



**RAJARATA UNIVERSITY OF SRI LANKA  
FACULTY OF APPLIED SCIENCES**

**B.Sc. in Applied Sciences**

**B.Sc. in Health Promotion**

**B.Sc. in Information Technology**

**First Year - Semester I Examination: July-August 2023**

**FDN 1201 – ENGLISH**

**INDEX No: -----**

**Time: 3 hours**

**Answer all questions on this paper itself.**

**SECTION 01 - STRUCTURE AND COMPREHENSION**

**Part A: [25 Marks]**

**Directions:**

**A-1: Turn the following sentences into PASSIVE VOICE (10 Marks).**

1) Somebody cleans this room everyday.

.....  
2) How do people learn languages?

.....  
3) Somebody warned us not to go out alone.

.....  
4) People don't use this road much.

.....  
5) They have postponed the meeting.

.....  
6) They are building a new ring road round the city.

- 7) He will pay you an attractive salary.
- .....
- 8) Has somebody shown you the new machine?
- .....
- 9) They asked me some difficult questions at the interview.
- .....
- 10) They didn't give me the necessary information.
- .....

**Directions:**

**A-2:** Read through the following text and FILL IN in the blanks with the CORRECT WORD from those given within brackets. ( 10 Marks)

SLT-Mobitel Enterprise, is 1)..... (empowering, empowered, empower) farmers by introducing the Fazenda Smart Agro solution integrating IoT and AI-based technology to Sri Lanka. Developed by SLT-Mobitel Enterprise, the smart farming solution caters to macro- to large-scale farms and is currently launched as a pilot project at the University of Peradeniya, Kandy, and a commercial project in Balangoda Plantation, in collaboration with agronomists and SLT-Mobitel technical experts. This will enable precision agriculture concept 2)..... (in, at, for) the first time in Sri Lanka.

Fazenda Smart Agro offers a comprehensive service for agribusiness enterprises, comprising a complete 24x7 monitoring and 3)..... (management, manage, manager) solution that you can access from anywhere using a PC or Mobile

Deploying the Internet of Things (IoT)-enabled smart farming to transform the future of local agriculture, the Fazenda Smart Agro solution is set to improve operational 4).....(efficient, efficiency, efficiently), maximize yield, and minimize wastage through real-time field data collection, data analysis, and deployment of control mechanisms.

The solution offers 24x7 real-time monitoring of farm conditions, threshold and location weather monitoring, crop analysis, water management, machine automation, and fertilization ensuring farmers reduce waste and enhance productivity, contributing towards healthy plant growth and better yield.

The solution infrastructure includes the Agro Sensing Network with multiple sensor setups to monitor agricultural parameters of soil, air, and rain, while the Smart Agro IoT platform is connected with wired/ wireless gateway 5).....(for, to, by) collect sensor data. Going beyond 6).....(tradition, traditional, traditionally) monitoring,

Fazenda Alerting Engine identifies anomalies in sensor data and generates real time smart SMS alerts and the Fazenda Analytic Engine 7).....( **visualize, visualizes, visualizing**) historical sensor data.

The Fazenda Smart Agro Application platform collects data and analyses them. The Dashboard includes real-time readings of sensors and historical data with insights from AI-based data analysts. The data is downloadable and offers data visualization and the ability to predict yields. 8).....( **Importantly, Importance, Important**), though the solution is cloud based, data resides locally within SLT ensuring farmer's data security.

The in-built yield management module offers daily management of harvested crops. The solution also comprises a Smart Agro Sensor Pack that makes farming processes data driven and automated.

As part of Fazenda Smart Agro solution, the Portable Soil Tester enables farmers to analyse nutrients in the soil in an accurate, affordable, and reliable way. The Fazenda Portable Lite and Fazenda Portable Pro help to make easy informed decisions on how to fertilize the soils.

The Fazenda Smart Agro solution is 9).....( **a, an, the**) novel product to be introduced by SLT-Mobitel Enterprise, as it extends 10).....( **its, it's, it**) portfolio and digital footprint across multiple sectors. The Fazenda Smart Agro solution future road maps include the ability to manage multiple farms and remote monitoring of enhanced fertilization and water management and extent it to the smart poly house.

