BIOLOGY ESSAYS ON ADAPTATION

Describe how the mammalian heart is ADAPTED to its function (20mks)

Explain how predators are ADAPTED to capture their prey. 14mks

Describe how hydrophytes are ADAPTED to living in areas with abundant water. (8mks)

Describe the ADAPTATIONs of seeds and fruits to dispersal. 20mks

Describe how the xerophytes are ADAPTED to their habitats. 20mks

Describe how the mammalian skin is ADAPTED to its functions. (20mks)

Describe how a male reproductive system is ADAPTED to its functions. 20mks

Describe the ADAPTATIONs of wind pollinated flowers. (20mks)

Describe how herbivorous mammals are ADAPTED to their mode of feeding. (16mks)

Explain the ADAPTATIONs of respiratory surfaces to their functions. (10 marks)

Explain how a body fish is ADAPTED for movement in its habitat. (20mks)

Describe how different types of tropisms ADAPT plants for survival in their habitats. (20mks)

13. Explain how the mammalian kidney is ADAPTED to its functions. (17 mks)

Describe how insect pollinated flowers are ADAPTED to pollination. (14 mks)

How is the gaseous exchange system of a mammal ADAPTED to perform its functions? (20mks)

Describe the various ways in which seeds and fruits are ADAPTED for dispersal. (20mks)

Describe how the mammalian ear is ADAPTED to perform its functions. (20mks)

Describe how small intestines are ADAPTED for its functions. (20 mks)

Describe how the mammalian eye is ADAPTED to perform its functions. (20mks)

Describe how desert plants are ADAPTED to conserve water. (12mks)

Describe the ADAPTATIONS of the mammalian blood. (17mks)

Explain how the leaf is ADAPTED to photosynthesis

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Describe the ADAPTATIONS of the structures of the mammalian (human)
(b) Describe the ADAPTATIONS of the structure of the root, root hair cell, xylem and phloem to their functions

Describe the ADAPTATIONS of the internal structure of the leaf to transpiration

Describe the ADAPTATIONS of the structure of the blood vessels to their functions

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Describe the ADAPTATIONS of the structures of the human lungs, and liver to their functions

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Describe the ADAPTATIONS of the structure of the mammalian nervous system to its functions

Describe the ADAPTATIONS of the structure to function of the human ear and eye

Describe the evidence of organic evolution (20mks)

a) Explain how various environmental factors increase the rate of transpiration (16 mks)

b) What is the significance of transpiration to plants (4 mks)

a) Name two processes by which flowering plants excrete products, and for each process, state two waste products that are eliminated. (6 mks)

b) Explain the roles of the Liver

Kidneys in eliminating excess amino acids from the human body.(14 mks)

Describe the structure and function of various parts of the mammalian skin. (20 mks)

In Britain, it is observed that there are two varieties of a moth species (Briston betulania). These are the light coloured peppered moth and the melanic form (dark coloured). It is observed that the light coloured moth is at high population in the forest land while the melanic form was at high population near industries. Explain the evolution principle behind the above observation.(16 mks)

b) State and explain the principles of Lamarck’s theory of evolution. (4 mks)
b) Explain how digestion of various food substances takes place in the duodenum. (8 mks)

Describe the importance of a balanced diet in children. (20 mks)

(a)(i) Lamarck’s theory of evolution has been rejected by scientists today. Explain. (2 mks)

(ii) Explain the meaning of the term “Survival of the fittest.” (3 mks)

b) Describe the various evidences which show that organic evolution has taken place. (15 mks)

(a) What is the role of the Gibberellins in plant growth and development? (5 mks)

(b) List down the characteristics features of the meristematic cells in a plant. (5 mks)

(c) Explain the effects of unidirectional light on growth, in a seedling. (10 mks)

Describe how excretion takes place in the mammalian kidneys? (20 mks)

Describe the digestion of egg albumen from the time of ingestion to the time it is assimilated in the body cells. (20 mks)

Describe the evidences that support the theory of organic evolution. (20 mks)

a) Differentiate between Homologous and Analogous structures. (4 mks)

b) Describe how natural selection brings about ADAPTATION of a species to its environment (18 mks)

Describe the role of hormones in the human menstrual cycle. (20 mks)

b) Explain how a seed is formed in a flowering plant. (6 mks)

Describe the various evidences which show that organic evolution has taken place. (20 mks)

a) What is meant by natural selection (3 Marks)

a) Describe secondary thickening in flowering plants (14 Marks)

b) Describe one method which can be used to measure the average growth rate of a single leaf on a plant (6 Marks)

