



## CHEMISTRY

### BOOKS - UNITED BOOK HOUSE

### QUESTION PAPER 2016

#### Exercise

1. Number of total electrons in n-th orbit of an an atom is-

A.  $n$

B.  $n^2$

C.  $2n^2$

D.  $n - 1$

**Answer:**



Watch Video Solution

2. The bond order of  $He^{2+}$  ion is-

- A. 0
- B. 0.5
- C. 1
- D. 1.5

**Answer:**

 Watch Video Solution

3. Which is not paramagnetic of the following?

- A.  $N_2^+$
- B. CO
- C.  $O_2^-$

D. NO

**Answer:**



[Watch Video Solution](#)

4. Surface tension of water with increase of temprature may-

A. increase

B. decrease

C. remain same

D. shows irregular behaviour

**Answer:**



[Watch Video Solution](#)

5. Which one off the following relation shows spontaneity?

A.  $\Delta H = T\Delta S$

B.  $\Delta H > T\Delta S$

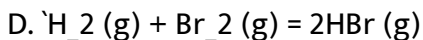
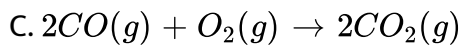
C.  $\Delta H < T\Delta S$

D.

**Answer:**  $\Delta H \neq T\Delta S$

 [Watch Video Solution](#)

6. For which of the following chemical equation has  $\Delta H = \Delta U$ ?



**Answer:**

 [Watch Video Solution](#)

7.  $\text{PCl}_5$  (g) harr  $\text{PCl}_3$  (g) +  $\text{Cl}_2$  (g). For this reaction at the chemical equilibrium condition Which of the following relation is correct?

A.  $K_p = K_c$

B.  $1K_c = K_p \times RT$

C.  $K_p = K_c \times RT$

D.  $K_p = \frac{1}{K_c}$

**Answer:**



[Watch Video Solution](#)

8. Cause of different colour of the flame in flame test is-

A. low ionisation potential

B. low melting point

C. malebility

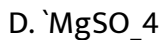
D. presence one electron in the outermost orbit.

**Answer:**



[Watch Video Solution](#)

9. Which of the following alkaline earth metal sulphate is most soluble in water?

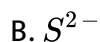


**Answer:**



[Watch Video Solution](#)

10. If in an organic compound both N and S elements are present, in Lassaigne's test which ion may be found?

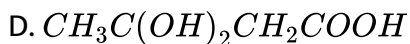
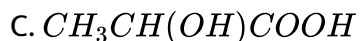
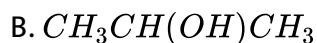
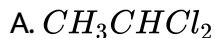


**Answer:**



[Watch Video Solution](#)

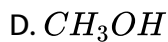
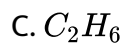
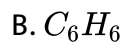
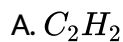
11. In which of the following compound Chiral C-atom is present?



**Answer:**

 [Watch Video Solution](#)

**12.** Which one is most acidic among the given compounds?



**Answer:**

 [Watch Video Solution](#)

**13.** The compound produce after the ozonolysis of benzene is-





B. Methanal

C. Ethanal

D. Hexanal

**Answer:**



[Watch Video Solution](#)

**14.** Which one of the following is not a Greenhouse gas?

A. C.F.C

B. Ammonia

C. Carbon dioxide

D. Methane.

**Answer:**



[Watch Video Solution](#)

15. How many electrons are present in 1 millimole of methane?

 [Watch Video Solution](#)

16. 2.7 gram of a metal after reaction with excess acid produces 3.36 litre of  $H_2$  at NTP. What is the equivalent weight of the metal?

 [Watch Video Solution](#)

17. Determine the position of an element in long form of periodic table if its electronic configuration is  $[ _{18}Ar]3d^{10}4s^2$ .

 [Watch Video Solution](#)

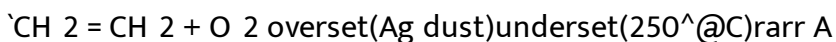
18. Mention the name and position of two elements one of which is most electronegative and other is most electropositive in periodic table.

