



# CHEMISTRY

## BOOKS - OMEGA PUBLICATION

### SAMPLE QUESTION PAPER -I (PUNJAB)

#### Question

1. Functional group of monocarboxylic acids is

: - O H, - C H O, - C O O H. - C O O R

A.  $-OH$

B.  $-CHO$

C.  $-COOH$

D.  $-COOR$

**Answer:**



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2. Define critical temperature.



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3. Alkali metals are soft. Why ?



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4. Derive van der Waals' equation of State for n moles of gas.'



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5. What is Avogadro's number ?



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6. What is screening effect ?

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7. Ozone has bent structure.

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8. Give the IUPAC names of  $:(CH_3)_3C - OH$ .



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9. Define Ionic product of water. What is the effect of temperature on it?



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10. Which is a stronger Lewis acid and why ?

$BF_3$  OR  $BCl_3$



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11. Define COD and BOD.



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12. Give reasons :

Cone.  $HNO_3$  can be transported in aluminium container



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13. Dettol is a mixture of :



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14.  $CCl_4$  is not hydrolysed but  $SiCl_4$  can be hydrolysed with water. Why ?



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15. Give differences between electron affinity and electronegativity.



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**16.** Explain the action of acidic buffer.



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**17.** What is the difference between e.m.f. and potential difference?



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**18.** State Hess's law. Give two applications of it.



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**19.** Explain the deviations of real gases from ideal gases.



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**20.** Explain Dalton's law of partial pressures and Charles' law.



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**21.** What are electrophiles and nucleophiles?

Give two examples in each case.



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**22.** Describe permutit process for softening hard water.



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**23.** Give the theory of manufacture of washing soda by Solvay's process.



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**24.** Alkali metals give blue solutions in ammonia. Why?



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**25.** Calculate the volume of 4.4 g of  $CO_2$  at S.T.P.



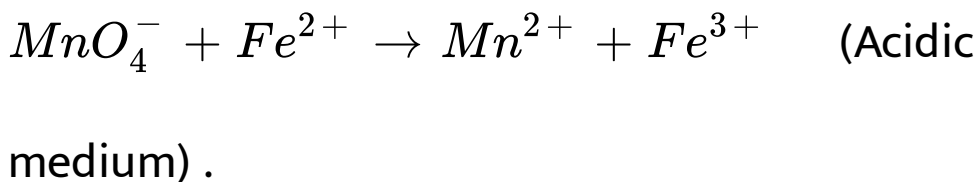
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**26.** Define empirical formula and molecular formula ? How are they related to each other ?



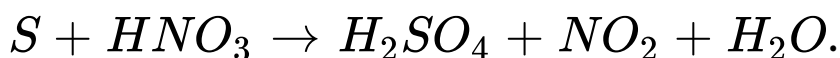
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27. Balance the following equations by oxidation no. method.



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28. Balance the following equations by oxidation no. method.



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**29.** Define oxidising agent and reducing agent on the basis of oxidation number concept.



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**30.** Distinguish between intermolecular and intramolecular H-bonds.



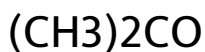
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31. Distinguish between  $\sigma$  and  $\pi$  orbitals.



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32. What are hybridisation states of each carbon atom in the following compound :



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**33.** Explain the shape of  $C_2H_4$  molecule on the basis of hybridisation.



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**34.** Describe orbital picture of benzene.



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**35.** How will you convert benzene into

(a) Chlorobenzene



(b) Nitrobenzene

(c) Benzene sulphonic acid



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**36.** Give the laboratory preparation of ethene.



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**37.** Define peroxide effect .



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**38.** Ethyne is acidic in nature. Why ?



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**39.** Calculate  $n$ ,  $l$ ,  $m$  and  $s$  for  $4f$  and  $3d$  electrons.



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**40.** Explain Heisenberg's uncertainty principle.  
Give its significance.



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**41.** How Bohar's model differ from Rutherford's Model of atom.



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