

**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. **During the Fission Reaction of 1kg of Uranium-235, amount of energy is released:**  
(A)  $4.7 \times 10^{11}$  J      (B)  $5.7 \times 10^{11}$  J      (C)  $6.7 \times 10^{11}$  J      (D)  $7.7 \times 10^{11}$  J
2. **One Byte is equal to:**  
(A) 10 Bits      (B) 8 Bits      (C) 6 Bits      (D) 4 Bits
3. **Geogre Bole invented:**  
(A) Arithmetic Algebra (B) Geometry      (C) Boolean Algebra      (D) Mean Algebra
4. **In C.R.O. the Potential of Grid is:**  
(A) Zero      (B) Positive      (C) Negative      (D) Neutral
5. **Laws of Electromagnetic Induction and Electrolysis were presented by:**  
(A) Michael Faraday      (B) Jeorge Coulomb      (C) Newton      (D) Simon Ohm
6. **1 kWh = \_\_\_\_\_.**  
(A) 3.6 N      (B) 3.6 W      (C) 3.6 MJ      (D) 3.6 J
7. **The Unit of e.m.f. is:**  
(A)  $NC^{-1}$       (B) NC      (C) CJ      (D)  $JC^{-1}$
8. **The Index of Refraction depend on:**  
(A) The Focal Length      (B) The Speed of Light (C) The Image Distance (D) The Object Distance
9. **The Rays reflected at angle of \_\_\_\_\_ in totally Internal Reflecting Prism.**  
(A)  $45^\circ$       (B)  $60^\circ$       (C)  $90^\circ$       (D)  $180^\circ$
10. **"Optical Fibres" work on the principle of \_\_\_\_\_.**  
(A) Reflection      (B) Refraction  
(C) Diffraction      (D) Total Internal Reflection
11. **The loudness of a sound is most closely related to its:**  
(A) Amplitude      (B) Period      (C) Wavelength      (D) Frequency
12. **The bending of Waves around obstacles or sharp edges, this phenomenon is called**  
(A) Reflection      (B) Refraction      (C) Interference      (D) Diffraction

# Bahawalpur Board 2019 (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) How can you define Damped Oscillation?
- (ii) What is meant by Diffraction of Waves?
- (iii) Differentiate between Time Period and Frequency.
- (iv) Write down any two uses of Ultrasound.
- (v) What is meant by Quality of Sound?
- (vi) State Lenz's Law.
- (vii) Define Mutual Induction.
- (viii) Differentiate between Step Up and Step Down Transformer.

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

- (i) State the Laws of Reflection.
- (ii) What is meant by Refractive Index of a Medium? What is its SI Unit?
- (iii) What is the difference between Real and Virtual Image?
- (iv) Differentiate between Hardware and Software?
- (v) Name different information Storage Devices.
- (vi) Write two advantages of E-mail.
- (vii) Describe two uses of Radio Isotopes in Medicine.
- (viii) What are two common Radiation Hazards?

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

- (i) Define Electrostatic Induction.
- (ii) Define Potential Difference between Two Points and write its unit.
- (iii) Write four uses of Capacitors.
- (iv) Define Joule's Law.
- (v) Define Direct Current and Alternating Current.
- (vi) What is Circuit Breaker?
- (vii) What are Logic Gates?
- (viii) What is Not Operation? Draw its symbol diagram.

### (PART - II)

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

**Q5. (a) Define Refraction of Light. Also explain Refraction of Light by a Glass Block with diagram. 4**

**(b) A simple Pendulum completes one vibration in two seconds. Calculate its length when  $g = 10 \text{ ms}^{-2}$ . 5**

**Q6. (a) Describe the method for the measurement of Potential Difference across a circuit component and the measurement of emf. 4**

**(b) Three Capacitors with capacitance of  $3\mu\text{F}$ ,  $4\mu\text{F}$  and  $5\mu\text{F}$  are arranged in Series combination to a battery of 6 V. Find (i) Total Capacitance (ii) The Quantity of Charge across each capacitor. 5**

**Q7. (a) What is Cathode Ray Oscilloscope? Explain the working of different parts of CRO in detail. 4**

**(b) A Radioactive Element has a half life of 40 minutes. The initial count rate was 1000 per minute. How long will it take for the count rate to drop to: (i) 250 Count Per Minute (ii) 125 Count Per Minute. 5**



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Q1.

