Ismail Yusuf College, Jogeshwari (E) Mumbai – 60

M . Sc . Semister IV - Inorganic Chemistry

Paper II-Organometallics and Main Group chemistry (92878)

Multiple choice questions

1) Alkene metathesis known for in good result ----------

a) Fischer carbene

b) Schrock carbene

c) Schrock carbine

d) Fischer carbene

2) How many M-M bonds are present in [Cp $Mo(CO_3)]_2$?

a) 1

b) 2

c) 0

d) 4

3) A fischer- type carbene contains all but one of the following. Which is the odd one out?

a) M=C bond

b) A nucleophilic caebene centre

c) A low oxidation state metal centre

d) A heteroatom (eg.O) attached to the metal-bound C.

4) An organometallic bond is defined as the bond between

a) a metal and a nonmetal

b) a carbon and a metal

c) a carbon and a nonmetal

d) a carbon and a metalloid

5) Which of the following is correct for grubb's catalyst?

a) Rh with +4 oxidation state.

b) Ru with +4 oxidation state

c) Rh with +3 oxidation state

d) Ru with +3 oxidation state

6) The correct geometry of $[Rh_6C(CO)_{15}]_{2-}$ is ----------

a) octahedron

b) pentagonal pyramid

c) trigonal prism

d) monocapped square pyramid

7) Where is the intermediate theory used----------

a) Homogeneous components.

b) Heterogeneous components.

c) miscible components.

d) immicible components.

8) The Grubbs catalyst is----------

a) used in carbon- carbon coupling reactions

b) used in alkene metathesis reactions

c) used in carbene formation

d) used with palladium as a catalyst

9) A key feature of the Fischer- Tropsch process is----------

a) hydrocarbon formation

b) alkene hydrogenation

c) alkene polymerization

d) hydroformylation

10) Typical Grubb's catalysts contain----------

a) Ru; a carbene ligand

b) Rh; a carbene ligand

c) Ru; a alkene ligand

d) Mo; a carbene ligand

11) Ziegler-Natta catalysis is associated with----------

a) alkene hydrogenation

b) alkene polymerization

c) hydroformylation of alkenes

d) alkyne metathesis

12) Nickel is good at----------

a) adsorption only.

b) chemisorption

c) desorption

d) adsorption and desorption

13) The total number of Cu-O bonds present in the crystalline copper(II) acetate monohyhydrate is----------

a) 10

b) 6

c) 8

d) 4

14) Which is the common ligand in organometallic cluster compound?

a) carbon monoxide

b) carbon dioxide

c) carbon trioxide

d) none of the above

15) The number of 3c-2e bonds present in $Al(BH_4)_3$ is---------

a) 4

b) 3

c) 6

d) 0

16) A sodalite cage in zeolites is ----------

a) a truncated tetrahedron

b) an isosahedron

c) a truncated octahedron

d) a dodecahedron

17) The number of valence electrons provided by $[Ru(CO)_3]$ fragment towards cluster bonding is----------

a) 1

b) 14

c) 6

d) 2

18) Borax bead test is not given by----------

a) An aluminium salt

b) A cobalt salt

c) A copper salt

d) A nickel salt

19) Which of the following is an example of cyclic silicate?

a) spodumene

b) olivine

c) beryl

d) asbestos

20) The ratio of 'Si' to 'O' in phyllosilicates is----------

a) 2:4

b) 1:4

c) 2:5

d) 1:5

21) Which of the following mineral of lithium has pyroxene type silicates structure?

a) lepidolite

b) spodumene

c) petalite

d) none

22) Which of the following is not an orthosilicates?

a) phenacite

b) zircone

c) olivine

d) beryl

23) ---------- polymer is prepared by free radical polymerization.

a) polyester

b) polyamide

c) polystyrene

d) polyurethane

24) Tacticity of polymer depends on ----------

a) crystalinity

b) surface pattern

c) element composition

d) chiral carbon

25) ---------- is the example of co polymer

a) ABS

b) polypropylene

c) nylon

d) none of the above