

University of Ruhuna- Faculty of Technology

Bachelor of Information and Communication Technology/ Bachelor of Engineering Technology/ Bachelor of Biosystems Technology Honours Degree

Level III (Semester I) Examination, June 2023

Academic year 2021/2022

Course Unit: ENG 3112/3122/3132 - English V (Written)

Duration: 2 hours

Registration Number:

Name of the Department:

Instructions

- This paper contains **six (06)** questions.
- Answer all the questions **on the paper itself**.
- Total Marks: 60 marks

For Examiners' Use Only			
Question No.	Maximum Marks	Marks Obtained	
		Examiner 1	Examiner 2
1	15		
2	05		
3	08		
4	10		
5	12		
6	10		

Question 01

a). Write these sentences in indirect speech, changing the words where necessary.

(2x 5=10 Marks)

- i. "Do you think the Prime Minister will resign?"
They asked me if
- ii. "Are you going to present your research paper at the Undergraduate Research Symposium?"
He asked me if
- iii. "Why are you late today for the English lecture?". My lecturer asked me.
.....
- iv. "I had never been to a hackathon before".
He said that
- v. "Can I borrow your lecture notes?"
He asked me if

b). Complete the following sentences with the correct comparative form of the words given in the box.

(1x 5=05 Marks)

easy, good, useful, angry, cheaper

- i. This is online course I have taken.
- ii. Nothing makes me than seeing even the final year students still copying their lab reports.
- iii. ChatGPT is one of platforms available to gain quality insights into research, given the fact that students do not misuse it.
- iv. I got a very good GPA this semester. The final examination was than we had expected.
- v. Singer Megha showroom in Havelock town is having a great sale today. Most televisions are 25% than they were yesterday.

Question 02

a). Complete the following sentences selecting an adjective or adverb from the box given below.

(1x 5= 5 Marks)

sharp/ notably/ dramatically/ modest/ negligible/ steadily

- i. There was a increase in profits last year. (sudden, big change).
- ii. Numbers of young people using the product grew (change at a consistent rate).
- iii. The difference between the figures for 2012 and 2013 was (practically no difference).
- iv. The graph shows a rise over the spring and summer period. (small change).
- v., production was moved out of the country before 2015 (important change).

Question 03

Refer to the sample abstract on, “Effects of Marine Exhaust Water on Algae” and complete the table given below by extracting the relevant information from the abstract.

(2x 4= 08 Marks)

This project in its present form is the result of bioassay experimentation on the effects of two-cycle marine engine exhaust water on certain green algae. The initial idea was to determine the toxicity of outboard engine lubricant. Some success with lubricants eventually led to the formulation of “synthetic” exhaust water which, in turn, led to the use of actual two-cycle engine exhaust water as the test substance. Toxicity was determined by means of the standard bottle or “batch” bioassay technique. *Scenedesmus quadricauda* and *Ankistrodesmus* sp. Were used as the test organisms. Toxicity was measured in terms of a decrease in the maximum standing crop. The effective concentration – 50 % (EC 50) for *Scenedesmus quadricauda* was found to be 3.75% exhaust water, for *Ankistrodesmus* sp. 3.1% exhaust water using the bottle technique. Anomalies in growth curves raised the suspicion that evaporation was affecting the results; therefore, a flow-through system was improvised utilizing the characteristics of a device called a Biomonitor. Use of the Biomonitor lessened the influence of evaporation, and the EC 50 was found to be 1.4% exhaust water using *Ankistrodesmus* sp. as the test organism. Mixed populations of various algae gave an EC 50 of 1.28% exhaust water. The contributions of this project are twofold. First, the toxicity of two-cycle marine engine exhaust was found to

be considerably greater than reported in the literature (1.4% vs 4.2%). Secondly, the benefits of a flow-through bioassay technique utilizing the Biomonitor were demonstrated.

Purpose of the experiment	
Procedures Used	
Observations/Data and Results	
Conclusions	

Question 04

Summarize the excerpt taken from a systematic literature review on, "**How solar radiation forecasting impacts the utilization of solar energy**". Use the grid that has been provided to write your summary.

Word Count of the original excerpt is 194.

(10 Marks)

Global energy demand has increased over recent decades due to industrialization, population growth, living standard, etc. The utilization of renewable energy sources (RES) has been promoted in recent decades due to increased atmospheric temperature by utilizing conventional fuels and the exhaustion of fossil fuels. Renewable energy sources such as solar, wind, hydro and geothermal energy have been recognized as alternative solutions for the above issues and as a sign of energy change in the future. Solar energy is the cleanest and most inexpensive source of renewable energy. Advanced technologies exploit solar energy for various applications, including electricity generation and domestic and industrial process heating. A steep rise in power generation from solar energy has been observed in recent past and future years. Solar energy provides the standalone solution and sometimes with other energy sources as a substitute for conventional energy sources. Natural resources such as solar and wind are chaotic, and power production from these sources is not consistent. It makes it a challenging task to integrate over the electricity grid. Owing to this reason, the prediction of solar radiation in future is essential to integrating electrical energy generation into the grid.

