

# City College

## B.Sc. Part III (1+1+1) Chemistry Honours (CEMA) Practical Examination-2020

### Paper VIIIA (ORGANIC QUALITATIVE ANALYSIS AND LAB QUIZ)

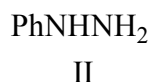
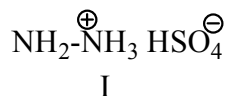
Full Marks: 50

1. Given compound's name : 4-Nitro benzoic acid,  
Write about the following .....

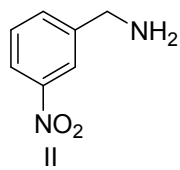
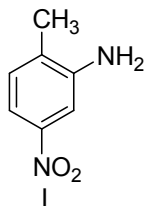
- (i) Solubility and solubility classification
- (ii) Lassaigne's test
- (iii) Detection of functional groups (a) Nitrogenous and (b) Non-nitrogenous  
 $(\frac{1}{2} \times 4 + 2) + (2 \times 3) + (2 \frac{1}{2} \times 6) = 25$

2. Lab quiz 2 x 5 = 10

- (i) Sometimes we get a black precipitate on addition of ferrous sulphate to the sodium extract in Lassaigne's test- Why? Explain it by equation.
- (ii) p-Toluidine offers a precipitate when treated with Brady's reagent, although it does not contain a carbonyl group. Explain it with chemical reactions.
- (iii) Which of the following compound/compounds will not give Lassaigne's test for nitrogen and why?



- (iv) Which of the following compound can respond to dye test and why?



- (v) What happens when phenol is treated with excess Br<sub>2</sub>-water, write down the structure of the product formed.

3. Internal assessment

15

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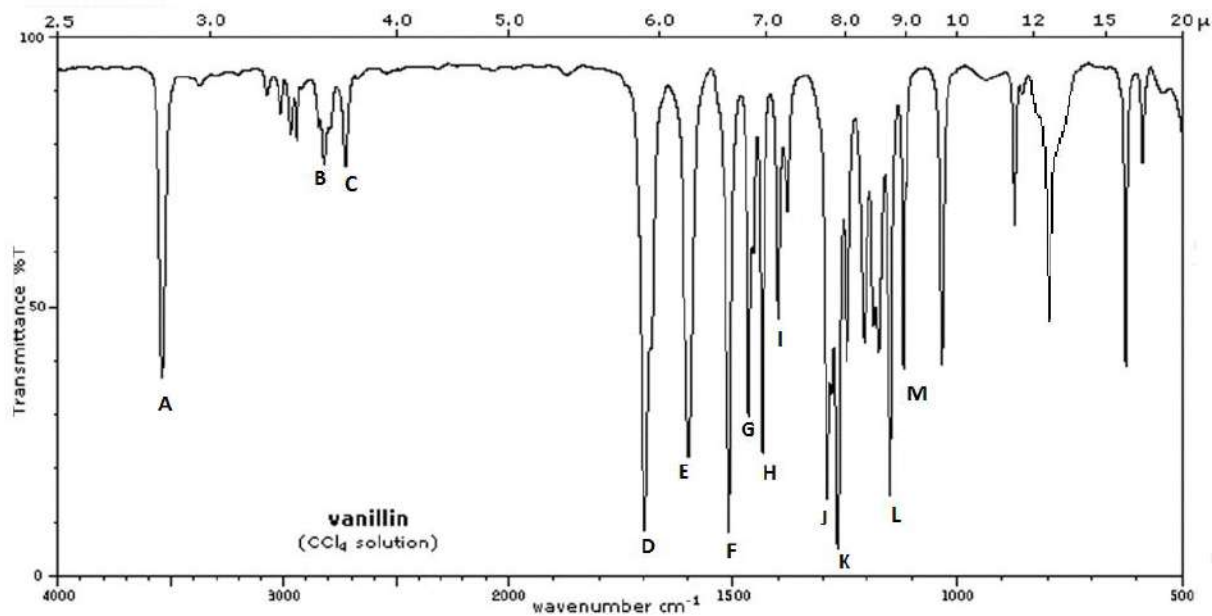
### Paper VIB (ORGANIC SPECTRA)

