SAMAGRA SHIKSHA - KERALA

E 1006- Ph

SECOND TERMINAL EVALUATION 2018-19 Set - A

PHYSICS

Standard: X

Time : 1½ Hour
Total Score : 40

Instructions

- First 15 minutes is given as cool off time. This time is to be spent for reading and understanding the questions.
- Answer the questions based on instructions.
- Answer the questions according to score and time

Answer any FOUR questions from 1 to 5. Each question carries 1 score. (4 x 1 = 4)

1. Identify the relation between the first pair and complete the following.

   Rainbow : Dispersion of light (1)

   Blue colour of the sky : .....

2. 2 kg of water at 352 K is mixed with 2 kg of water at 302 K kept in a container. What is the resultant temperature of this mixture? (Assume that there is no heat exchange with the surroundings) (1)

3. Name the law which helps to find the direction of the induced current in a circuit. (1)

4. Melting point of ice is 0^0 C. Express this value in Kelvin Scale. (1)

5. Networks of power generating centres and distribution system helped to maintain the power supply during the recent floods in Kerala. Name this system. (1)

Answer any FOUR questions from 6 to 10. Each question carries 2 score. (4 x 2 = 8)

6. The distribution of electric power from power station using transformers to distant places through electric lines is known as power transmission.

   a) Name the type of transformer used in power stations. (1)

   b) How do these transformers help in resolving the problem which may arise during power transmission? (1)

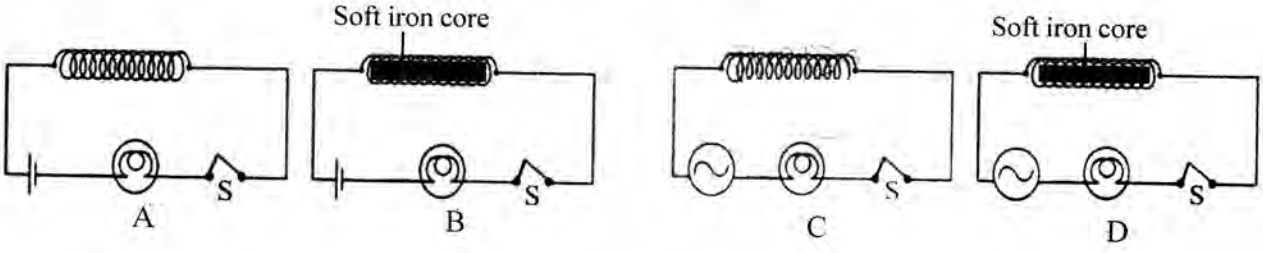
7. Choose the most suitable term from the box related to the given statements.

Vapourisation. Melting. Evaporation

   a) The process by which molecules on the surface of liquid get converted into gaseous state by absorbing heat from its surroundings. (1)

   b) The process by which a liquid changes into its gaseous state at its boiling point at normal atmospheric pressure. (1)

8. Observe the given circuits and answer the questions.



a) Identify the bulb which glows with least intensity, Justify your answer? (2)

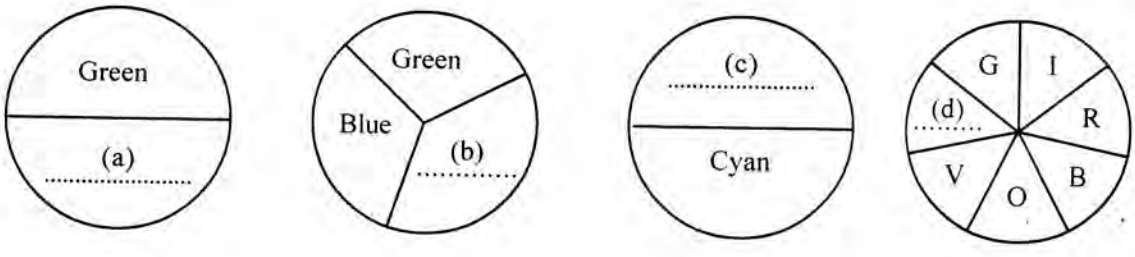
9. Choose the appropriate terms from the box that are related to the following statements.

Power transformer, Power transmission, Star connection. Amplifier

a) The voltage of 'ac' is increased without change in power. (1)

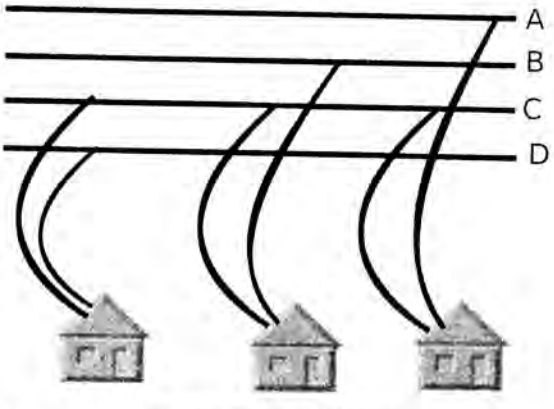
b) The system which converts the three power lines in 11 kV ac to four lines in domestic distribution transformer. (1)