Question 05

Read the passages given below extracted from a research article on, **Applications of Artificial Intelligence, Machine Learning, Big Data, and the Internet of Things to the COVID-19 Pandemic** and answer the questions that follow. (12 Marks)

In March 2020, the World Health Organization (WHO) declared COVID-19, the disease caused by the SARS-CoV-2 virus, to be a pandemic, which has since claimed the lives of millions of people worldwide. Since then, researchers around the world have been working to understand how the virus functions in an attempt to stop its spread. In this regard, the contribution of strategies supported by artificial intelligence (AI) and other emerging technologies has been unquestionable. Intelligent data analysis, which has become possible due to the development of high-performance computing resources (cloud computing) and recent improvements in deep learning algorithms, machine learning and neural networks, allows researchers to successfully process large amounts of data and to extract knowledge. AI can contribute to these objectives by providing efficiency and speed in terms of obtaining results, as well as by generating new solutions and new lines of research.

Since the beginning of the pandemic, scientific production in many different areas, sometimes supported by AI, has continued to grow, and researchers have begun to address issues related to detection and transmission, vaccines, treatments, and, more generally, appropriate management of this exceptional situation. A huge number of technological methodologies are arising to manage the effects of the COVID-19 pandemic. Among them, emerging technologies including Internet of Things (IoT), AI, blockchain, and cutting-edge media transmission networks such as 5G have been at the bleeding edge.

The Internet of Medical Things (IoMT), additionally alluded to as the medical care IoT, is a blend of clinical gadgets and programming applications offering broad medical care services that are associated with the medical services IT frameworks. Due to their capacity to gather, investigate, and send wellbeing information proficiently, the medical services area has understood the extraordinary capability of IoMT innovations. The act of utilizing IoMT advancements to work with distant patient observing is called telemedicine. It permits clinicians to assess, analyze, and treat patients without requiring any actual association with them. Following the episode of the exceptionally infectious COVID-19, some IoMT tech and telemedicine platforms have been studied as a solution.

Likewise, wearables can be a legitimate medical technology, because of the biosensors that are installed inside. The capacity to screen individuals' actual wellbeing, alongside their feelings of anxiety, has made wearables an optimal innovation for reception in the medical services area. Additionally, we can name blockchain, as it is acquiring more importance every day on account of its wide applications in different backgrounds. Seeing its utility, various researchers across the globe have begun utilizing blockchain to assemble applications that can help in countering the COVID-19. These applications plan to resolve a vital issue, which is the lack of integration of verified data sources such as vaccination certificates. Blockchain can approve

consistently evolving information. This component can end up being very important in dealing with the quickly raising COVID-19 circumstance.

Concerning following the applications, advancements such as Bluetooth and other short-distance communications can be useful. It is quite possibly the most interesting innovation utilized for exact vicinity estimation. Additionally, it is one of the most unintrusive innovations, as it does not screen the specific area of a cell client but instead the relative distance between a gadget and that of another. AI and Machine Learning (ML), whenever utilized appropriately, are compelling technologies against the COVID-19 pandemic. They can be utilized for different purposes, such as infection reconnaissance, hazard forecast, clinical analysis, infection demonstrating or implementing the public approaches measures. In another vein, 5G refers to the fifth generation of wireless communication technology regarding mobile networks globally. Along with other corresponding innovations such as IoT and AI, 5G organization innovation can possibly alter the medical care area in the COVID-19 pandemic by giving better help to the forefront staff and by providing further developed infection following, patient checking, information assortment, and investigation.

The scientific studies available in this area are scattered, and their numbers are overwhelming, making it hard for researchers to obtain a structured view of the state of the art. Fortunately, interesting reviews quickly took over this situation, providing a complete overview, updated to the first months of the pandemic, and even creating an interesting repository of papers on data science-based applications that can help in the COVID-19 pandemic. Scientometric analysis is a technique that can provide a macroscopic view of a large amount of academic literature; through a quantitative analysis using text mining techniques, it is possible to map the scientific development of a given field of research. In this way, it is possible to identify patterns related to authors, journals, countries, and the issues on which research is focused and which have already been surpassed. Regarding the present topic, scientometric analysis can provide an overview of those areas that are multidisciplinary or are experiencing greater inter-collaboration in terms of the management of the current pandemic, and which are supported by emerging technologies.

i. Name **three (03)** things that enable intelligent data analysis which facilitate the processing of large amounts of data? **(0.5x3= 1.5 Marks)**

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.....

ii. Briefly state the role of Artificial Intelligence (AI) in a research context? **(1.5 Marks)**

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iii. Explain what do you understand by the phrase “at the bleeding edge”? **(2 Marks)**

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.....

iv. What do you mean by 'IoMT' (1.5 Marks)

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.....

v. What is 'telemedicine'? (1.5 Marks)

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.....

vi. Find synonyms from the passage to match the meaning of the words given below (1x2=2 Marks).

a. Extraordinary-

b. Use-

vii. Write 2 uses of 'Scientometric analysis' (1x2= 2 Marks)

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Question 06

ChatGPT is providing free education, however; many people misuse it. Write a comprehensive essay on how to use ChatGPT effectively for educational purposes of undergraduates. Use no more than 200 words.

(10 Marks)

.....End of the paper.....