Genesis Educates

"There is no element of genius

Without some form of madness"

Class 10th ICSE Physics
Mock Test-1 (term-2) 07.04.2022

T.T- 2 Hr **M.M - 40**

Answers to this Paper must be written on the paper provided separately you will not be allowed to write during the first 10 minutes
This time is to be spent in reading the question paper the time given at the head of this Paper is the time allowed for writing the answers. Attempt all questions from Section A and any three questions from Section B.
Each question in section A is of 1 mark
Each question in section B is of 10 marks
The intended marks for questions or parts of questions are given in brackets ()

SECTION -A
ATTEMPT ALL QUESTIONS

QUESTION 1. (10)

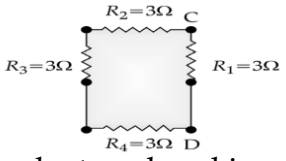
(i) A current flows through a conductor. It indicates that _____ electrons pass in 1s across the cross-section of the conductor.
(a) 1.6×10^{-19} (b) 1.6×10^{19} (c) 6.25×10^{18} (d) 1

(ii) Resistivity of a conductor depends on
(a) Length of the conductor (b) Area of cross-section of the conductor
(c) Material of the conductor (d) Both (a) and (b) Ans.

(iii) If a body vibrates in the absence of external force is termed as,
(a) Resonance (b) Natural vibration
(c) Forced vibration (d) Damped vibration

(iv) Amplitude and frequency of a freely vibrating body is always--------
(a) Constant (b) Decreases
(c) Increases (d) None of the above

(v) The equivalent resistance across C, D point is
(a) 4 9 Ω (b) 9 4 Ω
(c) 12 Ω (d) 3 4 Ω



(vi) Magnitude of the force acting on a current carrying conductor placed in a magnetic field in a direction perpendicular to the field is
(a) Directly proportional to the current flowing only
(b) Directly proportional to the strength of magnetic field only
(c) Directly proportional to the length of the conductor only
(d) All of the above

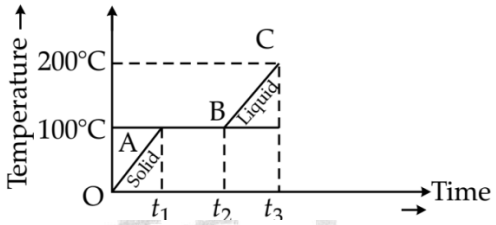
(vii) An alternating voltage of frequency 50 Hz changes its direction at a time interval of

(a) 1 /100 s (b) 1 /50 s (c) 1 /25 s (d) 1/ 200 s

(viii) 1 calorie is correctly defined as

(a) Heat energy required to raise the temperature 1g of water from 14.5°C to 15.5°C.
(b) Heat energy required to raise the temperature 1g of water by 1°C.
(c) Heat energy required to raise the temperature 1g of water 4°C to 5°C.
(d) Heat energy required to raise the temperature 1g of water 0°C to 1°C.

(ix) The following figure shows the heating curve of a substance.



The melting point of the substance is

(a) 200°C (b) 100°C
(c) Less than 100°C (d) More than 200°C

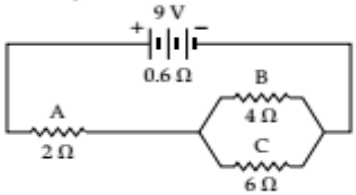
(x) Same amount of heat is supplied to two liquids X and Y. Temperature of liquid X rises more than that of the liquid Y. Which of the following statements is then true?

(a) Heat capacity of X = Heat capacity of Y
(b) Heat capacity of X > Heat capacity of Y
(c) Heat capacity of X < Heat capacity of Y
(d) Insufficient data to comment about the heat capacity

SECTION -B

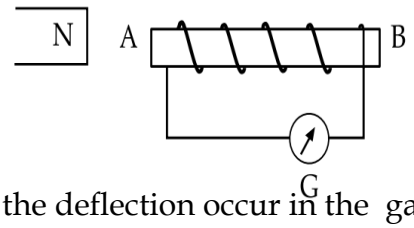
ATTEMPT ANY 3 QUESTIONS

Q2. A circuit is made out of a battery (of emf 9 V and internal resistance 0.6 Ω) connected to three resistors A, B and C (10)



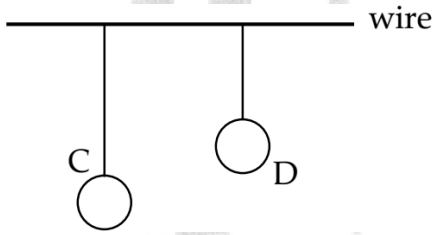
(i) What is the combined resistance of B and C?
(ii) What is the total resistance of A, B and C?
(iii) What is the total resistance of the circuit?
(iv) Find the current flowing in each of the three resistors A, B and C

Q3. The diagram shows a closed coil connected to a galvanometer G. The galvanometer shows a deflection to the right when N-pole of the bar magnet is brought closer to the coil AB. (10)



(i) Explain, why the deflection occur in the galvanometer?
(ii) Does the direction of the current in the coil appear clockwise or anti-clockwise when viewed from the end A?
(iii) State the observation in G when the coil is moved away from N and Why?
(iv) State the observation in G when both the coil and the magnet are moved to the right at the same speed and why?

Q4. Two pendulums C and D are suspended from a wire as shown in the figure given below. Pendulum C is made to oscillate by displacing it from its mean position. It is seen that D also starts oscillating. (10)



(i) Name the type of oscillation, C will execute.
(ii) Name the type of oscillation, D will execute and why.
(iii) If the length of D is made equal to C, then what difference will you notice in the oscillations of D and why?
(iv) What is the name of the phenomenon when the length of D is made equal to C?

Q5. What is the composition of the nucleus X_{84}^{212}? (10)
(i) It emits an alpha particle and is transformed into nucleus Y. What is the composition of nucleus Y? Explain
(ii) The nucleus Y emits a beta particle and is transformed into a nucleus C. What is the composition of nucleus C? Explain
(iii) The nucleus C emits gamma radiations? How its composition will change? Explain
(iv) Arrange α, β and γ radiations in ascending order with respect to their
(a) Penetrating power. (b) Ionising power