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. **Which of the following is not a processing?**
   (A) arranging (B) manipulating (C) calculating (D) gathering
2. **If a metal (Tungsten Filament) is heated to high temperature which of the particles are emitted out?**
   (A) electrons (B) protons
   (C) neutrons (D) both protons & neutrons
3. **A 100 watts bulb is connected to 250 volts supply. The current flowing through the bulb is____amperes.**
   (A) 0.4 (B) 2.5 (C) 4.8 (D) 14.5
4. **The electric field lines are used for the representation of:**
   (A) electri potential (B) capacitance (C) electric field (D) potential difference
5. **The radius of curvature of a converging mirrior is 20 cm. It focal length will be_____cm.**
   (A) 10 (B) –10 (C) 20 (D) –20
6. **The wave in which the particles of the medium move back and forth along the direction of propagation of wave is called:**
   (A) water wave (B) sound wave (C) radio wave (D) light wave
7. **Which of the following option is a stream of high energy electrons?**
   (A) alpha particles (B) beta radiations (C) gamma radiations (D) positive ions
8. **The brightness of the spot on CRO flourescent screen is controlled by:**
   (A) anode (B) negative potential of grid
   (C) plates (D) cathode
9. **For an ideal transformer, we can write that:**
   (A) $\frac{V_p}{V_s} = \frac{I_p}{I_s}$ (B) $\frac{V_s}{V_p} = \frac{I_s}{I_p}$ (C) $\frac{V_s}{I_s} = \frac{V_p}{I_p}$ (D) $\frac{V_s}{V_p} = \frac{I_p}{I_s}$
10. **Two resistances of 6kΩ and 12kΩ are connected in parallel across a 6 volts battery. The potential difference across 6kΩ resistance is _____ volts.**
    (A) 2 (B) 4 (C) 6 (D) 12
11. **The speed of light in air is approximately equal to _____ms^{-1}.**
    (A) 3×10^5 (B) 3×10^6 (C) 3×10^8 (D) 3×10^9
12. **The speed of sound in solid is _____ times greater as compared to gases.**
    (A) 2 (B) 5 (C) 10 (D) 15

Gujranwala 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) If time period of simple pendulum is 1.99 second. Find its frequency.
(ii) State Hook's law.
(iii) What is meant by Damped Oscillations?
(iv) Why are sound waves called as mechanical waves?
(v) Define intensity of sound. Write its unit.
(vi) What is relay? How does it work?
(vii) What is difference between step-up and step-down transformer?
(viii) State Fleming's left hand rule.

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

(i) Write two uses of light pipes.
(ii) Define the power of lens. Write its unit.
(iii) Differentiate between regular and irregular reflection.
(iv) Define telecommunication.
(v) What is a computer? Write down the names of its main parts.
(vi) Write two advantages of e-mail.
(vii) Write general equation and an example of beta-decay.
(viii) Define nuclear fission reaction and write its equation.

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

(i) Define electric field intensity.
(ii) Write any two factors that affect the ability of a capacitor to store charge.
(iii) Three capacitor of capacitances 3μF, 4μF and 5μF are arranged in series combination to a battery of 6 volts. Find the total capacitance of series combination.
(iv) Prove that: 1 kWh = 3.6 MJ
(v) State Ohm's law.
(vi) What is the difference between D.C and A.C?
(vii) Describe the function of electron gun in CRO?
(viii) How is NAND gate reciprocal of AND gate?

(PART - II)

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

Q5. (a) What are optical fibres? Describe how total internal reflection is used in light propagation through optical fibres. 4

(b) Find the time period and frequency of a simple pendulum 1 meter long at a location where $g=10\ ms^{-2}$. 5

Q6. (a) Define specific resistance and prove that $R = \rho\frac{L}{A}$ 4

(b) A point 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) Draw the circuit diagram of burglar alarm and explain its working. 4

(b) The activity of a sample of a radioactive Bismuth decreases to $\frac{1}{8}$ of its original activity in 15 days. Calculate the half life $\left(T_{\frac{1}{2}}\right)$ of the sample. 5

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. **If we double both the current and the voltage in a circuit while keeping its resistance constant the power:**

   (A) remains unchanged (B) becomes half (C) becomes double (D) becomes four times

2. **If we burn one tonne of coal then about _____ energy is released.**

   (A) 0.6×10^{10}J (B) 1.6×10^{10}J (C) 2.6×10^{10}J (D) 3.6×10^{10}J

3. **The loudness of a sound is most closely related to its:**

   (A) frequency (B) period (C) wave length (D) amplitude

4. **AND gate can be formed by using two gates:**

   (A) NOT gates (B) OR gates (C) NOR gates (D) NAND gates

5. **Which thing works on the principle of electro-magnetic induction in hydro-electric power house?**

   (A) battery (B) cell (C) motor (D) generator

6. **Mouthpiece and earpiece are the parts of:**

   (A) micro scope (B) telephone (C) television (D) computer

7. **Number of input terminals in NOT gate is:**

   (A) 1 (B) 2 (C) 3 (D) 4

8. **A strong _____ field lies in Faraday Cage.**

   (A) electric (B) magnetic (C) geometric (D) gravitational

9. **The speed of light in water is:**

   (A) 3×10^8 ms^{-1} (B) 2.3×10^8 ms^{-1} (C) 2×10^8 ms^{-1} (D) 1×10^8 ms^{-1}

10. **The part of a wave , where the particles of medium are lowest from the mean position is called:**

    (A) crest (B) trough (C) wave front (D) wave length

11. **Alternating current (AC) frequency in Pakistan is:**

    (A) 60 Hz (B) 50 Hz (C) 70 Hz (D) 80 Hz

12. **Which of the following quantity is not changed during refraction of light?**

    (A) its direction (B) its speed (C) its frequency (D) its wave length

Gujranwala Board 2019 (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) Calculate the speed of the wave, when frequency is 2 Hz and wave length is 0.1 m.

(ii) State Hooke's law.

(iii) What is meant by restoring force?

(iv) How can you define acoustic protection?

(v) What is difference between musical sound and noise?

(vi) State Faraday's law of electromagnetic induction.

(vii) Define ideal transformer.

(viii) Write down any two factors which affect induced e.m.f.

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

(i) Define accommodation.

(ii) What is meant by farsightedness?

(iii) Define resolving power.

(iv) Differentiate between information technology and telecommunication.

(v) Write two services of internet.

(vi) Write any two advantages of e-mail.

(vii) Define carbon dating.

(viii) Write two characteristics of beta (β) particles.

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

(i) Define Coulomb's law.

(ii) Define electric field intensity and write its unit.

(iii) Write two uses of capacitors.

(iv) Define electric current and write its unit.

(v) State ohm's law and write its formula.

(vi) What is the difference between ohmic and non-ohmic conductors?

(vii) Write the names of components of cathode ray oscilloscope.

(viii) Define thermionic emission.

(PART - II)

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

Q5. (a) What is telescope? Explain its working and magnification. 4

(b) A simple pendulum completes one vibration in 2s. Calculate its length, when $g = 10\ ms^{-2}$. 5

Q6. (a) Discuss the main features of parallel combination of resistors. 4

(b) A point charge +2 C is transferred from a point at a potential 100 V to a point at potential 50 V. What would be the energy supplied by the charge? 5

Q7. (a) Define OR gate. Explain it with circuit diagram, symbol and truth table. 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 $\frac{1}{8}$ of the initial quantity? 5