Full Marks: 25

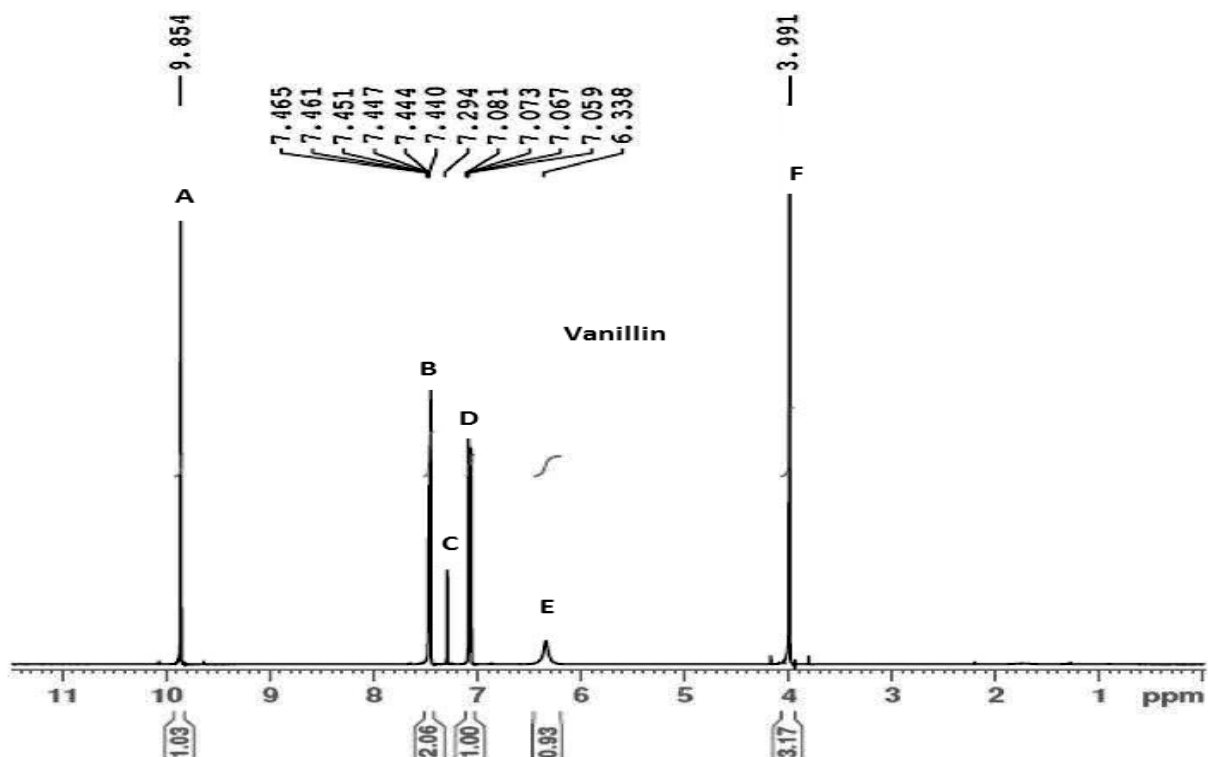
1. Identify structure of the given molecule showing different type of hydrogen. 2

Name of the molecule: Vanillin

2. Using given IR spectra 6



Frequency (cm <sup>-1</sup> )	Identification of Bands in the Spectrum (½ x 4)	Assignment of Bands (½ x 4)	Nature of Bands (½ x 4)
3550			
2750			
1700			
1600			



Signals	Identification of Signals	Splitting of Signals	No. of H atoms	Assignment of Signals	Explanation
	1x3	$1/2 \times 3 = 1\frac{1}{2}M$	$1/2 \times 3 = 1\frac{1}{2}M$	1x3	1x3
9.85					
6.33					
3.99					