

**Day and Date: Wednesday, 15/06/2022**

**Time:10.00 am to 1.00 pm**

**Max. Marks- 100**

**Instructions:**

- i. Question No. 1 is compulsory.
- ii. Figure to the right indicate full marks.
- iii. Give suitable general Instructions

BT	CO's	Q. No.	Marks	
		<b>Q.1</b>	<b>Attempt all Questions</b>	<b>40 Marks</b>
2 1	1	a	i)What are fertilizers? Give classification of fertilizers with suitable example. ii)State Le Chatelier's principle . And explain physico chemical principles involved in manufacture of ammonia by Haber' process.	4 6
2 2	2	b	i)Explain water as universal solvent ii) What are solvents? Give classification of solvents with suitable example. iii) Distinguish between Complex fertilizers and mixed fertilizers.	3 3 4
2 1	2 1	c	i)What is fertility of soil? Explain need and essential requirements(qualities) of fertilizers. ii) Explain liquid ammonia as non – aqueous solvents w.r.t. Solvent characteristics and any two important reactions.	5 5
1 2	2 1	d	i) Explain the following properties of non-aqueous solvents. Heat of vaporization, Heat of fusion and Dielectric constant ii). Explain physico chemical principles involved in manufacture of Sulphonic acid by contact process.	5 5
		<b>Q.2</b>	<b>Attempt following Questions</b>	<b>20 marks</b>
2	3	a	i)Give preparation, properties and uses of pyridine. <b>OR</b> ii) Give preparation, chemical reactions and uses of Quinoline.	6
2	3	b	How quinoline is obtained from skraup's synthesis?	7
2	3	c	Give preparation, properties and uses of pyrrole.	7
		<b>Q.3</b>	<b>Attempt the following any four questions.</b>	<b>20 Marks</b>
1	3	a	Explain the process of refining of petroleum with neat diagram, state the products obtained and their applications.	5
1	3	b	What is crude oil? Give composition of crude oil.	5
1	3	c	What is cracking? Give types of cracking w.r.t. Temp.pressure conditions.	5

1	3	d	What is anti-knocking property How it is improved. What additives (anti knocking agents) are added.	5
1	3	e	What is octane number and cetane number.	5
		<b>Q.4</b>	Attempt the following Questions.	<b>20Marks</b>
2	4	a	i)What are organ metallic compounds? How are they classified? <b>OR</b> i) Which of the following can be categorized as organ metallic compounds and why? Metal cyanide, metal carbonate, metal aryls, metal carbonyls.	4
2	4	b	Give preparation properties and chemical reactions of ethylene oxide	4
2	4	c	Give preparation properties and chemical reactions of aldehydes	6
2	4	d	Give preparation properties and chemical reactions of ketones.	6

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