

NOTE: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink. Cutting or filling two or more circles will result in zero mark in that question.

Q1.

12

1. **An electric current in conductor is due to the flow of:**
(A) positive ions (B) negative ions (C) positive charges (D) free electrons
2. **SI unit of electric current is:**
(A) Newton (B) Ampere (C) Watt (D) Volt
3. **If the current in a wire which is placed perpendicular to a magnetic field be increased, the interacting magnetic force on a wire:**
(A) will increase (B) will decrease (C) will remain same (D) will be zero
4. **In computer terminology, information means:**
(A) any data (B) raw data (C) processed data (D) large data
5. **The process by which electrons are emitted by a hot metal surface is known as:**
(A) boiling (B) evaporation (C) conduction (D) thermionic emission
6. **The brain of any computer system is:**
(A) monitor (B) memory (C) CPU (D) control unit
7. **When Uranium (92 protons) ejects a beta particle, how many protons will be in the remaining nucleus?**
(A) 89 (B) 90 (C) 93 (D) 91
8. **Waves transfer:**
(A) energy (B) frequency (C) wavelength (D) velocity
9. **Which form of energy is sound?**
(A) electrical (B) mechanical (C) thermal (D) chemical
10. **Types of reflection are:**
(A) 2 (B) 3 (C) 4 (D) 5
11. **A converging mirror with a radius of 20cm creates a real image at 30 cm from the mirror. What is the object's distance?**
(A) +5.0 cm (B) +7.5 cm (C) +15 cm (D) +20 cm
12. **A positive electric charge:**
(A) attracts other positive charge (B) repels other positive charge
(C) attracts neutral charge (D) repels a neutral charge

Sahiwal Board 2018 (First Group)

Roll No.(in Figures): (in Words):

Maximum Marks: 48

SUBJECTIVE TYPE

Time Allowed :1.45 Hours

(PART- I)

Q2. Write short answers to any FIVE (5) questions. (5×2=10)

- (i) What is meant by wave motion?
- (ii) A wave moving on a slinky with frequency of 4Hz and wavelength 0.4m. What is the speed of the wave?
- (iii) What is meant by intensity of sound? Write its unit.
- (iv) What is the audible frequency range for human ear? Does this range vary with respect to age of people?
- (v) Flash of light is seen 1.5 second earlier than the thunder. How far away is the cloud in which the flash has occurred. Speed of sound is 332ms^{-1} .
- (vi) Define electric current and write its unit.
- (vii) Prove that $1\text{ kWh} = 3.6\text{ MJ}$
- (viii) Differentiate between A.C and D.C.

Q3. Write short answers to any FIVE (5) questions. (5×2=10)

- (i) Draw the ray diagram of simple microscope.
- (ii) What is meant by near sightedness?
- (iii) Define near point of eye.
- (iv) How a body is charged negatively?
- (v) Define variable capacitor.
- (vi) Differentiate between data and information.
- (vii) Write two uses of optical fibre.
- (viii) What is meant by word processing?

Q4. Write short answers to any FIVE (5) questions. (5×2=10)

- (i) Define mutual induction.
- (ii) Describe relay briefly.
- (iii) What is meant by AND operation? Draw the diagram of AND gate.
- (iv) Differentiate between analogue and digital quantities.
- (v) Write the name of main services available on internet.
- (vi) What is meant by Isotopes? Write the name of Isotopes of Hydrogen.
- (vii) Describe any two hazards of radiations.
- (viii) What is meant by artificial radioactivity?

(PART - II)

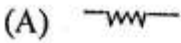
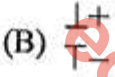
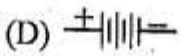
Note: Attempt any TWO questions. (2×9=18)

- Q5. (a) Define simple Harmonic Motion. Show that motion of mass attached to a spring is simple harmonic motion. 4
- (b) An object is placed at 6cm in front of a concave mirror that has focal length 10cm. Determine the location of the image? 5
- Q6. (a) Determine the equivalent resistance of series connected in series. 4
- (b) The potential at a point in an electric field is 10^4V . If a charge of $100\mu\text{C}$ is brought from infinity to this point, what would be the amount of work done on it? 5
- Q7. (a) Explain four components of computer based information system (CBIS). 4
- (b) Carbon - 14 has a half life of 5730 years. How long will it take for the quantity of carbon - 14 in a sample to drop to one - eighth of the initial quantity. 5

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Q1.

