

**KANNUR DISTRICT PANCHAYAT
DIET KANNUR
MUKULAM SSLC MODEL EXAMINATION FEBRUARY-2019**

PHYSICS

Time: 1 ½ Hours.

Total score: 40

Instructions:


- First 15 minutes are allotted as Cool off time.
- Answer the questions only after reading instructions and questions thoroughly.
- Questions are given in **A, B, C, D** sections. Write any 4 questions from each section.
- Score allotted for sections **A, B, C, D** are **1, 2, 3, 4** respectively.

SECTION-A

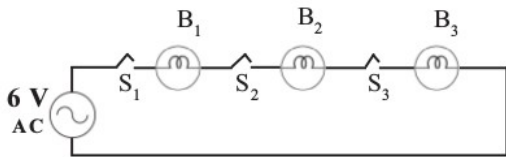
1. Find the odd one from the brackets and give reason behind your selection.
(Petroleum, Biomass, Hydroelectric power, Solar energy)
2. What is the relation between speed of sound in air and humidity?
3. Identify the correct relation which is suitable for a step down transformer.
($V_s > V_p$, $I_s < I_p$, $I_s > I_p$, $\frac{N_s}{N_p} > 1$)
4. Which optical phenomenon is the reason behind seeing the path of light from the head lamp of vehicles in the foggy morning ?
5. How can you obtain 400 V potential difference from the four lines of star connection?

SECTION-B

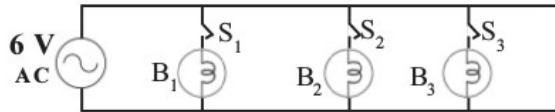
6. Sound from a source in a closed room reflects by a wall and reaches a listener after 0.5 s ?
 - a) Say whether an Echo can be heard or not ?
 - b) Justify your answer .
7. Power generators are big generators used for the production of electricity.
 - a) Which part of the power generator is used as the rotor?
 - b) Write two reasons, why strong electromagnets are used as field magnets in power generators.
8. Symbol of an electronic component is given below.


- a) Which electronic component is represented by this symbol?
 - b) What is the function of this component in a circuit?
9. Different stages of the working of a fluorescent lamp are given below. Arrange them in the correct order.
 - Ultra violet rays are produced.
 - Visible light comes out.
 - Heating coil emits electrons.
 - Electrons and atoms of mercury undergo collision.

10. B₁, B₂, B₃ are electric bulbs having same power. They are connected in two different ways and the circuit diagrams are depicted.



circuit (i)

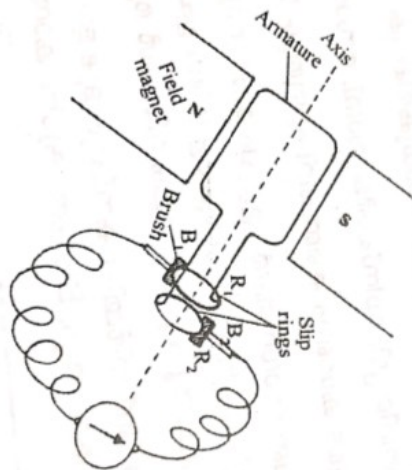


circuit(ii)

- Write down in which way bulbs are connected in each circuit.
- Which circuit is suitable for house hold wirings? Write any one reason for this.

SECTION-C

11. Observe the diagram.



- Identify the device represented by the diagram.
 - State the principle of this device.
 - Draw the output graph of the emf produced in this device.
12. Match the items given in A suitably with items given in B and C

A	B	C
Hydro electric power station	Ramagundam	Nuclear energy-heat energy- mechanical energy- electrical energy
Thermal power station	Kota	Potential energy- kinetic energy-mechanical energy- electrical energy
Nuclear power station	Pallivasal	Chemical energy-heat energy- mechanical energy- electrical energy

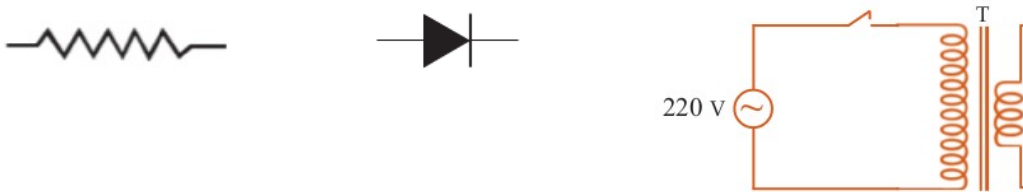
13. The component colours in sunlight undergo scattering when passes through the atmosphere.

