SSLC SAMPLE QUESTION PAPER MARCH-2022

Time: 1 1/2 hrs ***PHYSICS*** ***Total score: 40***

PART I

A....Answer any four questions from 1 to 6 (1 Mark each)

1. Electric fan – Mechanical effect

   Safety fuse - ……..

2. The device which works based on principle of electromagnetic induction .

   (Moving coil loud speaker, Generator, Inductor)

3. The number of images formed when the angle between two plane mirrors is 60^0 is ----------

4. Identify the one which is not a part of DC generator .

   (Field magnets, split ring , slip ring , brush)

5. The end of solenoid where current flows in clockwise direction will be ---------- pole.

6. A lens of + 2 D is prescribed for a patient. What is the defect of his eye?

B.....Answer all the questions from 7 to 9 (1 Mark each)

7. What is the energy consumed when a grinder of 750 W works for 2 hours?

8. The energy is produced in sun and stars by ---------- reaction .

   (Nuclear fission, Nuclear fusion, Thermal reaction)

9. The filament of incandescent lamp is made up of ----------.

PART II

A.....Answer the following question (carries 2 marks)

10. a. What are the situations in which fuse wire melts?

    b.when fuse wire is included in a household wiring,what are the precautions to be taken ?

B.....Answer any one questions from 11 and 12 (2 Marks each)

11.The input voltage of a transformer is 240V . There are 80 turns in the secondary coil and 800 turns in the primary.What is the output voltage of the transformer?

12. Hydrogen is a fuel with highest calorific value

a.which are the instances when hydrogen is used as a fuel ?

b.why is hydrogen not used as a domestic fuel ?

PART III

A....Answer any three questions from 13 to 16 (3 Marks each)

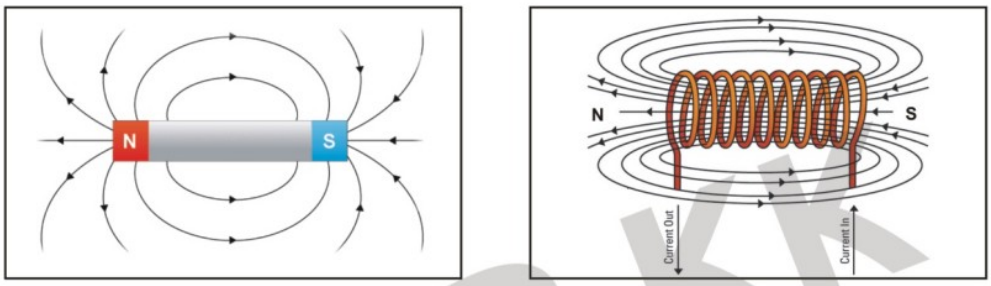
13. 1 A current flows through a resistor of resistance 500Ω for 3 minute

a. Calculate the heat generated.

b. What will be the heat if resistance is changed to 1000 Ω keeping current and time remain the same?

c. What will be the heat if current is doubled keeping resistance and time remain the same?

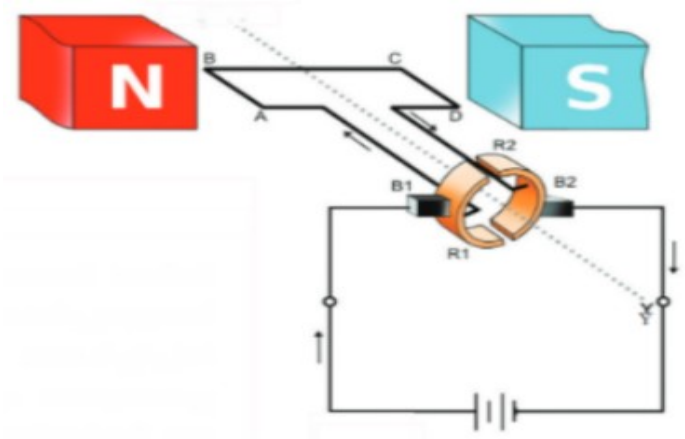
14. The magneticfield lines around a barmagnet and a current carrying solenoid are as shown below.