12

1. The half life of C-14 is:
(A) 5730 years (B) 123 years (C) 7530 years (D) 30 years
2. Number of components of computer based information system is:
(A) 4 (B) 3 (C) 5 (D) 6
3. The brain of any computer system is:
(A) monitor (B) memory (C) control unit (D) CPU
4. If $X = A.B$ then X is 1, if:
(A) $A = 0, B = 0$ (B) $A = 1, B = 1$ (C) $A = 1, B = 0$ (D) $A = 0, B = 1$
5. The application of mutual induction is:
(A) A.C. generator (B) transformer (C) relay (D) D.C. motor
6. The symbol to denote resistance is:
(A)  (B)  (C) Ω (D) 
7. SI unit of electric current is:
(A) Farad (B) Ampere (C) Volt (D) Newton
8. The formula to calculate electric field intensity is:
(A) $E = \frac{q_0}{F}$ (B) $E = q_0 F$ (C) $F = \frac{E}{q_0}$ (D) $E = \frac{F}{q_0}$
9. The change in focal length of eye lens is called:
(A) modification (B) induction (C) accommodation (D) distinct of vision
10. The speed of light in water is approximately:
(A) $3.3 \times 10^8 \text{ms}^{-1}$ (B) $2.5 \times 10^8 \text{ms}^{-1}$ (C) $2.3 \times 10^8 \text{ms}^{-1}$ (D) $2.6 \times 10^8 \text{ms}^{-1}$
11. The unit of intensity of sound is:
(A) Wm (B) Wm^{-1} (C) Wm^{-2} (D) W^{-1}m
12. The relation between time, speed and distance is:
(A) $v = \frac{d}{t}$ (B) $v = dt$ (C) $v = \frac{t^2}{d}$ (D) $v = \frac{d^2}{t}$

Sahiwal Board 2018 (Second Group)

Roll No.(in Figures):

(in Words):

Maximum Marks: 48

SUBJECTIVE TYPE

Time Allowed :1.45 Hours

(PART- I)

Q2. Write short answers to any FIVE (5) questions.

(5×2=10)

- (i) What is meant by restoring force?
- (ii) Find the frequency of sound wave of speed 340ms^{-1} and wave length is 0.5 m.
- (iii) Define simple harmonic motion.
- (iv) How is sound produced?
- (v) Write two factors on which loudness depends.
- (vi) Define electric current. Also write its formula.
- (vii) What is meant by electromotive force (e.m.f)?
- (viii) What is meant by fuse?

Q3. Write short answers to any FIVE (5) questions.

(5×2=10)

- (i) Write the characteristics of focus of a concave and convex mirror.
- (ii) Describe the laws of refraction of light.
- (iii) What is meant by power of a lens? Write its unit.
- (iv) What is meant by electrostatic induction?
- (v) With the help of electroscope how can you find the presence of charge on a body?
- (vi) How are light signals sent through optical fibre?
- (vii) What is the role of computer in everyday life?
- (viii) What is internet?

Q4. Write short answers to any FIVE (5) questions.

(5×2=10)

- (i) What is meant by electromagnet?
- (ii) How is force on a current carrying conductor placed in a magnetic field is increased?
- (iii) Define electronics.
- (iv) Write truth table and symbol for AND gate.
- (v) Differentiate between analogue quantities and digital quantities.
- (vi) What is meant by back ground radiations?
- (vii) Write two properties of gamma Rays.
- (viii) Write the alpha decay process by equation for $^{226}_{88}\text{Ra}$ (Radium).

(PART - II)

Note: Attempt any TWO questions.

(2×9=18)

Q5. (a) Explain the following properties of wave with reference to Ripple tank experiment.

4

i. Reflection

ii. Diffraction

(b) A concave lens has focal length 15cm. At what distance should the object from the lens be placed so that it form an image at 10cm from lens. Also find the magnification of the lens.

5

Q6. (a) Write down the properties of parallel combination of resistors.

4

(b) A point of charge of +2 C is transferred from a point at potential 100 V to a point at potential 50 V. What would be the energy supplied by the charge?

5

Q7. (a) Write four advantages of e. mail.

4

(b) Cobalt -60 is a radioactive element with half -life of 5.25 years. What fraction of the original sample will be left after 26 years?

5