**Subject:** practical organic Synthesis
**Code no. CHEM 420**
**Date: 19/7/ 2020**

**Answer All Questions**

**Fourth year: General Chemistry**
**Final examination 2ⁿᵈ semester**
Time: 1 hrs.
**(90 Marks)**

### Q1) Write briefly assay on the following :

i-All The steps used to prepare American red dye in your laboratory and the mechanistic equation used to this preparation .

ii-Describe the methods utilizing for dying a piece of cotton ,silk and wool comment on the fastness , dye intensity  and  the class (type)of your dying .

iii-If  we replace aniline by 4-nitro aniline  what the name of the obtained dye (write the mechanistic equation used).

iv) Calculate the yield % when 4gm of aniline was diazotized in presence of conc. HCl and sodium nitrite, then coupling with 8gm of β-naphthol to obtain 10gm of phenylazo-β-naphthol .

i- The theoretical principle utilizing in the synthesis of  1-phenyl-3-methyl pyrazolone , write the different steps and   mechanistic equations of this preparation in  the laboratory

ii) If you provided by  5.2 g of EAA and 4.32g of phenyl hydrazine calculate the yield of the obtained 1-phenyl-3-methyl pyrazolone  product

ii) Describe the steps you use to purify the crude product you obtained  and describe what do you do if the crystals is not precipitated on cooling   .

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