Describe the process of digestion that takes place when one eats an egg white and ugali. (20 mks)

Describe the various evidences which show that evolution has taken place. (20 mks)

(a) Name Five methods of excretion in plants. (5 mks)

(b) Give Three reasons why plants lack complex excretory system (3 mks)

(b) State six excretory products in plants and give their economic uses. (12 mks)

(a) What is pollution? (2 marks)
(b) Describe the effects of the various pollutants in water and soil to living organisms. (18 marks)

Explain the sources of water pollution and their effects on aquatic ecosystem. (20 mks)

Describe the process of blood clotting in man when blood is exposed to air. (5 mks)

Describe the skin under the following headlines. (20 mks)

As a thermoregulatory organ

As an excretory organ

As a sense organ

As a protective organ

As an osmoregulatory organ.

Explain the mechanism by which a human body maintains a constant body temperature. (20 mks)

(a) What is pollination? (2 mks)

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Describe locomotion in a finned fish. (20 mks)

(a) Distinguish between breathing and respiration. (2 marks)

(b) Describe breathing mechanism in man. (14 marks)

(a) Describe the Darwin theory of natural selection. (10 marks)

(b) Explain why plant breeders encourage cross-breeding and discourage inbreeding. (4 marks)

(c) The ban of Sulphur based malaria drugs is because the plasmodium has developed resistance after long exposure to the drugs. Explain how resistance to the drug develops. (4 marks)

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Describe one method which can be used to measure the average growth of a root seedling.

a) Name the parts of the body, where mammalian blood cells are manufactured. (3 mks)

Compare the nervous and endocrine systems. (8 mks)
(b) A barefooted man suddenly steps on a sharp thorn and quickly jumps up. Describe the changes that occur in the man’s body that brings about this response. (12mks)

Describe the composition and functions of mammalian blood. (20mks)

With the aid of a diagram, explain double fertilization in flowering plants (15 mks)

b) State the changes that occur in the flowering plant after fertilization (5mks)

(a) What is homeostasis? 2mks

b) Describe the homeostatic functions of the mammalian liver. 18mks

Describe the role of hormones in the menstrual cycle in humans. 20mks

a) Describe how you would use the capture recapture method to estimate the population of grasshoppers in school farm. (9mks)

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Identify two sites in the mammalian body where blood is manufactured. 2mks

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Describe the ADAPTATIONS of various types of respiratory structures in animals to their functions

Describe the ADAPTATIONS of the structures of the human lungs, and liver to their functions

Describe the ADAPTATIONS of seeds & fruits to method of dispersal.
Describe the ADAPTATIONS of the structure of the human male & female reproductive system to functions

Describe the ADAPTATIONS of the structure of the mammalian nervous system to its functions

Describe the ADAPTATIONS of the structure to function of the human ear and eye

Describe the evidence of organic evolution (20mks)

a) Explain how various environmental factors increase the rate of transpiration (16 mks)

b) What is the significance of transpiration to plants (4 mks)

a) Name two processes by which flowering plants excrete products, and for each process, state two waste products that are eliminated. (6 mks)

b) Explain the roles of the Liver

Kidneys in eliminating excess amino acids from the human body. (14 mks)

Describe the structure and function of various parts of the mammalian skin. (20 mks)

In Britain, it is observed that there are two varieties of a moth species (Briston betulania). These are the light coloured peppered moth and the melanic form (dark coloured). It is observed that the light coloured moth is at high population in the forest land while the melanic form was at high population near industries. Explain the evolution principle behind the above observation. (16 mks)

b) State and explain the principles of Lamarck’s theory of evolution. (4 mks)

b) Explain how digestion of various food substances takes place in the duodenum. (8 mks)

Describe the importance of a balanced diet in children. (20mks)

(a)(i) Lamarck’s theory of evolution has been rejected by scientists today. Explain. (2 mks)

(ii) Explain the meaning of the term “Survival of the fittest.” (3 mks)

b) Describe the various evidences which show that organic evolution has taken place. (15 mks)

(a) What is the role of the Gibberellins in plant growth and development. (5mks) (b) List down the characteristics features of the meristematic cells in a plant. (5mks)
(c) Explain the effects of unidirectional light on growth, in a seedling. (10mks)

Describe how excretion takes place in the mammalian kidneys? (20 marks)

