Reg.No : | | | | | | | | | | | |

D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1

SEMESTER EXAMINATIONS

APRIL – 2018 15CPCH2B

INORGANIC CHEMISTRY - II

Time : 3 Hours **Max. Marks : 75**

SECTION – A (5 x 6 = 30)

Answer ALL the questions.

1. (a) Compare X ray and Neutron diffraction.

(Or)

(b) Differentiate between diamagnetic, paramagnetic ferromagnetic, anti - ferromagnetic and ferrimagnetism with suitable examples.

2. (a) Give a brief note on Corrins, Schiff bases and Crown Ethers.

(Or)

(b) What are Iron - Sulphur proteins? Give an account of biological Nitrogen fixation.

3. (a) What is mean by electron transfer reactions? Explain the mechanism of inner and outer sphere process.

(Or)

(b) Explain the substitution reactions of octahedral complexes of Cobalt and Chromium.

4. (a) i) What do you mean by nuclear isomerism? (3)

ii) Give a brief account of nuclear forces. (3)

(Or)

(b) Write a short note on G. M. and Cherenkov Counters.

5. (a) Write a brief note on Stellar energy.

(Or)

(b) What are the differences between nuclear fission and nuclear fusion reactions?

SECTION – B (3 x 15 = 45)

Answer any THREE of the following questions.

6. a) Draw and explain the structure of Cadmium iodide and Nickel arsenide. (3)

b) How can you determine the magnetic succeptibility of the substance by using Guoy balance? (7)

c) What are Semiconductors and Super conductors? Give suitable examples. (5)

7. a) Define the term “Diffusion”. Explain vacancy and interstitial diffusion. (5)

b) What is the role of Na, K and Ca? (5)

c) Write a short note on Nitrogen cycle. (5)

8. a) Describe the Marcus theory. (4)

b) What are complementary, non - complementary and two electron transfer reactions? Explain with examples. (6)

c) Write the mechanism of substitution reactions in square planar complexes. (5)

9. a) What are the salient features of liquid drop model and shell model of the nucleus? (10)

b) Discuss about modes of radioactive decay. (5)

10. a) What is a nuclear reactor? Discuss its main parts briefly with a neat diagram. (11)

b) Distinguish between photonuclear and thermonuclear reactions. (4)

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