

BOARD OF INTERMEDIATE & SECONDARY EDUCATION, SAHRAWAL

SUBJECT: Physics EXAM 2nd Annual 2022 CLASS: XII
GROUP: II DATE: 13/12/22

(GENERAL INSTRUCTIONS FOR MARKING KEY)

Question No. 2:

- i. Explanation with correct reason (2 marks)
- ii. one mark for "yes". One for explanation (either mathematical or qualitative reasoning)
- iii. Two marks for correct proof; $1 \frac{V}{m} = 1 \frac{JC^{-1}}{m} = \frac{1 Nm}{C m} = 1 \frac{N}{C}$
- iv. One mark for each definition
 - Conversion of molecules of dielectric into dipoles upon application of electric field is polarization.
 - Two equal and opposite charges separated by small distance constitute an electric dipole.
- v. Two marks for correct explanation with proper reason.
- vi. Two marks for correct explanation with proper reason.
- vii. One mark for definition and one for correct formula
 - Sum of electric and magnetic force is called Lorentz force.
 - $\vec{F} = \vec{F}_E + \vec{F}_B = q\vec{E} + q(\vec{v} \times \vec{B})$
- viii. One mark for each definition (No deduction if formula or unit is not written)
- ix. Two marks for reason with explanation.
- x. Two marks for correct reasons; large size/imbalance of strong and weak nuclear forces
- xi. Two marks for writing names of at least four quarks
 - i.e. top, bottom, charm, beauty, up, down
- xii. One mark for definition and one for example.

Question No. 3:

- i. One mark for statement of each rule (No deduction if mathematical form is not written)
- ii. It does not draw any current while measuring unknown emf or PD. So it is a null type voltmeter. (Two marks for correct reason or explanation)

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