

Name:

Student ID No:

**Choose the correct choice and write your answer in the table below**

1) The process of changing gas to liquid is called.....

- (A) Evaporation       (B) Condensation      (C) Sublimation      (D) Deposition

2) Which of the following is not SI derived unit?

- (A)  $\text{g/cm}^3$       (B)  $\text{kg m/s}^2$       (C)  $\text{m/s}$       (D)  $\text{m}^3$

3) A small piece of plastic has a mass of  $2 \times 10^{-6}$  microgram ( $\mu\text{g}$ ) and a volume of 0.001 liter, its density in ( $\text{g/cm}^3$ ) will be .....

- (A)  $2.0 \times 10^{-12}$       (B)  $2.0 \times 10^{-6}$       (C)  $2.0 \times 10^{-9}$       (D)  $2.0 \times 10^{-3}$

4) If 50 mL of water at 318 K is added to 100 mL of water at the same temperature, the temperature in ( $^{\circ}\text{F}$ ) of the final volume of water is *almost* equal to .....

- (A) 363      (B) 273       (C) 113      (D) 81

5) Dissolving sugar in water can be described as.....

- (A) Chemical change and heterogeneous mixture  
(B) Chemical change and homogeneous mixture  
(C) Physical change and heterogeneous mixture  
 (D) Physical change and homogeneous mixture

6) How many neutrons are in the isotope potassium-40?

- (A) 59      (B) 40       (C) 21      (D) 19

7) How many neutrons and electrons are in the ion  ${}_{20}^{40}\text{Ca}^{2+}$ ?

- (A) 20 electrons and 18 neutrons  
(B) 20 electrons and 20 neutrons  
(C) 22 electrons and 20 neutrons  
 (D) 18 electrons and 20 neutrons

8) What is the correct name for  $\text{Ni}_2(\text{SO}_4)_3$ ?

- (A) Nickel(III) sulfate  
(B) Nickel(III) sulfite  
(C) Nickel(II) sulfate  
(D) dinickel trisulfate

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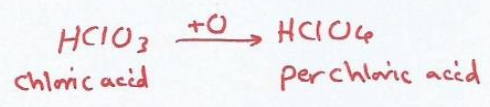
9) What is the chemical formula for ammonium nitrite?

- (A)  $\text{NH}_4\text{NO}_3$       (B)  $\text{NH}_4\text{NO}_2$       (C)  $(\text{NH}_4)_3\text{N}$       (D)  $(\text{NH}_4)_2\text{NO}_3$

$\text{NO}_3^-$  nitrate  
 $\text{NO}_2^-$  nitrite

10) The name of the compound  $\text{HClO}_4$  is.....

- (A) Hypochlorous acid  
 (B) Chlorous acid  
 (C) Perchloric acid  
 (D) Chloric acid



11) The three quantum numbers that give the **location** of the electron in the atom are:

- (A)  $n, m_l, m_s$   
 (B)  $l, m_l, m_s$   
 (C)  $n, l, m_s$   
 (D)  $n, l, m_l$

12) Which set of quantum numbers of an electron in an atom is correct?

- (A)  $(2, 1, \frac{1}{2}, \frac{1}{2})$       (B)  $(3, 3, 0, \frac{1}{2})$       (C)  $(3, 2, 1, \frac{1}{2})$       (D)  $(2, 1, -2, \frac{1}{2})$

13) Arrange the following atoms in order of decreasing atomic radius: N, F, P

- (A)  $\text{P} > \text{F} > \text{N}$       (B)  $\text{F} > \text{P} > \text{N}$       (C)  $\text{F} > \text{N} > \text{P}$       (D)  $\text{P} > \text{N} > \text{F}$

14) Arrange the following in order of decreasing first ionization energy: Na, Cl, Al, and Cs

- (A)  $\text{Cl} > \text{Al} > \text{Na} > \text{Cs}$   
 (B)  $\text{Cs} > \text{Na} > \text{Al} > \text{Cl}$   
 (C)  $\text{Cl} > \text{Al} > \text{Cs} > \text{Na}$   
 (D)  $\text{Al} > \text{Cl} > \text{Na} > \text{Cs}$

15) What *rule* or *principle* describes the filling order of electrons on atomic orbitals starting from the lowest available energy levels?

- (A) Dalton  
 (B) Aufbau *Building up*  
 (C) Hund  
 (D) Pauli exclusion