		BE - SEMESTER-V(New) • EXAMINATION – WINTER 2016							
Sub	ioct	· · · · · ·	/2016						
Subject Code:2153606 Date:30/11/2016 Subject Name:Polymer & Rubber Material-II(Department Elective- IV) Time:10:30 AM to 01:00 PM Total Marks: 7									
						Instr	uction		
								Attempt all questions.	
	2.	Make suitable assumptions wherever necessary.							
			MARKS						
` 0.1		Chart Oractions	1.4						
`Q.1	1	Short Questions What is appring?	14						
	1	What is curing?							
	2	Draw the repeat unit structure of resol							
	3	Name the polymer with structure for application of saucepan handles							
	4 5	What is polyorganosiloxanes? What is bakelite?							
	6	Give the name of any two methods for synthesis of alkyd resin							
	7	Give three names of thermosetting resin manufacturer							
	8	Draw the structure of MF							
	9	What happened when diethoxydiethylsilane react with water in the							
		presence of traces of acid?							
	10	Draw the structure of ethoxydiphenylsilanol							
	11	What are silicone fluids?							
	12	What is CNSL?							
	13	Why thermosetting polymers are amorphous?							
	14	Why thermosetting polymers exhibit no glass transition temperature?							
Q.2	(a)	Comments with examples on thermosets resins are so versatile in coating	03						
		industry							
	(b)	Justify your answer with reaction: resol is known as one stage resin, while	04						
		novolac is two-stage resin. Also write difference between novolac and							
		resol							
	(c)	Why curing is important in case of thermosets? Discuss briefly the	07						
		mechanism of curing of epoxy system with various curing agents							
		OR							
	(c)	Thermoset polymers are very useful in the coating application. Name a	07						
		thermoset polymer used for this purpose in washing machine application.							
		Justify and describe the synthesis and properties of the polymer.							
Q.3	(a)	Name the polymer with structure for following applications and give	03						
	(1.)	reason for choice: mold release agent & mattress	0.4						
	(b)	What are alkyds? How are they prepared?	04						
	(c)	What are the raw materials required for the manufacture of amino resins.	07						
		Write briefly synthesis and application of anyone amino resins							
0.3	(.)	OR	0.3						
Q.3	(a)	Write an explanatory note on epoxy-novalac & epoxy-acrylate system	03						
	(b)	Name the polymer with structure for following applications and give	04						
		reason for choice: body implants for cosmetic surgery, water repellent							
		finishes for natural and synthesis textiles							

What are the raw materials required for the manufacture of alkyd resins.

Write briefly synthesis and application of alkyd resins

(a) What is silicones rubber? Mention its important application.

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Q.4

07

03

	(b)	What are the raw materials required for the manufacture of polyurethane	04
		(PU). Write briefly synthesis of aliphatic PU	
	(c)	Write briefly synthesis and curing of unsaturated polyester resins	07
		OR	
Q.4	(a)	What is fiber reinforced polyester?	03
	(b)	Write various synthesis methods of intermediate silicone resin and its application	04
	(c)	What are polyesters? How many kinds of polyesters are there? Write briefly with application, how polyesters are produced	07
Q.5	(a)	Compare sulfur vulcanization vs peroxide vulcanization	03
	(b)	The silicones are generally prepared from chlorosilanes compounds. Mention in brief two routes for the preparation of chlorosilanes.	04
	(c)	Explain with example vulcanization & de-vulcanization of rubbers	07
		OR	
Q.5	(a)	What is vulcanization? How it is done?	03
	(b)	Mention important properties and application of silicones fluid	04
	(c)	Explain the reaction mechanism between phenol and formaldehyde and process of forming PF resins?	07
