10th Grade Sargodha Board

Physics

2019

Group A

MCQ SECTION

i) Which of the following characteristics of a wave is independent of the others. (Mark 1)

A. Speed
B. Frequency
C. Amplitude
D. Wavelength

Answer:
C. Amplitude

ii) The characteristic of sound by which we can distinguish between two sounds of same loudness and pitch is called: (Mark 1)

A. Frequency
B. Intensity
C. Quality
D. Sound level

Answer:
C. Quality

iii) Number of lenses used in a slide projector is: (Mark 1)

A. 0
B. 1
C. 2
D. 3

Answer:
D. 3

iv) At night we can see the stars in the sky without telescope. (Mark 1)

A. 300
B. 3000
C. 30000
D. 300000

Answer:
B. 3000

v) Five joules of work is needed to shift 10 C of charge from one place to another. The potential difference between the places is: (Mark 1)

A. 0.5 V
B. 2 V
C. 5 V

D. 10 V
Answer:
A. 0.5 V
vi) S.I unit for potential difference is: (Mark 1)
A. Joule
B. Coulomb
C. Ohm
D. Volt
Answer:
D. Volt
vii) If we increase the area of wire. Then its resistance: (Mark 1)
A. Increases
B. Decreases
C. No change
D. Vanishes
Answer:
B. Decreases
viii) Part of a D.C motor that reverses the direction of current through the coil after every half cycle is: (Mark 1)
A. Armature
B. The Commutator
C. Brushes
D. Slip rings
Answer:
B. The Commutator
ix) The process by which electrons are emitted by a hot metal surface is known as: (Mark 1)
A. Boiling
B. Evaporation
C. Conduction
D. Thermionic Emission
Answer:
D. Thermionic Emission
x) The screen of a cathode ray tube consists of a thin layer of:
(Mark 1)
A. Phosphor
B. Tungston
C. Cathode
D. Glass
Answer:
A. Phosphor
xi) The brain of any computer system is: (Mark 1)
A. Monitor
B. Memory
C. CPU

D. Control Unit
Answer:
C. CPU
xii) Radiations present in atmosphere due to different radioactive substances are called: (Mark 1)
A. Cosmic Radiations
B. Background Radiations
C. Alpha Radiations
D. Beta Radiations
Answer:
B. Background Radiations

SHORT QUESTION SECTION

Section-B Q.2

Q.2 i) Prove that
$v=f\lambda$. (Marks 2)
Q.2 ii) Define restoring force in vibratory motion of a simple pendulum. Which component of the weight act as restoring force. (Marks 2)
Q.2 iii) A wave moves on a slinky with frequency of 4 Hz and wavelength of 40 cm. What is the speed of the wave. (Marks 2)
Q.2 iv) How can the Cracks detected by ultrasonics, appear in interior part of high speed heavy machine? (Marks 2)
Q.2 v) What is the audible frequency range for human ear. (Marks 2)
Q.2 vi) Write the method of finding the direction of magnetic field around a current carrying conductor. (Marks 2)
Q.2 vii) How can the total force acting on the armature in DC motor can be increased. (Marks 2)
Q.2 viii) What is meant by electromagnetic induction. (Marks 2)

Section-B Q.3

Q.3 i) State Laws of Reflection of Light. (Marks 2)
Q.3 ii) What is difference between centre of Curvature and Radius of Curvature? (Marks 2)
Q.3 iii) The Power of a convex lens is 5D. Calculate its focal length. (Marks 2)
Q.3 iv) What is difference between data and information? (Marks 2)
Q.3 v) What is meant by secondary storage devices? Write the names of any two devices. (Marks 2)
Q.3 vi) Define Word Processing. (Marks 2)
Q.3 viii) What is meant by Alpha Decay? Write its general equation. (Marks 2)

Section-B Q.4

Q.4 i) State Coulomb's law. (Marks 2)

Q.4 ii) Define electroscope? (Marks 2)

Q.4 iii) Write any two characteristics of a parallel combination of capacitors. (Marks 2)

Q.4 iv) What is meant by ohmic and non-ohmic conductors? (Marks 2)

Q.4 v) What is the direction of conventional current in a circuit?

(Marks 2)

Q.4 vi) Convert one kilowatt hour into Joules. (Marks 2)

Q.4 vii) How electron gun work in cathode ray oscilloscope? (Marks 2)

Q.4 viii) Write the truth table for NOR gate? (Marks 2)

LONG QUESTION SECTION

Q.5 a) Define myopia and explain it with diagram. (Marks 4)
Q.5 b) If a Anarkali Bazar Lahore intensity level of sound is 80 dB. What will be the intensity of sound there. (Marks 5)

Q.6 a) Explain the energy dissipation in a Resistance. What is Joule's Law?
(Marks 4)
Q.6 b) The force of repulsion between two identical positive charges is 0.8 N. When the charges are 0.1 m apart. Find the value of each charge.
(Marks 5)

Q.7 a) Explain the working of different parts of different parts of cathode rays oscilloscope. (Marks 4)
Q.7 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-eight of the initial quantity? (Marks 4)

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Group B

MCQ SECTION

i) Radio waves are: (Mark 1)

