

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
		Q.1	40 Marks
2 1	1	a	i)What are fertilizers? Give classification of fertilizers with suitable example. 4 ii)State Le Chatelier's principle . And explain physico chemical principles involved in manufacture of ammonia by Haber' process. 6
2 2	2	b	i)Explain water as universal solvent 3 ii) What are solvents? Give classification of solvents with suitable example. 3 iii) Distinguish between Complex fertilizers and mixed fertilizers. 4
2 1	2 1	c	i)What is fertility of soil? Explain need and essential requirements(qualities) of fertilizers. 5 ii) Explain liquid ammonia as non – aqueous solvents w.r.t. Solvent characteristics and any two important reactions. 5
1 2	2 1	d	i) Explain the following properties of non-aqueous solvents. Heat of vaporization, Heat of fusion and Dielectric constant 5 ii). Explain physico chemical principles involved in manufacture of Sulphonic acid by contact process. 5
		Q.2	20 marks
2	3	a	i)Give preparation, properties and uses of pyridine. 6 OR ii) Give preparation, chemical reactions and uses of Quinoline.
2	3	b	How quinoline is obtained from skrap's synthesis? 7
2	3	c	Give preparation, properties and uses of pyrrole. 7
		Q.3	20 Marks
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
		Q.4	Attempt the following Questions.	20Marks
2	4	a	i)What are organ metallic compounds? How are they classified? OR 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
