051106T4APB

APPLIED BIOLOGY LEVEL 6

APB/OS/AB/CC/01/6/A

PERFORM ANATOMY AND PHYSIOLOGY STUDIES

July /August 2024

TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

WRITTEN ASSESSMENT

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. This paper consists of two sections**:** A and **B**
2. Answer **ALL** the question as guided in each section
3. Marks for each question are as indicated in the brackets
4. You are provided with a separate answer booklet to answer the questions
5. Do not write in this question paper

This paper consists of THREE (3) printed pages

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

SECTION A (40MARKS)

(Answer ALL questions in this section)

1. Assuming you are team working on a research project that aims to understand the types of excretory products produced by plants. Name **FOUR** excretory structures in plant. (4 Marks)
2. You are tasked to research on the specific adaptations of proximal convoluted tubules (PCTs) to their primary function of reabsorbing substances. Describe **TWO** adaptations of the proximal convoluted tubules to their function. (4 Marks)
3. You are assigned to research and analyse the structural differences of the components of the circulatory system. State **TWO** structural differences between arteries and veins. (4 Marks)
4. You are tasked with researching and identifying the key factors that influence the rate of photosynthesis in plants. State any **FOUR** factors that affect photosynthesis. (4 Marks)
5. An anatomist focuses on the female reproductive organ of flowering plants. Name the **FOUR** components of pistil as part of flower. (4 Marks)
6. Assuming your work encompasses dealing with lymphocyte biology on immune system. Outline **TWO** main types lymphocytes. (4 Marks)
7. Suppose your work involves identifying and describing essential nutrients for living organisms. Name **FOUR** major macronutrients. (4 Marks)
8. Skeletons are essential for movement and maintenance of shape in animals. Explain any **TWO** types of skeletons. (4 Marks)
9. A team of researchers is studying the impact of environmental factors on sensory perception in humans. Name any **FOUR** sensory organs. (4 Marks)
10. A scientist is conducting research on the neurons in the context of movement control. State the function of any **TWO** types of neurons. (4 Marks)

SECTION B (60MARKS)

(Answer Question ELEVEN and Any Other TWO Questions)

11. a) A researcher is investigating the regulatory mechanisms in the hum an body, focusing on the endocrine and nervous systems. Describe any **FOUR** similarities between the endocrine and nervous control system. (4 Marks)

    b) A botanist conducting a study on the growth patterns of a specific crop plant. Name and explain the FOUR phases of the plant growth curve. (16 Marks)

12. a)A plant biologist is studying the adaptations of leaves to optimize photosynthesis in a specific plant species. Explain how the leaf is adapted to carry out photosynthesis (14 Marks)

    b)A team conducting research on the role of saliva in the digestive process. Describe the functions of saliva in digestion. (6 Marks)

13. A physiologist is conducting research on skeletal muscles and synovial joints to understand their characteristics and functions in the human body.
    a) State the characteristics of skeletal muscles. (8 Marks)
    b) Describe three types of synovial joints. Give an example in each case (12 Marks)

14. a) A botanist is studying the adaptation of seeds and fruits to dispersal methods. Describe the adaptation of seeds and fruits to dispersal methods. Give an example in each case (16 Marks)
    b) A team conducts studies on different types of contraceptives. State **FIVE** methods of birth control. (4 Marks)

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