Kerala SSLC Physics Answer Key 2026

SECTION - A

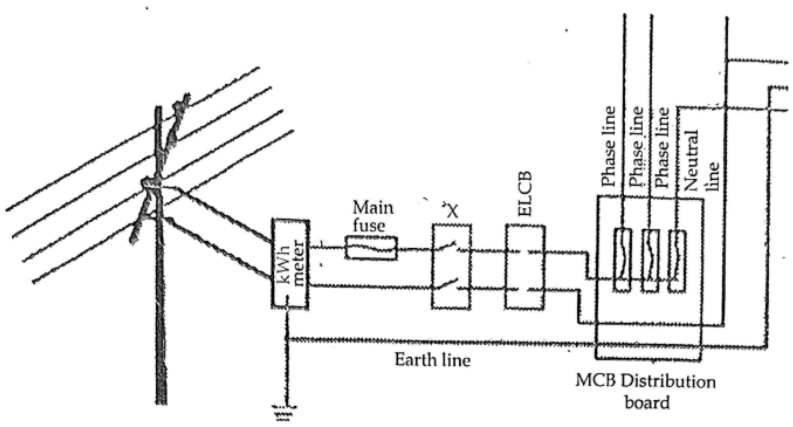
Answer all questions from 1 to 4. Each question carries 1 score.

- **1.** What does the term "Ohmic Heating" indicate?
  - (a) Heating in a microwave oven.
  - (b) Heating in an induction cooker.
  - (c) Joule heating.
  - (d) Heating through radiation.
- **2. Statement:** If the stem of a tuning fork is placed on a table, the sound heard increases. **Reason:** If the frequency of the forcing object and the natural frequency of the forced object are not equal, the objects are said to be in resonance. The frequency of the object undergoing resonance will increase.
  - (a) Both the Statement and Reason are correct.
  - (b) Both the Statement and Reason are incorrect.
  - (c) The Statement is correct but the Reason is incorrect.
  - (d) The Statement is wrong but the Reason is correct.
- **3.** When passing through water droplets while forming rainbow light rays undergo:
  - (i) Increase in speed.
  - (https://www.google.com/search?q=ii) Internal reflection.
  - (https://www.google.com/search?q=iii) Total internal reflection.
  - (iv) Refraction.
  - **Options:** (a) (i) and (https://www.google.com/search?q=ii) are correct; (b) (https://www.google.com/search?q=ii) and (https://www.google.com/search?q=iii) are correct; (c) (i), (https://www.google.com/search?q=ii) and (iv) are correct; (d) cite_start and (iv) are correct.
- **4.** Match the following and choose the correct option:
  - **A.** Bar magnet | **B.** Magnetism is permanent | **C.** Polarity can be changed
  - **D.** Current carrying solenoid | **E.** Magnetic strength can be varied | **F.** Polarity cannot be changed
  - **Options:** (a) AEC and DBF; (b) ABC and DEF; (c) ABF and DEC; (d) AEF and DBC.

SECTION - B

Answer questions from 5 to 11. Each question carries 2 scores.

- **5.** A child standing between two large buildings claps and hears the echo from the first building in 0.2 seconds and the echo from the second building in 0.3 seconds. (Speed of sound in air = 340 m/s).
    - (a) What is the condition to produce an echo?
    - (b) Calculate the distance between the two buildings.
- **6.** Draw a ray diagram showing the formation of a virtual image by a convex lens.
- **7. (A)** The Sun appears red or yellow or orange during sunrise and sunset, but normally the sky appears blue. Describe an experiment that would be helpful in explaining the cause of these phenomena. **OR** 7. (B) In winter, the path of light through gaps in tree branches can be seen clearly due to scattering.
    - (a) By what name is this phenomenon known, and through what type of medium does light travel when this occurs?
    - (b) What does the intensity of scattering depend on?
- **8.** Based on the household wiring diagram provided:



    - (a) What does the part marked as "X" represent in the circuit?
    - (b) Draw a circuit diagram of a branch circuit which includes one three-pin socket with a switch.
- **9.** A load of 20000 N is lifted with a wheel and axle system (wheel radius 50 cm, axle radius 10 cm).
    - (a) Calculate the mechanical advantage of this wheel and axle.

- (b) How should a wheel and axle be designed to obtain increased mechanical advantage?

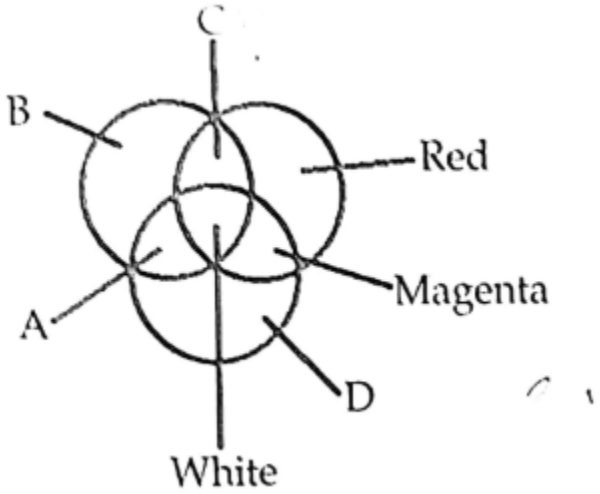
- 10. (A) A heating appliance produces 7,200,000 J of heat in 2 hours.
  - (a) What is the energy change in a heating appliance?
  - (b) Calculate the power of this appliance. **OR** 10. (B) An electric grinder with a power of 400 W is working.
  - (a) What is the energy change in this equipment?
  - (b) Calculate the work done by this grinder in 1 minute.
- **11.** Observe the figure showing a rule related to electricity and magnetism.

