

# 10<sup>th</sup> Grade Sargodha Board

## Physics

2018

### Group A

#### MCQ SECTION

i) The half life of cobalt is: (Mark 1)

A. 40 years

B. 50 years

C. 20 years

D. 30 years

Answer:

D. 30 years

ii) The brain of any computer system is: (Mark 1)

A. Control unit

B. CPU

C. Memory

D. Monitor

Answer:

B. CPU

iii) The basic operations performed by a computer are: (Mark 1)

A. Arithmetic operation

B. Non arithmetic operation

C. Logical operation

D. Both A and C

Answer:

D. Both A and C

iv) Types of waves are: (Mark 1)

A. 4

B. 3

C. 2

D. 1

Answer:

C. 2

v) The speed of sound at room temperature is: (Mark 1)

A.  $320 \text{ ms}^{-1}$

B.  $330 \text{ ms}^{-1}$

C.  $340 \text{ ms}^{-1}$

D.  $350 \text{ ms}^{-1}$

Answer:

C.  $340 \text{ ms}^{-1}$

vi) The refractive index of ice is: (Mark 1)

- A. 1.52
- B. 1.31
- C. 2.45
- D. 1.33

Answer:

B. 1.31

vii) Which one of the following quantity is not changed during refraction of light. (Mark 1)

- A. Its Direction
- B. Its Speed
- C. Its frequency
- D. Its wavelength

Answer:

C. Its frequency

viii) The value of 'K' in Coulomb's law is: (Mark 1)

- A.  $9 \times 10^9 \text{ Nm}^2\text{C}^{-2}$
- B.  $9 \times 10^{11} \text{ Nm}^2\text{C}^{-2}$
- C.  $9 \times 10^{-9} \text{ Nm}^2\text{C}^{-2}$
- D.  $9 \times 10^{-11} \text{ Nm}^2\text{C}^{-2}$

Answer:

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

ix) Electric potential and emf: (Mark 1)

- A. are same quantities
- B. two different quantities
- C. have different units
- D. Both A and B

Answer:

A. are same quantities

x) The combined resistance of two identical resistors connected in series is 8 ohm. Their combined resistance in a parallel arrangement will be: (Mark 1)

- A.  $2 \Omega$
- B.  $4 \Omega$
- C.  $8 \Omega$
- D.  $12 \Omega$

Answer:

A.  $2 \Omega$

xi) The presence of magnetic field can be detected by a: (Mark 1)

- A. small mass
- B. stationary positive charge
- C. stationary negative charge
- D. magnetic compass

Answer:

D. magnetic compass

xii) The particles emitted from a hot cathode surface are: (Mark 1)

- A. Positive ions
- B. Negative ions
- C. Protons
- D. Leptons

Answer:

- D. Leptons

## SHORT QUESTION SECTION

### Section-B Q.2

- Q.2 i) Define reflection of waves. (Marks 2)
- Q.2 ii) What are mechanical waves. Write an example. (Marks 2)
- Q.2 iii) Differentiate noise and music. (Marks 2)
- Q.2 iv) Write down two uses of ultrasound. (Marks 2)
- Q.2 v) Define intensity of sound. write its unit. (Marks 2)
- Q.2 vi) Define potential difference and write its unit. (Marks 2)
- Q.2 vii) What is meant by electromotive force? (Marks 2)
- Q.2 viii) What is unit of resistance? Define it. (Marks 2)

### Section-B Q.3

- Q.3 i) Define power of a lens and its unit. (Marks 2)
- Q.3 ii) Define the terms resolving power and magnifying power. (Marks 2)
- Q.3 iii) Define total internal reflection. (Marks 2)
- Q.3 iv) State Coulomb's Law. (Marks 2)
- Q.3 v) Define the unit of capacitance. (Marks 2)
- Q.3 vi) What is the role of computer in everyday life. (Marks 2)
- Q.3 vii) Differentiate between primary memory and secondary memory. (Marks 2)
- Q.3 viii) What is Internet. (Marks 2)

### Section-B Q.4

- Q.4 i) What is meant by mutual induction? (Marks 2)
- Q.4 ii) What is meant by electric motor? (Marks 2)
- Q.4 iii) Define thermionic emission. (Marks 2)
- Q.4 iv) Write names of two parts of cathode-ray oscilloscope. (Marks 2)
- Q.4 v) What is meant by truth tables? (Marks 2)
- Q.4 vi) Differentiate between atomic number and neutron number. (Marks 2)

**Q.4 vii) What is meant by nuclear fusion?**

**(Marks 2)**

**Q.4 viii) Write the causes of background radiations.**

**(Marks 2)**

## LONG QUESTION SECTION

**Q.5 a) Distinguish between longitudinal and transverse waves with suitable examples. (Marks 4)**

**Q.5 b) An object 30 cm tall is located 10.5 cm from a concave mirror with focal length 16 cm.**

**(a) Where is the image located?**

**(b) How high is it?**

**(Marks 5)**

**Q.6 a) Write four characteristics of series combination of capacitors.**

**(Marks 4)**

**Q.6 b) A electric bulb is marked with 220 V, 100 W. Find the resistance of the filament of bulb. If the bulb is used 5 hours daily. Find the energy in kWh consumed by the bulb in one month (30 days). (Marks 5)**

**Q.7 a) What do you understand by the term word processing and data managing. (**

**Marks 4)**

**Q.7 B) Technetium 99 is a radioactive element, has half life of 6 hours if of this technetium present, how much will be left in 36 hours.**

