Benha university	**2nd year students**	**Date :19.05.2019**
Faculty of science	**Inorganic chemistry**	**Time: 2 hours**
Chemistry department	**(Micro& chemistry)**	**Code: Ch222**

Answer the following questions:- [N.B: two marks for each question]

1. The number of hydrogen atoms attached to phosphorus atom in hypophosphorous acid is…..
a) Three b) One c) Two d) Zero

2. Which of the following statement is valid for oxoacids of chlorine?
a) All oxoacids contain octahedral four coordinated chlorine.
b) All oxoacids contain at least one Cl=O unit and two Cl – OH group
c) Hypochlorous acid is a diprotic acid
d) Perchloric acid is monoprotic acid

3. Of the following compounds the most acidic is
a) As_2O_3 b) P_2O_5 c) Bi_2O_3 d) ZnO

4. Which of the following compound is most amphoteric?
a) SO_3 b) PbO_2 c) SeO_2 d) SiO_2

5. Which one of the following orders correctly represents the increasing acid strengths of the given acids?
a) $HOClO < H_5IO_6 < HOClO_3$ b) $H_5IO_6 < HBrO_4 < HOClO_3$
c) $HOClO_2 < HOClO_3 < HBrO_4$ d) $HBrO_4 < H_5IO_6 < HOClO_3$

6. An element belongs to group 16 and sixth period of periodic table. Its electronic configuration will be
a) [Kr] $4d^{10}\ 5s^2\ 5p^2$ b) [Ne] $3s^2\ 3p^4$ c) [Xe] $4f^{14}\ 5d^{10}\ 6s^2\ 6p^4$ d) [Kr] $3d^{10}4s^24p^2$

7. Which one of the following orders correctly represents the increasing acid strengths of the given acids?
a) $HOClO < HOCl < HOClO_3 < HOClO_2$ b) $HOCl < HOClO < HOClO_2 < HOClO_3$
c) $HOClO_2 < HOClO_3 < HOClO < HOCl$ d) $HClO < HO_2Cl < HOClO_3 < HOClO_2$

8. Which of the following statements is true?
a) H_3PO_3 is a stronger acid than H_2SO_3 b) HNO_3 is a stronger acid than HNO_2
c) $HClO_4$ is a weaker acid than $HClO_3$ d) H_2SO_4 is weaker than H_2SO_3

9. An element belongs to group 14 and fifth period of periodic table. Its electronic configuration will be…….
a) [Kr] $4d^{10}\ 5s^2\ 5p^2$ b) [Ne] $3s^2\ 3p^4$ c) [Ar] $3d^{10}\ 4s^2\ 4p^3$ d) [Xe] $4f^{14}5d^{10}6s^26p^2$

10. In XeF_2, XeF_4, XeF_6 molecules, the number of lone pairs of Xe are respectively……
a) 2,3 and 1 b) 1, 2 and 3 c) 3, 2 and 1 d) 2, 1and 3

11. An element belongs to Group 18 and fourth period of the periodic table. Its electronic configuration will be
a) [He]$2s^22p^3$ b) [Ne]$3s^23p^2$ c) [Ar]$3d^{10}4s^24p^6$ d) [Ne]$3s^23p^3$

12. Among the following substituted silanes the one which will give rise to cross linked silicone polymer on hydrolysis is
a) R_4Si b) $RSiCl_3$ c) R_3SiCl d) R_3SiCl_2

13. In which of the following compounds, nitrogen exhibits highest oxidation state…….
a) NH_2OH b) N_2H_4 c) N_3H d) NH_4OH

14. P_4O_{10} is anhydride of……
a) H_3PO_2 b) H_3PO_4 c) H_3PO_3 d) $H_4P_2O_7$

15. An element belongs to group 15 and fourth period of periodic table. Its electronic configuration will be
a) [He] $2s^2\ 2p^3$ b) [Ne] $3s^2\ 3p^4$ c) [Ar] $3d^{10}\ 4s^2\ 4p^3$ d) [Ne] $3s^2\ 3p^3$