**Directions:**

**A-3:** Fill in the blanks of the following passage **with the correct tense of the verb** given within brackets. (05 Marks)

As a result of industrialization, urbanization and population increase, fuel shortages and energy insecurity have been a challenge for several decades. Environmental pollution and global warming, in addition to energy insecurity, have recently captured the public's attention at an unprecedented rate. Consequently, research concentrating on long-term energy security 1).....( **become**) a global concern. The great bulk of the world's air pollution 2).....( **be** )attributable to the combustion of fossil fuels for energy generation. Switching from fossil fuels to bio fuels as the primary energy source is one of the most effective ways to address this issue. As a result, there has been much discussion about growing the global usage of bio diesel to reduce the world's dependency on fossil fuels like petroleum diesel and ensure reliable energy sources. Bio diesel 3).....( **have**) numerous advantages, including high combustion efficiency, biodegradability, lubricity, less environmental contamination and is a clean, renewable energy source. Bio diesel is typically created via the chemical reaction of triglycerides with simple alcohols such as methanol, ethanol, propanol, and butanol in the presence of a catalyst to enhance the pace of the process by reducing the activation energy. There are two primary types of catalysts involved in bio diesel production:

homogeneous and heterogeneous. The most widely used catalyst for bio diesel production is a homogeneous alkaline catalyst such as potassium hydroxide or sodium hydroxide due to its availability and ease of operation. However, homogeneous and heterogeneous catalysts are widely discussed and practiced for bio diesel production to improve the yield of bio diesel and reduce the cost of production

Homogeneous catalysts are typically used in the process as those are present in the same phase during the reaction. However, the heterogeneous catalyst 4).....( gain) broader attention recently due to the reusability. A research team has optimized the catalysts (substances that can boost final output yield with less energy requirement) and all other solvents, co-solvents and parameters for optimum yield of bio diesel production. The cost of bio diesel manufacturing is mainly determined by the cost of raw materials and the cost of the catalyst. To successfully commercialize bio diesel, it is necessary to lower production costs. Utilizing waste oil, such as used cooking oil, can reduce the expense of raw materials. In addition, the cost of the catalyst can be reduced by utilizing a component with no cost. To achieve this need, it is essential to locate an environmental catalyst that is readily accessible. According to the analysis, both waste eggshells and seashells 5) .....(consist) of around 95% calcium carbonate and other components such as magnesium carbonate, calcium phosphate and organic substances

### **Part B: [25 Marks]**

#### **Directions:**

**B-1:** Read the following paragraph and FILL IN the blanks in it using the following reference words: The number of blanks equals the number of words given. (04 Marks)

(it, its, its, one, their, they, this, this )

For a planet to support life, (1) \_\_\_\_\_ must lie within a certain zone from (2) \_\_\_\_\_ host star. Planets that are too close to (3) \_\_\_\_\_ star will be too hot. If (4) \_\_\_\_\_ are too far away, there will not be enough light or heat. An Earth – sized planet was discovered in 2011. (5) \_\_\_\_\_ discovery could indicate that our planet is not the only (6) \_\_\_\_\_ that has conditions to support life. (7) \_\_\_\_\_ surface has a temperature of about 767 degrees Celsius (1,410 degrees Fahrenheit.) For (8) \_\_\_\_\_ reason, it is not capable of sustaining life as we know it.

**Directions:**

**B-2:** COMBINE each of the following pairs of sentences using appropriate RELATIVE PRONOUNS to make them complex sentences. ALWAYS make the second sentence the relative clause, and insert it after the appropriate noun in the first sentence (05 Marks)

E.g.: *Bile is excreted by the liver. Bile is stored in the gall-bladder.*

*Bile, which is stored in the gall-bladder, is excreted by the liver.*

- i. Computers can be defined as devices. These devices accept information in the form of programs and data.
- .....  
.....

- ii. Michael Faraday has made a number of discoveries in chemistry as well. Michael Faraday made the world's first generator.
- .....  
.....

- iii. Radium was discovered in 1898. Radium is a radioactive element.
- .....  
.....

- iv. Leaves are green in colour. Leaves contain chlorophyll.
- .....  
.....

- v. Uranus has four moons. Uranus is 1783 million miles from the sun.
- .....  
.....

**Directions:**

**B-3:** Rewrite the following sentences CONTRACTING the relative clauses within them without harming their meaning (05 Marks)

- i. Newton described the laws that govern the motion of falling bodies.

.....  
.....

- ii. The heart is surrounded by a tough sack which is called the pericardium.

.....  
.....

- iii. Galileo, who was an Italian scientist, invented the telescope.

.....  
.....

- iv. In plane geometry, an angle is a figure which is formed by two straight lines which meet at a point.

.....  
.....

