

SUBJECT CODE NO:- P-195
FACULTY OF ENGINEERING AND TECHNOLOGY
F. E. (All) (CGPA) Examination May/June 2017
Engineering Chemistry & Environmental Sci.
(Revised)

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- i) Q.No.1 and Q.No.6 are compulsory.
 - ii) solve any two questions from the remaining questions in each section
 - iii) Figure to right indicate full marks

Section A

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|-----|---|--|
| Q.1 | Answer the following question (any five) | 10 |
| | <ol style="list-style-type: none">1) Why does natural rubber need compounding?2) PVC is soft and flexible ,whereas Bakelite is hard and brittle. Give reason.3) What is resins?4) Arrange norbide, carborundum, corundum, garnet in increasing order of hardness?5) What will happen if gypsum is not added during grinding of clinkers?6) Define the terms adherents?7) What happens when temporary hard water is boiled (give equations)8) What is alkalinity?9) List the limitations of zeolite process. | |
| Q.2 | <ol style="list-style-type: none">a) Write preparation ,properties and applications of Bakelite.b) Write a note on compounding of rubberc) Explain the effect of structure on properties of a polymer (any two) | 07
04
04 |
| Q.3 | <ol style="list-style-type: none">a) What are various physical and chemical factors influencing the adhesive strength?b) What is cement? What are the constituents of cement?c) What are abrasives? give its applications | 07
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| Q.4 | <ol style="list-style-type: none">a) Outline the cause of hardness. A water sample on analysis give the following data
Mgcl₂ ----81ppm
Mgso₄ ----60ppm
Mg(Hco₃)₂ ---103ppm
Ca (Hco₃)₂ -----92ppm
Caso₄ ---102ppm
Sio₂ --- 40ppm
H₂so₄ ---120 ppm
Calculate temporary, permanent and total hardness & above water sampleb) Discuss caustic Embrittlementc) Give the application of conductometer. | 07

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04 |
| Q.5 | <ol style="list-style-type: none">a) What is vulcanisation of rubber? Why natural rubber need vulcanization? How is it carried out?b) Explain classification of cementc) Write a short not on R.O | 07
04
04 |

Section -B

Q.6	Answer the following (any five)	10
	1) Small anodic area results in intense corrosion. Give reason.	
	2) Define viscosity and viscosity index	
	3) Give any four characteristics of good lubricant	
	4) Write down classification of coal by rank	
	5) How does fuel cell differ from battery?	
	6) Write down cell reactions take place in acid –storage cell during discharging.	
	7) What are the gases responsible for green house effect?	
	8) Name any four important causes of pollution	
	9) Give the composition of atmosphere	
Q.7	a) Discuss the various factors affecting rate of corrosion	07
	b) Give an accounts of galvanizing	04
	c) Write a technical note on selection of Lubricants	04
Q.8	a) Define calorific value and ignition temp. How calorific value of solid flue determined by Bomb calorimeter	07
	b) Write a brief note on CNG	04
	c) What are the factors affecting on conductivity of electrolytes	04
Q.9	a) What are the different pollutants air and their effect on environment	07
	b) Give an account of Acid rain	04
	c) What is Ozone depletion? Explain its causes and ill effects	04
Q.10	a) How proximate analysis of coal is carried out in laboratory? Give its significance.	07
	b) Explain sacrificial anodic protection method controlling corrosion	04
	c) Write a note on soil pollution.	04