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Name _____ Stream _____

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UCE SEMINAR
553/1
BIOLOGY PAPER 1 (THEORY)

SECTION A

Element of construct 2

Item 1.1

4/7

Mr. Ogenga is a farmer. He planted beans in his farm which were looking healthy. Suddenly a dry spell set in and most plants stunted in their growth, had their leaves turning yellow and could wilt. After sometime, the rains returned but Ogenga wanted to replant and as he uprooted some plants, he observed that they had developed many small branching roots with numerous nodules and new green leaves developed, so he left them. At flowering stage, the garden was visited by numerous bees for some time. After the visit by the bees, the bean pods started forming and finally the beans produced low yields.

Task

- (a) Explain how the processes in the bean plants were affected leading to low yields
- (b) Explain the internal processes that took place in the bean plants from the time the bees visited to formation of pods.
- (c) How did the beans overcome the prevailing conditions?

Item 1.2**4/8**

Okone, a farmer of food crops in Serere district has a 2-acre farmland near the swamp. The day he planted maize grains was followed by a heavy down pour which made part of his farm flooded for a week. Most of the maize grains failed to germinate in the flooded part of the farm and a few maize seedlings remained stunted with small leaves. In the unflooded part of the farm, the maize plants had proper growth but later were invaded by insect larvae which destroyed most of the leaves and stems. After sometime, the insect larvae disappeared and the affected maize plants developed new leaves and flowers which resulted into low yields

Task

- (a) Identify the plant processes affected
- (b) Describe how the plant processes were affected
- (c) Explain how the;
 - (i) plants managed to produce yield
 - (ii) farmer could overcome the challenges.

Element of Construct 4**Item 2.1.****4/10**

Peter a S.2 student always sat at the back of the class since he had difficulty of reading words from the black board while seated in the front seats. This made him to be in company of bad boys who influenced him to smoke marijuana and drink alcohol. His performance declined. After some time, peter developed mental illness and could not continue with his studies.

Task

- (a) Explain Peter's condition
- (b) What should be done to help Peter to overcome his challenges and protect other students in his class.

Item 2.2.**4/1**

Ms. Anna, a 45-year-old mother with a swelling neck always involved herself in drinking alcohol with less eating and could always leave have children hungry. One day after drinking, she went back home drunk and attempted to cook. She carried a hot saucepan from the fire with bare hands and immediately threw it down, she also withdrew her hand swiftly and hit it on a chair and ended up breaking it. At the hospital, the doctor observed that she had weak brittle bones.

Task

- (a) Explain Ms. Anna's condition
- (b) Describe how her body coordinated causing her to throw the saucepan
- (c) What advise can you give to Ms. Anna

Element of Construct 5

Item 3.1.**4/3**

Fred met Grace at work place, dated and got married. Grace became pregnant but due to her busy schedule she did not attend antenatal care. Despite Fred and Grace being dark skinned, she gave birth to a child with pink eyes and white hair which brought misunderstanding in the family. Fred ran away while Grace neglected breastfeeding the baby. The baby developed ill health and poor growth.

Task

- (a) Explain the condition of the child
- (b) Convince the couple that they are responsible for the condition of the child
- (c) Advise the couple on how to take care of the child.



Item 3.2.**4/9**

A sixteen-year-old girl living with her grandmother would always leave to be in company of bad boys and return home late in the night. She became pregnant. When she went for antenatal care, she tested positive for HIV and the doctor also told her that she was suffering from candidiasis. She tried to abort and it was not successful.

Task

- (a) State the challenges the girl is facing and those she is likely to face
- (b) Explain the effect of the challenges the girl faced
- (c) Advise the girl on how she can overcome the challenges.

SECTION B**Element of Construct 1****Item 4.1.****4/2**

According to a report by the new vision dated June 12 2023, almost all wetlands in Busoga region have extensive rice fields with farmers scaring away birds that feed on their maturing crops. In addition to this, investors illegally have been constructing industries in some of the swamps and human settlements have been on a rise in the wetlands around urban areas. There is increase in dumping of plastic materials, kitchen wastes and industrial chemicals into wetlands. This has raised concern among the environmentalists and call for action.

