

Subject : Chemistry (DSC)

Paper – III

Time : 3 Hours

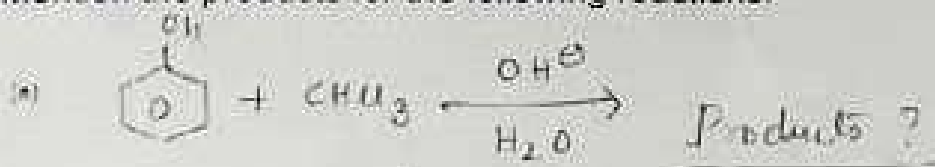
Max. Marks: 80

PART – A (5 x 4 = 20 Marks)

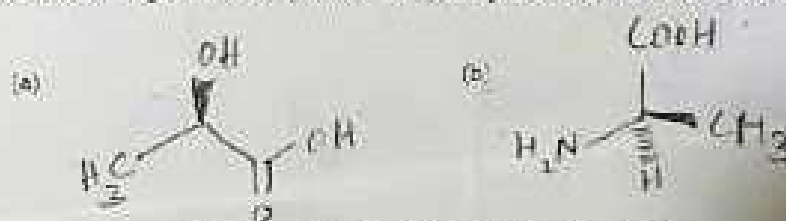
(Short Answer Type)

Note : Answer any FIVE of the following questions.

1. What is Lanthanide contraction and write its consequences?
2. Write a note on alkali metals in ammonia.
3. Mention the products for the following reactions.



4. State Williamson's synthesis and give its reaction.
5. Write a short note on triple point of water system.
6. What is Hardy-Schultz law? Explain.
7. What are fullerenes? Give two examples.
8. Write the absolute configuration (R, S – configuration) of the following compounds.



PART – B (4 x 15 = 60 Marks)

(Essay Answer Type)

Note: Answer ALL from the questions.

- 9 (a) Explain how lanthanides are separated by solvent extraction method and ion exchange method.

OR

- (b) Define symmetry and explain the types of symmetry by taking an example.

- 10 (a) Write the mechanism for (i) Aldol condensation (ii) Cannizzaro reaction

OR

- (b) Explain the following test :

(i) 2, 4, - DNP test (ii) Tollen's test (iii) Schiff's test

- 11 (a) State the Gibb's phase rule and explain lead-silver system.

OR

- (b) Explain physical adsorption and chemical adsorption and write Freundlich adsorption isotherm equation and its logarithmic form.

- 12 (a) What are nanomaterials and explain the applications of Nanomaterials.

OR

- (b) Draw different conformations of n-butane and explain the order of stability of various conformers.