Tabulate the differences between the magnetic fields of a barmagnet and a solenoid

Barmagnet	Solenoid
....	....
....	....
....	....

15. Picture of electric motor is given.



a) Observe the figure and write the parts represented by
NS, R_1, R_2, B_1, B_2, and ABCD.

b) If current flows in the direction shown in the diagram, what will be the direction of rotation of the armature?

c) What is the function of splitring commutator in electric motor?

16. When an object of height 2 cm is placed at a distance 20 cm away from a lens, a real image is formed 40 cm away from the lens.

a) Find the height of the image

b) Which type of lens is this?

c) What are the other characteristics of the image

B....Answer the following question (carries 3 marks)

17.

Parts of LED bulbs are given in the table below. Write the function of each part and complete the table

Part of LED bulb	**Function**
Heat Sink	
Power supply board	
Printed circuit board	

part iv

A: Answer any two questions from 18 to 20. Each carries 4 score

18. When an object is placed in front of a spherical mirror of focal length 20 cm the magnification of the image is found to be -1 (negative 1).

a) Which type of spherical mirror is this?

b) Write any two features of this image?

c) When the object is placed 45 cm away from the mirror.
Calculate the distance to the image from the mirror.

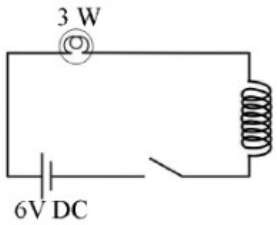
19. An electric heater is marked 920 W, 230 V.

a) How much heat energy is produced in this heater in one second?

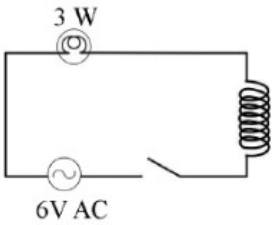
b) Calculate the resistance of the heating coil used in this electric heater.

c) If the electric heater works at 115 V, what will be its power?

20. Answer the following questions by observing the circuits.



Circuit (i)



Circuit (ii)

a) If switches are 'ON' in which circuit the brightness of bulb will be less.
Justify your answer .

b) If identical soft iron core is introduced in both coils what will be the observation.
Explain your answer.

B..Answer any one questions from 21 and 22. (Carries 4 score each)

21. The source of all energy in Earth is Sun.

a) What are the different energy forms obtained from Sun?

b) Write the energy conversion in a solar panel.

c) Name the phenomenon that is used in solar cell to convert solar energy in to electrical energy.

d) Write the situations where only solar panel can be used.

22. Given below are two statements related to eye defects.

i) Can see nearer objects clearly but can not see farther objects.

ii) Image is formed infront of the retina.

a) Identify this eye defect?

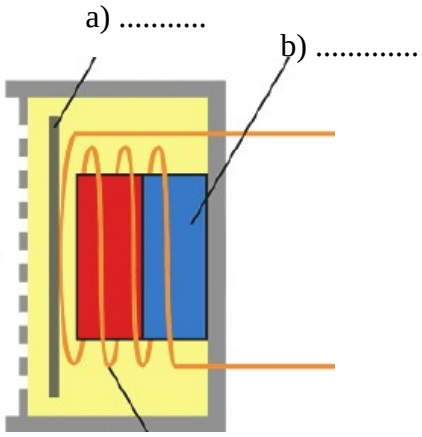
b) Give two reasons that causes this defect.

c) Write down one remedy to rectify this defect.

PART V

A....Answer any one questions from 23 and 24 (Carries 5 score)

24. Observe the figure:



i) Identify the device shown in the figure?

ii) Name the parts a and b ?

iii) Write the working principle of this device?

iv) Explaine the working of this device?

25. The image of a vehicle appear in a rear view mirror of the car at a distance 12 m behind the mirror. The actual distance of the vehicle from the rear view mirror of the car is 20 m.

a) identify which type of mirror is this?

b) why do such mirrors are used as the rear view mirrors?

c) what will be the focal length of the mirror?

d) Find out the magnification of the image?