**(Marks 5)**

# 10<sup>th</sup> Grade Sargodha Board

## Physics

2018

### Group B

#### MCQ SECTION

) In a vacuum all electromagnetic waves have the same  
:

(Mark 1)

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

Answer:

A. Speed

ii) SI unit of Intensity is:

(Mark 1)

- A.  $\text{Wm}^{-1}$
- B.  $\text{Wm}^{-2}$
- C.  $\text{Wm}$
- D.  $\text{Wm}^2$

Answer:

B.  $\text{Wm}^{-2}$

iii) Snell's law is:

(Mark 1)

- A.  $n = \sin(i)/\sin(r)$
- B.  $n = \sin(r)/\sin(i)$
- C.  $n = \sin(r)$
- D.  $n = \sin(i)$

Answer:

A.  $n = \sin(i)/\sin(r)$

iv) The endoscope which is used to examine throat is called :

(Mark 1)

- A. Gastroscope
- B. Cystoscope
- C. Bronchoscope
- D. None of these

Answer:

C. Bronchoscope

v) Coulomb's Law is: (Mark 1)

- A.  $F = K q_1q_2/r^3$
- B.  $F = K q_1q_2/r^2$
- C.  $F = Eq$
- D.  $F = G m_1m_2/r^2$

Answer:

- B.  $F = K q_1q_2/r^2$

vi) What is the power rating of a lamp connected to a 12 V source when it carries 2.5

A? (Mark 1)

- A. 4.8 W
- B. 14.5 W
- C. 30 W
- D. 60 W

Answer:

- C. 30 W

vii) Specific resistance of metal nichrome is: (Mark 1)

- A.  $100 \times 10^{-8} \Omega\text{m}$
- B.  $200 \times 10^{-8} \Omega\text{m}$
- C.  $300 \times 10^{-8} \Omega\text{m}$
- D.  $600 \times 10^{-8} \Omega\text{m}$

Answer:

- A.  $100 \times 10^{-8} \Omega\text{m}$

viii) The step-up transformer: (Mark 1)

- A. Increase the input current
- B. Increase the input Voltage
- C. Has more turns in primary
- D. Has less turns in secondary coil

Answer:

- B. Increase the input Voltage

ix) The output of a NAND gate is '0' when:

(Mark 1)

- A. Both of its input are '0'
- B. Both of its input are '1'
- C. Any of its input is '0'
- D. Any of its input is '1'

Answer:

- B. Both of its input are '1'



x) Which of the following is not processing:

(Mark 1)

- A. Arranging
- B. Manipulating
- C. Calculating
- D. Gathering

Answer:

B. Manipulating

xi) 1 megabyte is equal to:

(Mark 1)

- A. 1024 kB
- B. 1034 kB
- C. 1044 kB
- D. 1054 kB

Answer:

xii) Isotopes are atoms of same element with different:

(Mark 1)

- A. Atomic mass
- B. Atomic number
- C. Number of Protons
- D. Number of electrons

Answer:

B. Atomic number

## SHORT QUESTION SECTION

### Section-B Q.2

- Q.2 i) Define Amplitude. (Marks 2)  
Q.2 ii) Define mechanical waves. (Marks 2)  
Q.2 iii) What is meant by noise pollution. (Marks 2)  
Q.2 iv) What is meant by Zero bel. (Marks 2)  
Q.2 v) Define Ultrasound. (Marks 2)  
Q.2 vi) Define the unit of resistance. (Marks 2)  
Q.2 vii) Define conventional current. (Marks 2)  
Q.2 viii) Define electric power. (Marks 2)

### Section-B Q.3

- Q.3 i) Define power of a lens . Also write its formula. (Marks 2)  
Q.3 ii) Write down the function of  
Gastroscope.  
(Marks 2)  
Q.3 iii) Write laws of reflection. (Marks 2)  
Q.3 iv) How electric charge is produced. (Marks 2)  
Q.3 v) Write two uses of capacitor. (Marks 2)  
Q.3 vi) What is meant by floppy disk and hard disk. (Marks 2)  
Q.3 vii) Write two advantages of E-  
mail.  
(Marks 2)  
Q.3 viii) Write names of two parts of computer. (Marks 2)

### Section-B Q.4

- Q.4 i) Write two factors affecting induced e.m.f. (Marks 2)  
Q.4 ii) State the Faraday's law of electromagnetic  
induction.  
(Marks 2)  
Q.4 iii) Differentiate between analogue and digital  
electronics.  
(Marks 2)  
Q.4 iv) Explain NOR  
gate.  
(Marks 2)

**Q.4 v) Define cathode ray oscilloscope. (CRO) (Marks 2)**

**Q.4 vi) Write two characteristics of beta particles.**

**(Marks 2)**

**Q.4 vii) Differentiate between atomic number and atomic mass number.**

**Marks 2)**

**Q.4 viii) Define natural radio activity. (Marks 2)**

## LONG QUESTION SECTION

**Q.5 a) Explain the following properties of waves with reference to ripple tank experiment.**

**(i) Refraction**

**(ii) Diffraction**

**(Marks 4)**

**Q.5 b) An object is placed 6cm in front of a concave mirror that has focal length 10cm. Determine the location of the image.**

**Q.6 a) What is gold leaf electroscope? Explain its working principle with a diagram (Marks 4)**

**Q.6 b) If the length of copper wire is 1m and its diameter is 2mm then find its resistance (Marks 5)**

**Q.7 a) What is meant by Computer? What is role of computer in every day life? (Marks 4)**

**Q.7 b) Carbon-14 has half life of 5730 years. How long will it take for the quantity of Carbon-14 in a sample to drop to one-eighth of the initial quantity? (Marks 5)**