KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

Hiranya Chandra Bhuyan School of Science and Technology

HOME ASSIGNMENT FOR MASTERS OF SCIENCE IN INFORMATION TECNOLOGY

FIRST SEMESTER, 2023

N.B: The learners will have to collect receipt after submitting the assignment with the signature and seal of the collector of study centre and will have to keep with him/her till the declaration of result.

✂.....

Receipt

Received the assignment from Mr/Ms……..
Enrollment Number …… of 1st Semester, 2023 MSc IT on ...../...../2023/2024.

Date: **Signature of collector with seal**

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

(Hiranya Chandra Bhuyan School of Science and Technology)

Home Assignment
MSc IT 1st Semester, 2023

Computer Fundamentals and Digital Techniques

Total Marks: 50

Assignments are required to be written in your own language, copying in to from the learning material will carry less score.

***Last Date of Submission:** 10 January 2024*

A. Answer the following questions: 4x10=40 Marks

Q1. What are the five generations of computers, and how has each generation contributed to the evolution of computer technology?

Q2. Explain the different techniques used by antivirus software for detecting and eliminating malware, with a focus on signature-based detection, heuristic-based detection, behavioral-based detection, sandbox detection, and data mining techniques.

Q3. Explain the operation of a three-input XOR gate using its truth table and graphical symbol. Illustrate the XOR gate's behavior with a switching circuit analogy, and discuss the significance of its output in relation to the inputs.

Q4. Explain the concepts of multiplexers, demultiplexers, encoders, and decoders in combinational circuits. Provide detailed explanations of their block diagrams, working principles, and applications.

B: Answer the following: 10 marks

Q5. How can advancements in electronics and technology contribute to addressing environmental concerns? Discuss the potential roles of electronic devices, sensors, and communication technologies in monitoring and mitigating environmental issues. Provide examples of electronic solutions that have been or could be implemented to promote sustainability and environmental conservation. Additionally, explore any challenges or ethical considerations associated with the intersection of electronics and environmental conservation.

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Home Assignment
MSc IT 1st Semester, 2023

DSC: Computer Programming using C

Total Marks: 50

Assignments are required to be written in your own language, copying in to from the learning material will carry less score.

***Last Date of Submission:** 10 January 2024*

A. Answer the following questions: 4x10=40 Marks

Q1. What are conditional statements and conditional operators? What are the other control statements in C?

Q2. What are the different types of loops in C? What considerations would guide your choice between the different types of loops for a particular task? Explain with the help of an example.

Q3. What is an array? Give an example. How a 2-dimensional array is organized in memory? Can we have more than 2 dimensions in an array?

Q4. Write a C program to calculate the factorial of a given number using a function. Implement a function `calculateFactorial` that takes an integer as input and returns its factorial. In your `main()` function, prompt the user to input a number and output its factorial using the `calculateFactorial` function.

B: Answer the following: 10 marks

Q5. Explain how deforestation affects local ecosystems and biodiversity. Discuss the role of renewable resources or alternative materials in reducing this environmental impact.

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Home Assignment
MSc IT 1st Semester, 2023

Fundamentals of Networking and Web Technology

Total Marks: 50

Assignments are required to be written in your own language, copying in to from the learning material will carry less score.

***Last Date of Submission:** 10 January 2024*

A. Answer the following questions: 4x10=40 Marks

Q1. Compare a star network to a bus network in terms of their arrangements. Provide examples of scenarios where using a star network or a bus network would be advantageous.

Q2. Compare the advantages and limitations of guided media with unguided media in terms of their suitability for transmitting data. Illustrate scenarios where each type of medium would be most appropriate based on factors like data speed and distance.

Q3. Design a Local Area Network (LAN) that incorporates various end devices such as PCs, printers, and scanners using appropriate networking devices, transmission media, and topology. Explain why you chose these media and topology to connect the network.

Q4. Create a webpage using HTML having an unordered list of fruits available in winter. Also create a table having two columns differentiating the fruits and vegetables found in our region.

B: Answer the following: 10 marks

Q5. Discuss the advantages and challenges of transitioning from fossil fuels to renewable energy sources. What role can technology, policy, and public awareness play in facilitating this transition and mitigating environmental degradation?

Assignment Guidelines

The following are some important guidelines for writing your assignment responses:

- Make sure that you have answered all the questions of an assignment before you submit it in the study center. Incomplete assignments shall bring you poor grades, or non-submission of assignments in time may lead to withholding of results.
- Answer the questions of the assignment as directed after a careful study of the Units available in the SLMs.
- You should ***not send printed articles*** as your answers for assignments, nor should you reproduce the text of the SLMs verbatim. Write assignments in your ***own words and in your own handwriting*****.** Typed assignment responses are never allowed.
- The assignments should be written on an A4 size sheet or a foolscap size blank paper.
- Assignments should only be written in blue or black ink colour pen.
- **The assignments should have a first page/ cover page. The first page/ cover page should have the following details:**

  Programme Name: .....

  Name:..... **Enrolment Number:**.....

  Course Title:..... **Study Centre Code:**.....

  Date of Submission:..... **Phone No and Email id:**.....
- Ensure that you keep a copy of the assignment responses with yourself. You might need them in case you have to re-submit the assignment responses due to some unforeseen circumstances.
- While submitting the assignment, don't forget to collect the receipt.
- Be precise in your response. Keep the word limit of the assignments in mind.