

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE

AGE 407

Department of Crop Science
Bachelor of Agricultural Science (Honours) Part IV Examination
Post-harvest Crop Management

3 HOURS (100 Marks)

INSTRUCTIONS

Answer any **FOUR** questions. Each question carries 25 marks.

1. Discuss methods used for indirect moisture determination of cereal grains.

[25 marks]

2. (a) Use the psychrometric chart to complete the table below:

Tdb °C	Twb °C	Tdp °C	W Kg/kg	Enthalpy kJ/Kg	RH %	V m ³ /Kg
				40		0.84
			0.010		35	

[10 marks]

- (b) (i) Describe the mechanisms for grain deterioration in a silo.
(ii) and suggest mitigatory practices.

[10 marks]

[5 marks]

3. Compare and contrast the 'count and weigh' and the 'thousand grain mass' methods for loss assessment of grain in storage.

[25 marks]

4. Discuss the following in grain storage;

- (a) admixtures of plant and mineral substances,

[15 marks]

- (b) fumigants.

[10 marks]

5. Describe the following physical properties of grain and their importance in the post-production cycle:

(a) dimensions, [5 marks]

(b) thermal conductivity, [5 marks]

(c) bulk density, [5 marks]

(d) hygroscopic properties, [5 marks]

(e) moisture content. [5 marks]

6. Examine any five causes of grain losses in the post-production cycle and suggest measures to limit them. [25 marks]

END OF PAPER