 [Watch Video Solution](#)

19. Write the definition of entropy.

 [Watch Video Solution](#)

20. Write the name and structural formula of A in the following reaction



 [Watch Video Solution](#)

21. In two compounds of hydrogen and oxygen hydrogen present is 42.9% and 27.3% respectively. Show that the data support the law of multiple proportions.

 [Watch Video Solution](#)

22. Mention Heisenberg's uncertainty principle. Calculate the uncertainty of velocity of an electron which has an uncertainty in position of 1 Å.



[Watch Video Solution](#)

23. If the energy of first Bohr's orbit is - 13.58 eV of a hydrogen atom calculate the energy of third Bohr's orbit of that atom.



[Watch Video Solution](#)

24. Explain with reason :  $SnCl_2$  is a solid ionic compounds whereas  $SnCl_4$  is a covalent liquid.



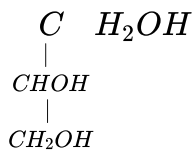
[Watch Video Solution](#)

25. Explain the phenomenon : "When phenolphthaline is added to aqueous solution of Borax the colour of the solution changed to pink which is again turn colourless if glycerol is added to it



[Watch Video Solution](#)

26. Name IUPAC name of the following :



Watch Video Solution

27. Name IUPAC name of the following :



Watch Video Solution

28. What is BOD? Write on harmful effect of it.



Watch Video Solution

29. State and explain with a suitable example the Hund's rule of maximum spin multiplicity.



Watch Video Solution

[Watch Video Solution](#)

30. Which one is more stable and why  $Fe^{2+}$  or  $Fe^{3+}$ ?

[Watch Video Solution](#)

31. Which of the following two elements have a diagonal relationship? Li, Be, Al and Si

[Watch Video Solution](#)

32. Between  $_{29}Cu$  and  $_{19}K$  which one has higher ionisation enthalpy and why?

[Watch Video Solution](#)

33. Why the electron affinity of chlorine is higher than that of fluorine?

[Watch Video Solution](#)

34. Arrange the following oxides according to their increase acidity-

$LiO$ ,  $BeO$ ,  $B_2O_3$  and  $CO_2$

 [Watch Video Solution](#)

35. Arrange the following compounds according to their increase of melting point :

$NaCl$ ,  $MgCl_2$  and  $AlCl_3$

 [Watch Video Solution](#)

36. Which one is more polar  $NF_3$  or  $NH_3$ ? Explain

 [Watch Video Solution](#)

37. Explain :

$NCl_5$  does not exist but  $PCl_5$  exists.

 [Watch Video Solution](#)

38. How would you explain  $BaO$  is soluble but  $BaSO_4$  is insoluble in water.

 [Watch Video Solution](#)

39. Why the falling liquid drop is spherical in nature?

 [Watch Video Solution](#)

40. In a 10 litre volumetric flask contains 1 gram He and 6.4 gram  $O_2$  at  $27^\circ C$  temperature. If that total pressure of the mixture is 1.107 atmosphere then what is the partial pressure of He and  $O_2$ ?



 [Watch Video Solution](#)

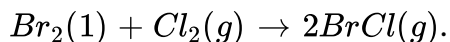
41. If the standard formation enthalpy of  $CS_2$ ,  $CO_2$  and  $SO_2$  are  $117 \text{ kJ mol}^{-1}$ ,  $-393 \text{ kJ mol}^{-1}$  and  $-297 \text{ kJ mol}^{-1}$  respectively, calculate  $\Delta H$  for the reaction  $CS_2 + 3O_2 \rightarrow CO_2 + 2SO_2$ .

