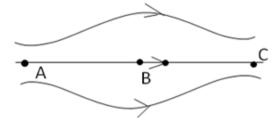
APPENDIX - V **SAMPLE QUESTIONS**

PHYSICS

- If a force $F = (2x + 3x^2)$ î N acts along x-axis on an object and moves it from x = 2m to x = 4m, the work 1. done is
 - A) 24 J
- B) 68 J
- C) 86 J
- D) 142 J
- 2.
 - A) 17/11
- B) 71/45
- C) 38/15
- D) 46/15
- Figure shows some of the electric field lines corresponding to an electric field. The figure suggests that 3.



- A) $E_A > E_B > E_C$
- B) $E_A = E_B = E_C$ C) $E_A = E_C > E_B$ D) $E_A = E_C < E_B$
- 4. A carbon resistor has color code as, Red, Black, Blue and Gold. The resistance and tolerance values are
 - A) 20 MΩ ±5%
- B) 20 MΩ ±10%
- C) 20 kΩ ±5%
- D) 20 kΩ ±10%
- A small circular flexible loop of wire of radius r carries a current I. It is placed in a uniform magnetic field B. 5. The tension in the loop will be doubled if
 - A) *I* is doubled
- B) B is halved
- C) r is doubled
- D) Both B and I are doubled
- What is the self-inductance of a coil when a change of current from 0 to 2 A in 0.05 s induces an emf of 40 V 6. in it?
 - A) 1 H
- B) 2 H
- C) 3 H
- D) 4 H
- A light has the wavelength 6000 Å in air and 4500 Å in water. Then the speed of light in water will be 7.
 - A) 5.0×10^{14} m/s
- B) 2.25×10^8 m/s
- C) 4.0×10^8 m/s
- D) $1.0 \times 10^{8} \text{ m/s}$
- 8. In which of the following transitions in hydrogen atom will the wavelength be minimum?
 - A) n = 5 to n = 4
- B) n = 4 to n = 3
- C) n = 3 to n = 2
- D) n = 2 to n = 1
- 9. One gram of Radium, with atomic weight 226, emits 4×10^{10} particles per second. The half-life of Radium is
 - A) $4.6 \times 10^{10} \, \text{s}$
- B) $4.6 \times 10^9 \, \text{s}$
- C) 4.6×10^{12} s
- D) $4.6 \times 10^{14} \, \text{s}$
- 10. The minimum number of NAND gates required to implement $A + A\overline{B} + A\overline{B}C$ is
 - A) 3
- B) 2
- C) 6
- D) zero