國立高雄科技大學 109 學年度碩士班 招生考試 試題紙

系 所 別: 化學工程與材料工程系碩士班 組 別: 乙組

考科代碼: 1013 考 科: 有機化學

注意事項:

1、各考科一律可使用本校提供之電子計算器,**考生不得使用自備計算器**,違者該科不 予計分。

2、請於答案卷上規定之範圍作答,違者該題不予計分。

一、Give IUPAC names for the following compounds: (每題 3分, 共 30分)

1.

CH₃CH₂CH₃

2.

3.

4.

5.

$$\begin{array}{ccc} CH_3 & CH_3 \\ \mid & \mid \\ CH_3CH_2CHC \equiv CCHCH_3 \end{array}$$

6.

$$\begin{array}{c} \text{OH} \\ \mid \\ \text{CH}_3\text{CH}_2\text{CHCHCH}_2\text{CH}_3 \\ \mid \\ \text{CH}_2\text{CH}_2\text{CH}_3 \end{array}$$

7.

8.

$$\begin{array}{c} CH_3 \\ \mid \\ CH_3CH_2 = CHCC \equiv CH \\ \mid \\ CH_3 \end{array}$$

10.

OH
$$\mid$$
 CH $_3$ CHCH $_2$ CH=CHCH $_2$ COOH

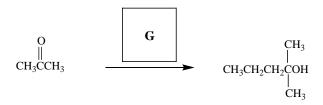
二、Finish the following reactions (每題 3分,共 30 分)

1.
$$+$$
 $N-Br$ A

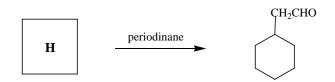
2.
$$+ \bigcirc OC_2H_5 \longrightarrow B$$

5.
$$\begin{array}{c} CH_3 \\ \\ \hline \\ NO_2 \end{array} + Cl_2/\operatorname{FeCl}_3 \end{array} \longrightarrow \begin{array}{c} E \end{array}$$

7.



8.



9.

10.

- \equiv \cdot What product would you expect from the SN1 reaction of (S)-3-methylnonan-3-ol with HBr? Show the mechanism and stereochemistry of both starting material and product. (10 %)
- ${\tt Predict}$ the product of the reaction of 1,2-diethylclclohexene with the following: (10 分)
 - (a) $KMnO_4$, H_3O^+
- (b) KMnO₄, OH⁻, H₂O
- 五、Show the mechanism of the reaction of benzene with fuming sulfuric acid. (10 分)
- ∴ How would you prepare cis-but-2-ene starting from propyne, CH₃Br, and any other reagents needed? (You'll have to carry out more than one reaction) (10)