Bharatiya Vidya Bhavan's Shri Ishvarlal L. P. Arts-Science & J. Shah Commerce College, Dakor Online Internal Examination, October - 2020 B.Sc. Chemistry(Semester – III) Paper Code : US03CCHE21 Paper Name : Inorganic Chemistry

Date :05/10/2020 Time : 12:00 to 12:30 pm

Total Marks: 30

* Required

1. Full Name *

2. EMAIL ID

3. Mobile No. *

4. Roll No. *

5. Class *

Mark only one oval.

- B.Sc.
- B.Com.
- B.A.

6. Semester *

Mark only one oval.

- I
- III
- V

Give the answer of the following multiple choice questions. [attempt all] [30] નીચેના બધાજ પ્રશ્નોના જવાબ માટે સાચો વિકલ્પ પસંદ કરો.

7. 1.Which of the following square planar complexes exist in cis and trans isomeric form? નીચેનાં માથી કયો સમતલીય ચોરસ સંકિર્ણ સીસ અને ટ્રાંન્સ સમઘટકો ધરાવે છે.?

Mark only one oval.

- Ma2b2
- Ma4
- Ma3b
- Mabcd

8. 2.Ni(CO)4 has ..... type of hybridization. Ni(CO)4 ..... પ્રકારનું સંકરણ ધરાવે છે.

Mark only one oval.

- dsp2
- sp3
- sp3d2
- d2sp3

9. 3.V.B.Theory given by..... સંયોજકતા બંધનવાદ આપનાર.....

Mark only one oval.

- H.Brethe
- L.Pauling
- Van Vleck
- none of these.

10. 4.Which type of bond formation between metal and ligand in VBT.? સંયોજકતા બંધનવાદમાં ધાતું અને લિગાન્ડ વચ્ચે કયાં પ્રકારનો બંધ હોય છે. ?

Mark only one oval.

- coordination bond
- covalent bond
- ionic bond
- hydrogen bond

11. 5.The arrangement of non-bonding electrons take place according to.....in VBT.
સંયોજકતા બંધનવાદમાં અબંધકારક ઈલેકટ્રોનની ગોઠવણી ..... નિયમના આધારે થાય છે.

Mark only one oval.

- Pauling's rule
- Aufbau's rule
- Hund's rule
- none of these.

12. 6.The octahedral complexes having d2sp3 hybridization are called..... d2sp3 સંકરણ ધરાવતા અષ્ટફલકીય સંકિર્ણને.....કહેવાય.

Mark only one oval.

- outer orbital complex
- inner orbital complex
- upper orbital complex
- none of these.

13. 7.How many unpaired electrons present in[Fe(CN)6]-4complex.? [Fe(CN)6]-4 સંકિર્ણ આયર્નમાં અયુગ્મિત ઈલેકટ્રોનની સંખ્યા કેટલી છે.?

Mark only one oval.

- 1
- 2
- 3
- 0

14. 8.Megnetic properties of [FeF6]-3complex is.....[FeF6]-3સંકિર્ણ આયર્નનો ચુંબકીય ગુણધર્મ.....છે.

Mark only one oval.

- paramagnetic
- diamagnetic
- ferrimagnetic
- ferromagnetic

15. 9.Four coordinated complex ion has .....type geometry. ચાર સવર્ગઆંક સંકિર્ણ આયર્ન.....પ્રકારની ભૂમિતિ ધરાવે છે.

Mark only one oval.

- octahedral
- trigonal planar
- tetrahedral
- non of these

16. 10. [Ni(CN)4]-2 has ..... type of hybridization. [Ni(CN)4]-2 ..... પ્રકારનું સંકરણ ધરાવે છે.

Mark only one oval.

- dsp2
- sp3
- sp3d2
- d2sp3

17. 11.Which of the following is limitations of VBT? નીચેના માંથી સંયોજકતા બંધનવાદની મર્યાદા કઇ છે.?

Mark only one oval.

- does not give colour of complex.
- geometry of complex
- hybridization of complex
- none of these

18. 12.Which type of isomerism is shown by [Cr(gly)3] ?[Cr(gly)3] કયાં પ્રકારની સમઘટકતા ધરાવે છે.?

Mark only one oval.

- optical only
- geometrical only
- both geometrical and optical
- none of these

19. 13.Which of the following methods used to distinguish cis and trans isomers.? નીચેના માંથી કઇ પધ્ધતિનો ઉપયોગ કરીને સીસ અને ટ્રાંસ સમઘટકોને જુદાં પાડી શકાય છે.?

Mark only one oval.

- Grinberg's method
- Kurnakov test
- X-ray crystal method
- all of these.

20. 14.The number of possible isomers of square planar complex [Pt Cl Br I (NH3)] would be..... [Pt Cl Br I (NH3)] સમતલીય ચોરસ સંકિર્ણનાં શકય સમઘટકોની સંખ્યા.....

Mark only one oval.

- 2
- 6
- 3
- 4

21. 15. How many hydrate isomers form by CrCl3.6H2O.? CrCl3.6H2O કેટલાં હાઈડ્રેટેડ સમઘટકો બનાવે છે.?

Mark only one oval.

- 3
- 6
- 2
- 4

22. 16. The number of bridge carbonyl present in [Co2(CO)8]

Mark only one oval.

- 3
- 1
- 2
- 4

23. 17. The number of bridge carbonyl present in [Fe2(CO)9].....

Mark only one oval.

- 3
- 2
- 1
- 4

24. 18. Which of the following metallic carbonyl is paramagnetic?

Mark only one oval.

- [V(CO)6]
- [Cr(CO)6]
- [Ni(CO)4]
- [Fe(CO)5]

25. 19. The hybridisation of Fe(CO)5 is _____

Mark only one oval.

- sp3
- dsp3
- sp3d2
- dsp2

26. 20. How many M-M bonds are present in Fe2(CO)9?

Mark only one oval.

- 0
- 1
- 2
- 3

27. 21. What will be the electronic contribution of bridge carbonyl?

Mark only one oval.

- 0
- 1
- 2
- 3

28. 22. What is the colour of Co2(CO)8?

Mark only one oval.

- Blue
- Red
- Orange Brown
- Golden Yellow

29. 23. When Fe(CO)5 is dissolved in glacial acetic acid and irradiated with UV light?

Mark only one oval.

- Fe2(CO)6
- Fe3(CO)12
- Fe2(CO)9
- Fe2(CO)10

30. 24. The metals in carbonyls are in _____Oxidation state

Mark only one oval.

- -6
- -4
- 1
- 0

31. 25. What is the EAN for [Fe(CO)2(NO)2] ?

Mark only one oval.

- 34
- 36
- 54
- 86

32. 26. How many bridge carbonyl are present in Fe2(CO)9 ?

Mark only one oval.

- 1
- 2
- 3
- 4

33. 27. What is the shape of Cr(CO)6 ?

Mark only one oval.

- Tetrahedral
- Octahedral
- TBP
- Trigonal

34. 28. [Fe(CO)5] is insoluble in _____

Mark only one oval.

- Ether
- Acetone
- Alcohol
- Water

35. 29. Which of the following is not obeying 18 electron rule?

Mark only one oval.

- Ni(CO)4
- Mn2(CO)10
- Cr(CO)5
- Co2(CO)8

36. 30. All mononuclear carbonyl have _____M-CO bonds

Mark only one oval.

- Circular
- Spiral
- Linear
- Zig-Zag