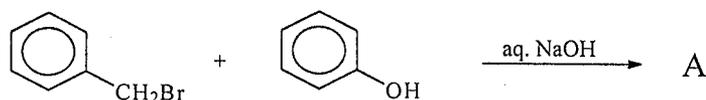


1. Draw structural formulas of: (30%)

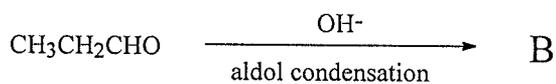
- 2-Methyl-1-phenyl-2-propanol
- 2-Ethoxyethanol
- tert*-Butyl iodide
- Trifluoroacetic acid
- Vinyl chloride
- Pentachlorophenol
- 1,3-Butadiene
- Ethylene oxide
- Toluene
- Salicylic acid
- Triacylglycerol
- Sodium dodecyl sulfate
- Cholesterol
- D-(+)-Glucose
- Glycine

2. Give the structures of compounds A-E: (25%)

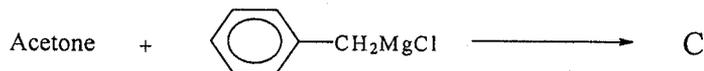
(a)



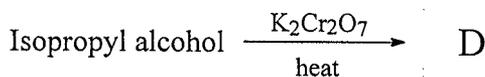
(b)



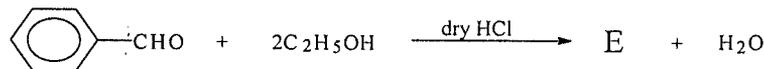
(c)



(d)



(e)



(背面仍有題目,請繼續作答)

3. Explain the following terms: (30%)
- (a) A *meso* compound
 - (b) β - and α -elimination
 - (c) S_N2 vs. S_N1 reactions
 - (d) Markovnikov's rule
 - (e) Diels-Alder reaction
 - (f) Isoelectric point
4. Which would you expect to be the stronger acid: β -chloroethyl alcohol or ethyl alcohol? Why? (5%)
5. Give a structure consistent with each of the following sets of NMR data. (10%)
- (a) C_4H_9Br
 - doublet, δ 1.04, 6H
 - multiplet, δ 1.95, 1H
 - doublet, δ 3.33, 2H
 - (b) $C_{10}H_{14}$
 - doublet, δ 0.88, 6H
 - multiplet, δ 1.86, 1H
 - doublet, δ 2.45, 2H
 - singlet, δ 7.12, 5H