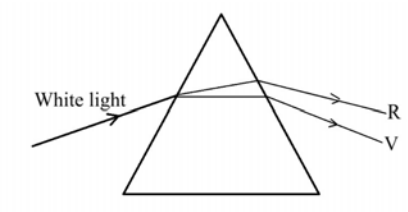
c) Why was the sound heard with maximum loudness in the second case? (1)

OR

12 B. A child A is in a room of length 10 m and another child B is in a room of length 40 m. Both of them made a loud sound in their respective rooms. Who will hear an echo? Why? (3)

13. An object of height 6 cm kept 60 cm away from a lens gave an image on a screen kept 40 cm away from the lens. Calculate the height of the image obtained if the object is 40 cm away from the same lens. (3)

14. White light passing through a prism is depicted.



Name the phenomenon. Explain how this happens. (3)

15 A. a) Which of the following has got the lower electrical resistance – An electrical appliance having high power or an electrical appliance having low power (both are operating at the same voltage). Justify your answer. (1)

b) Calculate the power of a 400 V, 1600 W device when 200 V is applied across it. (2)

OR

15 B. In a house 4 lamps of 60 W each are used for 3 hours a day and 6 lamps of 40 W each are used for 4 hours a day. Calculate the total energy consumed by them in 30 days. (3)

16. a) Circuits having current carrying solenoids are depicted. Identify the correct figure and justify. (1)

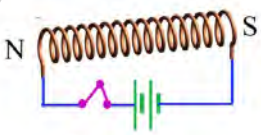


figure A

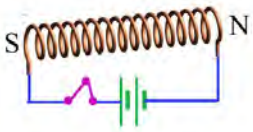


figure B

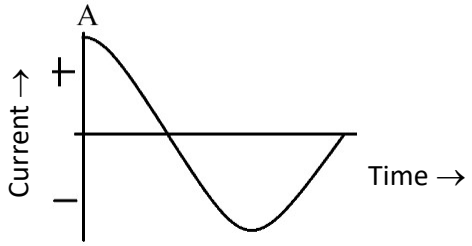
b) Write down two methods to increase the magnetic strength of the current carrying solenoid. (2)

17. Explain how you can prove that a screw is similar to an inclined plane. (3)

SECTION D

Answer question 18 A or 18 B. 4 scores.

18 A. The given graph is related to the current induced in the armature of a generator during its working.

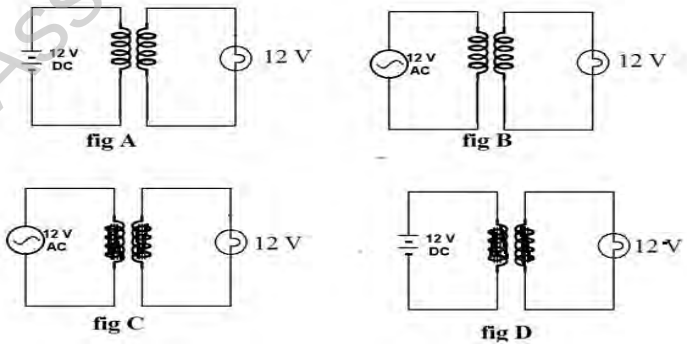


a) Child A says that it is an AC generator, Child B says that it is a DC generator and the Child C says it can be both. With whom do you agree? Justify your answer. (2)

b) In an AC generator and in a DC generator, the armatures are kept stationary and the magnet is rotated. What do you know about the nature of output from each generator? Give reason. (2)

OR

18 B. Observe the figures. (4)



In all the figures, the solenoids and bulbs are identical and the soft iron cores, if present, are also identical. Compare the brightness of each lamp. Give arguments to support your answer.