Task

Explain;

- (a) The challenges on the environment resulting from the activities of the people of Busoga and investors and what can be done to help the situation.
- (b) Why it is important for people of Busoga and investors to conserve wetlands

Item 4.2. **4/3**

Central Uganda has the highest concentration of industries, increased use of pesticides and fertilizers to increase food production, high number of imported used cars which are in dangerous mechanical conditions (DMCs) and used fridges, increased burning of plastic materials and burning of charcoal in surrounding forests. These have resulted into respiratory complications, high temperatures

Task

- (a) Explain how these activities have affected the environment.
- (b) Suggest what can be done to improve the condition the condition of the environment.

Item 5.1 **4/1**

Mubende district has areas well known for gold mining. As a result, a number of forests have been cleared to pave way for this activity which has left land bare, with huge ditches. In addition, during this activity, mercury and cyanide are added to gold-rich soils to merge the gold present within the sediments. These chemicals have been discovered in the water that people drink and food production has also deteriorated in the mining areas. There has been an increase in the number of people visiting the hospital and also a rise in cancer cases has been recorded by local authorities.

Task

Explain how the activities of the people of Mubende have led to different effects and suggest ways of how the effects on the environment above can be overcome.

Item 5.2.**4/4**

There has been increased human activities around Lake Victoria such as setting up of industries, settlements and modern farming. Due to these, hot waste water from industries, untreated sewage and waste plastic materials from human settlements and agrochemicals from farms have been channeled into the lake. This has resulted into poor quality of water hence affecting aquatic life and humans.

Task

- (a) Explain how the lake has been affected and suggest any measures to save the water bodies
 - (b) Why is important to conserve the lakes.
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Element of Construct 3

Item 6.1.**4/2**

Bwayo, a S3 student likes eating salty popcorn, misses meals and has family history of diabetes. He joined a small group of boys who introduced him to drinking alcohol. During one of the biology lessons, the teacher tasked learners to test their urine for the presence of proteins and glucose. Unlike his classmates, Bwayo found both nutrients in his urine. In addition, Bwayo feels frequent thirst yet urinates frequently. He grew very thin and frequently falls sick and cannot concentrate in his studies.

Task

Advise Bwayo about his situation.

Item 6.2.**4/5**

Tana is 1.6m tall, young lorry driver who spends much of his time driving long distances across borders. He smokes a lot of cigarettes, chews much miraa and takes much energy drinks to stay awake and energetic. He also eats much fatty meat roasted alongside roads in trading centres that he passes. Over time his weight increased to 96kg, he developed chronic cough, started feeling chest pain and heart related challenges. His feet were always swelling and his teeth had black coating. When he visited the hospital, the doctor advised him to change his lifestyle in addition to medication

Task

Convince Mr. Tana to take the doctor's advice

Item 7.1.**4/6**

Mr. Olema had a heavy starchy meal early in the morning before going to dig in his garden. He was able to dig a big area within a short time but he sweated excessively, became weak and felt muscle pain and fatigue so he decided to sit down and took some water. He continued to experience rapid and deep breathing for some time but muscle pain and sweating stopped. He ate some fruits and felt strong again and went home.

Task

- (a) Explain the processes that took place in Mr. Olema's body that made him able to dig a big area within a short time and the challenges that his body faced.
- (b) How was Olema's body able to overcome the challenges experienced?

Item 7.2.**4/10**

Salina a 1.5m tall girl wanted to be a model. She joined a group of girls who advised her to observe her weight in order to be a good model. She could always do physical exercises to trim her body and could experience heavy breathing, painful muscle cramps and sweating in the process. She also developed a habit of avoiding food and sometimes inducing vomiting after eating and could take some diet pills. After a long period of time, Salina complained of stomach pain, weak and could fall sick frequently. At the hospital, she was found to weigh 40kg and a complete blood count test showed she had less red blood cells.

Task

- (a) Explain Salina's body experience and health state.
 - (b) Suggest how salina can be helped out of her health state
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END**BEST OF LUCK**