 [Watch Video Solution](#)

42. Write Hess's law.

 [Watch Video Solution](#)

43. Judge the spontaneity of the following reaction at 298 K temperature and at a particular pressure:



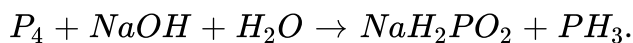
Given :  $\Delta H = 29.3 \text{ kJ mol}^{-1}$  and  $\Delta S = 104.1 \text{ JK}^{-1} \text{ mol}^{-1}$

 [Watch Video Solution](#)

44. Mention the oxidation number of two chlorine atoms in  $\text{Ca}(\text{OCl})\text{Cl}$  molecule.

 [Watch Video Solution](#)

45. Balance by oxidation number method

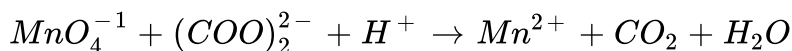


 [Watch Video Solution](#)

46. What is the oxidation number of N atom in  $\text{NaN}_3$  molecule?

 [Watch Video Solution](#)

47. Balance the following chemical equation by ion electron method :



 [Watch Video Solution](#)

48. A water sample contains 1 millimole of  $\text{Mg}^{2+}$  ion per litre. Calculate the hardness of water sample in ppm unit.

 [Watch Video Solution](#)

49. What do you understand by "Trailing of Mercury?"

 [Watch Video Solution](#)

50. What do most of the lithium salts present as hydrate one?

 [Watch Video Solution](#)

51. Which of the alkaline earth metal hydroxides are amphoteric in nature.

 [Watch Video Solution](#)

52. What is hydrohlith?

 [Watch Video Solution](#)

53. Why does  $BF_3$  behave as Lewis acid?

 [Watch Video Solution](#)

54. Write with equation what happens when? Water is added to calcium carbide.

 [Watch Video Solution](#)

55. Write with equation what happens when? Enthyl alcohol is heated with concentrate  $H_2SO_4$  at  $180^\circ C$  temperature.

 [Watch Video Solution](#)

56. By which property the stability of  $(CH_3)_3C^+$  ion could be explained?

 [Watch Video Solution](#)

57. Why methane could not be prepared by Wurtz reaction?

 [Watch Video Solution](#)

58. State law of mass action.

 [Watch Video Solution](#)

59. For the reaction  $N_2 + 3H_2 \leftrightarrow \frac{1}{2}N_2 + \frac{3}{2}H_2$  is  $K_2$ . Then calculate the relation between  $K_1$  and  $K_2$

 [Watch Video Solution](#)

60. Calculate the pH of 0.01 M  $\text{CH}_3\text{COOH}$  at  $25^\circ\text{C}$ . (Given dissociation constant of  $\text{CH}_3\text{COOH} = 1.75 \times 10^{-5}$ )

 [Watch Video Solution](#)

61. What is a buffer solution? Give one example of an acidic buffer. In which case of an acidic buffer  $\text{pH} = \text{pK}_a$ .

 [Watch Video Solution](#)

62. Why is the dissociation rate of  $\text{H}_2\text{S}$  decreased in the presence of  $\text{HCl}$  in an aqueous solution?

 [Watch Video Solution](#)

63. What is inorganic benzene? How is it prepared? State the conditions and the equation?

 [Watch Video Solution](#)

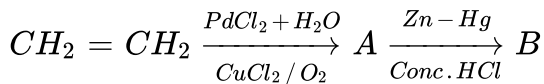
64. Dimond is non conductor of electricity but Graphatite is a conductor of electricity explain.

 [Watch Video Solution](#)

65. Why is Friedel-Crafts acylation of benzene is favourable than that of Friedel-Crafts alkylation ?

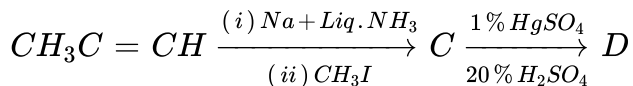
 [Watch Video Solution](#)

66. Write the structural formula of the compounds of A to F :



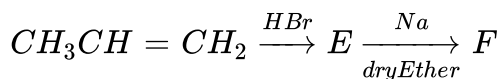
 [Watch Video Solution](#)

67. Write the structural formula of the compounds of A to F :



 [Watch Video Solution](#)

68. Write the structural formula of the compounds of A to F :



 [Watch Video Solution](#)

69. Do the following conversions:

Ethanol from Ethelene

 [Watch Video Solution](#)

70. Do the following conversions:

Acetelene from Methane





[Watch Video Solution](#)

**71.** Do the following conversions:

Toluene from Benzene.



[Watch Video Solution](#)