  - Which law does this figure represent? State the rule.

SECTION - C

Answer questions from 12 to 17. Each question carries 3 scores.

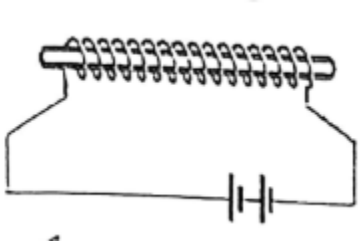
- **12.** Observe the figure of three coloured lights falling on a screen:



- (a) Which colours are labelled as A and D?
- (b) Identify the primary colours among A, B, C, and D.
- (c) Pick out the complementary colour pair among A, B, C, and D.

- **13.** The resistance of a heating coil operating at 200 V is 60 Ω.
  - (a) Which alloy is used to make heating coils?
  - (b) Calculate the amount of heat produced if electricity flows for 5 minutes.
  - (c) If another appliance with resistance less than 60 Ω is operated at the same voltage for 5 minutes, will heat increase or decrease? Justify.
- 14. (A) Based on the lever figures provided:

  - (a) Which one has a mechanical advantage less than one?
  - (b) State the principle of a lever.
  - (c) If mechanical advantage is 2 and effort arm is 1 m, calculate the load arm length. **OR** 14. (B) A crowbar can be used as a lever.
  - (a) What do you mean by a lever?
  - (b) Which one (Effort, Load, or Fulcrum) comes in the middle for a second-order and third-order lever?
  - (c) A 60 g wt is suspended 25 cm from a balanced point on a metre scale. What weight must be suspended 30 cm on the other side to maintain equilibrium?
- **15.** Regarding a current-carrying solenoid:



  - (a) What is meant by a solenoid?
  - (b) Is the statement "the end connected to the positive terminal will always be the North pole" correct? Justify.

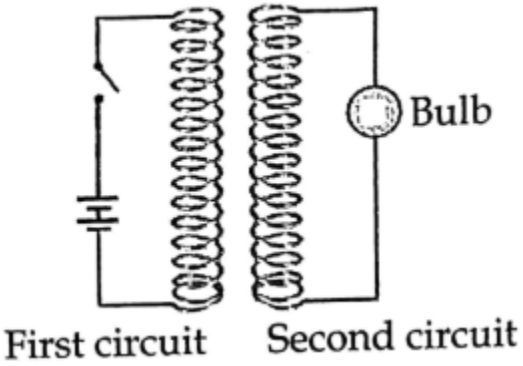
    - (c) Write two ways to increase the magnetic field strength of a solenoid.
- **16.** Observe the wave illustration (with labels C and R):

    - (a) Which type of mechanical wave is this?
    - (b) What do the letters C and R indicate?
    - (c) If the distance between two consecutive 'C' is 0.01 m and speed is 350 m/s, is it audible to humans? Justify mathematically.
- 17. (A) An object is 20 cm from a concave lens (focal length 10 cm).
    - (a) Calculate the image distance.
    - (b) Write the characteristics of the image. **OR** 17. (B) A convex lens (focal length 15 cm) forms a virtual image 7.5 cm away.
    - (a) Calculate the object distance.
    - (b) Write two instances where a convex lens is used this way.

SECTION - D

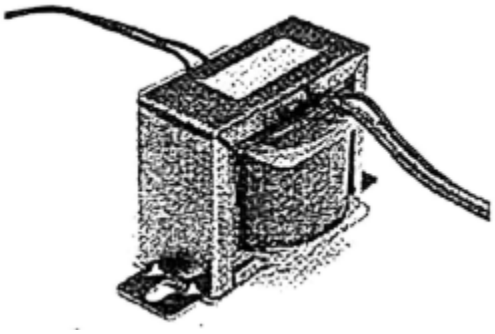
Answer 18(A) or 18(B). Each question carries 4 scores.

- **18. (A)** Two solenoids are placed side by side. Observe the figure



- (a) The bulb in the second circuit lights only when the switch in the first circuit is turned ON or OFF.
- Why does the bulb fail to glow continuously when the switch remains ON?
- (b) What change should be made to the first circuit for continuous glowing?
- (c) Name and explain the phenomenon producing the current.
- (d) If coil 1 has 100 turns and coil 2 has 200 turns, what voltage is needed in coil 1 to get 400 V in coil 2?

- 18. (B) Observe the provided device figure:



- (a) What is the Name the device and its use.
- (b) When If 20 V is supplied to the primary and 100 V is obtained in the secondary, calculate the primary current if the secondary current is 1 A.
- (c) What are the differences in turns and wire thickness between the primary and secondary coils for this specific device?