

2nd SEM.2011/2012



**UNIVERSITY OF SWAZILAND
SUPPLEMENTARY EXAMINATION PAPER**

PROGRAMME: BSC AGRIC. ECON. & AG. BMgt (2)

COURSE CODE: ABE 208

TITLE OF PAPER: POST-HARVEST TECHNOLOGY

TIME ALLOWED: TWO (2) HOURS

**SPECIAL MATERIAL REQUIRED: CALCULATOR &
PSYCHROMETRIC CHART**

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO
OTHER QUESTIONS.**

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GRANTED BY THE CHIEF INVIGILATOR**

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SECTION ONE: COMPULSORY

QUESTION ONE

- (a) Define the following: **(10 Marks)**
- (i) Equilibrium moisture content,
 - (ii) Grain repose angle,
 - (iii) Specific enthalpy,
 - (iv) Psychrometric chart,
 - (v) Critical moisture content
- (b) If the dry and wet bulb temperatures of moist air are 35 °C and 26 °C respectively, find the other thermodynamics properties of air from the psychrometric chart provided. **(10 Marks)**
- (c) Discuss the principal causes of post-harvest losses? **(10 Marks)**
- (d) What factors would you consider when applying fumigants in stored grain? **(10 Marks)**

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SECTION II: ANSWER ANY TWO QUESTIONS

QUESTION TWO

- (a) Discuss the importance of post-harvest knowledge and skills in modern farming practices. **(15 marks)**
- (b) With the aid of a sketch diagram, discuss the critical parameters observed in the construction of a maize crib? **(15 marks)**

QUESTION THREE

- (a) Write notes on the maize grain weevil (*Sitophilus zeamais*) addressing the following: **(20 Marks)**
 - (i) Life cycle
 - (ii) Damage to grain
 - (iii) Prevention
 - (iv) Control
- (b) Briefly discuss the effect of drying on grain quality. **(10 Marks)**

QUESTION FOUR

- (a) Giving examples of the most important species, describe how micro-organisms cause losses in food grain. **(10 Marks)**
- (b) Define sun drying and discuss the advantages and disadvantages of this method **(10 Marks)**
- (c) With the aid of a neat sketch diagram show the physical structure of a maize grain and briefly describe the composition of each of the components. **(10 Marks)**

