


Egypt-Japan University of Science and Technology (Entrance Exam for PharmD and CSIT)			
Academic Year: 2024/2025	Subject: Chemistry	No. of Pages: ٢	
Student name		Applicant E-JUST Admission ID:	

Choose the correct answer(s):

1. A set of orbitals have the quantum number $l = 2$ consists of:

- A. 7-fold degenerate
- B. 3-fold degenerate
- C. non-degenerate
- D. 5-fold degenerate

2. The chemical formula of potassium permanganate is:

- A. KMnO_2
- B. PMnO_4
- C. KMnO_4
- D. NaMnO_3

3. In exothermic reactions.....

- A. heat moves to the system from the surrounding.
- B. heat moves from the system to the surrounding.
- C. heat does not move from or to the system.
- D. heat moves from and to the system at the same time.

4. Phosphoric acid (H_3PO_4) is a acid.

- A. mono-proton
- B. di-proton
- C. tri-proton
- D. poly-proton

5. The number of neutrons and protons in the nucleus of ${}_{88}\text{Ra}^{226}$ are

- A. 138 and 88
- B. 88 and 138
- C. 226 and 88
- D. 88 and 226

6. Which of the following bonds is most ionic?

- A. H-Cl
- B. F-Cl
- C. O-Cl
- D. Cs-Cl

7. Which of the following compounds will not undergo an acid-base (neutralization) reaction with HCl?

- A. NaOH
- B. $\text{Sr}(\text{OH})_2$
- C. NH_3
- D. H_2SO_4

8. What is the number of moles of CO₂ which contains 16 g of oxygen?
A. 0.50 mol
B. 0.25 mol
C. 0.40 mol
D. 0.60 mol
9. Which of the following is not a physical process?
A. Filtration
B. Drying
C. Evaporation
D. Hydrogenation
10. The solubility of NaCl in water with increasing the temperature.
A. decreases
B. increases
C. remains the same
D. None of the above
11. Which reaction below is not an oxidation – reduction reaction?
A. $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$
B. $\text{Ba}(\text{NO}_3)_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{NaNO}_3$
C. $\text{I}_2 + 2\text{Na}_2\text{S}_2\text{O}_3 \rightarrow 2\text{NaI} + \text{Na}_2\text{S}_4\text{O}_6$
D. $\text{CH}_3\text{CH}_2\text{OH} + \text{O}_2 \rightarrow \text{CH}_3\text{COOH} + \text{H}_2\text{O}$
12. Which gas can be produced by incomplete combustion of hydrocarbons?
A. Sulfur dioxide
B. Nitrogen dioxide
C. Hydrogen chloride
D. Carbon monoxide
13. Liquids have the same shape of the containers. This is one of the applications of
A. surface tension.
B. density.
C. viscosity.
D. molarity.
14. Which of the following is not a physical process?
E. Filtration
F. Drying
G. Evaporation
H. None of the above
15. All the following molecules are polar except
A. C₆H₆.
B. H₂S.
C. CH₃OH.
D. H₂O.

Good Luck