

SAHIWAL BOARD
GRADE 10
PHYSICS
2019 GROUP 1

Section-A (MCQs)

i) The S.I unit of electric power is (Mark 1)

- A. Joule
- B. Watt
- C. Newton
- D. Kwh

Answer:

B. Watt

ii) If we double both voltage and current in a circuit while keeping its resistance constant, the power is (Mark 1)

- A. Quadruples
- B. Remains unchanged
- C. Double
- D. Half

Answer:

A. Quadruples

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

- A. Magnetic compass
- B. Small mass
- C. Stationary positive charge
- D. Stationary negative charge

Answer:

A. Magnetic compass

iv) AND gate can be formed by using two (Mark 1)

- A. AND gates
- B. NAND gates
- C. NOT gates
- D. NOR gates

Answer:

B. NAND gates

v) The particles emitted from a hot metal surface are (Mark 1)

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

Answer:

C. Electrons

vi) One byte is equal to

(Mark 1)

A. 10 bits

B. 8 bits

C. 6 bits

D. 4 bits

Answer:

B. 8 bits

vii) One of the isotopes of Uranium is ${}_{92}\text{U}^{238}$. The number of Neutrons in this isotope is

(Mark 1)

A. 330

B. 238

C. 146

D. 92

Answer:

C. 146

viii) The relation between v , f and λ of a wave is

(Mark 1)

A. $v = \lambda/f$

B. $v\lambda = f$

C. $v = f\lambda$

D. $v f = \lambda$

Answer:

C. $v = f \lambda$

ix) How does sound travel from its source to your ear by vibration in wires?

(Mark 1)

A. By change in air pressure

B. By vibration in wires

C. By electromagnetic waves

D. Infrared waves

Answer:

A. By change in air pressure

x) Which one of the following quantity is not changed during refraction of light?

(Mark 1)

A. Its direction

B. Its speed

C. Its wavelength

D. Its frequency

Answer:

D. Its frequency

xi) Index of refraction of water is

(Mark 1)

A. 1.31

B. 1.00

C. 1.33

D. 1.52

Answer:

C. 1.33

xii) Two small charged spheres are separated by 2 mm. Which of the following would produce a greater attractive force? (Mark 1)

A. +1q and +4q

B. -1q and -4q

C. +2q and +2q

D. +2q and -2q

Answer:

D. +2q and -2q

Q.2 i) Define diffraction of waves and write an example. (Marks 2)

Q.2 ii) If $f = 4$ Hz and $\lambda = 0.4$ m, find the value of v . (Marks 2)

Q.2 iii) Define mechanical waves and electromagnetic waves. (Marks 2)

Q.2 iv) What is the pitch and quality of sound. (Marks 2)

Q.2 v) What is the reflection of sound? (Marks 2)

Q.2 vi) Define electromagnetic induction. (Marks 2)

Q.2 vii) Define mutual induction. (Marks 2)

Q.2 viii) What is relay? Write its use. (Marks 2)

Q.3 i) Write any two uses of lens. (Marks 2)

Q.3 ii) What is the difference between the incident ray and reflected ray? (Marks 2)

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

Q.3 iv) BSs and MSC stand for what? (Marks 2)

Q.3 v) What are browsers? give their two examples. (Marks 2)

Q.3 vi) Define C.P.U. Why it is called the brain of computer? (Marks 2)

Q.3 vii) Describe medical treatment of radio isotopes. (Marks 2)

Q.3 viii) Write a note on cosmic radiations. (Marks 2)

Q.4 i) Define farad? (Marks 2)

Q.4 ii) What is meant by volt? (Marks 2)

Q.4 iii) State coulomb's Law. (Marks 2)

Q.4 iv) Define ampere. (Marks 2)

Q.4 v) What is meant by conventional current? (Marks 2)

Q.4 vi) State Ohm's Law. (Marks 2)

Q.4 vii) Define thermionic emission. (Marks 2)

Q.4 viii) What is meant by analogue to digital converter (ADC)? (Marks 2)

2)

Q.5 a) If at Anarkali Bazar Lahore, intensity level sound is 80 dB. What will be the intensity of sound there? (Marks 5)

Q.5 b) State the conditions for total internal reflection. (Marks 4)

Q.6 a) 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.6 b) Determine the equivalent resistance of the series combination of resistors. (Marks 4)

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

Q.7 b) What is cathode-ray oscilloscope? Describe its components. (Marks 4)

SAHIWAL BOARD
GRADE 10
PHYSICS
2019 GROUP 2

Section-A (MCQs)

i) 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

ii) From which of the following you can get information almost about everything? (Mark 1)

- A. Book
- B. Teacher
- C. Computer
- D. Internet

Answer:

- D. Internet

iii) In the thermionic emission, the particles emitted from a hot metal surface are (Mark 1)

- A. electron
- B. Proton
- C. Neutron
- D. Photons

Answer:

