

Code No: R10104

R10**SET - 1****I B. Tech I Semester Supplementary Examinations, Oct/Nov - 2018****ENGINEERING CHEMISTRY-I**

(Com to All Branches)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions
All Questions carry **Equal** Marks

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1. a) Define the terms enthalpy, entropy and free energy. (8M)  
b) Explain Lechatelier's principle with examples. (7M)
2. a) Explain the factors influencing viscosity. (8M)  
b) What are catalysts? What are the general criteria of catalysts? (7M)
3. a) Explain the principle of NMR spectroscopy. Give its applications. (8M)  
b) What is meant by fluorescence and phosphorescence? Give examples. (7M)
4. a) What are liquid crystals? Explain the types of liquid crystals. (8M)  
b) Explain the properties and applications of semiconductors. (7M)
5. a) Discuss the working of thermal power station. (10M)  
b) Define net and gross calorific value. (5M)
6. Discuss about (15M)  
(i) Concentration cells  
(ii) Single electrode potential  
(iii) Lead acid storage battery.
7. a) Explain the role of the following terms in the nuclear reactor (10M)  
(i) moderator (ii) coolants (iii) breeder reactor  
b) What is meant by binding energy? Discuss the relation of binding energy and nuclear stability. (5M)
8. What are green house gases? How are they obtained? Explain their importance. (15M)