

2914/206
APPLIED BIOLOGY
PRACTICAL II
Oct./Nov. 2022
Time: 4 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN APPLIED BIOLOGY
MODULE II

APPLIED BIOLOGY PRACTICAL II

4 hours

easyvet.com

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Non-programmable scientific calculator.

Answer ALL questions in the answer booklet provided.

All questions carry equal marks.

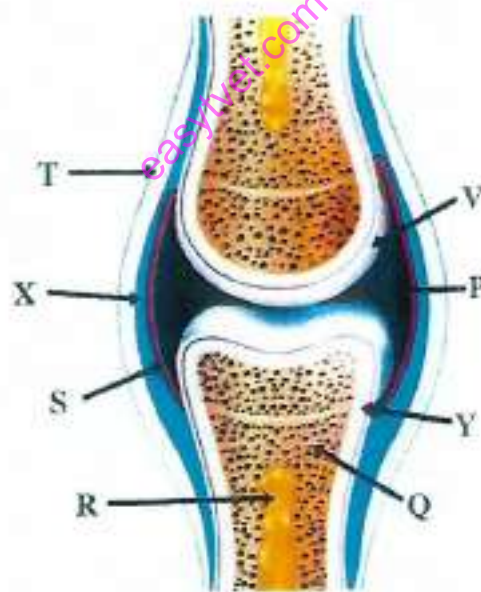
Maximum marks for each part of a question are indicated.

Candidates should answer the questions in English.

This paper consists of 4 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

1. (a) You are provided with a specimen labelled P_1 .
- (i) Identify specimen P_1 . (1 mark)
- (ii) Classify specimen P_1 up to the species level. (7 marks)
- (b) Prepare a cross-section of P_1 and observe under X40 objective.
- (i) Outline the procedure carried out in (b). (7 marks)
- (ii) Draw a labelled diagram of the mounted section of P_1 . (10 marks)
2. (a) You are provided with specimens labelled A_1 and A_2 .
- (i) Identify specimens A_1 and A_2 . (2 marks)
- (ii) Draw a labelled diagram of specimen A_2 . (6 marks)
- (iii) State any **four** differences between specimen A_1 and A_2 . (4 marks)
- (b) **Figure 1** represents a synovial joint.



- (i) Identify the parts labelled P, Q, R, S, T and V. (3 marks)
- (ii) Highlight **five** functions of the content found in part labelled P. (5 marks)
- (c) Outline any **five** functions of bones. (5 marks)

3. You are provided with photographs of habitats labelled figures 2, 3 and 4.



Fig. 2



Fig. 3



Fig. 4
3

- (a) Identify the habitats represented in each of the figures labelled 2, 3 and 4. (3 marks)
- (b) (i) Name the type of plants observed in figure 4. (1 mark)
- (ii) Describe the abiotic factors associated with habitat in figure 4. (5 marks)
- (c) Explain adaptations of the plants in figures 2 and 3 in relation to their respective habitats. (16 marks)
4. (a) (i) You are required to determine blood groups of the blood samples labelled G_1 , G_2 , G_3 and G_4 .
- Proceed as follows:
- Place a clean white tile on the bench.
 - Label three wells A, B and D.
 - Add one drop of Anti A to the well labelled A, one drop of Anti B to the well labelled B and one drop of Anti D to the well labelled D.
 - Add a drop of blood sample labelled G_1 to each of the wells labelled A, B and D.
 - Using a separate applicator stick for each well, mix the content thoroughly.
 - Make observation and record the results in a table.
 - Repeat this procedure for blood samples labelled G_2 , G_3 and G_4 separately. (12 marks)
- (ii) Identify the blood groups of blood samples labelled G_1 , G_2 , G_3 and G_4 . (4 marks)
- (b) Account for the observation made in (a)(i) for the blood samples labelled G_1 , G_3 and G_4 . (9 marks)

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