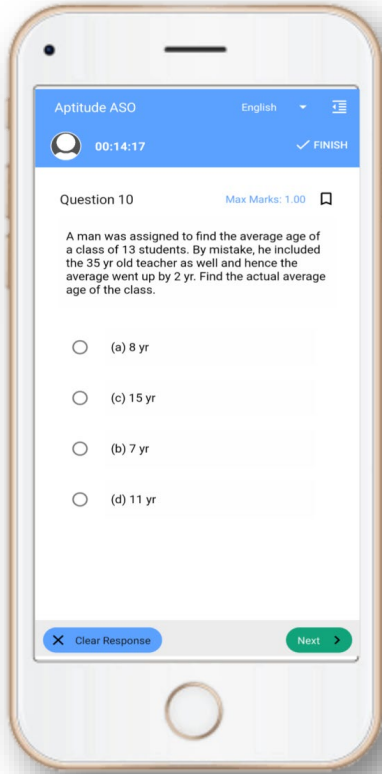


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## B - SECTION - III

## SCIENCE (CBZ)

## CHEMISTRY

41. 50 ml of  $H_2$  diffuses out through a small hole from a vessel in 20 mins. The time needed for 40 ml of  $O_2$  to diffuse out from the same vessel is :
- (A) 12 min  
(B) 64 min  
(C) 8 min  
(D) 32 min
42. Which of the following ion is the smallest in size ?
- (A)  $N^{3-}$   
(B)  $Na^+$   
(C)  $F^-$   
(D)  $O^{2-}$
43. According to Le-Chatelier's principle maximum yield of ammonia is obtained at :
- (A) High temperature and low pressure  
(B) High pressure  
(C) Low temperature  
(D) Low temperature and High pressure
44. The oxide of a metal contains 40% oxygen. If the valency of the metal is 3, its atomic mass will be :
- (A) 8  
(B) 16  
(C) 36  
(D) 24
45. The refining of Nickel metal is done by :
- (A) Van Arkel Method  
(B) Mond process  
(C) Vapour-phase refining  
(D) Zone refining
46.  $ZnS$  is not precipitated by passing  $H_2S$  through acidified  $ZnCl_2$  solution, but  $CuS$  is precipitated by passing  $H_2S$  through acidified  $CuSO_4$  solution. The reason for this is :
- (A)  $K_{sp} CuS \gg K_{sp} ZnS$   
(B)  $K_{sp} CuS = K_{sp} ZnS$   
(C)  $K_{sp} CuS \ll K_{sp} ZnS$   
(D) None of these

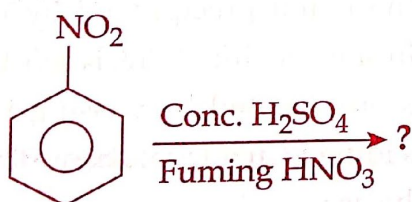
47. The volume of 0.05 N  $\text{H}_2\text{SO}_4$  solution needed to completely neutralise 25 ml of 0.1 N NaOH solution is :

- (A) 25 ml
- (B) 50 ml
- (C) 100 ml
- (D) 12.5 ml

48. The ore containing two different metals is :

- (A) Haematite
- (B) Galena
- (C) Copper pyrite
- (D) Magnetite

49. What will be the product of the following reaction ?



- (A) m-dinitrobenzene
- (B) o-dinitrobenzene
- (C) p-dinitrobenzene
- (D) Both o- and p-dinitrobenzene

50. The relative lowering in vapour pressure of an ideal solution containing the non-volatile solute is equal to the mole fraction of the solute at a given temperature. This law is known as :

- (A) Henry's law
- (B) Van't Hoff's law
- (C) Raoult's law
- (D) Ostwald's dilution law

51. Among the following covalent compounds, the compound having more polar character is :

- (A) HI
- (B) HCl
- (C) HBr
- (D) HF

52. One drop of water weighs 0.018 g. Number of water molecules present in one drop of water is :

- (A)  $1 \times 10^{-3}$
- (B)  $6.02 \times 10^{20}$
- (C)  $22.4 \times 10^{-3}$
- (D)  $6.02 \times 3 \times 10^2$

53. Which of the following shows positive inductive effect ?

- (A)  $-\text{NO}_2$
- (B)  $-\text{COOH}$
- (C)  $-\text{OCH}_3$
- (D)  $-\text{CN}$

54. The set of quantum numbers for 19<sup>th</sup> electron of Chromium atom is :

	n	l	m	s
(A)	3	0	0	1/2
(B)	3	2	-2	1/2
(C)	4	0	0	1/2
(D)	4	1	0	1/2

55. When acetylene is passed through dil. H<sub>2</sub>SO<sub>4</sub> in presence of HgSO<sub>4</sub> at 60°C, the organic compound formed is :

- (A) Dimethylether  
 (B) Acetone  
 (C) Acetic acid  
 (D) Acetaldehyde

56. According to VSEPR theory the shape of SF<sub>6</sub> molecule is :

- (A) Trigonal bipyramidal  
 (B) Regular octahedral  
 (C) Pentagonal bipyramidal  
 (D) Tetrahedral

57. The correct order of electron gain enthalpy among the following is :

- (A) F > Cl > Br  
 (B) Br > Cl > F  
 (C) Cl > F > Br  
 (D) F > Br > Cl

58. The uncertainty in the momentum of an electron is  $1 \times 10^{-5}$  kg m/s. The uncertainty in its position will be ( $h = 6.62 \times 10^{-34}$  kg m<sup>2</sup>/s) :

- (A)  $1.05 \times 10^{-28}$  m  
 (B)  $1.05 \times 10^{-26}$  m  
 (C)  $5.27 \times 10^{-30}$  m  
 (D)  $5.27 \times 10^{-28}$  m

59. In the standardisation of Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> using K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> by iodometry, the equivalent mass of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> is :

(A)  $\frac{\text{Mol. Mass}}{2}$

(B)  $\frac{\text{Mol. Mass}}{3}$

(C)  $\frac{\text{Mol. Mass}}{6}$

(D) Same as molecular mass

60. Which of the following is an electrophile ?

- (A) H<sub>2</sub>O  
 (B) NH<sub>3</sub>  
 (C) AlCl<sub>3</sub>  
 (D) CH<sub>3</sub>NH<sub>2</sub>