Describe the digestion of egg albumen from the time of ingestion to the time it is assimilated in the body cells. (20mks)

Describe the evidences that support the theory of organic evolution. (20mks)

a) Differentiate between Homologous and Analogous structures. (4 mks)

b) Describe how natural selection brings about ADAPTATION of a species to its environment (18 mks)

Describe the role of hormones in the human menstrual cycle (20 mks)

b) Explain how a seed is formed in a flowering plant. (6 mks)

Describe the various evidences which show that organic evolution has taken place. (20 mks)

a) What is meant by natural selection (3 Marks)

a) Describe secondary thickening in flowering plants (14 Marks)

b) Describe one method which can be used to measure the average growth rate of a single leaf on a plant (6 Marks)

Describe the process of digestion that takes place when one eats an egg white and ugali. (20 mks)

Describe the various evidences which show that evolution has taken place. (20 mks)

(a) Name Five methods of excretion in plants. (5mks)

(b) Give Three reasons why plants lack complex excretory system (3mks)

(b) State six excretory products in plants and give their economic uses. (12mks)

(a) What is pollution? (2marks)

(b) Describe the effects of the various pollutants in water and soil to living organisms. (18 marks)

Explain the sources of water pollution and their effects on aquatic ecosystem. (20 mks)

Describe the process of blood clotting in man when blood is exposed to air. (5mks)

Describe the skin under the following headlines. (20mks)

As a thermoregulatory organ

As an excretory organ

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As a sense organ

As a protective organ

As an osmoregulatory organ.

Explain the mechanism by which a human body maintains a constant body temperature.

(a) What is pollination? (2mks)

(b) Describe the sequence of events that take place from the time a pollen grain falls on the stigma until a seed is formed. (18mks)

Describe locomotion in a finned fish. (20mks)

(a) Distinguish between breathing and respiration. (2 marks)

(b) Describe breathing mechanism in man. (14 marks)

(a) Describe the Darwin theory of natural selection. (10 marks)

(b) Explain why plant breeders encourage cross-breeding and discourage inbreeding. (4 marks)

(c) The ban of Sulphur based malaria drugs is because the plasmodium has developed resistance after long exposure to the drugs. Explain how resistance to the drug develops. (4 marks)

Explain how the various activities of man have caused pollution of air. (20mks)

Describe secondary thickening in flowering plants. (13mks)

Describe one method which can be used to measure the average growth of a root seedling.

a) Name the parts of the body, where mammalian blood cells are manufactured. (3mks)

Compare the nervous and endocrine systems. (8mks)

(b) A barefooted man suddenly steps on a sharp thorn and quickly jumps up. Describe the changes that occur in the man’s body that brings about this response. (12mks)

Describe the composition and functions of mammalian blood. (20mks)

With the aid of a diagram, explain double fertilization in flowering plants (15 mks)

b) State the changes that occur in the flowering plant after fertilization (5mks)

(a) What is homeostasis? (2mks)
b) Describe the homeostatic functions of the mammalian liver. 18mks

Describe the role of hormones in the menstrual cycle in humans. 20mks

a) Describe how you would use the capture recapture method to estimate the population of grasshoppers in school farm. (9mks)

b) Describe the physical factors that are likely to influence the population of grasshoppers in the school farm. (11mks)

Describe the role of plant hormones in their growth and development and application in agriculture.

a) State the differences between gaseous exchange in fish and mammals. 4mks

b) Describe how inspiration and expiration take place in man. 16mks

Describe the role of hormones in the human menstrual cycle. 20mks

a) Explain how blood is involved in transport. Stating the constituents of blood involved. 14mks

b) Describe how blood protects the body. 4mks

Identify two sites in the mammalian body where blood is manufactured. 2mks

(a) Citing specific examples. State and explain characteristics of gaseous exchange structures or respiratory surfaces in mammals. (8 Marks)

(b) Describe the process of exhalation in man. (11 Marks)

(c) Which part of the brain controls breathing? (1 Mark)

Describe various economic importance of

(i) Bacteria (10 Marks)

(ii) Fungi (10 Marks)

80. A student ate lean meat for breakfast. Explain fully how the meat eventually becomes part of the body tissue. 20mks

81. a) Describe the process of fertilization in a flowering plant. 14mks

b) How does the process above differ from that in Bryophytes. 6mks

82. Describe how the mammalian heart is ADAPTED to its function (20mks)
83. Describe the mammalian heart structure & its function (20mks)