

Sl. No.

SSLC MODEL EXAMINATION, FEBRUARY - 2019**PHYSICS**

(English)

Time : 1½ Hours

Total Score : 40

GENERAL INSTRUCTIONS :

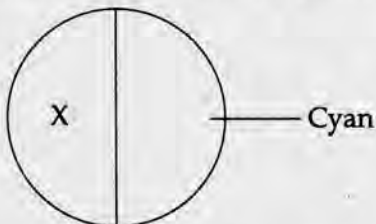
- The first 15 minutes is the cool off time. You may use the time to read and plan your answers.
- Answer the questions only after reading the instructions and questions thoroughly.
- Questions with marks respectively 1, 2, 3 and 4 are categorised as sections A, B, C and D.
- Five questions are given in each section. Answer any four from each section.
- Answer each question by keeping the time.

Score

SECTION - A

Answer any four questions. Each question carries 1 score.

- | | | |
|----|---|---|
| 1. | Identify the relation between the terms in the first pair and fill in the second pair.
In discharge lamps Hydrogen : Blue
Nitrogen _____ | 1 |
| 2. | When armature is used as the stator in power generator the _____ can be avoided.
[exciter ; power transformer ; power grid ; graphite brushes] | 1 |
| 3. | What is melting point of ice on Fahrenheit scale ? | 1 |
| 4. | Name the colour to be painted on the part. | 1 |



marked as 'X' on the disc shown in figure for obtaining white colour when rotated at a high speed.

- | | | |
|----|--|---|
| 5. | Forced vibration is produced when an excited tuning fork of frequency 256 Hz is kept pressed against the surface of a table of natural frequency 200 Hz. Which of the following is the frequency of the table under this condition ?
[256 Hz ; 200 Hz ; 456 Hz ; 56 Hz] | 1 |
|----|--|---|

P.T.O.

SECTION - B

Answer any 4 questions. Each question carries 2 score.

6. Complete the following table by classifying the given terms. 2

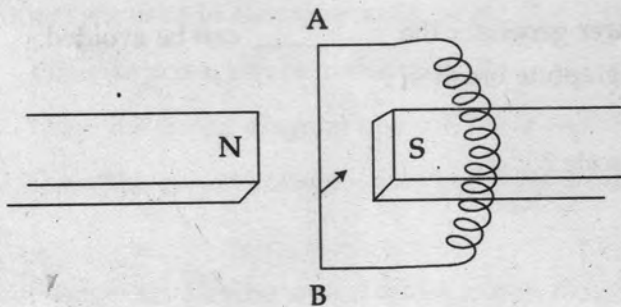
Solar cell ; Atomic reactor ; Thermal power station ; Biomass.

Green Energy	Brown Energy
•	•

7. What are the factors that influence the speed of sound in air ? 2

8. The sky appears dark in the moon. Explain the reason. 2

9. Observe the diagram.



- (a) Find out the direction of induced e.m.f. in the conductor AB when it is suddenly moved upwards perpendicular to the plane of the paper ? 1

(i) A to B

(ii) B to A

- (b) Name the law used to answer the above question. State the law. 1

10. Explain how safety is ensured by using three pin plugs in household wiring. 2

SECTION - C

Score

Answer any 4 questions. Each question carries 3 score.

11. (a) What is the role of fluorescent coating in a fluorescent lamp ? 1
 (b) What is the purpose of using electronic ballasts in modern fluorescent lamps ? 2
12. Kelvin scale is used to measure temperature
 (a) Name the property used to design the Kelvin scale. 1
 (b) What is the name of the lowest temperature ? 1
 (c) What is the normal temperature of human body on this scale ? 1
13. A transformer without power loss has 1500 turns in its primary coil and 7500 turns in the secondary coil. Secondary coil delivers 100 W power at 250 V.
 (a) Give the working principle of a transformer. 1
 (b) Calculate the voltage across the primary coil. 1
 (c) Find the current through the primary coil. 1
14. (a) When an incandescent lamp is lighted with its broken filament joined together we get more light output even though its electrical resistance is decreased. Why ? 1
 (b) The marking on a filament lamp is 240 V, 40 W. Calculate the value of its electrical resistance. 2
15. 2 kg of water at 353 K is mixed with 8 kg of water at 298 K. Assume that there is no heat exchange between the water and its surroundings.
 (a) Calculate the resultant temperature. 2
 (b) This mixture of water is divided into two parts of masses 6 kg and 4 kg and stored separately in two vessels. Will there be any change in heat energy contained in each of these parts ? Justify your answer. 1

SECTION - D

Answer any 4 questions. Each question carries 4 score.

16. White light splits into its constituent colours when passed through a glass prism.
- | | |
|---|---|
| (a) Name the process of splitting. | 1 |
| (b) Give the reasons for this type of splitting. | 1 |
| (c) Draw the diagram for recombining these colours produced by the prism. | 2 |
17. It is very essential to control the mining and use of fossil fuels.
- | | |
|--|---|
| (a) Name the most abundant fossil fuel in earth. | 1 |
| (b) Explain how the uncontrolled mining of fossil fuels will affect the future generation. | 2 |
| (c) Explain how the over exploitation of fossil fuels affects the earth's atmosphere. | 1 |
18. (a) Give two differences between waves travelling on the surface of water and sound waves. 2
- (b) Calculate the wavelength of a wave, having a speed of 340 m/s and a frequency of 1360 Hz. 2
19. Rectifiers are used in electronic appliances.
- | | |
|---|---|
| (a) What do you mean by rectification ? | 1 |
| (b) Draw the circuit diagram of a full wave rectifier using a transformer and two diodes. | 2 |
| (c) Draw the output voltage - time graph for a full wave rectifier. | 1 |
20. Transformers are playing an important role in reducing transmission losses in electric power transmission.
- | | |
|--|---|
| (a) Name the important stages in power transmission where transformers are used. | 1 |
| (b) What is the cause of power loss in power transmission ? | 1 |
| (c) Explain how transformers reduce the power loss in transmission. | 2 |