1031

Sl. No. 191348

S.S.L.C. EXAMINATION, MARCH - 2014

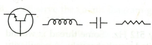
PHYSICS

Time : 1½ Hours | Total Score : 40

Instructions :
- Fifteen minutes are given as 'cool off time'.
- This time is given to read and understand the questions well.

Score

1. Given below are the symbols of a few electronic components. Select the component in which you can see a dielectric. 1



2. Light from the sun travels in straight lines. Yet, the light reaches our rooms and brightens it. Name the phenomena of light that causes this. 1

3. Given below are some devices. Identify the one that does not work on the principle of Electro magnetic induction. Also mention the principle on which it works. 2

(a) Dynamo (b) Loud speaker (c) Micro phone (d) Transformer

4. Which characteristic of sound will help you to : 2

(a) distinguish between the sound of a boy and a girl.

(b) distinguish between the sound of two girls.

5. Stars have different colours because of their temperature. 2

(a) What will be the colour of a star that has very high surface temperature ?

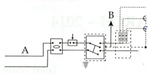
(b) What is the colour of star 'Chothi' ?

6. The word PHYSICS is written in red ink and the word CHEMISTRY is written in blue ink on a white piece of paper. They are then viewed in red light. Which word will you be able to read ? Why ? 2

P.T.O.

Score

7. The diagram of a household wiring starting from supply line is shown. Study the diagram. 3



(a) Which wire does 'A' represent ?

(b) Which wire does 'B' indicate ?

(c) What is the potential difference between B and earth ?

8. (a) The calorific value of hydrogen is 150000 kJ/kg. What does this mean ? 3

(b) Even though the calorific value of hydrogen is very high, it is not used as a household fuel. Why ?

(c) Give a situation in which this fuel is used.

9. There are two tuning forks 'A' and 'B', each of frequency 512 Hz. Some thread is wound over one of the prongs of 'A'. Both the tuning forks are excited simultaneously. A peculiarity in the sound is observed. What do you call this phenomenon ? 1

10. Analyse the first pair and complete the second pair. 1

Battery : 

DC Generator : - - - - -

11. The sun has several layers round it. 3

(a) Name the layer that is normally visible to us.

(b) Name the outer most layer that is visible only during total solar eclipse.

(c) In which part of the sun, energy is produced ?

12. What is the main component in CNG ? 1

13. In certain auditoriums due to multiple reflection the sound persists for some time even after the source has actually stopped producing the sound. 3

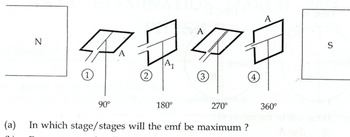
(a) What is this Phenomena known as ?

(b) Suggest **two** ways to overcome this disturbance.

(c) Cite **two** devices where multiple reflection is utilized.

Score

14. A. 1, 2, 3 and 4 are the four stages of a rotating armature coil placed between the poles of a field magnet. 3

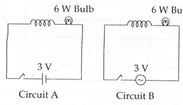


(a) In which stage/stages will the emf be maximum ?

(b) Represent graphically the relation between induced emf and angle of rotation of the coils in stages 1, 2, 3 and 4.

OR

B. Observe the circuit diagram given below.



(a) What difference is observed in the brightness of the bulbs in the two circuits A and B when the switch is ON ?

(b) How will you account for this ?

15. A copper wire and a Nichrome wire were found to have the same resistance. 3

(a) Will the two wires have the same resistivity also ? Justify your answer.

(b) Give an example of a pure metal having high resistivity.

(c) What is the unit of resistivity ?

16. A. (a) Name any **two** phenomena of light that causes formation of rainbow. 3

(b) A particular colour in the rainbow makes an angle of 42.7° with the line of vision. What is the colour ?

(c) What will be the shape of a rainbow when viewed from :

(i) terrace of a house ?

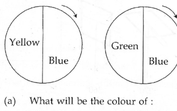
(ii) aircraft flying very high.

OR

P.T.O.

Score

B. Discs A and B are painted as in figure. It is rotated very fast in the direction of the arrow.



(a) What will be the colour of :

(i) disc A (ii) disc B

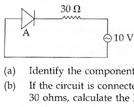
(b) What property of the eye makes this possible ?

(c) What is the complimentary colour of red ?

17. Study the table given below and find the value of 'A' and 'B'. 2

Device	Power	Time of working (hours)	Energy consumed (In kWh)
Incandescent Bulb	60 W	A	0.6
CFL	B	9	0.18

18. Observe the circuit : 4



(a) Identify the component marked 'A'

(b) If the circuit is connected to a 10 V AC supply and the total resistance of the circuit is 30 ohms, calculate the heat produced after 20 minutes.

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