

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. One kilo byte is equal to:
(A) 1024 Bytes (B) 1024 kilo bytes (C) 1024 mega bytes (D) 1024 Bits
2. Isotopes are atoms of same element with different:
(A) Atomic mass (B) Atomic number (C) Number of protons (D) Number of electrons
3. The relation among v, f and λ of a wave is:
(A) $v f = \lambda$ (B) $f \lambda = v$ (C) $v \lambda = f$ (D) $v = \frac{\lambda}{f}$
4. Which from of energy is sound?
(A) Electrical (B) Mechanical (C) Thermal (D) Chemical
5. An object is 14cm in front of a convex mirror. The image is 5.8cm behind the mirror. What is the focal length of the mirror?
(A) -4.1 cm (B) -8.2 cm (C) -9.9 cm (D) -20 cm
6. The index of refraction of air is:
(A) 1.00 (B) 1.66 (C) 1.33 (D) 1.52
7. According to Coulomb's law, what happens to the attraction of two oppositely charged objects as their distance of separation increase?
(A) Increases (B) decreases (C) remains unchanged (D) cannot be determined
8. An electric current in conductor is due to the flow of:
(A) Positive ions (B) Negative ions (C) Positive charge (D) Free electrons
9. The unit of electric power is:
(A) Volt (B) Joule (C) Ampere (D) Watt
10. D.C motor converts:
(A) Mechanical energy into electrical energy (B) Mechanical energy into chemical energy
(C) Electrical energy into mechanical energy (D) Electrical energy into chemical energy
11. The process by which electrons are emitted by a hot metal surface is known as:
(A) Boiling (B) Evaporation (C) Conduction (D) Thermionic emission
12. In computer terminology information means:
(A) any data (B) raw data (C) processed data (D) large data

Rawalpindi 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) What is meant by Crest and Trough?
- (ii) Define Wave.
- (iii) How can we hear the sound produced by Tuning Fork?
- (iv) Define Loudness.
- (v) What is meant by resonance of waves?
- (vi) Prove that: $1\text{kWh} = 3.6\text{MJ}$
- (vii) Give two advantages of parallel circuit.
- (viii) Define electric power.

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

- (i) What is meant by regular reflection of light?
- (ii) What is refractive index of water and ice?
- (iii) Define Volt.
- (iv) Define electric field.
- (v) What is meant by lightning?
- (vi) Define Photo Phone.
- (vii) What is meant by secondary memory?
- (viii) What is fax machine?

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

- (i) Define mutual induction.
- (ii) What is meant by electric motor?
- (iii) Write down the name of any two components of cathode-ray-oscilloscope (CRO).
- (iv) Define analogue quantities.
- (v) Define truth table.
- (vi) What is difference between atomic number and atomic mass number?
- (vii) Write down four properties of alpha (α) radiations.
- (viii) What is meant by nuclear fusion?

(PART - II)

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

- Q5. (a) Prove that mass attached to a spring execute simple harmonic motion. 4**
(b) The power of a convex lens is 5D. At what distance the object should be placed from the lens so that its real and two time larger image is formed? 5
- Q6. (a) State characteristics of Ohmic and non-Ohmic conductors. 4**
(b) Two point charges $q_1 = 10\mu\text{C}$ and $q_2 = 5\mu\text{C}$ are placed at a distance of 150cm. What will be the coulombs force between them? Also find the direction of the force. 5
- Q7. (a) Explain briefly the transmission of radiowaves through space. 4**
(b) Half life of a radioactive element is 10 minutes. If the initial counts rate is 368 counts per minute, find the time for which count rate reaches 23 counts per minute. 5

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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) Halves (C) Doubles (D) Quadruples
2. Which part of a D.C motor reverses the direction of current through the coil every half-cycle?
(A) the armature (B) Commutator (C) the brushes (D) Slip rings
3. The out put of a NAND gate is 0 when:
(A) $A = 0$ and $B = 0$ (B) $A = 1$ and $B = 1$ (C) $A=0$ OR $B=0$ (D) $A=1$ OR $B=1$
4. Which of the following is not a storage Device?
(A) Hard Disk (B) Flash Drive (C) Keyboard (D) Cassattes
5. Which of the following action is not processing?
(A) Arranging (B) Gathering (C) Manipulating (D) Calculating
6. Which of the following radiations has more penetrating power?
(A) Beta Particle (B) Gamma rays (C) Alpha particle (D) all these
7. Which of the following characteristics of a wave is independent of the others?
(A) Speed (B) Frequency (C) Amplitude (D) Wavelength
8. For a normal person, audible frequency range for a sound wave lies between.
(A) 10Hz – 10kHz (B) 20Hz – 20kHz (C) 25Hz – 25kHz (D) 30Hz – 30kHz
9. Power of a lens is the reciprocal of:
(A) Speed (B) Focal length (C) Frequency (D) Wavelength
10. Image formed by a camera is:
(A) Real, erect, same size (B) Real, inverted, diminished
(C) Virtual, erect, diminished (D) Virtual, inverted, magnified
11. Electric field lines:
(A) Always cross each other (B) Never cross each other
(C) Cross each other in the region of strong field
(D) Cross each other in the region of weak field
12. Electric power (P) is equal to:
(A) I^2V (B) IV^2 (C) I^2R (D) IR^2

Rawalpindi 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) If the length of a simple pendulum is doubled what will be the change in its time period?
- (ii) Define restoring force.
- (iii) What is the difference between musical sound and noise?
- (iv) What is meant by ultrasound?
- (v) What is meant by reflection of sound?
- (vi) Define current and also write its unit.
- (vii) Prove that: $1\text{ kWh} = 3.6\text{ MJ}$
- (viii) State Joule's law.

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

- (i) Differentiate between concave and convex mirror.
- (ii) What is mirror formula? Write its mathematical form.
- (iii) What is meant by resolving power?
- (iv) Define electrostatic induction.
- (v) Define electric field intensity and write its formula.
- (vi) Define information technology and telecommunication.
- (vii) Write a short note on fax machine.
- (viii) What is difference between RAM and ROM memories?

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

- (i) Define mutual induction.
- (ii) State right hand rule.
- (iii) Define thermionic emission.
- (iv) Define analogue and digital electronics.
- (v) Write two uses of cathode ray oscilloscope.
- (vi) Define fission reaction.
- (vii) What is meant by background radiations?
- (viii) Write two properties of α -particle.

(PART - II)

Note: Attempt any TWO questions. (2×5=10)

Q5. (a) Prove that a motion of mass attached to a spring performing simple harmonic motion. 4

(b) A convex lens of focal length 6cm is used to form a virtual image three times of size of object. Where must lens be placed? 5

Q6. (a) Write down the characteristics of parallel combination of resistors. 4

(b) If 0.5C charge passes through a wire in 10s, then what will be the value of current flowing through the wire? 5

Q7. (a) What is meant by half life of radioactive element and how it is measured? Explain. 4

(b) Discuss the role of information technology in school education. 5