16. An element belongs to group 17 and fifth period of periodic table. Its electronic configuration will be
a) [Ar]$3d^{10}\ 2s^2\ 2p^3$ b) [Ne] $3s^2\ 3p^5$ c) [Kr] $4d^{10}\ 5s^2\ 5p^5$ d) [Ar]$3d^{10}\ 2s^2\ 2p^4$

17. Which of the following is used to prepare oxygen diamagnetic molecule…….
a) ClO^- b) ClO_2^- c) ClO_3^- d) ClO_4^-

18. Which of the following is used to prepare oxygen paramagnetic molecule……..
a) ClO^- b) ClO_2^- c) ClO_3^- d) ClO_4^-

19. The compounds of silicon in oxidation number +2 are named
a) Silanes b) Silicides c) Silylanes d) Silicis

20. Which compound has the maximum number of lone pair of electrons on the central atom?
a) $[ClO_3]^-$ b) XeF_4 c) SF_4 d) $[I_3]^-$

21. The usual valence of hydrogen is:
a) -2 b) 0 c) +1 or sometimes -1 d) +2

22. Which isotope of hydrogen is radioactive?
a) protium b) deuterium c) tritium d) hydronium

23. What is the ortho: para ration of hydrogen at high temperature?
a) 1:2 b) 1:3 c) 2:1 d) 3:1

24. The valence of sodium in sodium peroxide is……
a) -1/2 b) 0 c) +1 d) +2

25. KO_2 is used in submarine to uptake……
a) Carbon dioxide b) Nitrogen c) Oxygen d) Carbon

26. LiH is an example for …….. hydrides
a) Ionic b) Covalent c) Metallic d) Intermediate

27. $Na[BH_4]$ is ……
a) Oxidizing agent b) Reducing agent c) Dehydration agent d) All the above

28. The hydrolysis of sodium carbide gives ……..
a) Methane b) Acetylene c) Propane d) Ethane

29. Lithium element is characterized by……..
a) low boiling and melting points b) Form super oxide c) its salts insoluble in organic solvent d) Form the complexes

30. MgC_2 is called ……
a) Mllyide b) Acetylide c) Methanide d) Allylide

31. Grignard reagent is ……..
a) RMgBr b) RCaCl c) RBaBr d) RSrCl

32. The most important magnesium complex is …..
a) Nioxime b) Chlorophyll c) Cupferron d) Oxine

33. Borax is ……..
a) $Na_2Al_4O_7.10H_2O$ b) $Na_2B_4O_7.10H_2O$ c) $Na_2Ca_4O_7.10H_2O$ d) $Na_2Ga_4O_7.10H_2O$

34. Boron forms many types of hydrides called …….
a) Boranes b) Borenes c) Barazole d) Borazole

35. The chemical formula of Borazole is…….
a) $B_5N_2H_6$ b) $B_4N_2H_6$ c) $B_3N_3H_6$ d) $B_2N_4H_6$

36. Aluminium is form …… by heating in air
a. Normal oxide b) Peroxide c) Super oxide d) Sesquioxide

37. Beryllium halide is characterized by …….
a) Covalent b) Hygroscopic c) Polymeric d) All the above

38. Hydrogen is used as …….. in space rockets.
a) Oxidizing agent b) Solar cell c) Fuel d) All the above

39. The hydrolysis of Beryllium carbide gives ……..
a) Methane b) ethylene c) Propane d) butane

40. Which type of hydrides is formed by transition elements?
a) Metallic b) Interstitial c) ionic d) Covalent

With Best Wishes,

Prof Dr. Ibrahim El-Sayed and Dr. Ayman Abdel Razik

Answer Sheet

1.	**C**
2.	**D**
3.	**B**
4.	**B**
5.	**B**
6.	**C**
7.	**B**
8.	**B**
9.	**A**
10.	**C**
11.	**C**
12.	**B**
13.	**C**
14.	**B**
15.	**C**
16.	**C**
17.	**A**
18.	**C**
19.	**C**
20.	**D**
21.	**C**
22.	**C**
23.	**D**
24.	**C**
25.	**A**
26.	**A**
27.	**B**
28.	**B**
29.	**D**
30.	**D**
31.	**A**
32.	**B**
33.	**B**
34.	**A**
35.	**C**
36.	**D**
37.	**D**
38.	**C**
39.	**A**
40.	**B**