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HDZ-003-1103016 Seat No. _____

M. Sc. (Sem. III) (CBCS) Examination

November / December – 2017

Inorganic Chemistry

(C (I) - 304 : Selected Topics in Inorganic Chemistry)

Faculty Code : 003

Subject Code : 1103016

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All Questions are compulsory.
(2) All Questions carry equal marks.

1 Answer the following : (Any **Seven**) **14**

- (a) Define Catalysis with suitable example
- (b) Discuss the nature of bonding in organo metallic compound
- (c) Give one preparative method for η^5 -cyclopentadienyl
- (d) How positive catalyst works?
- (e) What is Wacker process?
- (f) Discuss the use of compound for Polymerization reaction
- (g) Give the general characteristics of η^4 -cyclobutadiene Organometallic Compounds
- (h) What do you mean by atom economy and atom efficiency?
- (i) Classify pi-bonded organo metallic compound
- (j) Give one specific example of chemical route developed using catalysis

2 Answer the following : (Any **Two**) **14**

- (a) Explain reductive elimination reaction
- (b) Describe catalytic development and mechanistic aspect of Zeigler-Natta reaction
- (c) Discuss the preparative methods of η^5 -Organometallic Compounds

- 3** Answer the following : (Any **Two**) **14**
- (a) Explain the fluxional Organo metallic compound
 - (b) Discuss the mechanism of Monsanto process
 - (c) Discuss Heterogeneous catalysis involving metal complexes
- 4** Answer the following : (Any **Two**) **14**
- (a) Discuss the Phase transfer and miscellar catalysis
 - (b) Explain insertion and des-insertion reaction
 - (c) Give the high light of Principle of green chemistry and role of catalysis
- 5** Answer the following : (Any **Two**) **14**
- (a) Describe the reaction and application of η^4 -organometallic compounds.
 - (b) Write note on water gas shift reaction
 - (c) Give the difference between Homogeneous and heterogeneous reactions
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