

CHEMISTRY

Course Id: 21422

Course Code: UG/CHEM/202/C-4

Course Title: Organic Chemistry-II (P4)

Time: 2 Hours

Full Marks: 15

The figures in the margin indicate full marks.  
Candidates are required to give their answer in their own words as far as practicable.

Answer the following questions:

1. How can one synthesize *p*-bromoacetanilide in the laboratory via a green approach.

Mention the following points:

- (i) Theory (with proper justification why the approach can be considered as 'Green')
- (ii) Chemical reactions involved.

(3+2) = 5

2. How can one selectively reduce one of the nitro groups of *m*-dinitrobenzene. (Hint: Mention the specific reducing agent and the process by which it is prepared in the laboratory).

(1+2) = 3

3. How can one synthesize phthalimide from phthalic anhydride (Hint: Write just the reaction scheme with reaction condition, e.g. temperature). Mention the type of reaction under which the above mentioned reaction can be categorized and justify your answer.

(1+2) = 3

4. 90.5 g of methyl 3-nitrobenzoate (molecular weight: 181.15 g/mol) gives 80 g of 3-nitrobenzoic acid (molecular weight: 167.12 g/mol) on hydrolysis under alkaline conditions. Calculate the yield of the reaction.

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5. State one example of a multi-component-coupling reaction with reaction scheme. 2