

Code No: 51005**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech I Year Examinations, October/November - 2020****ENGINEERING CHEMISTRY****(Common to CE, EEE, ME, ECE, CSE, IT, ETM, AE, AME, MIE)****Time: 2 hours****Max. Marks: 75****Answer any five questions****All questions carry equal marks**

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- 1.a) What are primary and secondary cells? Give examples.
b) Describe the construction and working of H₂-O₂ fuel cell. [7+8]
- 2.a) Describe hydrogen evolution and oxygen absorption in electrochemical corrosion with an example.
b) What are paints? Write about their constituents and functions. [7+8]
- 3.a) Differentiate chain growth and step growth polymerization with examples.
b) Write about preparation, properties and engineering applications of PVC, Buna-S rubber. [7+8]
- 4.a) What are various boiler troubles? Write about formation and prevention of scales and sludges.
b) Discuss ion-exchange process in detail. [7+8]
- 5.a) How do you calculate the surface area of a solid by BET equation?
b) Discuss the preparation of nano materials by CVD and sol-gel method. [7+8]
- 6.a) Compare the properties of solid, liquid and gaseous fuels.
b) How flue gas analyzed by Orsats' method? Write the significance of analysis. [7+8]
- 7.a) Write phase rule equation. Explain terms involved in it.
b) Draw and explain water system. [7+8]
- 8.a) Write the chemical reactions involved in setting and hardening of cement.
b) Explain how cloud and pour points of a lubricant are determined. Give their significance. [7+8]

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