



International Olympiad of Science



Organized by:

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For supremacy in Mathematics

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CLASS 12th SAMPLE QUESTIONS

The Actual Question Paper Contains 40 Questions. The Duration of the Test Paper is 50 Minutes.

- A voltmeter of resistance $400\ \Omega$ is used to measure the emf of a cell of internal resistance $2\ \Omega$. The percentage error in reading of the voltmeter is very nearly equal to
(A) 0.5% (B) 0.8%
(C) 1% (D) 1.25%
- Choose the wrong statements from the following. The force experienced by a charged particle moving with a velocity v in an electric field E is zero if
(A) $v = 0$
(B) v is parallel to E
(C) v is antiparallel to E
(D) All of these
- In the Bohr model of the hydrogen atom, the ratio of the kinetic energy to the total energy of the electron in a quantum state n is
(A) -1 (B) $+1$
(C) $\frac{1}{n}$ (D) $\frac{1}{n^2}$
- The vapour pressure of pure benzene and toluene are 160 Torr and 60 Torr, respectively. The mole fraction of benzene in vapour phase in contact with equimolar solution of benzene and toluene would be
(A) 0.24 (B) 0.56
(C) 0.73 (D) 0.11
- Which of the following ions is most effective in the coagulation of an arsenious sulphide sol?
(A) K^+ (B) Mg^{2+}
(C) Al^{3+} (D) Ca^{2+}
- The relative order of acidity of alcohols in comparison to H_2O and $HC \equiv CH$ is
(A) $H_2O > ROH > HC \equiv CH$
(B) $H_2O > HC \equiv CH > ROH$
(C) $ROH > H_2O > HC \equiv CH$
(D) $ROH > HCOOH > H_2O$
- If
$$\begin{vmatrix} x-4 & 2x & 2x \\ 2x & x-4 & 2x \\ 2x & 2x & x-4 \end{vmatrix} = (A+Bx)(x-A)^2$$
, then the ordered pair (A, B) is equal to
(A) $(-4, -5)$ (B) $(-4, 3)$
(C) $(-4, 5)$ (D) $(4, 5)$
- If the system of linear equations
 $x + ky + 3z = 0$
 $3x + ky - 2z = 0$
 $2x + 4y - 3z = 0$
has a non-zero solution (x, y, z) then $\frac{xz}{y^2}$ is equal to
(A) -10 (B) 10
(C) -30 (D) 30
- Inhibition of secretion of which of the following hormones is necessary for disintegration of corpus luteum?
(A) Progesterone (B) LH
(C) LTH (D) FSH
- HIV selectively infects and kills
(A) B cells (B) Antibodies
(C) T-helper cells (D) T-cytotoxic cells

ANSWERS

1. (A) 2. (D) 3. (A) 4. (C) 5. (C) 6. (A) 7. (C) 8. (B) 9. (A) 10. (C)