NEET CHEMISTRY 2018-19 - Chennai

Periodic Test : 12 **Test ID :** 024

Number of questions: 150 **Test date: 01.04.2019**

Name: _____ **Time**: 3HRS

ID No: _____

Negative Marks : 4 marks for correct attempt & 1 mark deducted for every wrong attempt.

1. It is because of inability of ns^2 electrons of the valence shell to participate in bonding that
   (a) Sn^{2+} is oxidising while Pb^{4+} is Reducing
   (b) Sn^{2+} and Pb^{2+} are both oxidising and reducing
   (c) Sn^{4+} is reducing while Pb^{4+} is oxidising
   (d) Sn^{2+} is reducing while Pb^{4+} is oxidising.

2. Boric acid is an acid because its molecule
   (a) Contains replaceable H^+ ion
   (b) Gives up a proton
   (c) Accepts OH^+ from water releasing proton
   (d) Combines with proton from water molecule.

3. AlF_3 is soluble in HF only in presence of KF; it is due to the formation of
   (a) $K_3[AlF_3H_3]$
   (b) $K_3[AlF_3]$
   (c) AIH_3
   (d) $K[AlF_3H]$

4. The stability of +1 oxidation state among Al. Ga, In and Tl increases in the sequence
   (a) Al < Ga < In <Tl
   (b) Tl < In < Ga < Al
   (c) In < Tl < Ga < Al
   (d) Ga < In <Al < Tl

5. Which of the following structure is similar to graphite?
   (a) B_4C
   (b) B_2H_6
   (c) BN
   (d) B

6. Which of these is not a monomer for a high molecular mass silicone polymer?
   (a) Me_3SiCl
   (b) $PhSiCl_3$
   (c) $MeSiC1_3$
   (d) Me_2SiCl_2

7. The basic structural unit of silicates is
   (a) SiO_3^{2-}
   (b) SiO_4^{2-}
   (c) SiO^-
   (d) SiO_4^{4-}

8. Which statement is wrong?
   (a) Beryl is an example of cyclic silicate
   (b) Mg_2SiO_4 is orthosilicate.
   (c) Basic structural unit in silicates is the SiO_4 tetrahedron.
   (d) Feldspars are not aluminosilicates

9. Name the two type of the structure of silicate in which one oxygen atom of $[SiO_4]^{4-}$ is shared?
   (a) Linear chain silicate
   (b) Sheet silicate
   (c) Pyrosilicate
   (d) Three dimensional

10. Which of the following statements is incorrect?
   (a) Pure sodium metal dissolves in liquid ammonia to give blue solution.
   (b) NaOH reacts with glass to give sodium silicate
   (c) Aluminum reacts with excess NaOH to give $Al(OH)_3$.
   (d) $NaHCO_3$ on heating gives Na_2CO_3.

11. Which of the following oxide is amphoteric
   (a) SnO_2
   (b) CaO
   (c) SiO_2
   (d) CO_2

12. Which one of the following molecular hydrides acts as a Lewis acid?
   (a) NH_3
   (b) H_2O
   (c) B_2H_6
   (d) CH_4

13. The tendency of BF3, BC13 and BBr3 to behave as Lewis acid decreases in the sequence
   (a) $BC1_3 > BF_3 > BBr_3$
   (b) $BBr_3, > BC1_3 > BF_3$
   (c) $BBr_3 > BF_3 > BC1_3$
   (d) $BF_3 > BC1_3 > BBr_3$

14. The straight chain polymer is formed by
   (a) Hydrolysis of CH_3SiC1_3 followed by condensation polymerisation
   (b) Hydrolysis of $(CII_3)_4Si$ by addition polymerisation
   (c) Hydrolysis of $(CH3)_2SiC1_2$ followed by condensation polymerisation
   (d) Hydrolysis of $(CH_3)_3SiC1$ followed by condensation polymerisation

15. Which of the following oxidation states are the most characteristic for lead and tin respectively?
   (a) +2, +4
   (b) +4, +4
   (c) +2, +2
   (d) +4, +2.

