1ST SEM. 2015/2016

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: B. SC. AGRON II.; B.SC. ASC. II; BSC. ASD. II; B.SC. FSNT II & B.SC. HORT. II.

COURSE CODE: AS 202

TITLE OF PAPER: BIOCHEMISTRY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY 4 QUESTIONS.

THIS PAPER SHOULD NOT BE OPENED UNTIL THE CHIEF INVIGILATOR HAS GRANTED PERMISSION.

QUESTION 1

A) Describe and illustrate production of sugar alditols from the following monosaccharides:

i) D-Glucose (5 Marls)

ii) D-Mannose (5 Marks)

iii) D-Glyceraldehyde (3 Marks)

B) Describe and illustrate monosaccharides that can be isolated from the hydrolysates of the following oligosaccharides:

i) Sucrose (6 Marks)

ii) Lactose (6 Marks)

QUESTION 2

a) Explain and illustrate the biosynthesis of Sulphur containing amino acids by soil bacteria. (15 Marks)

b) Giving an example in each case, explain and illustrate:

i) Essential fatty acids (5 Marks)

ii) Essential amino acids (5 Marks)

QUESTION 3

Using structures to illustrate your answers describe the following: (5 Marks each)

a) Triacylglycerides

b) Riboflavin

c) Eicosanoids

d) Ribonucleoside

e) Amino sugar

QUESTION 4

a) Discuss and illustrate the catabolism of glucose in the cytoplasm of the eukaryotic cell. (16 Marks)

b) Describe and illustrate the formation of peptide bonds in the animal cell. (9 Marks)

QUESTION 5

a) Briefly discuss the classification of enzyme inhibitors. (9 Marks)

b) Giving **TWO** examples in each case, explain the major differences between:

i) Water soluble and fat soluble vitamins (8 Marks)

ii) Saturated and unsaturated fatty acids (8 Marks)