**Exam 2: Head shots**

**2.0 Name (1 pt)**

**2.1 Nomenclature (14 pts)**

Name or provide the structure for the compounds below. (2 point each/14 pts total)

**2.2. Diene cycloaddition chemistry** **(8 points)**

Predict the products in the cycloadditions below: (2 pts per box)

**2.3. Classical Diene and Allyl Chemistry (14 pts)**

**2.3.1. Allyl Radical chemistry (4 pts)**

Predict the **most likely** product for each allylic species below(2 pts each/4 pts total):

**2.3.2. Carbocation diene chemistry (5 pts)**

Predict the unique monobromo addition products of the reaction below (2 pt each)

**2.3.3 Allylic carbocation chemistry ( 5 pts)**

 a) Which two compounds below would have equivalent carbocations …

 b) Draw all the unique carbocations formed by…

**2.4 Aromaticity: the big picture (11 pts)**

**2.5. Aromatic, Electrophilic Reactions (52 pts)**

**2.5.1. Making Lewis acids for electrophilic aromatic substitution (2 pts each/6 pt total)**

**2.5.2. Aromatic Reaction Boxing (22 points)**

**2.5.3 Multi-substituted aromatic syntheses (4 pts each/12 pts total)**

**2.5.4 Building Hooks and Handles 3 pts each (9 points total)**

Starting from benzene, alkyl mono halides or acid chlorides find routes to: (2)

 Starting from (shown below) and any other compounds you might need, suggest a route to: (1)

**2.5.5. Final alcoholic binge 5 pts**

Starting from any alcohol and benzene, provide a route to..(1)

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**2.1 Nomenclature (14 pts)**

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 a) Which two compounds below would have equivalent carbocations …

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**2.5.5. Final alcoholic binge 5 pts**

Starting from any alcohol and benzene, provide a route to..(1)