16. Which of the following anions is present in the chain structure of silicates?
    (a) $(Si_2O_5^{2})_n$
    (b) $(SiO_3^{2})_n$
    (c) SiO_4^{4-}
    (d) $Si_2O_7^{6-}$

17. Which of the following. is the most basic oxide?
    (a) SeO_2
    (b) $A1_2O_3$
    (c) Sb_2O_3
    (d) Bi_2O_3

18. The correct order regarding the electro negativity of hybrid orbital of carbon is
    (a) $sp < sp_2 < sp_3$
    (b) $sp > sp_2 < sp_3$
    (c) $sp > sp_2 > sp_3$
    (d) $sp < sp_2 > sp_3$

19. Which one of the following statements about the zeolite is false?
    (a) They are used as cation exchangers.
    (b) They have open structure which enables them to take up small molecules.
    (c) Zeolites are aluminosilicates having three dimensional network.
    (d) Some of the SiO_4^{4-} units are replaced by AlO_4^{5-} and AlO_6^{9-} it ions in zeolites.

20. Which one of the following compounds is not a protonic acid?
    (a) $B(OH)_3$
    (b) $PO(OH)_3$
    (c) $SO(OH)_2$
    (d) $SO_2(OH)_2$

21. Which compound is electron deficient?
    (a) $BeCl_2$
    (b) BCl_3
    (c) $CC1_4$
    (d) $PC1_5$

22. Which of the following does not show electrical condition
    (a) Diamond
    (b) Graphite
    (c) Potassium
    (d) Sodium

23. The type of hybridisation of boron in diborane is
    (a) sp^3-hybridisation
    (b) sp^2-hybridisation
    (c) sp-hybridisation
    (d) sp^3d^2-hybridisation

24. Percentage of lead in lead pencil is
    (a) 80
    (b) 20
    (c) zero
    (d) 70

25. In graphite, electrons are
    (a) localised on each C-atom
    (b) localised on every third C-atom
    (c) Spread out between the structure
    (d) present in anti-bonding orbital

26. Boron compounds behave as Lewis acids, because of their
    (a) Ionisation property
    (b) electron deficient nature
    (c) acidic nature
    (d) Covalent nature.

27. Aluminum (III) chloride forms a dimer because aluminum
    (a) belongs to 3^{rd} group
    (b) can have higher coordination number
    (c) cannot form a trimer
    (d) has high ionization energy

28. The BCl_3 is a planar molecule whereas NCl_3 is pyramidal because
    (a) nitrogen atom smaller than boron atom
    (b) BCl_3 has no lone pair but NCl_3 has a lone pair of electrons
    (c) B - Cl bond is more polar than N - CI bond
    (d) NCl pond is more covalent than B - CI bond

29. Method used for obtaining highly pure silicon, used as a semiconductor material, is
    (a) crystallization
    (b) zone refining
    (c) oxidation
    (d) electro-chemical

30. Carbon and silicon belong to (IV) group. The maximum coordination number of carbon in commonly occurring compounds is 4, whereas that of silicon is 6.This is due to
    (a) availability of low lying d-orbital's in silicon
    (b) large size of silicon
    (c) more electropositive nature of silicon
    (d) both (b) and (c).

31. Which of the following statements about H_3BO_3 is not correct?
    (a) It has a layer structure in which planar BO_3 units are joined by hydrogen bonds.
    (b) It does not act as proton donor but acts as a Lewis acid by accepting hydroxyl ion.
    (c) It is a strong tribasic acid.
    (d) It is prepared by acidifying an aqueous solution of borax.

