



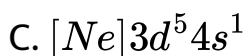
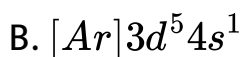
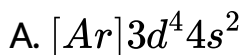
## CHEMISTRY

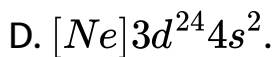
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### MODEL QUESTION PAPER 11

#### Exercise

1. Correct ground state electronic configuraton of Cr is:



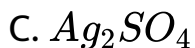
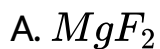


**Answer:**



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2. Which one is coloured :



**Answer:**



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3. Which one is tetrahedral:



**Answer:**



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4. Which one is not applicable for reversible process:

- A. It is slow
- B. It occurs all at a sudden
- C. Maintain thermodynamic equilibrium
- D. Can be reversed to the initial stage properly

**Answer:**



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**5. Spontaneous process is:**

- A. Irreversible
- B. Free energy change negative
- C. entropy increases

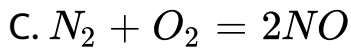
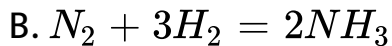
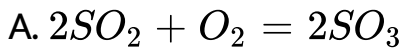
D. all applicable

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**6.** Which one, of the following equilibrium is independent of pressure:

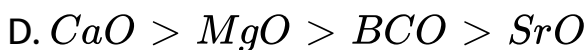
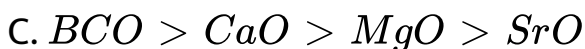
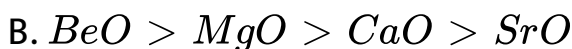
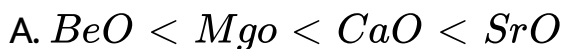


**Answer:**



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7. Correct order of basicity of the oxides:

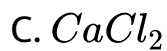
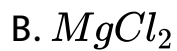
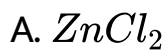


Answer:



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8. Which one is a component of sorel Cement:

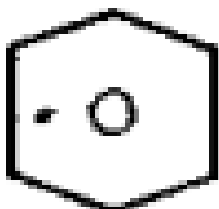


**Answer:**

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9. Sulphonation is easier for:

A.



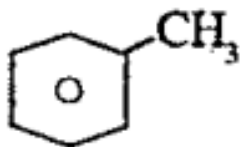
B.



C.



D.



**Answer:**

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10. Chiral Carbon refers to:

- A. Isomer having mirror image relationship
- B. Having Centre of symmetry
- C. Having plane of Symmetry
- D. Having geometric isomer

**Answer:**



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11. NO of possible isomer for the compound  $C_7H_8O$ :

- A. 2

B. 5

C. 3

D. 4

**Answer:**



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**12.** Boiling point of branched alkanes compare to normal alkane—

A. Higher

B. lower

C. equal

D. not related

**Answer:**



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**13.** Beagon contains Compounds which is—

A. Chlorinated

B. Fluorinated

C. Phosphate

D. Carbamate group

**Answer:**



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**14.** What is accuracy?

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**15.** What do you mean by reliability?

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**16.** In which block element lanthanoid Contraction observe?

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17. Give an example of inert pair effect?



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18. What is the change of free energy in irreversible process?



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19. What is light Oil?



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20. 1.25 gm of a metal process 62.4 ml  $H_2$  at NTP,  
Calculate the equivalent. weight of the metal.

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21. Give the difference between orbit and orbital.

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22. What happens when:CuO is heated with  $B_2O_3$  in  
(Oxidation flame)

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23.  $Fe_2O_3$  is heated with  $B_2O_3$  in (reducing flame)

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24. Write the structural formula for the following compound: 1, 2, 3 - trimethyl Cyclopentane.

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25. Write the structural formula for the following compound: 4 - Chloro - 2 - Pentanone.

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26. What is stone Cancer.

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27. Calculate the energy of 1 Millimole of photon having wavelength 405nm

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28. Calculate the radius of the 3<sup>rd</sup> orbit in which electron has the velocity  $1 \times 10^8 \text{ cm/sec}$ .

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29. Arrange the following oxides as per their increasing order of acidic nature.  $B_2O_3$ ,  $CO_2$ ,  $F_2O$  &  $N_2O_5$  State modern periodic law.

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30. Arrange the element as per increasing electronegativity O, Te, Se, S. Name a coinage metal.

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31. Why the boiling point of  $NH_3$  is higher than that of  $PH_3$ ? Give an example of intermolecular hydrogen bonding?

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32. Why the bond length of  $BF_3$  is less than that of  $BF_4$ ?

Find the hybridization of Cl in  $ClO_4^+$ .

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33. Calculate the r.m.s. velocities of  $CO_2$  at  $27^\circ C$ . Show

that 
$$C_{rms} = \sqrt{2 \frac{E}{M}}$$

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34. Why the rain drops are spherical? Why the surface-tension of pb is higher than that of water.-

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35. Calculate the enthalpy for the reaction at  $27^{\circ}\text{C}$ .

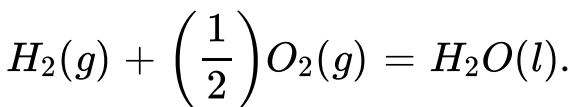


$$\Delta H^{\circ}(\text{C} - \text{C}) = 350 \text{ kJ mol}^{-1} \quad H^{\circ}(\text{C} - \text{H}) = 410 \text{ kJ mol}^{-1},$$

$$\Delta H(\text{C} = \text{C}) = 600 \text{ kJ mol}^{-1} \quad -\Delta H^{\circ}(\text{C}-\text{Cl}) = 340^{\circ} \text{ kJ mol}^{-1}, \quad \Delta H^{\circ}(\text{H}-\text{Cl}) = 430 \text{ kJ mol}^{-1}.$$

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36. Calculate  $\Delta H - \Delta U$  at  $25^{\circ}\text{C}$  for the reaction:



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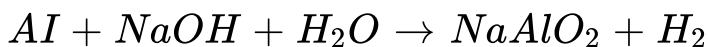
37. What is the oxidation number of Mn in  $K_2MnO_4$ ?

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38. Calculate the oxidation no of \* marked atom: \*Fe  
(CO)<sub>5</sub>\*

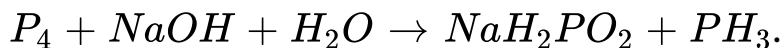
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39. Balance the equation by oxidation no method :



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40. Balance by oxidation number method



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41. What do you mean by Interstitial and non stoichiometric hydrides? Give example.

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42. Why  $K_2CO_3$  can't be prepared by solvey process?

What is backing soda?

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**43.** What is carbene? How many types of carbene present?

Give example.

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**44.**  $2AB_2(g) = 2AB(g) + B_2(g)$  if the degree of dissociation and total pressure be  $x$  and  $P$  respectively them establish the equation for  $K_p$ . Discuss the effect of temperature and pressure for the physical equilibrium.



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

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46. Write the equation what happens when Borax is heated with ethanol and conc.  $\text{H}_2\text{SO}_4$  and the vapour comes out is held to the flame of Bunsen burner.

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47. Write the equation what happens when a mixture of diborane and ammonia is strongly heated.

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48. State reason :Why born nitrides is called inorganic graphite..

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49. State reason : $BH_3$  forms dimer.

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50. Give example of 3-centre-2-electron bond.

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**51.** How would you differ chemically: Ethene & Ethyne.

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**52.** How would you differ chemically: 1 - Butene & 2 - butene.

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**53.** Write short note on: Friedel Craft alkylation reaction.

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**54.** Write short note on: Aromaticity.



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