

College of Engineering, Pune
END SEMESTER EXAM Nov/Dec 2009
Year (F.Y. B. Tech)
AS103 CHEMISTRY

Day & Date- 2/12/2009

Max. Marks- 50

Timing- 10AM-1PM

Duration – 3Hr

Instructions:

1. Solve all questions
2. Students should not carry mobile phones in the exam hall
3. Draw figures where ever necessary.

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|------|---|-----------------|
| Q. 1 | Define the following terms (Any TEN)
i) Vulcanization ii) Knocking iii) Petroleum Cracking

iv) point defect v) Hard water vi) Corrosion

vii) Chemical shift in UV spectroscopy viii) AAS ix) Glass transition temperature x) viscosity xi) co-polymer xii) Elastomer | Marks
10 |
| Q. 2 | A. Describe in detail the process of obtaining straight run gasoline
B. Give classification of Fuels
<p style="text-align: center;">OR</p> B Describe the process of estimation of various metals from stainless steel by Absorption spectroscopy. | 6
4

4 |
| Q. 3 | A. Describe the process of manufacture of polyethylene(PE) and epoxy resin with all process parameters
<p style="text-align: center;">OR</p> A Give an account of various methods of corrosion control
B Give Scientific reasons:
i) In coastal areas rusting occurs faster than deserts.
ii) Well lubricated machines last longer. | 6

6
4 |
| Q. 4 | A. Bore well water was used for a 10 ton capacity boiler for 5 years. Regular blow down and servicing was not done for last 2 years; finally yesterday the boiler exploded. Write down all possible factors and chemical reactions that may have resulted in the accident.
B. Effluent treatment plant for an electro-plating unit showed large number of shallow pits after 2 years. Predict the mechanism for observed pits. | 6
4 |

OR

- B Explain the mechanisms of electrochemical corrosion 4
- Q. 5 . Suggest the most suitable material for following applications with proper justification (Any five) 10
- i) Hair conditioners
 - ii) artificial skin
 - iii) ship bottom
 - iv) Surgical instruments
 - v) Antirust paint
 - vi) synthetic carpet
 - vii) lubricant for lathe machine used for cutting plastic