



L-Università
ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL
2021 SUPPLEMENTARY SESSION**

SUBJECT:	Agribusiness
PAPER NUMBER:	Synoptic – Unit 3
DATE:	1 st November 2021
TIME:	9:00 a.m. to 11:05 a.m.

**THIS PAPER SHOULD BE RETURNED TO THE INVIGILATOR
AFTER THE EXAMINATION.**

Answer ALL questions in the space provided.

Scenario

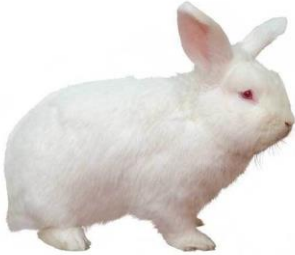


A rabbit breeder has to understand:

- the basic concepts of genetics,
- the basic needs of the animal depending on the intended purpose,
- issues related to disease management.

Question 1

(6 marks)

State **TWO** important features required in the following common rabbit breeds and hybrids in relation to their breeding purpose.

	Rabbit Breed	Two important features
a.	 New Zealand White rabbit (Meat market) <i>(Source: https://www.petplan.co.uk/pet-information/rabbit/breed/new-zealand-white/)</i>	i. _____ _____ (1) ii. _____ _____ (1)
b.	 Lionhead rabbit (Pet) <i>(Source: https://www.petplan.co.uk/pet-information/rabbit/breed/lionhead/)</i>	i. _____ _____ (1) ii. _____ _____ (1)
c.	 Rex rabbit (Fur Industry) <i>(Source: https://squeaksandnibbles.com/black-otter-rex-rabbits/)</i>	i. _____ _____ (1) ii. _____ _____ (1)

Question 2**(6 marks)**

Outline the following laws of genetics.

a. Mendel's first law:

(3)

b. Mendel's second law:

(3)

Question 3**(10 marks)**

- A rabbit breeder owns a pair of rabbits.
- Both male and female are black-furred.
- The breeder knows that both rabbits have a recessive gene for white fur, so their genotypes are both Ff (F referring to the black allele and f referring to the white allele).

a. Construct a punnet square to illustrate the F1 offspring generation using Mendel's Law.

(3)

This question continues on next page.

b. Predict the percentage of each phenotype of offsprings in the F1 generation.

_____ (1)

c. Predict all genotypes and the ratio/percentage for each of the offsprings in the F1 generation:

_____ (1)

d. Construct a punnet square to illustrate the F2 offspring generation if an offspring with a visible recessive phenotype is bred with a parent that produced the F1 generation.

(3)

e. Predict the percentage of each phenotype of offsprings in the F2 generation.

_____ (1)

f. Predict all genotypes and the ratio/percentage for each of the offsprings in the F2 generation:

_____ (1)

Question 4

(6 marks)

Distinguish between mitosis and meiosis in **TWO** point per term within the box below.

a.	Mitosis	b.	Meiosis
i.	(1.5)	i.	(1.5)
ii.	(1.5)	ii.	(1.5)

Question 6

(8 marks)

Identify **ONE** cause for each of the following rabbit diseases and disorders and **ONE** correct prevention measure for each. Some answers may be used more than once.

clean and disinfect water system mites good feed storage good hygiene
 lack of vaccination in-breeding vaccinations too much protein
 introduction of new stock good record keeping inadequate flooring for breed
 proper microclimatic and housing conditions farm bio-security

Disease/Disorder	Probable cause	Preventive measure
a. ear canker	_____ _____(1)	_____ _____(1)
b. viral diseases	_____ _____(1)	_____ _____(1)
c. buckteeth	_____ _____(1)	_____ _____(1)
d. sore hocks	_____ _____(1)	_____ _____(1)

Question 7

(12 marks)

Justify the use of the given treatments for the following diseases, disorders and pests.

	Disease, disorder or pest	Proper Treatment	Justification
a.	Coccidiosis	Antibiotics	_____ _____ _____ (2)
b.	Myxomatosis	Culling	_____ _____ _____ (2)
c.	Ear canker	Ear drops/vaccination	_____ _____ _____ (2)
d.	Malocclusion	Cutting the teeth with sharp pliers to the gums	_____ _____ _____ (2)
e.	Sorehocks	Disinfectants	_____ _____ _____ (2)
f.	Snuffles	Antibiotics	_____ _____ _____ (2)

Question 8

(10 marks)

a. List **TWO** correct practices when choosing the type of food to feed rabbits.

Practice 1: _____ (1.5)

Practice 2: _____ (1.5)

b. List **ONE** correct practice that needs to be observed when checking the water supply.

_____ (1)

c. List **TWO** practices required when cleaning a rabbit cage.

Practice 1: _____ (1)

Practice 2: _____ (1)

Practice 3: _____ (1)

d. List **TWO** PPEs used for feeding, watering and cleaning tasks in rabbit production.

PPE 1: _____ (1.5)

PPE 2: _____ (1.5)

Question 9

(20 marks)

a. Mention **SEVEN** areas on a rabbit that should be considered when a rabbit's health check-up is undertaken.

Area 1: _____ (2)

Area 2: _____ (2)

Area 3: _____ (2)

Area 4: _____ (2)

Area 5: _____ (2)

Area 6: _____ (2)

Area 7: _____ (2)

b. How should the appetite of a healthy rabbit be?

_____ (1)

c. What documents/records should be checked to determine the health status of the rabbit?

_____ (1)

d. What PPEs are used during a check-up?

PPE 1: _____ (1)

PPE 2: _____ (1)

e. Mention **ONE** reason why these PPEs are used.

_____ (2)

Question 10

(6 marks)

Describe favourable micro-climatic conditions for the parameters below. In your answer include ways to control the conditions and what effects are experienced by rabbits if these are uncontrolled.

a. Quality of air/ventilation: _____

_____ (2)

b. Temperature: _____

_____ (2)

c. Lighting: _____

_____ (2)

Please turn the page.

Question 11

(4 marks)

Describe **ONE** behavioural change in rabbits and **TWO** anatomical features in rabbits in relation to copulation.

Behavioural change in rabbits:

_____ (2)

Anatomical features in rabbits:

Feature 1: _____

_____ (1)

Feature 2: _____

_____ (1)

Question 12

(4 marks)

Outline **TWO** different methods of rabbit slaughtering

Slaughter method 1: _____ (1)

Outline: _____

_____ (1)

Slaughter method 2: _____ (1)

Outline: _____

_____ (1)

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