

SSLC MODEL EXAMINATION - FEBRUARY 2015

Physics (English)

Time : $1\frac{1}{2}$ Hours.

Total Score : 40

Instructions :

- Fifteen minutes are given as 'cool-off time.'
- This time is given to read and understand the questions well.
- For choice questions only one of them need to be answered.
- The score of each question is given along with it.

Score

1. Fill in the blank by identifying the correct relationship
Distance between planets : Astronomical Unit :: Distance between stars: ----- (1)
2. Write TWO characteristics of a fuse wire (1)
3. Find the odd one out and give reason for your answer (1)
Petrol, Kerosene, Naptha, Ammonia
4. A bulb is connected to a 12 V DC through a solenoid. The bulb starts to glow. The source is now replaced by 12V AC. The intensity of light (2)
 - a) Increases
 - b) Decreases
 - c) Has no change

Choose the correct answer and given reason for your answer.
What is this phenomena called?

5. Object 'A' has frequency 50 Hz and object 'B' has frequency 55 Hz. They are (2)
allowed to vibrate identically but separately
 - a) What peculiarity can you hear?
 - b) What is this phenomena called?
 - c) What is the condition under which this phenomenon can occur?
6. Given below are some colours of stars. Arrange them in the ascending order (2)
of temperature
Orange³, Blue[~], Red¹, Yellow².

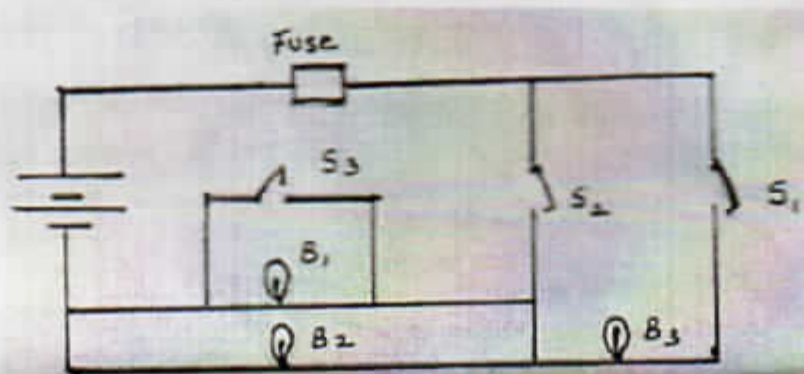
[P.T.O]

ANSWER QUESTION 7A or 7B

7. A. a). What difference do you observe on burning a flat paper and rolled paper separately?
b) List FOUR drawbacks of partial combustion.

OR

- 7.B a) How are fossil fuels formed? (3)
b) Why is it necessary to control the mining and use of these fuels?
c) Give an example of a fossil fuel.
8. Observe the circuit diagram (2)



- a) Which bulb/bulbs glow / glow when S2 is ON ?
b) Identify the bulb/bulbs that glow when all the switches are ON.

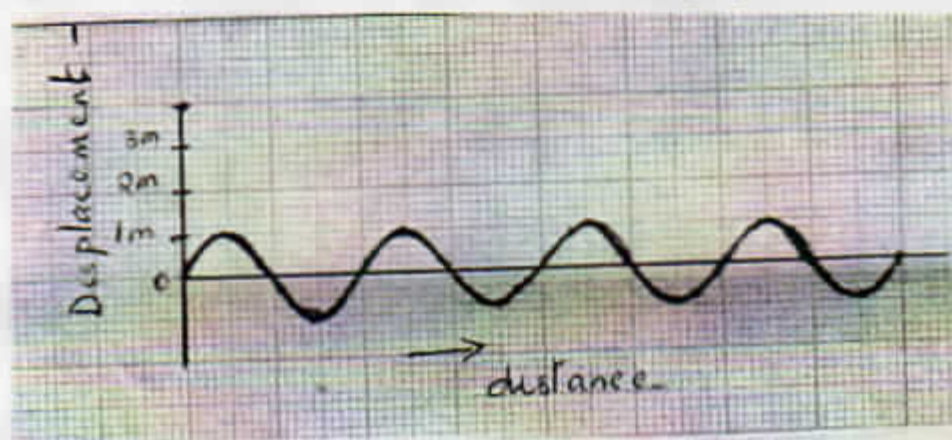
9. A permanent magnet was used as field magnet in an electric generator.
a) Name TWO problems you are likely to face. *Decrease its strength* (2)
b) How can you overcome these difficulties?