- A. electron

iv) If $X=A.B$ then X is 1 when

(Mark 1)

- A. $A=0, B=0$
- B. $A=1, B=0$
- C. $A=0, B=1$
- D. $A=1, B=1$

Answer:

- D. $A=1, B=1$

v) If the current in a wire which is placed perpendicular to a magnetic field increases, the force on the wire will

(Mark 1)

- A. Remain the same
- B. Decrease
- C. Increase
- D. Be zero

Answer:

- C. Increase

vi) Unit of time period is

(Mark 1)

- A. Second
- B. Hertz
- C. Js^{-1}
- D. Cs^{-1}

Answer:

- A. Second

vii) Two resistors of $6\text{ k}\Omega$ and $4\text{ k}\Omega$ are connected in series. Their equivalent resistance is

(Mark 1)

- A. $24\text{ k}\Omega$
- B. $12\text{ k}\Omega$
- C. $10\text{ k}\Omega$
- D. $2\text{ k}\Omega$

Answer:

- C. $10\text{ k}\Omega$

viii) According to Coulomb's Law, the value of k is

(Mark 1)

- A. $9 \times 10^9 \text{ Nm}^2\text{c}^{-2}$
- B. $9 \times 10^9 \text{ N}^{-1}\text{m}^2\text{c}^2$
- C. $9 \times 10^9 \text{ Nm}^2\text{c}^2$
- D. $9 \times 10^9 \text{ Nm}^{-2}\text{c}^{-2}$

Answer:

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

ix) Unit for power of lens is

(Mark 1)

- A. centimeter
- B. meter
- C. watt
- D. dioptre

Answer:

D. diopetre

x) The instrument used to examine stomach is (Mark 1)

- A. Cystoscope
- B. Bronchoscope
- C. Gastroscope
- D. Periscope

Answer:

C. Gastroscope

xi) Intensity of sound of rustling of leaves is (Mark 1)

- A. 10^{-18}wm^{-2}
- B. 10^{-12}wm^{-2}
- C. 10^{-11}wm^{-2}
- D. 10^{-10}wm^{-2}

Answer:

C. 10^{-11}wm^{-2}

xii) An equation to find the time period of mass attached to a spring is (Mark 1)

Answer:

B.

Q.2 i) What is meant by simple harmonic motion? (Marks 2)

Q.2 ii) How damping progressively reduces the amplitude of oscillation? (Marks 2)

Q.2 iii) Derive a relation between velocity, frequency, and wavelength of a wave. (Marks 2)

Q.2 iv) Write two uses of ultrasound in medical field. (Marks 2)

Q.2 v) Calculate the intensity level of the faintest audible sound of intensity 10^{-12}wm^{-2} (Marks 2)

Q.2 vi) What is meant by an ideal transformer? (Marks 2)

Q.2 vii) Lenz's Law is a manifestation of the law of conservation of energy. Why? (Marks 2)

Q.2 viii) State Faraday's Law of electromagnetic induction. (Marks 2)

Q.3 i) Define compound microscope. write formula to find its magnification. (Marks 2)

Q.3 ii) State Snell's Law and write its formula. (Marks 2)

Q.3 iii) Define nearsightedness and how this defect can be corrected? (Marks

2)

- Q.3 iv) Define compact disc. How much data can be stored in it? (Marks 2)
- Q.3 v) What is the difference between cell phone and photo phone. (Marks 2)
- Q.3 vi) What is meant by information and communication technology? (Marks 2)
- Q.3 vii) Write two properties of Alpha particles. (Marks 2)
- Q.3 viii) What is meant by Gamma decay? Write its general equation. (Marks 2)
- Q.4 i) Define electrostatic induction. (Marks 2)
- Q.4 ii) State Coulomb's Law. (Marks 2)
- Q.4 iii) Write at least four uses of capacitors. (Marks 2)
- Q.4 iv) Differentiate between Ohmic and non-Ohmic conductors. (Marks 2)
- Q.4 v) What is fuse? How it is connected in circuit? (Marks 2)
- Q.4 vi) Write the use of circuit breaker. (Marks 2)
- Q.4 vii) Define thermionic emission. (Marks 2)
- Q.4 viii) Draw the truth table for NAND operation. (Marks 2)
- Q.5 a) At one end of the ripple tank 80 cm across a 5 Hz vibrator produces waves whose wavelength is 40 mm. Find the time the waves need to cross the tank. (Marks 5)
- Q.5 b) Define refraction of light and write its laws. (Marks 4)
- Q.6 a) Two capacitors of capacitance $6\mu\text{F}$ and $12\mu\text{F}$ are connected in series with 12 V battery. Find the equivalent capacitance of the combination. Find the charge and the potential difference across each capacitor. (Marks 5)
- Q.6 b) Explain the factors which affect resistance. Also, define specific resistance. (Marks 4)
- Q.7 a) 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)
- Q.7 b) Explain AND operation and write the truth table of AND gate. (Marks 4)