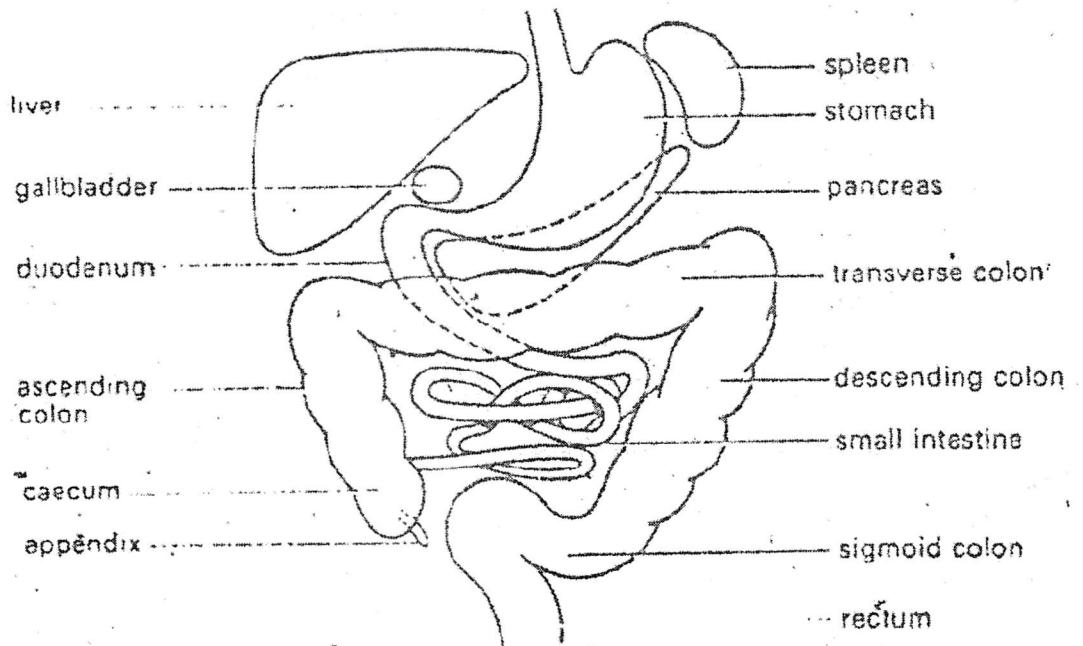
- v. This forms an external skeleton, or exoskeleton which protects and supports the body.

.....  
.....

**Directions:**

**B-4:** Complete the following sentences which give the location of some organs of the abdomen by studying the diagram below (11 Marks)

- a) The stomach lies between the liver and .....
- b) ..... is situated above the descending colon.
- c) The small intestine is located between ..... and .....
- d) ..... is to the right of the spleen.
- e) The transverse colon lies ..... the stomach.
- f) The stomach is ..... the liver.
- g) The liver is ..... the ascending colon.
- h) The pancreas is located to the left of .....
- i) ..... is situated below the small intestine.
- j) The gallbladder lies below ..... and ..... the duodenum.



N.B. RIGHT (of the body) LEFT

Some organs of the abdomen

## SECTION 02 – SKILLS FOCUS

## Part A: [15 Marks]

**Directions**

READ the passage and ANSWER the questions that follow:

**Ethanol**

Ethanol ( $\text{CH}_3\text{CH}_2\text{OH}$ ; which is also called ethyl alcohol, grain alcohol, and EtOH) is a clear, colorless liquid. It is a renewable biofuel made from starch and sugar-based crops like corn grain and sugar cane or from cellulosic feedstocks like grass, wood, or recycled newspapers. Ethanol is a high-octane biofuel which performs so splendidly in internal combustion engines that early automakers presumed it would be the world's chief fuel. American proponents of ethanol fuel highlight two principal advantages: its environmental impact and its energy security benefits.

The adoption of ethanol reduces noxious emissions such as carbon monoxide (CO) and pollutants from internal combustion engines; hence, it is appreciably less deleterious to the environment than gasoline. Ethanol made from corn has been shown to reduce harmful emissions by up to 13%, whereas ethanol made from cellulosic materials reduces dangerous emissions by as much as 88%.

Ethanol is a renewable biofuel; in only six months a new crop can be grown, harvested, and converted to fuel, so it is profitable for rural crop-producing economies. In addition, it keeps engines clean and can be used in gasoline engines with no modifications when combining gas with up to 10% ethanol. It can be used in specially modified vehicles called "flexible-fuel" or "flex-fuel" vehicles in concentrations of up to 85%. Gasoline combined with 85% ethanol is generally referred to as "E85." Higher ratios of ethanol in the fuel mixture result in less reliance on fossil fuels, so there is less dependence on imports. American opponents of ethanol fuel point to three disadvantages: its price fluctuations, its energy level, and its availability.

The price of ethanol fluctuates on a different cycle than gasoline; therefore, at times ethanol is more expensive than gasoline, and at times it is cheaper. Another drawback of ethanol is that it contains less energy per gallon than gasoline; even when it is cheaper per gallon than conventional fuel, it does not take the vehicle as far as a gallon of gas. A car's fuel economy with ethanol can be expected to be 20–30% less than a vehicle which burns gasoline. So, the occasional cheaper price is offset by the lower energy yields. In addition, ethanol is not as

widely distributed as gasoline. It is readily available only in the Midwest; other areas have limited ethanol infrastructure.

