

ELECTRIC CURRENT AND MAGNETISM BASED GENERAL SCIENCE MCQ PRACTICE QUESTIONS AND ANSWERS PDF WITH EXPLANATION

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Q1. A compass which is allowed to move in a horizontal plane is taken to a geomagnetic pole. It

- a) will stay in any position
 - b) will stay in north-south direction only
 - c) will stay in east-west direction only
 - d) None of these
-

Q2. Consider the following statements regarding electric fuse wire:

- It has low melting point.
- It has very high specific resistance.
- It is connected in parallel with the electric circuit.

Which of the statements given above is/are correct ?

- a) 1 and 2
 - b) 1 only
 - c) 1 and 3
 - d) 2 and 3
-

Q3. If a bulb of 100 watt burns for 10 hours, the expenditure of electricity will be

- a) 10 units
 - b) 0-1 unit
 - c) 1 unit
 - d) 100 units
-

Q4. Choke coil works on the principle of

- a) self induction
- b) mutual induction
- c) transient current
- d) wattless current

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Q5. Consider the following statements :

- The strength of magnetic field of a permanent magnet decreases with the increase in temperature.
- A permanent magnet can be demagnetised by beating it.
- A charged particle moving parallel to direction of magnetic field experiences a force.

Which of the statements are correct ?

- a) 1 and 3
- b) 1 and 2
- c) 2 and 3
- d) 1, 2 and 3

Q6. Consider the following statements regarding a motor car battery:

- The voltage is usually 12 V.
- Electrolyte used is hydrochloric acid.
- Electrodes are lead and copper.
- Capacity is expressed in ampere-hour.

Which of the above statements are correct?

- a) 3 and 4
- b) 1 and 2
- c) 2 and 3
- d) 1 and 4

Q7. Electric motors operating at low voltages tend to burn out because

- a) They draw heat proportional to V^2
 - b) They draw more current which is inversely proportional to the voltage
 - c) They draw more current which is inversely proportional to the square root of the voltage
 - d) Low voltage sets in electrical discharge
-

Q8. Domestic electrical wiring is basically a

- a) Combination of series and parallel connections
 - b) Series connection
 - c) Parallel connection
 - d) Series connection within each room and parallel connective elsewhere
-

Q9. To obtain a p-type germanium semiconductor, it must be doped with

- a) antimony
 - b) indium
 - c) arsenic
 - d) phosphorus
-

Q10. The Donor level in a semiconductor is placed

- a) in the forbidden energy gap close to the upper edge of the valence band
 - b) in the conduction band close to the lower edge to the conduction band
 - c) half-way in the forbidden energy gap
 - d) in the forbidden energy gap close to the lower edge of the conduction band
-

Q11. Consider the following statements. An ordinary light bulb has a rather short life because the

- Filament wire is not uniform.
- Bulb cannot be evacuated completely.

- Wires supporting the filament melt at high temperatures.

Which of the above statements are correct?

- a) 1 and 3
- b) 1 and 3
- c) 2 and 3
- d) 1, 2 and 3

Q12. Graphene is frequently in news recently. What is its importance?

- It is a two-dimensional material and has good electrical conductivity.
- It is one of the thinnest but strongest materials tested so far.
- It is entirely made of silicon and has high optical transparency.
- It can be used as 'conducting electrodes' required for touch screens, LCDs and organic LEDs.

Which of the statements given above are correct?

- a) 1, 2 and 4 only
- b) 1 and 2 only
- c) 3 and 4 only
- d) 1, 2, 3 and 4

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Q13. In a p-n junction

- a) the p side is at higher electrical potential than n side
- b) the n side is at higher electric potential than p side
- c) the potential of p & n sides becomes higher alternately
- d) both p & n sides are at same potential

Q14. Match list-I with list -II:

List I (Magnet)	List II (Property)
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A. Artificial magnet	1. Long lived
B. Permanent magnet	2. Last for infinitely long period
C. Temporary	3. Short lived magnet
D. Earth as a magnet	4. Induced magnet

Select the correct answer using the codes given below the lists:

a) 2 1 4 3

b) 3 1 4 2

c) 3 4 1 2

d) 2 4 1 3

Q15. Which one among the following is the correct order of power consumption for light of equal intensity ?

a) CFL tube Fluorescent tube Light emitting diode Incandescent bulb

b) CFL tube Fluorescent tube Incandescent bulb Light emitting diode

c) Light emitting diode CFL tube Fluorescent tube Incandescent bulb

d) Incandescent bulb Light emitting diode Fluorescent tube CFL tube

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Answers to the above questions :

Q1. Answer: (a)

At geomagnetic poles, there is no horizontal component of earth field and so compass needle may stay at any position.

Q2. Answer: (a)

An electric fuse wire should have low melting point and very high specific heat. Also it is connected in series with the electric circuit.

Q3. Answer: (c)

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Q4. Answer: (a)

Q5. Answer: (b)

According to $F_{\text{?}} = qvB \sin \theta$,

If angle between the direction of particle and magnetic field is 0° then $F_{\text{?}} = 0$.

Q6. Answer: (d)

Q7. Answer: (b)

Q8. Answer: (c)

Q9. Answer: (b)

For p-type semiconductor the doping impurity should be trivalent.

Q10. Answer: (d)

Q11. Answer: (d)

Q12. Answer: (a)

Q13. Answer: (a)

Hint : For easy flow of current the p-side must be connected to +ive terminal of battery

i.e., it is connected to higher potential in comparison to n. This connection is called forward biased. In this case the input resistance is very low.

In reverse-biased, the p-side is connected to –ive terminal & n-side to (+ive) terminal to battery. In this case input resistance is very high.

physics semiconductor electronics mcq question answer 4 hint

Q14. Answer: (b)

Q15. Answer: (c)

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