10. Which are the colours to be filled in each discs inorder to get white colour when rotated at high speed. (2)



Answer any <u>FOUR</u> questions from 11 to 15. Each question carries 3 score. (4 x 3 = 12)

11. A, B, C, D in the following diagram are power distribution lines.

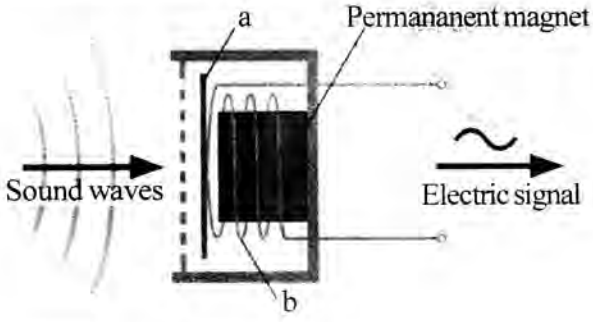


a) Which among them represents the neutral line? (1)

b) What is the potential difference between line 'A' and the earth? (1)

c) Birds sitting on a phase line do not get electric shock? Why? (1)

12. The picture showing the different parts of a moving coil microphone is given below.



i) Name the parts represented by a and b. (1)

ii) The signals from the microphone are not given directly to the loud speaker. Why? Name the device used to overcome this problem. (2)

13. Dispersion of light through water droplets in the atmosphere causes rainbow.

a) Draw the sketch of dispersion of light through a water droplet. (2)

b) The rainbow is seen as a circle when viewed from an aeroplane flying at high alttitudes. Give reason? (1)

14. A transformer without power loss has 500 turns in its primary coil and 2500 turns in the secondary coil. It induces a potential difference of 250 V and 0.2 A in the secondary.

a) Name the type of transformer. (1)

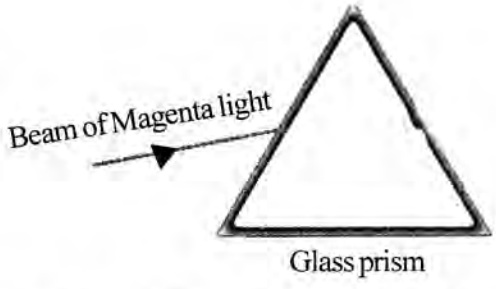
b) Find the voltage in the primary coil. (1)

c) What is the intensity of current in the primary coil? (1)

15. We are familiar with the experiment of the splitting up of a composite light into its constituent colours when passed through a glass prism.

a) Describe the experiment for the conversion of these constituent colours into white light. (2)

b) Complete the diagram. (1)



Answer any <u>FOUR</u> questions from 16 to 20. Each question carries 4 score. (4 x 4 = 16)

16. Global warming is a matter of world wide discussion in relation to environmental protection.

a) Name the radiation which causes global warming? (1)

b) What are the reasons for the increase in green house gases in the atmosphere? (2)

c) List out some methods to prevent global warming. (1)

17. Following are the observations made by a student in his science diary based on an experiment which was conducted using, transparent and opaque objects. Make suitable corrections in column 'C' of the table, if any.

Object placed in sunlight A	Colour filter used for observation B	Observed colour of object C
Red flower	Green	(a) Green
White chalk	Blue	(b) White
Yellow flower	Red	(c) Red
Green leaf	Yellow	(d) Blue

(4)

18. Give reasons for the following statements.

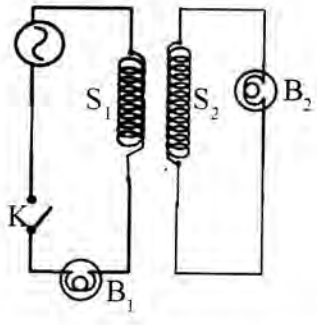
a) During night, wind blows from land to sea. (1)

b) Propylene glycol is added to water when it is used as coolant. (1)

c) Water kept in an earthern pot cools well. (1)

d) The chilling effect produced by ice at 0^0C when placed in our mouth is higher than that of water at the same temperature. (1)

19. Observe the diagram and answer the following.



a) Bulb 'B_2' glows when the switch 'K' is in 'ON' position. Why? (1)

b) What change would you observe in the brightness of bulbs when a soft iron core is inserted into the solenoid S_1? (1)

i) Bulb B_1..... ii) Bulb B_2.....

c) Suggest a method for increasing the brightness of the bulb B_2. (2)

20. A student who is a member of the energy club replaces forty CFL's of 20 W with forty 9 W LED bulbs, which is continuously used for 8 hour a day in his cattle farm.

a) What is the amount of energy he saved in a month? (3)

b) Design a poster showing the necessity of conservation of electrical energy. (1)