

**Instructions**

- Total score in the question paper is 30. Answers of best written questions / sub questions, for 20 score, are evaluated.

**Question number 1 to 5 (1 score for each question)**

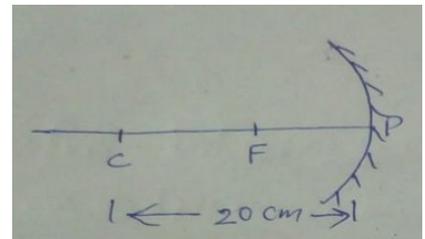
- 1) Which of the given device produce electricity?  
**(Ammeter, Motor, Transformer, Generator)**
- 2) What is the voltage at which electricity is generated in our country?
- 3) Magnification of a convex mirror is always.....?  
**(+1, -1, greater than one, less than one)**
- 4) Correct the statement related to electric power transmission.

**Current and loss of energy in the form of heat is decreased, when electric power is transmitted at low voltage.**

5) Moving coil loud speaker works with motor principle. What is the working principle of moving coil microphone?

**Question number 6 to 9 (2 score for each question)**

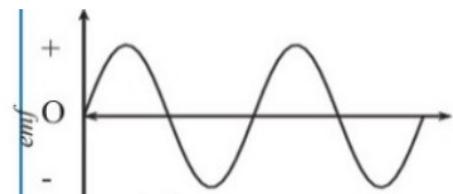
- 6) Observe the figure and answer the questions?
  - a) What is the focal length of this mirror?
  - b) Write two features of the image, if an object is placed at a distance of 5 cm from the mirror?



- 7) Select the correct statements related to the step up transformer?
  - a) **Current in the primary and secondary are equal.**
  - b) **Power in the primary and secondary are equal.**
  - c) **Primary current is less than secondary current.**
  - d) **Primary current is greater than secondary current.**

8) Graphical representation of emf obtained from a device is given.

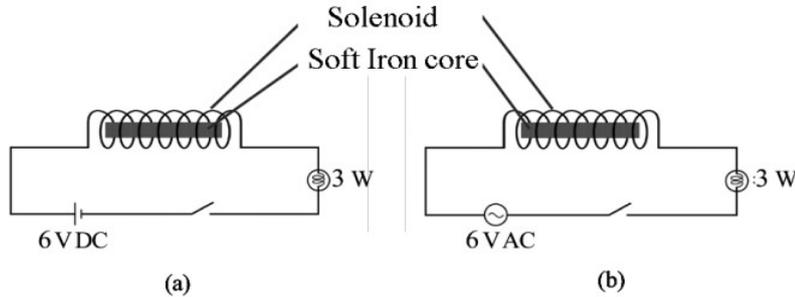
- a) Name the device?
- b) State the working principle of this device?



9) Write two first aids given to a person, who gets an electric shock?

**Question number 10 to 12 (3 score for each question)**

10) Observe the given electric circuits and answer the following questions. Similar bulbs are connected on both circuits.



- a) In which circuit, the intensity of light from the bulb is less?
- b) Suggest a method for increasing, the phenomenon which causes the decrease in the intensity of light, in the above circuit?
- c) Write the name of a device, which has this phenomenon as working principle?

11) Arrange the column A, B and C suitably.

| A              | B  | C                        |
|----------------|--|--------------------------|
| Plane mirror   | Converges the light rays from a distant object, to a point.        | Used as rear view mirror |
| Concave mirror | Image is always diminished, virtual and erect.                     | For observing the face.  |
| Convex mirror  | Image is always virtual, erect and same size as that of the object | Used in solar furnace.   |

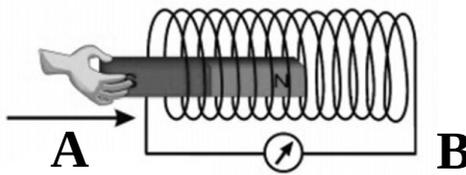
- 12) a) Complete the table by using the given statements.
- i) Slip rings are used.
  - ii) Split rings are used.
  - iii) AC is produced on the armature and DC in the external circuit.
  - iv) AC is produced on the armature and external circuit.

| AC Generator | DC Generator |
|--------------|--------------|
|              |              |

b) Write the energy change taking place in a generator?

**Question number 13 to 14 (4 score for each question)**

13) (i) Electric current is produced in the circuit, when an experiment is setup as shown in the figure. Complete the table.



| Activity  | Observation                                      |
|---|--|
| North pole of the magnet is moved into the solenoid from the side A.      | Galvanometer needle deflected towards the right. |
| Magnet is stationary inside the solenoid.                                 | ..... (a).....                                   |
| North pole of the magnet is moved out of the solenoid through the side A. | ..... (b).....                                   |
| North pole of the magnet is moved into the solenoid from the side B.      | ..... (c).....                                   |
| North pole of the magnet is moved out of the solenoid through the side B. | .....(d).....                                    |

(ii) Give two suggestions, for increasing the current produced in the above experiment?

14) An object of height 10 cm is placed at a distance of 20 cm from a concave mirror. A real image is formed at a distance of 30 cm from the mirror.

- a) Find the magnification?
- b) What is the height of the image?
- c) Find the focal length of the mirror?