Take Home Exam 4C

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***Carbon footprint***

Carbon footprint refers to the number of greenhouse gases produced either indirectly or directly through activities that support human life1. It also includes the total emission through a product, organization and event. It is affirmed that each individual in New York emits 8.61 tons of carbon dioxide each day1. In Chicago 12.9 tons carbon is emitted per capita. In Los Angeles, 10.1 metric tons carbon footprint is recorded per capita2. Amsterdam is recorded with a carbon footprint of 6.6 tonnes per capita while Tokyo has a ratio of 4.3 tonnes carbon footrpints2. Greater the carbon dioxide footprint, greater will be the temperature change that can have a serious impact on humans. It can cause serious consequences on humans and their environment. Chicago has the highest ratio of carbon footprint, taking into account that there is a significant problem of global emission. There is a great threat to droughts and increased storms, on the other hand, countries with lower carbon dioxide footprint have a low ratio of environmental risks.

It is the amount of check and balance that makes the difference. Greater the difference in human activities, greater will be a recorded and calculated ratio of carbon footprints, adhering to balanced environment with bearable environmental conditions. Carbon footprint is important because it is a procedure that can number the emission of greenhouse gases in a particular platform such as an organization2. A carbon print is a major tool for measuring ecological footprint, taking into account the increasing demand of biologically productive space. Cities with high carbon footprint are better because it causes a great benefit to the companies and consumers. It can act as a tool to fight against rapid climate change with reduced greenhouse gases. It can impart a step towards energy saving products and the production of environment-friendly resources.

The comparison is a guide in teaching the understanding of ‘environment and environmental ethics"2. Cities with a large carbon foot prints are predicting future suffering, side by side, major importance is given to the activities that can ensure environmental safety and open avenues towards the production to environmental friendly resources. Countries with least carbon footprint will have a balanced environmental situation taking into account the least assumption towards environmental delimmas2. It would not be wrong to say that carbon footprints act as a balance between environment and individuals, taking into account the facts and figures that can guide humans to synchronize his activities with the global aspects.

***Ring Species***

 In biology and life sciences, ring species refer to a series of species with connecting neighboring populations. Each of the series has the potential to interbreed with other closely related populations3. It is important to note that there is two end population which is too distant to interbreed. In a nutshell, this non-breeding although genetically connected, the two end populations are residing within the same region, thus closing the ring. The species of this ring are called ring species.

*Ring species and theory of evolution*

 Ring Species are a clear depiction of "theory of evolution," adhering to the evidence for evolution that causes the appearance of certain new species. Ring species affirm that small changes can develop into large differences between distinct species. Many of the critics are of the view that evolution can contribute to bringing about a limited variation within the realm of a species and it cannot lead to the revolution of a new species3. Ring species highlight that the critics are wrong and the variations that exist between species is similar in qualitative context but there exists a difference in actual degree and it can also be a variation within species. It is important to know that Ring Species are a tool to empower reconstruction of history and sources of divergence during speciation3. Ring species highlight that speciation can occur even without complete isolation in earthly realms. The end of long chains of the population who are interbreeding can diverge population to appoint where there is no direct interbreed despite travelling of genes through intermediate populations3.

*Example*

 One of the most excellent cases of ring species as a supporter of "theory of evolution" can be found in "Larus Gull." It is an example of ring species that was a circumpolar species "ring," referring to genus Larus. The range of these gulls is capable of forming a ring around the North Pole3. There are further seven populations of this particular population taking into account that each of this population can breed with the previous as well as the next population. However the first and last cannot , but it eventually depicts the theory of evolution promoting diversities3.

***Part III***

The graph depicts two instances, “an increase in drug resistance among pathogens taking into account different years and variation of the three bacteria such as Klebsiella, Enterobacter and E Coli. Side by side there is a “decreased number of drugs in the market taking into account the falling ratio since 1903- 2007”.

*Hypothesis*

A possible hypothesis could be

* Increased drug resistance among pathogens has decreased the number of drug production in the market.

*Observation*

It can be observed that there is increased resistance in pathogens over time. However, there is a no constant stance of resistance in a particular drug, there is a variation in strength of each of the pathogen. However, the highest resistance can be observed in Enterobacter in the year 2001. Second highest resistance against drugs have been found in Klebsiella while the lowest resistance is seen in E Coli.

 There is a decreased ratio of drug production market and this ratio can be found at a peak in 2003-2007 where there is a comparatively lowest ratio of drug production, referring to about 2.4% of drug production.

*Causes*

 It can be interpreted that the decreased ratio of drug production in the market has a direct relationship with an increased resistance against pathogens. As pathogens are developing more and more resistance, certain drugs become inefficient to treat an ailment, thus mitigating and reducing the production. It is important to note that continuous efforts are made to address a pathogen with great efficiency so the variation in a graph can be understood by different ratio of drug efficiency and steps to introduce a new drug in the market. Side by side, it is also important to note that there is an overall reduction in the production of new drugs in market because of the "increasing resistance". The introduction of new drugs has acted as a platform to balance the emergency while there is a global reduction in drug production because of the increasing resistance.

*Reason*

The reason of increasing resistance and decreasing production can be traced in the analysis that the pathogens are becoming resistant because of several reasons such as, "overuse of antibiotics”, lack of attention towards health care settings and over prescription of an antibiotic. Overuse of drugs refer to excessive use of medicine taking into account “self-medication”. There is much less attention towards health care settings because of excessive health care platforms and lack of check and balance. Other reasons include, absence of new antibiotics that can break resistance because pathogen are molding themselves inferring resistance and there is a decreased hygiene and sanitation platform.

End Notes

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