

SEM	SET	PAPER CODE	TITLE OF THE PAPER
IV	2013	12PCH4115	ORGANIC CHEMISTRY – IV

**SECTION – A****Answer all the questions:****20 x 1 = 20****Choose the correct answer:**

- Green chemistry is defined as environmentally benign
  - chemical synthesis
  - photo synthesis
  - green synthesis
  - none
- Reaction of unsaturated halide with an alkene in the presence of a base and palladium catalyst to form \_\_\_\_\_.
  - alkane
  - alkene
  - alkyne
  - allenes
- \_\_\_\_\_ process proceeds through a variety of mechanisms.
  - transmetallation
  - metallation
  - Cis hydroxylation
  - hydroxylation
- How many stereoisomers of  $(\text{CH}_3)_2\text{CHCH}=\text{CHCH}_2\text{CH}(\text{OH})\text{CH}_2\text{Br}$  are possible?
  - 2
  - 3
  - 4
  - 5
- Quantity of current needed to deposit 1gm equivalent
  - 96000C
  - 95500C
  - 96500C
  - 98000C

**Fill in the blanks:**

6. Risk = Hazard x = \_\_\_\_\_.
7. The mechanism of \_\_\_\_\_ reaction is one of the most intensively studied pathway for coupling reaction.
8. The means of stereoselectivity is among the possible product one is \_\_\_\_\_.
9. The reduction can be carried out by the electrodes like \_\_\_\_\_.
10. Alcohol can be converted into ester with the help of \_\_\_\_\_.

**Answer in one or two sentences:**

11. What is atom economy?
12. What is meant by insertion reaction?
13. What is Gilman's reagent?
14. What is the use of Negishi coupling reaction?
15. Write any one example of spirocyclic compound.
16. Give any one example of bicyclic alkene compound.
17. State the Faraday's first law of electrolysis.
18. What is Nernst equation?
19. What is the reagent used to convert nitrobenzene to acetanilide?
20. How will you synthesis phenol from benzene?

## SECTION – B

Answer all the questions:

5 x 6 = 30

21. a. What is green chemistry? What are the advantages of green chemistry?

**OR**

- b. Write the deprotonation of alkynes reaction.
22. a. Explain the mechanism of Suzuki coupling.

**OR**

- b. Write the mechanism of Stille coupling.
23. a. Write short notes on stereochemistry of bicyclic compounds.

**OR**

- b. Give a brief account on stereo selective reactions of acyclic compound.
24. a. Discuss the electro chemical reduction of nitro compounds & carbonyl compounds.

**OR**

- b. Bring out the advantages of electro chemical reactions over chemical reactions.
25. a. Explain the different types of chemical reactions.

**OR**

- b. Suggest a method to convert benzaldehyde to cinnamaldehyde.

## SECTION – C

**Answer any FIVE questions:**

**5 x 10 = 50**

26. Write the twelve principles of green chemistry.
27. Discuss the mechanism of Sonogashira, Kumada, Chan-Lan Coupling reaction.
28. Describe the stereoselective reactions with any one example for each of the following:
  - (i) 5-Membered cyclic compounds
  - (ii) 6-Membered compounds
29. a. What are the basic requirements of electro organic synthesis?  
b. Write the mechanism of Kolbe reaction.
30. Discuss hydroboration – oxidation and oxymercuration – demercuration reactions with mechanism.
31. Write short notes on:
  - (a) Heck reaction
  - (b) Electrical Efficiency
  - (c) Chemical Efficiency

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