[P.T.O.]

$$\frac{1}{10} \times \frac{17}{2} \times 5 = 4.25$$

Write question 10 A or 10 B

10.A A sound wave generated in 4 seconds is shown in the graph. (3)



If wavelength of the wave is 15m, calculate

- a) Frequency of the wave
- b) Distance travelled by the wave in 4 seconds.
- c) Find out the amplitude of the wave?

$$\frac{1}{10} \times \frac{17}{2} \times 5 = 4.25$$

OR

10.B A sound was produced. Three seconds later, its echo was heard. (3)

- a) What is the distance between the reflecting surface and source?
(speed of sound in air is 340 m/s)
- b) Write TWO methods by which you can reduce the harmful effects of reflection of sound in big halls.

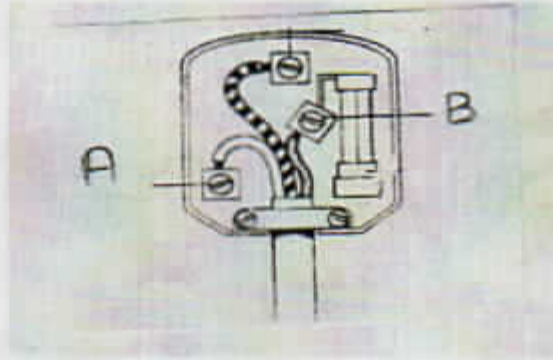
11. Match items given in A suitably with those given in B and C (4)

A	B	C
Resistor	Rectifier	Farad
Capacitor	Amplification	p n p
Inductor	Regulates current	LED
Diode	Stores electric charge	Henry
	Resists variation of electric current	Ohm

[P.T.O.]

12. Figure shows the interior of a three pin plug.

(2)



- Identify the parts marked 'A' and 'B'.
- To which part will you connect the metallic covering of the appliance? To which part is the fuse connected?

13.

(3)



'A' and 'B' are two water drops along an arc of a rainbow. (See figure)

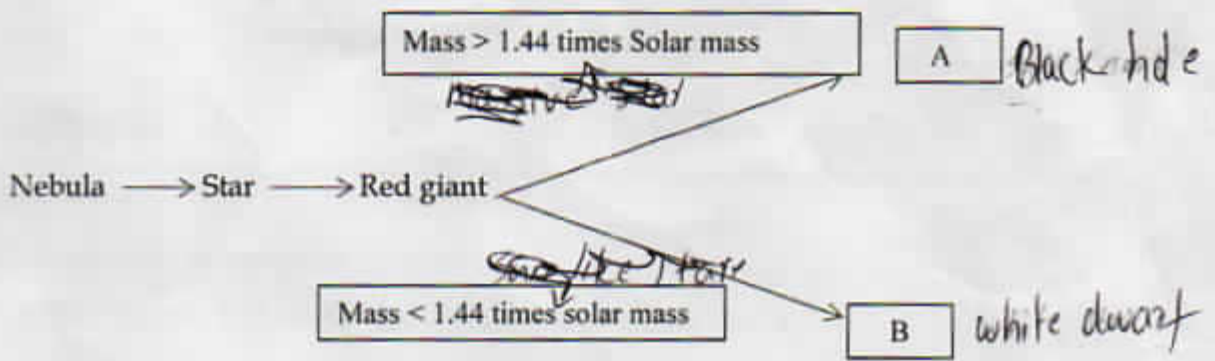
Drop 'A' makes an angle 42.7° with the line of vision.

- What do you mean by Line of Vision? What is the angle made by 'B' with the line of vision?
- Which colour makes the minimum angle with the line of vision? Is the deviation of this colour maximum or minimum compared to other colours?
- ✓ List TWO optical phenomena that takes place when a rainbow is formed.

[P.T.O.]

white star
supper name

14. Study the figure and a) identify the parts marked 'A' and 'B' (2)

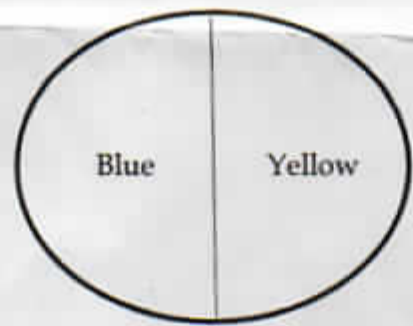


b) Explain the possibility of a star becoming a Black hole.

15. A bulb is marked 40 W, 200 V (2)

- a) What is the maximum permissible current that can pass through the bulb?
- b) Calculate resistance of the filament.

16. Blue colour is painted on one half and yellow colour is painted on the other half of a circular metallic plate as shown in figure. The disc is rotated at high speed. (3)



1 = 5 = 1/10
2 = 1/10

- a) In what colour will the metallic plate appear? Explain the reason for this.
- b) If red colour is used instead of yellow colour and rotated what difference can you observe?

17. Convert 1 Kilowatt hour of electric energy into Joules. (1)

18. Using which rule can you find out the direction of force experienced by a conductor carrying current placed in a magnetic field? State the rule. Name TWO devices which works on the principle given above. (3)