- a) What is the relation between the rate of scattering and wave length of colours .
- b) Write the situation when all colours got the same rate of scattering.
- c) The sky is dark in the moon. What is the reason?

14. Latent heat fusion of ice is very high.

- a) What do you mean by latent heat of fusion?
- b) Calculate the quantity of heat absorbed when 3 kg of ice at 0°C is completely converted into water at same temperature. (Latent heat of fusion of ice is $335 \times 10^3 \text{ J/kg}$)

15. Symbols of some components used in an electronic circuit are given below.



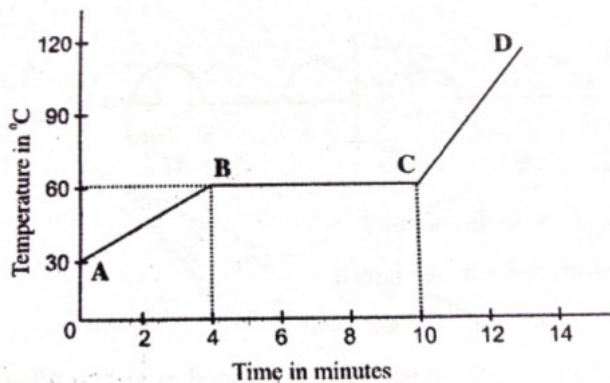
- a) What do you mean by rectification?
- b) Using the given components draw the diagram of a half wave rectifier circuit.

SECTION -D

16. An electric heater is marked 920 W, 230 V.

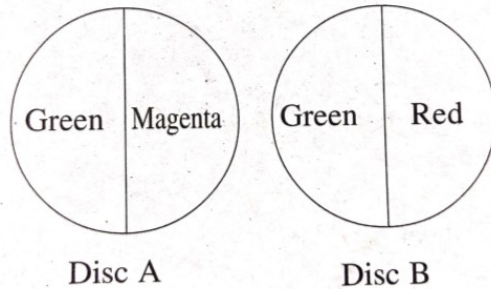
- a) How much heat energy is produced in this heater in one second?
- b) Calculate the resistance of the heating coil used in this electric heater.
- c) If the electric heater works at 115 V, what will be its power?

17. The following figure represents a graph drawn with the data obtained when a solid is heated. Observe the graph and answer the following questions.



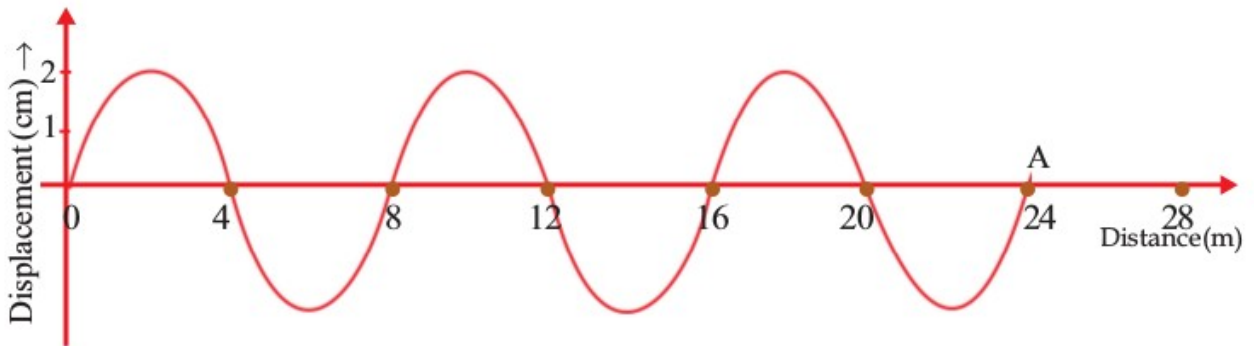
- a) What is the melting point of this substance?
- b) From 4 to 10 minutes the temperature remains same. Why?
- c) If the mass of the substance is 0.5 kg and specific heat capacity is 120 J/kgK , how much heat is absorbed by the substance in the first 4 minutes.

18. Discs A and B are painted as in the figure.



- a) Write down how each disc is seen when rotated very fast.
- b) What property of the eye makes this possible?
- c) In which name the colour pair in disc A is known?

19. Graph of a wave formed on the surface of water is given. It takes 3 s to reach A.



- a) Which type of mechanical wave is this?
- b) Write any two features of this type of waves.
- c) Calculate the frequency of this wave.
- d) What is the relation between frequency and wave length of a wave of constant speed?

20. Coal, Petroleum and Natural gas are the fossil fuels found in earth.

- a) Which is the most abundant fossil fuel found in earth?
- b) Explain how fossil fuels are formed.
- c) Which is the main content of natural gas?