



VII SEMESTER B.TECH. (CHEMICAL ENGINEERING)

END SEMESTER EXAMINATIONS MARCH 2021

**SUBJECT: PE-VI PETROCHEMICALS [CHE 4003]**

REVISED CREDIT SYSTEM


Date of Exam: 26/03/2021

Time: 9.00 AM-12.00 NOON

MAX. MARKS: 50

**Instructions to Candidates:**

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.
- ❖ Avoid free hand drawing while making flow diagram.

1A.	Write down the names and uses of the thermoplastics for following codes. 	5
1B.	Discuss the production process of synthesis gas by steam reforming of hydrocarbon along with chemical reactions and diagram.	5
2A.	Discuss the production process of ethylene and acetylene from fresh naphtha using steam-cracking process along with flow diagram. No need to draw the flow diagram or discuss the recycled C2 and higher composition stream.	8
2B.	Describe the heat economy of formaldehyde production process.	2
3A.	Discuss styrene production process along with chemical reactions and flow diagram.	8
3B.	Write down the chemical reaction conditions for phenol production using benzene sulfonate process.	2
4A.	Discuss the production process of phenol from chlorobenzene route along with chemical reactions and flow diagram. Discuss the economically viable aspects of this process (4 points).	8
4B.	Write down the effect of water monomer ratio and pH on suspension polymerization.	2



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<b>5A.</b>	Mention the names and draw the chemical structures of polypropylene based on the different stereotactic arrangement of pendent methyl group. Discuss how this can affect the crystallinity and physical properties.	<b>5</b>
<b>5B.</b>	Write down the production process of Nylon 6.	<b>5</b>