229

Sl. No.

SSLC MODEL EXAMINATION, FEBRUARY - 2017.
PHYSICS
(English)

Time : 1½ Hours   Total Score : 40

Instructions :

- First **15** minute duration is cool off time. Cool off time is given to read and understand the questions.
- Read the instructions of each questions carefully before answering.
- The score of each question is given along with it. Answers written should be proportionate to the score given.

		Score

1. Write the name of electromagnetic wave which has the lowest frequency in the electromagnetic spectrum.   **1**

2. Study the relation in the first pair of each of the following and complete the second pair.

   (a) Discharge Lamp   **1**

   Hydrogen : blue : : Nitrogen : _____

   (b) AC generated for distribution in our country   **1**

   Voltage : 11 kV : : frequency : _____

3. Write down two advantages and two limitations of Hydrogen as a fuel.   **2**

4. (a) List out four advantages of nanotechnology.   **2**

   (b) Which characteristics of nano particle is utilised in nanotechnology ?   **1**

5. (a) A bulb of power 40 W is designed to operate at 240 V. Calculate resistance of the filament in the bulb.   **2**

   (b) What are the characteristics required for the material chosen for making filament of incandescent lamp ?   **2**

Answer either 6(A) or 6(B) completely.

6. (A) All the constituent colours of sunlight do not have same rate of scattering.

   (a) Write the reason for this ?   **1**

   (b) Describe an experiment to demonstrate that scattering of all colours are not equal.   **2**

   (c) Under what condition all the colours are scattered equally.   **1**

OR

Score

(B) Blue colour of sky is due to the phenomenon of scattering.

    (a)   What is meant by scattering ?   1

    (b)   How is Tyndal effect related to above phenomenon ?   1

    (c)   What are the advantages of using infrared photography ?   1

    (d)   In which colour does sky appear when viewed from moon ?   1

7.   The loudness of sound becomes maximum at resonance.

    (a)   What is meant by resonance ?   1

    (b)   Write the name of an instrument used to demonstrate the resonance of air column.   1

    (c)   Explain the mechanism by which sound propagates through air.   2

8.   Reverberation causes uneasiness to clearly distinguish sounds produced in closed rooms.

    (a)   What causes reverberation ?   1

    (b)   Suggest methods to minimise the disturbance due to reverberation.   1

9.   Observe the circuit A and B shown below.

fig. A   fig. B
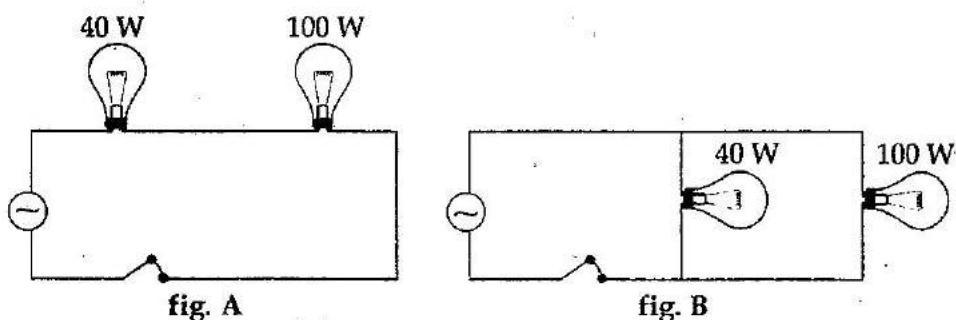
    (a)   If current through 40 W bulb in the circuit A is 0.6 A what is the current through 100 W bulb in the same circuit.   1

    (b)   Which among the above two circuit is suitable for house hold connection ?   1

    (c)   What are the advantages of using above circuit for house hold electric connection ?   2

10.   Match the following columns A, B and C suitably.   3

	A	B	C
a	Green colour	Non conventional	Farad
b	Inductor	Secondary colour	Brown energy
c	Nuclear energy	⌐OOOOOO⌐	Violet
		Complementary colour	Henry
		⊣⊢	Magenta
		Conventional	Green energy

11.   Distinguish between evaporation and vapourisation.   2

Score

12. Primary of a transformer has 20,000 turns and the secondary has 30,000 turns. 160 V AC is applied at the primary of the transformer.

    (a)   What is the voltage available at secondary of the above transformer ?   2

    (b)   If the number of turns in the secondary transformer is greater than that in the primary   1
then more voltage is induced in the secondary. Why ?

    (c)   How much power must be supplied to the primary of the transformer so that 500 W   1
power is obtained from secondary ?

Answer either 13(A) or 13(B) completely.

13. (A) Heat energy of 209300 J is required to increase the temperature of 5 kg of water from 303 K to 313 K.

    (a)   Calculate the specific heat capacity of water.   2

    (b)   Write down two practical situation where the high specific heat capacity of water   2
is used.

<div align="center">OR</div>

  (B) Latent heat of fusion of ice is very high.

    (a)   What is the unit of latent heat of fusion ?   1

    (b)   What is meant by Latent heat of fusion ?   1

    (c)   Write down two applications of high latent heat of fusion of ice.   2

14. In which of the following the calorific value of LPG is represented in correct unit.   1

    (a) 55000 kJ/hr   (b) 55000 kJ/s   (c) 55000 kJ/kg   (d) 55000 kJ/g

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