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Mid-Term Examination, Even Semester 2019-20

B.Tech, I Year, II Semester

(BCHS 0101): Engineering Chemistry

Time: 2 Hr **Maximum Marks: 30**

Section A

Note: Attempt all questions **2 × 3 = 6 marks**

1. Differentiate enantiomers and diastereomers.
2. Write important industrial applications of ceramics.
3. What is hydrogen Bond? Discuss different types of hydrogen bonding.

Section B

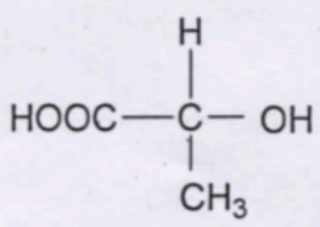
Note: Attempt all questions **3 × 3 = 9 marks**

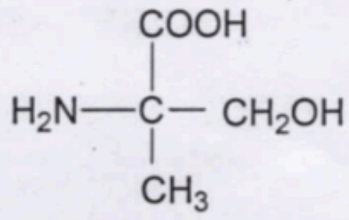
1. Discuss the mechanism of thick film lubrication. Give two examples of solid lubricants.
2. Write the preparation process and industrial application of any two polymers.

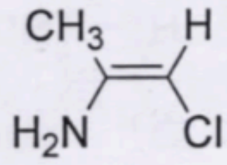
   (i)Teflon

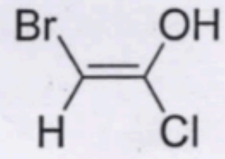
   (ii) Buna-S rubber

   (iii) Poly lactic acid
3. Assign R/S and E/Z to the following.









Section C

Note: Attempt any three questions **5 × 3= 15 marks**

1. How experimentally calorific value of a fuel is determined by bomb calorimeter? Explain with neat diagram.
2. Using the concept of Molecular orbital theory, draw the molecular orbital diagram of N_2, find out bond order and also assign magnetic behavior.
3. (i) Write the composition and uses of any two of the glasses.

   (a) Potash glass

   (b) Lead glass

   (c) Soft glass

   (ii) Calculate the volume of air required for the complete combustion of 1 m^3 of gaseous fuel having composition: C_3H_8=40%, C_2H_2=30%, H_2=15%, N_2=5% and rest is CO_2.
4. (i) With the help of neat diagram discuss Fischer Tropsch method for the production of synthetic petrol.

   (ii) Write the most stable and least stable conformation of n-butane.