



Eastern University, Sri Lanka

Third Year First Semester Examination in Science-External Degree

2010/2011 (June/ August 2012)

EXTCH 301 CHEMISTRY OF NATURAL PRODUCTS

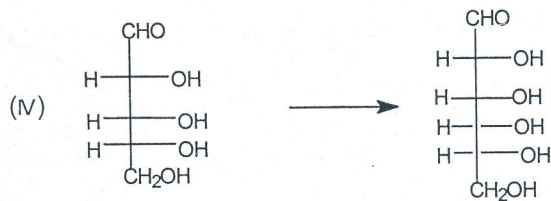
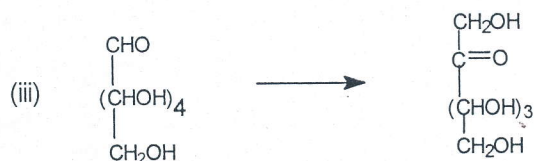
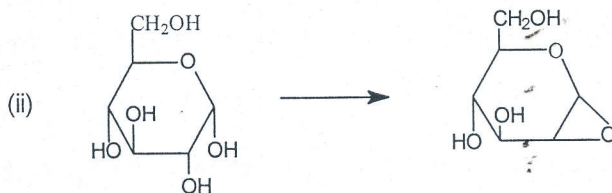
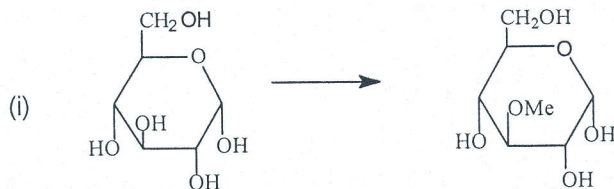
Answer all questions

Time: 01 hour

1. (a) What is muta-rotation? Explain with a suitable example.

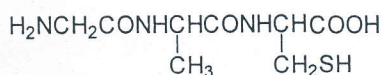
[10 marks]

(b) By means of equations show how the following transformations may be effected. Give essential experimental conditions



[40 marks]

(c) Show how the following tri peptide can be synthesized starting with individual amino acids.



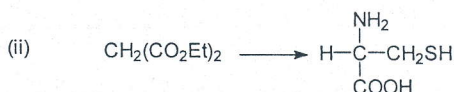
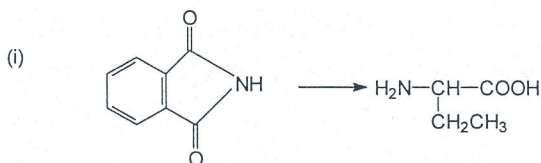
[20 marks]

(d) Give two examples each for amino protecting groups and acid activating groups used in the synthesis of peptide chain.

[10 marks]

Contd...

(e) Indicate by means of equation how the following transformation may be effected?



[20 marks]

2. (a) Draw the structures of the following disaccharides and indicate the type of the linkage in it.

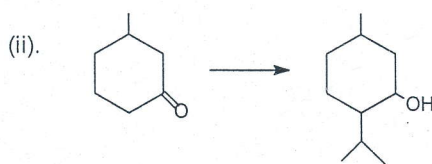
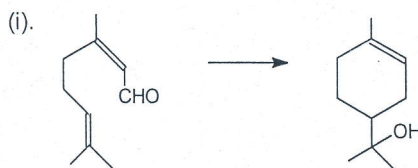
- (i) Sucrose
- (ii) Lactose
- (iii) Maltose

[30 marks]

(b) Neomenthyl chloride undergoes E_2 elimination reaction when heated with NaOMe about 200 times faster than menthyl chloride under the same condition. Explain.

[20 marks]

(c) How the following transformation may be effected? Indicate by means of equation.

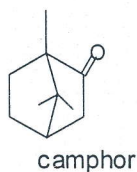


[20 marks]

(d) Write the cyclohexane configuration of menthol, isomenthol, neomenthol, and neoisomenthol.

[10 marks]

(e) Outline one method to synthesis of camphor starting from readily available compounds.



[20 marks]