A. Stationary waves
B. Electromagnetic waves
C. Particle waves
D. Mechanical waves

Answer:
B. Electromagnetic waves

ii) Which is the example of longitudinal waves: (Mark 1)

A. Sound waves
B. Light waves
C. Radio waves
D. Water waves

Answer:
A. Sound waves

iii) Speed of light in glass is approximately: (Mark 1)

A. $3 \times 10^{8}\,ms^{-1}$
B. $2.3 \times 10^{8}\,ms^{-1}$
C. $2 \times 10^{8}\,ms^{-1}$
D. $3.5 \times 10^{8}\,ms^{-1}$

Answer:
A. $3 \times 10^{8}\,ms^{-1}$

iv) Refractive index of ice is: (Mark 1)

A. 1.30
B. 1.33
C. 1.32
D. 1.31

Answer:
D. 1.31

v) The value of K in coulomb's law is: (Mark 1)

A. $9 \times 10^{9}\ Nm^{2}c^{-2}$
B. $9 \times 10^{-8}\ Nm^{2}c^{-2}$
C. $9 \times 10^{-9}\ Nm^{2}c^{-2}$
D. $9 \times 10^{8}\ Nm^{2}c^{-2}$

Answer:
A. $9 \times 10^9\ Nm^2c^{-2}$

vi) The unit of resistance is: (Mark 1)

A. Volt
B. Ohm
C. Farad
D. Ampere

Answer:
B. Ohm

vii) One watt is equal to: (Mark 1)

A. $1\ Js^{-2}$
B. 1 Js
C. $1\ Js^{-1}$
D. 1 Ns

Answer:
C. $1\ Js^{-1}$

viii) For an ideal transformer: (Mark 1)

Answer:
A

ix) NOT gate is also called: (Mark 1)

A. Conductor
B. Amplifier
C. Transistor
D. Inverter

Answer:
D. Inverter

x) In CRO, the Potential of grid is: (Mark 1)

A. Positive
B. Negative
C. Neutral
D. Zero

Answer:
B. Negative

xi) One byte is equal to _____ bits. (Mark 1)

A. 4
B. 6
C. 8
D. 10

Answer:
C. 8

xii) Release of energy by the sun is due to: (Mark 1)

A. Nuclear fission
B. Nuclear fusion
C. Burning of gases
D. Chemical reaction

Answer:
B. Nuclear fusion

SHORT QUESTION SECTION

Section-B Q.2

Q.2 i) Distinguish between longitudinal and transverse waves.
(Marks 2)

Q.2 ii) Write an activity that shows that water waves transfer energy without Transfer of medium. (Marks 2)

Q.2 iii) Write at least two features of Simple Harmonic Motion.
(Marks 2)

Q.2 iv) What is meant by the intensity level of the sound and what is its S.I unit. (Marks 2)

Q.2 v) For hearing distinct echoe's write necessary conditions.
(Marks 2)

Q.2 vi) State Fleming's left hand rule. (Marks 2)

Q.2 vii) Define Faraday's Law of Electromagnetic induction, also state at least one factor affecting induced e.m.f. (Marks 2)

Q.2 viii) State the working Principle of electric motor. (Marks 2)

Section-B Q.3

Q.3 i) Write two laws of refraction of light. (Marks 2)

Q.3 ii) Define power of a lens and write its unit. (Marks 2)

Q.3 iii) What is meant by software? (Marks 2)

Q.3 iv) Define and write lens formula? (Marks 2)

Q.3 v) What is meant by telecommunication technology? (Marks 2)

Q.3 vi) Write two uses of radioisotopes. (Marks 2)

Q.3 vii) Write two services of internet. (Marks 2)

Q.3 viii) Define the term atomic number and atomic mass number.
(Marks 2)

Section-B Q.4

Q.4 i) What is the working Principle of an electroscope? (Marks 2)

Q.4 ii) Define electric field. Write its unit also? (Marks 2)

Q.4 iii) Define unit of power. (Marks 2)

Q.4 iv) What is meant by Filter circuit? (Marks 2)

Q.4 v) How do the Jewellers identify diamond as real or fake one?

(Marks 2)

Q.4 vi) What is the difference between a fuse and a circuit breaker?

(Marks 2)

Q.4 vii) How the filament is heated in an oscilloscope and why is it heated? (Marks 2)

Q.4 viii) Define NOT gate. Draw its symbol. (Marks 2)

LONG QUESTION SECTION

Q.5 a) Explain refraction of light through a glass slab with the help of a diagram. (Marks 4)

Q.5 b) A pendulum of length 0.99 m is taken to the moon by an astronaut. The period of pendulum is 4.9s. What is the value of g on the surface of moon. (Marks 5)

Q.6 a) Discuss the main features of parallel combination of Resistors and determine the equivalent Resistance also. (Marks 4)

Q.6 b) The electric potential at a point in an electric field is 10^4 V. If a charge of +100μc is brought from Infinity to this point, what would be the amount of work done on it. (Marks 5)

Q.7 a) What is meant by cathode-ray oscilloscope. Explain the working of different parts of oscilloscope. (Marks 4)

Q.7 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?

(Marks 5)