



Dr. Blossa Science

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UACE P515/3 Principles and practices of agriculture2 2018

2 hours

Instructions

Answer all questions

1. Specimen B and C are crops attacked by pests
 - (a) Cut open specimen B and split open specimen C to expose the inside parts. Describe the condition of each specimen. (02marks)
 - (i) B
 -
 - (ii) C
 -
 - (b) Suggest the possible pest responsible for the conditions of each specimen. (01 marks)
 - (i) B
 - (ii) C
 - (c) Basing on the observations in (a) explain how the condition of each specimen is caused. (02marks)
 - (i) B
 -
 - (ii) C
 -
 - (d) Suggest
 - (i) **four** ways of controlling the pest that causes the condition of specimen B (02marks)
 -
 -
 -
 -

(ii) **two** ways of controlling the pest that causes the condition of specimen C (01marks)

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(e) From the observation of the attack on specimen B, suggest why it is difficult to control the pest (02 marks)

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2. You are provided with specimen P which is part of an animal

(a) Observe the specimen and identify the undesirable features on it (2½ marks)

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(b) Suggest the cause of each undesirable feature on the specimen. (2½ marks)

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(c) State how each of the identified undesirable features affect the quality of the specimen (05marks)

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3. Specimen S1, S2, S3 and S4 are common building tools and materials on a farm.

(a) Basing on the observations, explain how any one feature on each of specimens S1, S2 and S3 facilitate the use of specimens. (03marks)

- (i) S1
.....
.....
- (ii) S2
.....
.....
- (iii) S2
.....
.....

(b) State a farm operation involves the use of all the specimens. (01marks)

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(c) Give two maintenance practices for each of specimens S1, S2 and S3 (03marks)

- (i) S1
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.....
- (ii) S2
.....
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.....
- (iii) S2
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(d) (i) Using a ruler, measure the dimensions of specimen S4 and record your answer in centimeters ($\frac{1}{2}$ mark)

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(ii) Basing on the results in (d)(i), calculate the number of specimen S4 needed to construct a wall of 4 metres high, 10cm thick and 80 metres long. (Assume the thickness of building material is negligible. (2½ marks)

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4. Specimens K, L, M and L are livestock feeds

(a) Name the specimens (02marks)

K
L
M
N

(b) Explain how the physical nature of each specimen affects its intake by animals. (04 marks)

K
.....
L
.....
M
.....
N
.....

(c) Give one benefit of using each specimen to feed animals. (02marks)

K
.....
L
.....
M
.....
N
.....

(d) Suggest one way of improving the intake of each specimen (02marks)

K
.....
L
.....
M
.....
N
.....

5. Specimen W is a soil sample. Carry out the following tests on the specimen using the following procedure.

Label two measuring cylinders provided as X and Y. To each measuring cylinder, put 10cm^3 of W followed by 50cm^3 of water. Stir thoroughly then allow the mixtures to stand for 10 minutes.

(a) (i) Record your observation in each cylinder (01 mark)

X

Y

(ii) Add a spatula end-full of Z into cylinder only and stir the contents of both cylinders again thoroughly. Allow the contents to stand for 20 minutes and record your observations in each cylinder. (01 marks)

X

Y

(b) Take 2cm^3 of the top solution from each of the cylinder X and Y at a time, and using the universal indicator, determine and record the pH of each solution (02marks)

pH of solution X

pH of solution Y

(c) (i) From your observation in (a) and (b) state the effect of substance Z on W. (02marks)

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(ii) Suggest the identity of Z

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(d) Explain how a farmer can benefit from the knowledge in the experiment

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End

Confidential material

Each student should be provided with

Dairy meal, labeled K



Silage, labeled L



Hay, labeled M



Young fresh green pasture plant, Labeled N



Brick layer's trowel, Labeled S₁



Spirit level/builder's level labeled S₂



Wood float labeled S₃



Block with dimensions of 20cm x 10 x 8cm labeled S₄



A dry skin/hide of about 10cm², labeled P

Specimen P should bear the following

- Fat/meat left on
- Holes cut in the hide/skin
- Soil and dung dried on
- Folds formed during drying
- Hair slip



Sweet potato tuber attacked by weevil, labeled B



Bean pond attacked by American boll worm, labeled C



50cm³ of dry clay soil, labeled W



1 teaspoonful of calcium carbonate, labeled Z

Universal indicator

pH chart (1- 14)

3 measuring cylinders (100ml)

1 beaker (250cm³)

1 stirring rod

1 spatula

1 stop clock

knife

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Suggested answers

1. Specimen B and C are crops attacked by pests

(a) Cut open specimen B and split open specimen C to expose the inside parts. Describe the condition of each specimen. (02marks)

(i) B

(ii) C

(b) Suggest the possible pest responsible for the conditions of each specimen. (01 marks)

(i) B

(ii) C

(c) Basing on the observations in (a) explain how the condition of each specimen is caused. (02marks)

(i) B

(ii) C

(d) Suggest

(i) **four** ways of controlling the pest that causes the condition of specimen B (02marks)

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.....
.....

(ii) **two** ways of controlling the pest that causes the condition of specimen C (01marks)

.....
.....
.....

(e) From the observation of the attack on specimen B, suggest why it is difficult to control the pest (02 marks)

.....
.....
.....

2. You are provided with specimen P which is part of an animal

(a) Observe the specimen and identify the undesirable features on it (2½ marks)

(ii) S2

(iii) S2

(d) (i) Using a ruler, measure the dimensions of specimen S4 and record your answer in centimeters (½ mark)

(ii) Basing on the results in (d)(i), calculate the number of specimen S4 needed to construct a wall of 4 metres high, 10cm thick and 80 metres long. (Assume the thickness of building material is negligible. (2½ marks)

4. Specimens K, L, M and N are livestock feeds

(a) Name the specimens (02marks)

K

L

M

N

(b) Explain how the physical nature of each specimen affects its intake by animals. (04 marks)

K

L

M

N

.....
(c) Give one benefit of using each specimen to feed animals. (02marks)

K

L

M

N

(d) Suggest one way of improving the intake of each specimen (02marks)

K

L

N

5. Specimen W is a soil sample. Carry out the following tests on the specimen using the following procedure.

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X

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Y

.....

(b) Take 2cm³ of the top solution from each of the cylinder X and Y at a time, and using the universal indicator, determine and record the pH of each solution (02marks)

pH of solution X

pH of solution Y

(c) (i) From your observation in (a) and (b) state the effect of substance Z on W. (02marks)

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.....

(ii) Suggest the identity of Z

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(d) Explain how a farmer can benefit from the knowledge in the experiment

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End

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Thanks

Dr. Bbosa Science