12

1. Image formed by a Camera is:

- (A) Real, Inverted and Diminished (B) Virtual, Upright and Diminished  
(C) Virtual, Upright and Magnified (D) Virtual, Inverted and Magnified

2. The SI Unit of Sound Intensity Level is:

- (A)  $\text{Wm}^{-2}$  (B) Bell (C) Deci Bell (D) None of these

3. In a Vacuum all Electromagnetic Waves have the same:

- (A) Speed (B) Frequency (C) Amplitude (D) Wavelength

4. Which type of Image is formed in Plane Mirror?

- (A) Real (B) Virtual (C) Real and Virtual (D) None of these

5. When we double the voltage in a Simple Electric Circuit, we double the:

- (A) Current (B) Power (C) Resistance (D) Both A and B

6. Specific Resistance of Silver is:

- (A)  $1.69 \times 10^{-8} \Omega\text{m}$  (B)  $2.75 \times 10^{-8} \Omega\text{m}$  (C)  $1.7 \times 10^{-8} \Omega\text{m}$  (D)  $5.25 \times 10^{-8} \Omega\text{m}$

7. The value of Constant K in Coulomb's Law depends upon:

- (A) Size of Charges (B) Magnitude of charges  
(C) Distance between Charges (D) Medium between Charges

8. In an Ideal Transformer, which quantity remains constant:

- (A) Voltage (B) Power (C) Current (D) Both A and B

9. The basic operation performed by Computer is:

- (A) Arithmetic Operation (B) Non Arithmetic Operation  
(C) Logic Operation (D) Both A and C

10. Which Gate is used in making Burglar Alarm?

- (A) OR gate (B) AND gate (C) NOT gate (D) NAND gate

11. For a NOR gate Output will be "1" when inputs are:

- (A) "1" and "0" (B) "0" and "1" (C) "0" and "0" (D) "1" and "1"

12. Beta Decay, Nucleon Number changes by:

- (A) Decreases by 4 (B) Increases by 4 (C) Remains unchanged (D) Decreases by 2

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

Maximum Marks: 48

**SUBJECTIVE TYPE  
(PART- I)**

Time Allowed :1.45 Hours

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

- (i) Write any two features of Simple Harmonic Motion.
- (ii) If  $\ell = 1.0\text{m}$ ,  $g = 10.0 \text{ ms}^{-2}$ , then find the value of T.
- (iii) Name two basic categories of Waves.
- (iv) Define Intensity of Sound and write its unit.
- (v) Write any two uses of Ultrasound.
- (vi) Define Electromagnetic Induction.
- (vii) Write the factors which affect the Induced e.m.f.
- (viii) What is Transformer? In which Principle does it works?

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

- (i) Describe any two types of Endoscope.
- (ii) Enlist at least four types of Lenses.
- (iii) State Lens formula in words.
- (iv) What is meant by word Processing?
- (v) Write the main services used on the Internet.
- (vi) Write the way to reduce the Risk of security breaches to secure your computer.
- (vii) Write two uses of Radioisotopes.
- (viii) Draw the Diagram of Fission Chain Reaction in U-235.

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

- (i) Describe the structure of Paper Capacitor.
- (ii) Write the Mathematical Form of Coulomb Law. How does the Coulomb Force affected, if the separation between two point charges is doubled?
- (iii) Define Electric Field Intensity and write its unit.
- (iv) What is a Thirmister? Write its any one use.
- (v) What is meant by the term Electro Motiveforce?
- (vi) Differentiate between Direct Current and Alternating Current.
- (vii) In CRO, what is the function of Deflecting Plates?
- (viii) Differentiate between Analogue Electronics and Digital Electronics.

**(PART - II)**

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

- Q5. (a) Describe Defects of Vision. How these Defects can be corrected? Explain. 4**  
**(b) A doctor counts 72 hearbeats in 1 minute. Calculate the frequency and period of the hearbeats. 5**
- Q6. (a) What is meant by Parallel Combination of Resistors? Write down its three characteristics. 4**  
**(b) A capacitor holds 0.03 coulombs of charge when fully charged by a 6 Volt Battery. How much Voltage would be required for it to hold 2 Coulombs of charge? 5**
- Q7. (a) Explain OR Operation. Write also symbol and Truth Table of OR gate. 4**  
**(b) Technetium -99 m is a Radioactive element and is used to diagnose brain, thyroid, liver and kidney diseases. This element has half - life of 6 hours. If there is 200 mg of this technetium present, how much will be left in 36 hours? 5**