32. Na^+, Mg^{2+}, $A1^{3+}$ and Si^{4+} are isoelectronic their ionic size will follow the order
    (a) $Na^+ > Mg^{2+} < Al^{3+} < Si^{4+}$
    (b) $Na^+ < Mg^{2+} < Al^{3+} < Si^{4+}$
    (c) $Na^+ > Mg^{2+} > Al^{3+} > Si^{4+}$
    (d) $Na^+ < Mg^{2+} > A1^{3+} < Si4+$

33. Which of the following types of forces bind together the carbon atoms in diamond?
    (a) Ionic
    (b) Covalent
    (c) Dipolar
    (d) van der Waals

34. Water gas is produced by
    (a) passing steam through a red hot coke bed
    (b) saturating hydrogen with moisture
    (c) mixing oxygen and hydrogen in the ratio of 1:2
    (d) heating a mixture of CO2, and CH4 in petroleum refineries

35. Which of the following is an insulator?
    (a) Graphite
    (b) Aluminum
    (c) Diamond
    (d) Silicon

36. Glass is a
    (a) liquid
    (b) solid
    (c) super cooled liquid
    (d) Transparent organic polymer.

37. The ability of a substance to assume two or more crystalline structures is called
    (a) isomerism
    (b) polymorphism
    (c) isomorphism
    (d) amorphistn

38. The substance used as a smoke screen in warfare is
    (a) $SiCl_4$
    (b) PH_3
    (c) $PC1_5$
    (d) acetylene

39. The most suitable method of 1:1 separation of mixture of ortho and paran-itrophenols

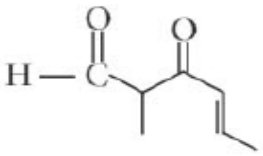
(a) chromatography

(b) crystallisation

(c) steam distillation

(d) sublimation

40. The IUPAC name of the compound



is _____.

(a) 5-formylhe4x-2-en-3-one

(b) 5 –Methy1-4-oxohex-2-en-5-al

(c) 3-keto-2-methylhex-5-enal

(d) 3-keto-2--methylhex-4-enal

41. The correct statement regarding electrophile is

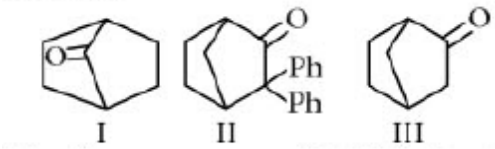
(a) electrophile is a negatively charged species and can form a bond hy accepting a pair of electrons from another electrophile

(b) electrophiles are generally neutral species and can form a bond by accepting a pair of electrons from a nucleophile

(c) electrophile can be either neutral or positively charged species and can form a bond by accepting a pair of electrons from a nucleophile

(d) electrophile is a negatively charged species and can form a bond by accepting a pair of electrons from a nucleophile.

42. Which among the given molecules can exhibit tautomerism?



(a) III only

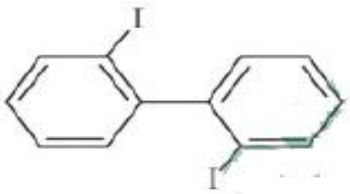
(b) Both I and III

(c) Both 1 and II

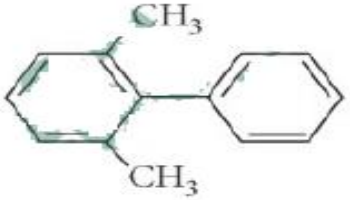
(d) Both II and III

43. Which of the following statements is correct?

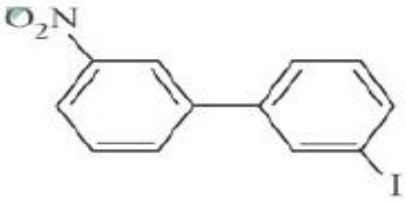
(a)



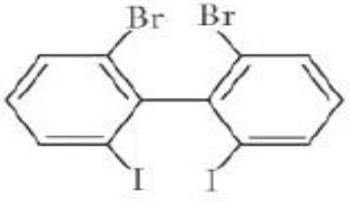
(b)



(c)

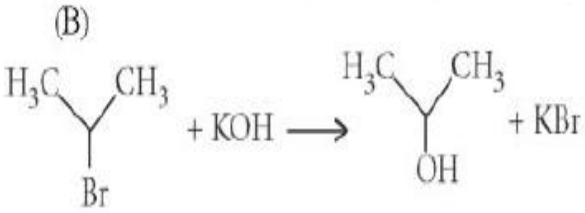


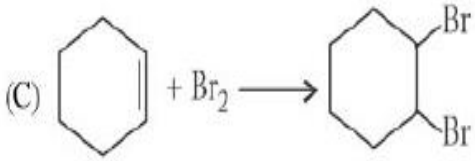
(d)



44. For the following reactions

(A) $CH_3CH_2CH_2Br + KOH \rightarrow CH_3CH=CH_2 + KBr + H_2O$

(B) 

(C) 

Which of the following statements is correct?

