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UACE S101 General Paper section B: Logic Quiz 8

Study the information provided below and answer the questions that follow:

Uganda is a developing country with a fast growing demand for motor vehicles. Consequently, this has culminated in importation of many new and used cars, motorcycles, tractors, buses and trucks.

The Uganda Motor Vehicle Registration Board has been overwhelmed by this development. Previously, the Board has a three letter and three digit combination for motor vehicle registration; e.g. UAA 001

A new system of motor vehicle registration has been put in place. It will have three letters, three digits and a letter of alphabet at the end e.g. UAA 001A

Motorcycles and tractors have been assigned their own registration numbers.

Motorcycle registration numbers run from UAD 001F to UAD 001Q while tractors registration numbers run from UAD 002Q to UAD 001Z

Questions:

- (a) (i) Using the old motor vehicle registration system, calculate the number of vehicles that will be registered with UAA. (02marks)
(ii) If the new system is used, how many more vehicles will be registered with UAA? (04marks)
- (b) Determine the number of
 - (i) Motorcycles, (04marks)
 - (ii) Tractors (04marks)that will be registered under the new registration system.
- (c) Assess the impact of importing used motor vehicles to the environment, (16marks)
- (d) Explain the importance of registering motor vehicle in your country. (10marks)

Spellings, Punctuations, Grammatical Expressions (SPGE)

(10marks)

Suggested solutions

- (a) (i) Using the old motor vehicle reistation system, calculate the number of vehicles that will be registered with UAA. (02marks)

Total number of vehicle from UAA 001 – UAA 999 = 999

- (ii) If the new system is used, how many more vehicles will be registered with UAA? (04marks)

Total number of vehicles with UAA 001A – UAA 999A = 999

Considering the total number of alphabet A – Z = 26

Total number of vehicle from UAA 001A to UAA 999Z = $999 \times 26 = 25974$

Extra number of vehicles vehicles that will be registered with UAA = $25974 - 999 = 24,975$

- (b) Determine the number of

- (i) Motorcycles, (04marks)

Total number of alphabetic letters from F to P = 11

Total number of motorcycles = $999 \times 11 + 1$ (UAD 001Q) = 10,990

- (ii) Tractors (04marks)

that will be registered under the new new registration system.

Total number of alphabetic letters from Q to Z = 10

Total number of tractors = $999 \times 10 - 1$ (UAD 001Q) = 9,989

- (c) Assess the impact of importing used motor vehicles to the environment. (16marks)

- Due to improper combustion old vehicles release carbon monoxide (CO). Carbon monoxide combines with blood haemoglobin and prevent it from carrying oxygen causing death.
- Vehicles also release carbon dioxide and hydrocarbons that that lead to global warming and climate change.
- Hydrocarbons lead to depletion ozone leading penetration of high frequency radiations that cause skin cancer.
- They also release oxides of nitrogen and sulphur; these gases are acidic, lead to acidic rain that is corrosive to both plant leaves and human skin. Acid rain also seeps into the ground and dissolves and cause leaching of nutrients, such as magnesium and calcium, that trees need to be healthy. Acid rain also causes aluminum to be released into the soil, which makes it difficult for trees to take up water. Acid rain also cause deterioration of building and bridges
- Old vehicles released lead from the car batteries to environment, lead poining lead to kidney and brain damage.
- Old vehicles also litter the environment non biodegradable broken glasses, rubber and plastic materials
- Old motor vehicle are cheap and are bought in large numbers causing traffic jam and human stress and distress.
- Old motor vehicles cause noize in the evironment that scare wild animals in game parks.

- Old motor vehicles have inefficient Engines leading to over consumption of fuel and fast depletion this vital resource from the environment.
- Old motor vehicles contaminate the ground and water with oil spillages

(d) Explain the importance of registering motor vehicle in your country. (10marks)

- It is a source of revenue to the government which help to fund road maintenance and other infrastructures.
- To permit the car to use public roads
- It enable identification of its owner or a person responsible in case of theft, accidents, or other legal matters.
- Provide evidence of ownership in case it is to be used as collateral for a loan.
- Enable payment Third party liability insurance and track whether the vehicle is insured against third party.
- It enable government to know the total number and types of vehicles in country.
- It enable to government to assess the mechanical condition of a vehicle to ensure road safety.
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Spellings, Punctuations, Gramatical Expressions (SPGE)

(10marks)

Please say something or send your additions/ comments/corrections/suggestions in the comment section. Note that digitalteachers.co.ug is an academic website that thrives on accuracy of information.

Thank you

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