

## **BIOLOGY ASSIGNMENT JOHN SHIMFE - SS 3 DIAMOND**

- 1a. Define variation?
  - b. Distinguish between continuous and discontinuous variations giving two examples in each case.
    - 1bi. Distinguish between Morphological and psychological variation, giving examples of each.
  - 2a. List four (4) Applications of variation?
  - 2b. Describe the Application of variation in:
    - i. Crime detection ii. Blood transfusion
- 3ai. What is evolution?
- 3aii. mention the two main theories of evolution.
- 3aiii. list five (5) evidences of evolution.
- 3bi. What is d
- 3bii what is mutation?
- 3ci. Explain briefly the contribution of mutation to the evolutionary process.
- 3cii. Distinguish between divergent and convergent evolution.

### **Solution**

- 1a. Variation could be defined as those differences that are been observed within species.
  - ii. Continuous variation varies gradually from one extreme form to the other.  
e.g Height ii. Weight while  
Discontinuous variation shows no intermediate form in other words there is a sharp difference between the various form of a giver feature.  
e.g (a) Blood group (b) Ability to roll tongue

No 1 bi

- Morphological variation is the form and structure of an organism it determines physical appearance and so help us to identify the individuals of a population. E.g. (a) Colour (b) Fingerprints.

- Physiological variation are regarded as not visibly apparent in other words refers to all function and activities of a living organism or one of its part e.g.
  - (a) Behavior patterns
  - (b) Ability to roll tongue

1. If

1. Crime detection
2. Blood transfusion
3. Determination of paternity
4. Marriage counseling

No:2b

- Crime detection: Fingerprints are commonly used as an identification feature since the technique of making them is simple and inexpensive i.e. the police have used them to solve crimes.
- Blood transfusion: A person can lose blood from either injury accidents and a blood transfusion must be given. During a blood transfusion, blood from a healthy donor is led into one of the veins in the body of the recipient. This is where a knowledge of the variation that occur in human blood plays an important role.

2. Evolution: can be seen as the sum total of adaptive changes that have taken place over a very long period of time. It leads to the development of new species from earlier ones.

No:3aii

- I. Lamarck's theory
- II. Darwin's theory

No :3aiii

- I. Fossil records
- II. Biochemical similarities
- III. Molecular records
- IV. Comparative anatomy
- V. Embryology