

(This Question Paper contains 2 printed pages)

Sr. No. of Question Paper	:	7962	F-1
Unique Paper Code	:	1141102	
Name of the Paper	:	Raw Materials of Polymers	
Name of the Course	:	B.Tech. Polymer Science	
Semester	:	Ist	
Duration	:	3 Hours	
Maximum Marks	:	75 Marks.	

Instruction for candidates

(Write your Roll no. on the top immediately on receipt of the question paper.)

Attempt five questions in all.

Question No. 1 is compulsory.

1. (a) What is octane number? How it is differ from cetane number? 3
(b) What is the proximate and ultimate analysis of coal? 3
(c) How coal is formed? Write the progressive formation of wood.
(d) What are the advantages and disadvantages of solid fuel? 3
(e) What is natural gas? What is the average composition of natural gas?
(f) What are the different forms of natural gas? What are the differences between these forms?
(g) What is carbide theory? What are the drawbacks of this theory?
(h) What are the differences between vulcanized and natural rubber? 3
(i) What are accelerators? Name some accelerators used in latex. 3
2. (a) What is desalting? What are the main processes? 3
(b) Write the process description of formation of formaldehyde monomer with the help of reactions and flow diagram.
(c) How the latex is collected from the tree? 3
3. (a) What is moving bed catalytic cracking? Explain with diagram. 3
(b) What is the difference between direct chlorination and oxychlorination processes of the formation of vinyl chloride monomer? Explain with the help of block diagram.
(c) How is latex stabilized? Explain the factors which affect the stability of latex. 3
4. (a) Explain the followings:
(i) Knocking
(ii) Tetraethyl lead
(iii) methyl tertiary butyl ether 3x2=6
(b) Write the process description of styrene monomer. 3
(c) Define the following terms:
(i) Softeners
(ii) Fillers
(iii) Thickening agent 1x3=3
5. (a) Give the reactions of the followings with conditions: (any three)
(i) Vinyl acetate
(ii) ethylene

- (iii) Ethylene glycol
 - (iv) terephthalic acid 3x2=6
 - (b) What is reforming? What the types? 3
 - (c) What do you mean by latex compounding? 3
6. (a) Give the chart of petrochemicals that can be obtained from ethene.
- (b) Explain the followings:(any two)
- (i) Fixed bed catalytic reforming
 - (ii) Process description of ethylene oxide
 - (iii) Process description of adipic acid 2x3=6
- (c) Discuss the production of crepes. 3