

10th Grade Multan Board

PHYSICS

2018

Group A

MCQ SECTION

i) The relation between V, f and λ of a wave is given by: (Mark 1)

- A. $V = \lambda$
- B. $f\lambda = V$
- C. $V\lambda = f$
- D. $V = \lambda/f$

Answer:

- B. $f\lambda = V$

ii) Sound is a form of _____ energy: (Mark 1)

- A. Electrical
- B. Mechanical
- C. Thermal
- D. Chemical

Answer:

- B. Mechanical

iii) _____ type of image is formed by convex lens on a screen (Mark 1)

- A. Inverted and Real
- B. Inverted and virtual
- C. Upright and real
- D. Upright and Virtual

Answer:

- A. Inverted and Real

iv) The refractive index of water is: (Mark 1)

- A. 1.33
- B. 1.02
- C. 1.31
- D. 1.52

Answer:

- A. 1.33

v) The value of K in Coulomb's Law is: (Mark 1)

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

Answer:

- A. $9 \times 10^9 \text{ Nm}^2 \text{ C}^{-2}$

vi) A current of 3A passes through 6Ω resistor then voltage across this resistor will be:(Mark 1)

- A. 2V
- B. 9V
- C. 18V
- D. 36V

Answer:

C. 18V

vii) 1 milliampere is equal to :(Mark 1)

- A. 10^{-3} A
- B. 10^{+3} A
- C. 10^{-6} A
- D. 10^{-9} A

Answer:

A. 10^{-3} A

viii) If the current in a wire is placed perpendicular to a magnetic field increases, magnetic force on the wire:(Mark 1)

- A. Will increase
- B. Will decrease
- C. Will remain the same
- D. Will be zero

Answer:

A. Will increase

ix) From the given figure _____ logical operation is performed by this gate.

- A. AND
- B. NOR
- C. NAND
- D. OR

Answer:

C. NAND

x) _____ is the most suitable mean of reliable continuous communication between an orbiting Satellite and Earth.(Mark 1)

- A. Microwaves
- B. Radio Waves
- C. Sound Waves
- D. Any light wave

Answer:

A. Microwaves

xi) The brain of any computer is(Mark 1)

A. Monitor

B. Memory

C. C.P.U

D. Control Unit

Answer:

C. C.P.U

xii) When a heavy nuclide splits into two lighter nuclei, then process would : (Mark 1)

A. Release Nuclear energy

B. Absorb nuclear energy

C. Release chemical energy

D. Absorb Chemical Energy

Answer:

A. Release Nuclear energy

SHORT QUESTION SECTION

Section-B Q.2

- Q.2 i) What is meant by damped oscillations? (Marks 2)
- Q.2 ii) Find the time period of a simple pendulum 1.0m long at a location where $g=10\text{ms}^{-2}$. (Marks 2)
- Q.2 iii) What is the difference between intensity and loudness of a sound? (Marks 2)
- Q.2 iv) Calculate the frequency of sound wave of speed 340ms^{-1} and wavelength 0.5m ? (Marks 2)
- Q.2 v) How is ultrasound used to locate underwater depths or is used for locating object deep on the ocean floor? (Marks 2)
- Q.2 vi) What is meant by the term e.m.f? (Marks 2)
- Q.2 vii) In a circuit 2 ohm, 3 ohm and 6 ohm resistances are connected parallel to a battery of voltage 6. Calculate the equivalent resistance of the circuit. (Marks 2)
- Q.2 viii) Describe Joule's Law and write its equation? (Marks 2)

Section-B Q.3

- Q.3 i) State Law of Reflection of light. (Marks 2)
- Q.3 ii) Differentiate between concave mirror and convex mirror. (Marks 2)
- Q.3 iii) Define power of lenses and write its unit. (Marks 2)
- Q.3 iv) What is meant by electric field lines? (Marks 2)
- Q.3 v) What is the difference between fixed capacitor and variable capacitor? (Marks 2)
- Q.3 vi) What is the difference between data and information? (Marks 2)
- Q.3 vii) Differentiate between primary memory and secondary memory? (Marks 2)
- Q.3 viii) Define data managing? (Marks 2)

Section-B Q.4

- Q.4 i) Define Electromagnetism? (Marks 2)
- Q.4 ii) State principle of A.C Generator? (Marks 2)
- Q.4 iii) What is meant by thermionic emission? (Marks 2)
- Q.4 iv) What is Electric Gun? (Marks 2)
- Q.4 v) Write the names of Logic Operations? (Marks 2)

Q.4 vi) Define Half Life? (Marks 2)

Q.4 vii) What is meant by Carbon Dating? (Marks 2)

Q.4 viii) Define penetrating power of Radiation? (Marks 2)

LONG QUESTION SECTION

Q.5 a) What is wave velocity? Derive it. (Marks 4)

Q.5 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 times larger image is formed? (Marks 5)

Q.6 a) Explain Coulomb's Law of electrostatics. Also write its mathematical form. (Marks 4)