(a) (A) is elimination, (B) and (C) are substitution reactions.

(b) (A) is substitution, (B) and (C) are addition reactions,

(c) (A) and (B) is elimination,(C) are addition reactions

(d) (A) is elimination, (B) is substitution and (C) is addition reactions.

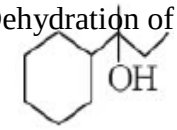
45. Which of the following statements is not correct for a nucleophile?

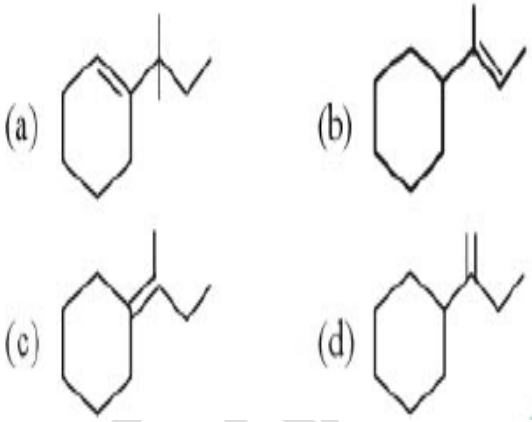
(a) Ammonia is a nucleophile.

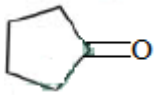
(b) Nucleophiles attack low e^- density sites.

(c) Nucleophiles are not electron seeking.

(d) Nucleophile is a Lewis acid.

46. Which of the following is not the product of Dehydration of 



47. Treatment of cyclopentanone  with methyllithium gives which of the Following species?

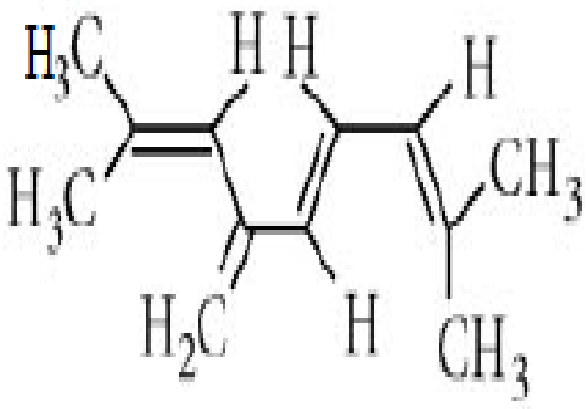
(a) Cyclopentanonyl radical

(b) Cyclopentanony1 biradical

(c) Cyclopentanonv1 anion

(d) Cyclopentanonvl cation

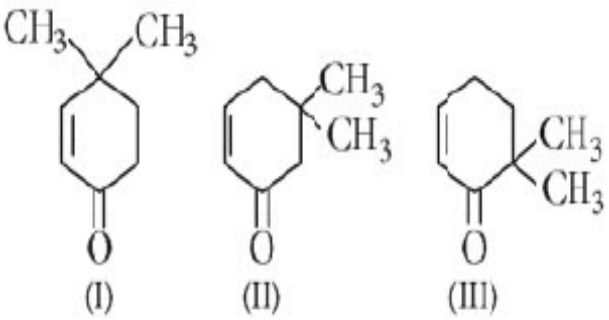
48. The total number of π bond electrons in the following structure is



(a) 12
(b) 16
(c) 4
(d) 8

49. Which of the following species contains equal number of σ- and π-bonds?
(a) $(CN)_2$
(b) $CH_2(CN)_2$
(c) HCO_3
(d) XeO_3

50. Given



Which of the given compounds can exhibit tautomerism?
(a) II and III
(b) I,II and III
(c) I and II
(d) I and III