

Roll Number: _____

SCHOOL OF CHEMICAL AND LIFE SCIENCE

B.Sc. CHEMISTRY (FYUP), SEMESTER-II

SEMESTER EXAMINATION, NOVEMBER 2023

PAPER CODE: BCH VAC 201

PAPER TITLE: DIGITAL AND TECHNOLOGICAL SOLUTIONS

Time: 1.5 Hours

Maximum Marks: 30

Write the Roll No. at the top immediately on receipt of this Question Paper. Attempt all questions. All parts of a question must be attempted in continuation. Start the answer to the next question on a new page. Cite examples and draw labeled diagrams wherever necessary.

SECTION A

Q1. Answer all Questions.

[1x8= 8 Marks]

- A. What is the fundamental concept behind a digital system?
a) Analog values b) Discrete values c) Continuous values d) Variable values
- B. Define a digital system in terms of the values it uses.
a) 1s and 2s b) 0s and 1s c) A and B d) 0s and 2s
- C. Give an example of an application of digital systems in the field of automation.
a) Digital cameras b) Digital broadcasting c) Traffic lights d) Analog watches
- D. An algorithm must have a finite number of steps, meaning it must eventually terminate. (True/False)
- E. The CPU is the component in a computer system that executes instructions stored in memory, performs calculations, and manages data. (True/False)
- F. In a communication system, the _____ typically initiates the communication by encoding and transmitting the message, while the _____ decodes and interprets the message.
- G. System software includes the _____ that manages hardware resources, such as Windows, macOS, and Linux.
- H. What does the term "algorithm" refer to in computer science?

SECTION B

Q2. Attempt ANY THREE of the following

[3x4=12 Marks]

- A. Explain the key objectives of the Unified Payments Interface (UPI) and how it has transformed digital payments in India.
- B. What is a communication system, and why are communication systems important in our daily lives? Provide a brief example of how you use a communication system in your routine.
- C. What are web browsers?
- D. How has social networking changed the way people connect and communicate with each other in their daily lives? Provide one example of a positive impact and one example of a potential drawback of using social networking platforms.

SECTION C

Q3. Attempt ANY TWO of the following

[5x2=10 Marks]

- A. What are the keyways in which digital technology has transformed the role and significance of communication in our modern society?
- B. How do computer systems process and execute instructions, and what are the main components responsible for their functioning?
- C. Explain evolution of digital systems.
- D. What are the main types of operating systems, provide an example for each type?

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