Q.6 b) If a current of 0.5 A passes through a bulb connected across a battery of 6 V for 20 seconds . Find the rate of energy transferred of the bulb. Also find the resistance of the bulb. (Marks 5)

Q.7 a) What is an electronic mail? Write its three advantages. (Marks 4)

Q.7 b) Define nuclear fusion. Also explain it in detail. (Marks 5)

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Group B

MCQ SECTION

i) If $X = A + B$ then $X = 0$

when:

(Mark 1)

A. $A = 1, B = 0$

B. $A = 0, B = 1$

C. $A = 0, B = 0$

D. $A = 1, B = 1$

Answer:

C. $A = 0, B = 0$

ii) _____ is not processing

(Mark 1)

A. Gathering

B. Calculating

C. Arranging

D. Manipulating

Answer:

A. Gathering

iii) 1 Kilo byte is equal to:

(Mark 1)

A. 1024 Bytes

B. 1000 Bytes

C. 1002 Bytes

D. 1010 Bytes

Answer:

A. 1024 Bytes

iv) The device used to store charge is called:

(Mark 1)

A. Resistance

B. Capacitor

C. Battery

D. Wire

Answer:

B. Capacitor

v) The number of Neutrons in $^{12}\text{C}_6$ is:

(Mark 1)

A. 18

B. 12

C. 6

D. 2

Answer:

C. 6

vi) In a vacuum all electromagnetic waves have same: (Mark 1)

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

Answer:

A. Speed

vii) The loudness of a sound is most closely related to its: (Mark 1)

- A. Frequency
- B. Period
- C. Amplitude
- D. Wavelength

Answer:

C. Amplitude

viii) The refractive index of diamond is: (Mark 1)

- A. 2.42
- B. 2.21
- C. 1.66
- D. 1.52

Answer:

A. 2.42

ix) The equation of Snell's law is: (Mark 1)

- A. $n = \frac{\sin r}{\sin i}$
- B. $n = \frac{\sin i}{\sin r}$
- C. $n = 1/\sin r$
- D. $n = 1/\sin i$

Answer:

B. $n = \frac{\sin i}{\sin r}$

x) The SI unit of electric field intensity is: (Mark 1)

- A. NC^{-1}
- B. N^{-1}C
- C. N^2/C
- D. C/N^2

Answer:

A. NC^{-1}

xi) 1 milliampere is equal to: (Mark 1)

- 1)
- A. 10^{-2} A
- B. 10^{-3} A
- C. 10^{-6} A
- D. 10^{-9} A

Answer:

B. 10^{-3} A

xii) The study of magnetic effects of current is called:

(Mark 1)

- A. Electrostatics
- B. Magnetism
- C. Electricity
- D. Electromagnetism

Answer:

- D. Electromagnetism

SHORT QUESTION SECTION

Section-B Q.2

- Q.2 i) Define amplitude. (Marks 2)
- Q.2 ii) What is meant by electromagnetic waves? (Marks 2)
- Q.2 iii) What is meant by loudness? (Marks 2)
- Q.2 iv) What is meant by noise? (Marks 2)
- Q.2 v) Define intensity of sound. (Marks 2)
- Q.2 vi) State Ohm's law. Also write its formula. (Marks 2)
- Q.2 vii) Define resistance. Also write its unit. (Marks 2)
- Q.2 viii) Define Electric Power. (Marks 2)

Section-B Q.3

- Q.3 i) What is meant by regular reflection? (Marks 2)
- Q.3 ii) Define Principal axis. (Marks 2)
- Q.3 iii) What is endoscope? (Marks 2)
- Q.3 iv) Define electric field. (Marks 2)
- Q.3 v) What is meant by capacitance? (Marks 2)
- Q.3 vi) What is meant by hardware? (Marks 2)
- Q.3 vii) What is meant by flow of information? (Marks 2)
- Q.3 viii) What is a fax machine? (Marks 2)

Section-B Q.4

- Q.4 i) What is meant by solenoid? (Marks 2)
- Q.4 ii) What is meant by relay? (Marks 2)
- Q.4 iii) What is meant by thermionic emission? (Marks 2)
- Q.4 iv) Differentiate between analogue and digital electronics. (Marks 2)
- Q.4 v) Draw circuit diagram of OR gate. (Marks 2)

Q.4 vi) What is meant by isotopes of an element?
Q.4 viii) Define penetrating power.

(Marks 2)

(Marks 2)

LONG QUESTION SECTION

Q.5 a) Derive wave equation. (Marks 4)

Q.5 b) An object and its image in a concave mirror are of the same height, yet inverted, when the object is 20 cm from the mirror. What is the focal length of the mirror? (Marks 5)

Q.6 a) Explain any two hazards of static electricity. (Marks 4)

Q.6 b) The resistance of a conductor wire is $10\text{ M}\Omega$. If a potential difference of 100 volt is applied across its ends, then find the value of current passing through it in mA. (Marks 5)

Q.7 a) How light signals are sent through optical fibre? (Marks 4)

Q.7 b) Ashes from a campfire deep in a cave show carbon-14 activity of only one-eighth the activity of fresh wood. How long ago was that campfire made? (Marks 5)