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Reg. No. : .....

Name : .....

Second Semester B.Sc. Degree Examination, August 2018
First Degree Programme Under CBCSS
Complementary Course II for Botany/Zoology
CH 1231.3/CH 1231.4 : INORGANIC AND BIOINORGANIC CHEMISTRY
(2013-2016 Admissions)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions. **Each** question carries **one** mark. Answer in **one word/ sentence.**

1. Which is the most important green house gas ?
2. Name the pollutant which interferes with oxygen transportation in our body.
3. Write the name of gases responsible for acid rain.
4. Write the IUPAC name of the following complex $Ca_2[Fe(CN)_6]$.
5. Give an example of a hexadentate ligand.
6. Which region of electromagnetic spectrum is used in vibrational spectroscopy ?
7. Define the term chromophore.
8. State Franck Condon principle.
9. Which is the most abundant metallic element in human body ?
10. Explain myoglobin and its importance.

(10×1=10 Marks)

SECTION – B

Answer **any 8** questions. **Each** carries **two** marks.

11. What is meant by biochemical cycle ?
12. What are the principal sources of water pollution ?
13. What is COD of a water sample ?
14. Describe the effects of freons on environment.
15. What is stability constant ?
16. Explain the effect of isotopic substitution on B value of molecule in rotational spectra.
17. What are overtone bands in IR spectrum ?
18. Explain Beer's law.
19. What is effective atomic number ?
20. Explain geometrical isomerism in complex compounds.
21. Describe carbon fixation and carbon cycle.
22. What are the functions of hemoglobin ?

(8×2=16 Mar

SECTION – C

Answer **any six** questions. **Each** carries **4** marks.

23. Compare photosynthesis and respiration.
24. Write a note on the biochemistry of iron.
25. What are the drawbacks of V.B. theory ?

26. What do you mean by high spin and low spin complexes ? Explain.

27. Differentiate between fluorescence and phosphorescence.

28. How is the information from rotational spectral lines used in the calculation of bond length of a molecule ?

29. Explain the various methods for controlling industrial pollutants.

30. Write short note on acid rain.

31. Discuss the term eutrophication.

(6×4=24 Marks)

SECTION – D

Answer **any 2** questions. **Each** carries **15** marks.

32. What are cytochromes ? Discuss their importance in biological systems.

33. Explain the causes and consequences of green house effect.

34. What do you mean by anharmonic vibrations ? Write the general equation for vibrational energy of an anharmonic oscillator ?

35. Name the different kinds of isomerism possible in coordination complexes. Give one example for each kind.

(15×2=30 Marks)