

BOWEN UNIVERSITY IWO, OSUN STATE
FACULTY OF SCIENCE
DEPARTMENT OF CHEMISTRY AND INDUSTRIAL CHEMISTRY
B.SC DEGREE SECOND SEMESTER EXAMINATION
2018/2019 SESSION

Course Code: CHM 104 Course Title: General Chemistry Practical I Credit: 1
Date: Time allowed: 1 hour
Instructions: (a) Answer all questions in the space provided on the question paper
(b) Submit the question paper at the end of the examination

SURNAME: OTHER NAMES:

MATRIC NUMBER: DEPARTMENT:

QUESTION ONE

- (a) Briefly discuss the ignition and Lassaigne's test (8 marks).....
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- (b) State three precautions you will observe when performing the experiments in Question One (a) (3 marks).....
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- (c) Fill in the missing observations/inferences in the table below as you would observe in the sodium fusion experiment.

TEST	OBSERVATION	INFERENCE
1.0 g FeSO ₄ +2 mL filtrate heat/shake + H ₂ SO ₄ Allow to stand for 15 minutes	(i)------(1 mark) (ii)------(1 mark)	Nitrogen is present
5 mL filtrate +H ₂ SO ₄ +HNO ₃ +excess AgNO ₃	White precipitate	(iii)----- (1 mark)
Filtrate + 2 mL acetic acid +drops of Lead acetate solution	(iv)----- (1 mark) (v)------(1 mark)	(vi)----- (1 mark) (vii)----- (1 mark)

QUESTION 2

- (a) What is the significance of the experiment for the solubility of unknown substances in common reagents? (2 marks).....
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- (b) Fill in the missing observations/inferences in the incomplete table as you would observe in the practical organic chemistry class.

TEST	OBSERVATION	INFERENCE
Sample A + water + litmus paper + heat	Soluble ; Neutral to litmus	(i)----- (1 mark)
Sample B + NaHCO ₃ + litmus paper heat	(ii)----- (1 mark) (iii)----- (1 mark)	Carboxylic acid
Sample C + dilute HCl + litmus paper heat	Soluble ; Alkaline to litmus	(iv)----- (1 mark)
Sample D + water + litmus paper heat	(v)----- (1 mark) (vi)----- (1 mark)	Esters/Phenols
Sample E + water + litmus paper heat	Soluble ; Acidic to litmus	(vii)----- (1 mark)
Sample F + dilute NaOH + litmus paper heat	Soluble ; Acidic to litmus	(viii)----- (1 mark)
Sample G + dilute NaOH/HCl + litmus paper heat	Insoluble	(ix)----- (1 mark)

QUESTION 3

- (a) Briefly expatiate on the term "Qualitative Organic Analysis" (2 marks) -----

- (b) Briefly discuss the methods employed in Qualitative Organic Analysis (3 marks).-----

- (c) What are the physical examinations performed on organic compounds prior to qualitative analysis (2 marks)-----

- (d) Describe how you can detect carbon and hydrogen in organic compounds (4 marks)-----
-----Carbon-----

-----Hydrogen-----

