UNIVERSITY OF LAGOS

DEPARTMENT OF CHEMISTRY

B.Sc./ B.Sc. (Edu) Hons. Examination, 1st Semester 2017/2018

CHM 213: BASIC ORGANIC CHEMISTRY

Attempt All Questions

Total **Time: 2½ Hour**

This examination is in two parts; part A for 1½ hr after which it will be collected

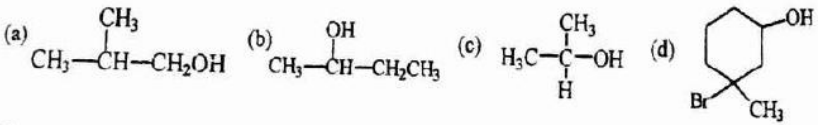
Part B is for only 1 hr.

SURNAME: **Other Name:**

Matric No: Department:

PART A

1. All the following are examples of secondary alcohol except



2. The reagent used in the reduction of ketone in the preparation of tertiary (3°) alcohol is
(a) $LiAlH_4$ (b) $NaBH_4$ (c) $RMgCl / H^+$ (d) All of the above.

3. In the dehydration reaction of $CH_3CH_2CHCH_2OH$ in the presence of sulphuric acid, at 140°C. The product formed is?

(a) acid (b) alkene (c) ether (d) alcohol

4. The product of the reaction of metal alkoxides and primary alkyl halides is

(a) acid (b) alkene (c) ether (d) alcohol

5. The name of the organic compound: $CH_3CH(CH_2I)\ CH_2\ CHO$ is

(a) 4-iodo-3-methyl propanal (b) 3-iodomethyl butanal
(c) 3-iodomethyl-3-methyl propanal (d) 4-iodo-3-methyl butanal

6. The product of the reaction of acid chloride and aromatic hydrocarbon in the presence of a Lewis catalyst is

(a) ketone (b) aldehyde (c) ester (d) alcohol

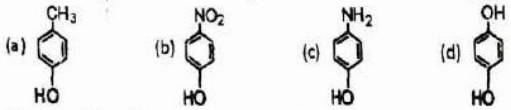
7. Which of the following compounds would you expect to possess the highest boiling point

(a) $CH_3CH_2CH_2CHO$ (b) $CH_3CH_2OCH_2CH_3$ (c) $CH_3CH_2CH_2COOH$ (d) $CH_3CH_2CH_2CH_2OH$

8. Which of the following would be oxidised to propan-2-one
(a) butan-1-ol (b) ethanol (c) 2-methylpropan-2-ol (d) propan-2-ol

9. Which of the following statements are correct:
i. 3° alcohols have lower boiling points than 1° alcohols with an similar molecular weights
ii. Alcohols undergo nucleophilic substitution
iii. 3° alcohols undergo dehydration more readily than 1° alcohols
iv. 3° alcohols are oxidised to ketones
(a) i, ii, iii & iv (b) i, ii & iii (c) i, iii & iv (d) ii, iii & iv

10. Choose the most acidic compound from the following:

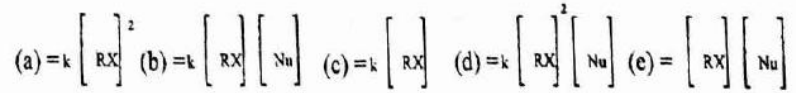


11. Which of the following statements is incorrect:
(a) Ethers are flammable
(b) Ethers form peroxides by free radical oxidation
(c) Ethers are widely used as extraction solvents
(d) An ether oxygen can only be found within an acyclic carbon chain

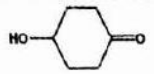
12. How many 1,2-disubstituted benzene is(are) possible

(a) 1 (b) 2 (c) 3 (d) 4

13. The rate of SN_2 reaction is



14. Give the IUPAC nomenclature for the compound below:



(a) 1,4-ketohexanol (b) 4-oxocyclohexanol
(c) 4-oxohexanol (d) 4-hydroxycyclohexanone

15. Which of the following would be oxidised to propan-2-one
(a) butan-1-ol (b) ethanol (c) 2-methylpropan-2-ol (d) propan-2-ol