

大葉大學 95 學年度轉學招生考試試題紙

系 組 別	日 \ 第二部	年級	考試科目 (中文名稱)	考試日期	節次	備註 共三頁
生物產業技術系	日	三	有機化學	8月7日	3	P2-1

註：考生可否攜帶計算機或其他資料作答，請在備註欄註明（如未註明，一律不准攜帶） (1=10 ~ 12=30)

選擇題 (單選，每題 5 分，共 20 題，共 100 分)

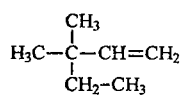
1. Which ion is described by the electronic configuration $1s^2 2s^2 2p^6 3s^2 3p^2$?

- a) P^+ b) Al^+ c) Si^+ d) Mg^+

2. Which acid has the highest pK_a ?

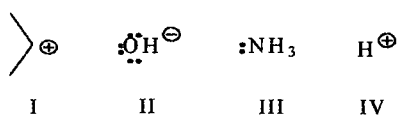
- a) CH_3COOH b) H_2O c) NH_4^+ d) HCl

3. Which is the IUPAC name for the following structure?



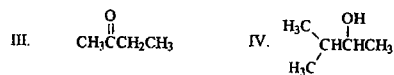
- a) 3,3-dimethyl-1-pentene b) 3-methyl-3-ethyl-1-butene
c) 3,3-dimethyl-4-pentene d) isopropylpentene

4. Which species are electrophiles?



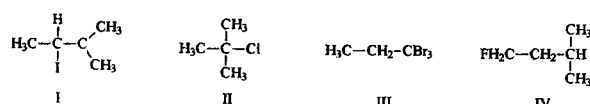
- a) II, III b) II, IV c) I, IV d) I, III

5. Which compounds contain stereocenters?



- a) I, II b) III, IV c) I, III d) II, IV

6. Which compounds are primary halides?



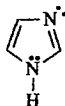
- a) I, II b) III, IV c) II, III d) I, IV

7. Arrange the following in order of increasing basicity (weakest to strongest).

- I. OH^- II. Cl^- III. H_2O IV. NH_3

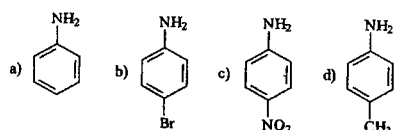
- a) IV, I, II, III b) III, I, IV, II c) II, III, IV, I d) III, IV, I, II

8. How many π -orbital electrons are in the following molecule?



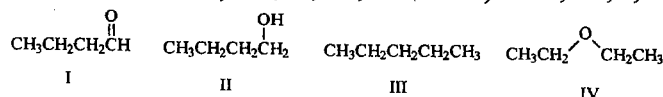
- a) 4 b) 6 c) 8 d) 10

9. Which compound is the strongest base?



10. Arrange the compounds in order of increasing boiling point (lowest first).

- a) II, I, IV, III b) I, II, IV, III c) III, IV, I, II d) II, I, IV, III

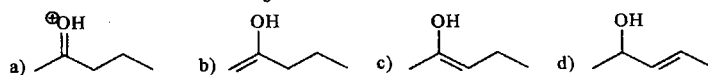


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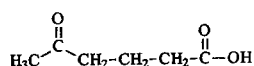
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生物醫學科技學院	日	三	有機化學	8月7日	3	P2-2

註：考生可否攜帶計算機或其他資料作答，請在備註欄註明（如未註明，一律不准攜帶）

11. Which structure is the major tautomer of 2-pentanone in aqueous acid?



12. Which is the IUPAC name for the following compound?



- a) 5-oxohexanoic acid b) 2-oxohexanoic acid
c) methyl butyoxo ketone d) 4-ketopentanoic acid

13. Which conditions are best for the transformation?



- a) LiAlH_4 b) NaBH_4 c) $\text{Ag}(\text{NH}_3)_2\text{OH} / \text{NH}_4\text{OH}$ d) Pyridine · Cr_3O_4

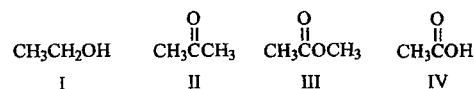
14. Which compounds will yield benzoic acid when hydrolyzed?

- I) benzyl ethanoate II) benzamide
III) phenyl ethanoate IV) methyl benzoate

- a) I, II b) III, IV c) I, III d) II, IV

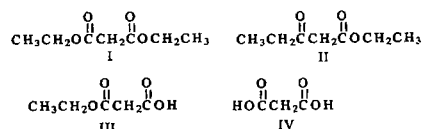
15. What is the order of increasing acidity for these compounds (least acidic first)?

- a) III, II, I, IV b) IV, III, II, I c) IV, II, III, I d) II, III, I, IV



16. Which compounds will undergo decarboxylation upon heating?

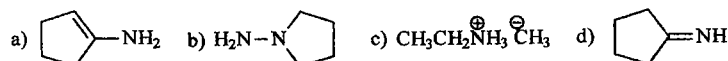
- a) I, II b) II, III c) III, IV d) II, IV



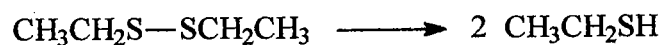
17. How many chiral ketones are there that have the molecular formula $\text{C}_6\text{H}_{12}\text{O}$?

- a) 1 b) 2 c) 3 d) 4

18. Which compound is a Schiff base?

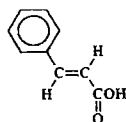


19. Classify the following reaction.



- a) oxidation b) reduction c) nitration d) hydrolysis

20. Which is the IUPAC name for the following compound?



- a) E-3-phenylpropenoic acid b) Z-3-carboxy-1-phenylethene
c) E-1-phenylpropenoic acid d) Z-benzylacrylic acid