The Obama administration is working on expanding the ethanol infrastructure. In a recent interview with 15 newspaper editors, President Obama characterized the U.S. position on biofuels in this way: "Our challenge, I think, is to see our current ethanol technology as a bridge to the biofuel technologies of the future. And that's what we want to invest in, and that's what I'll be directing my Department of Agriculture to focus on."

**1. Read the text and choose the correct answer.**

1. As can be inferred from the passage, which of these statements about ethanol is/are true?

- I) Burning ethanol made from wood produces less CO than burning ethanol made from corn.
  - II) Burning ethanol made from grain produces less CO than burning gasoline.
  - III) Burning ethanol made from newspapers produces less CO than burning ethanol made from grass.
- A) I only
  - B) II only
  - C) III only
  - D) I and II only
  - E) II and III only

2. The author's primary purpose is to

- A) describe and define ethanol.
- B) compare 2 types of ethanol.
- C) support the adoption of ethanol.
- D) explain advantages and disadvantages of gasoline.
- E) explain advantages and disadvantages of ethanol.

3. In line 9, *deleterious* most closely means

- A) dangerous, because it harms the environment less than gas.
- B) beneficial, because it helps the environment less than gas.
- C) splendid, because it performs less splendidly than gas.
- D) unreliable, because it is less unreliable than gas.
- E) expensive, because it is less expensive than gas.

**2. Answer the following questions based on the information stated in the text.**

1. What are the principal advantages highlighted by the American proponents of ethanol?

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

2. What are the disadvantages pointed out by the American opponents of ethanol?

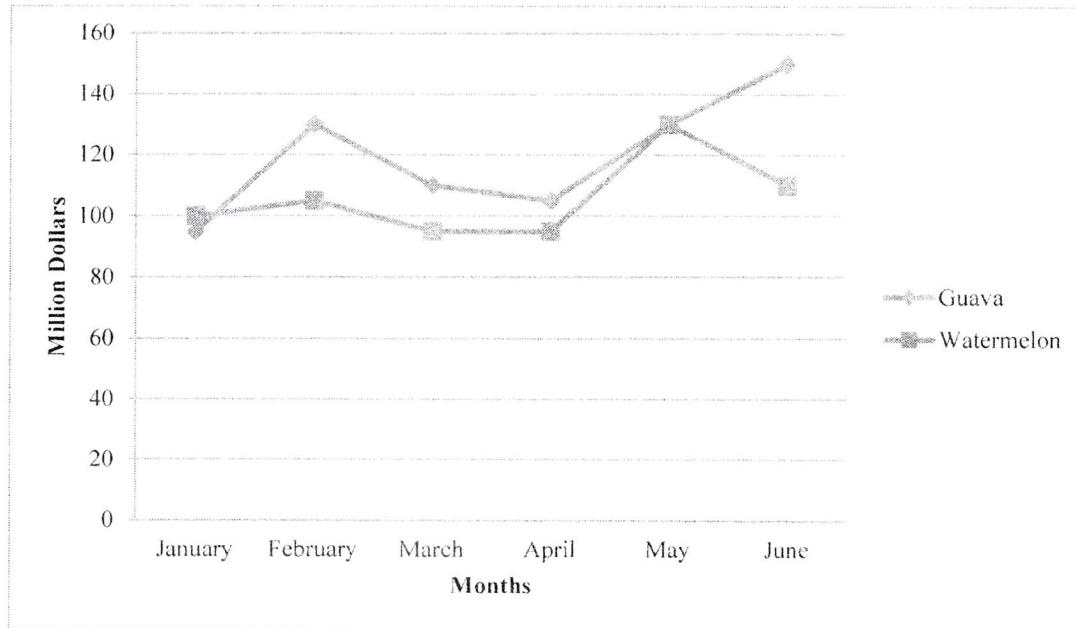
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**3. Find words from the text which correspond to the following definitions.**

1. In a magnificent or very impressive manner- .....
2. Capable of being renewed - .....
3. A disadvantage or the negative part of a situation- .....
4. Whether someone or something can be accessed or used- .....
5. Confident or trustful dependence - .....

**Part B: [15 marks]****Directions**

Study the following graph which summarizes the sales of guava and watermelon during the first 6 months of the David and Sons and write a brief description of it in about 150 words.





### **Part C: [20 marks]**

## Directions

**“Technology in mobile phone is a useful servant but a dangerous master.”** Write an essay in relation to the quote by discussing pros and cons of technology in mobile phones. Use about 300 Words.



-END-