

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
 TEST-1 EXAMINATION, FEBRUARY 2016.  
 B.Tech II Semester (BT)

Subject Code: 14B11BT211  
 Subject Name: General Chemistry  
 Course Credits: 04

Maximum Marks: 15

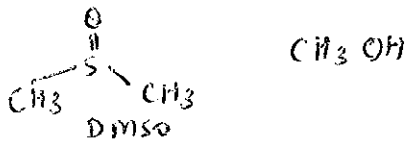
Time: 1Hr.

Attempt all questions. All parts of each question have to be answered in one place. Carrying of mobile phone in examination centre will be treated as unfair means case.

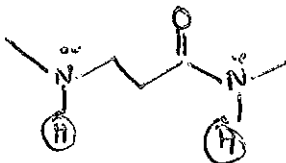
Q1. Answer the following questions.

[1x5=5]

- What evidence is there that non polar molecules attract each other?
- Determine formal charge on nitrogen in  $\text{CH}_3\text{NH}_3$
- The fluoride ion of NaF is more reactive in DMSO than in  $\text{CH}_3\text{OH}$ . Explain?



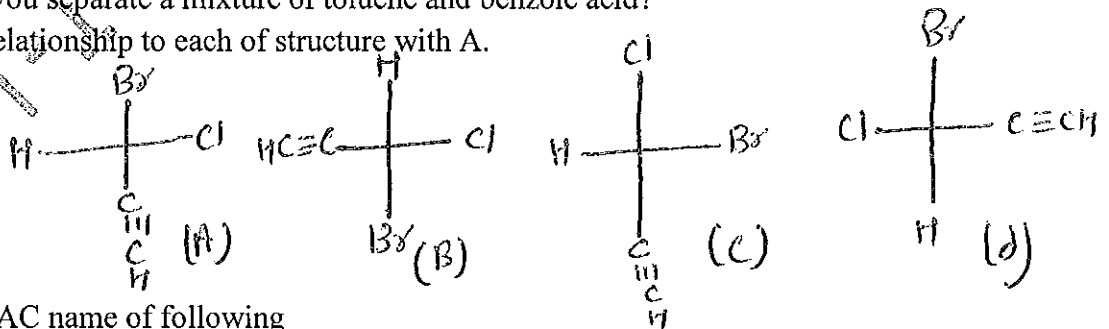
- What is  $\text{pK}_a$ ?
- Which proton is more acidic in the following structure? (circle)



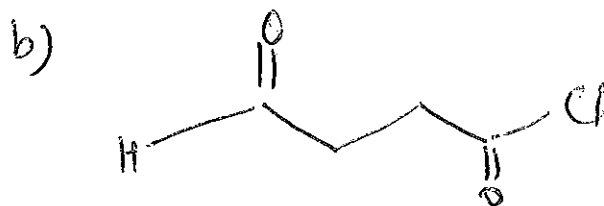
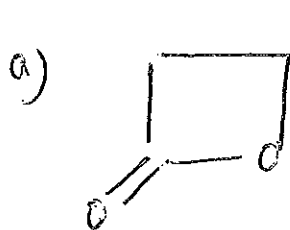
Q2. Answer/ explain the followings

[1.5x4=6]

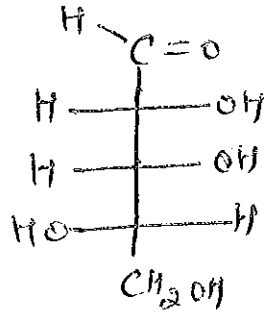
- The specific rotation of (R)(-)-2-bromooctane is  $-36^\circ$ . What is the percentage composition of a mixture of enantiomer of 2-bromooctane whose rotation is  $+18^\circ$ .
- How will you separate a mixture of toluene and benzoic acid?
- Assign a relationship to each of structure with A.



- Write IUPAC name of following



e) Designate R/S to each chiral centre.



Q3. Sketch an energy diagram showing a conformational analysis of *n*-butane. [2]

Q4. Explain formation of bonding and antibonding molecular orbitals. [2]

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