

**23U155**

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Name: .....

Reg.No: .....

**FIRST SEMESTER B.Voc. DEGREE EXAMINATION, NOVEMBER 2023**

(CBCSS - UG)

(Regular/Supplementary/Improvement)

**CC21U SDC1 IE01 - INTRODUCTION TO IOT AND ELECTRONICS**

(Information Technology)

(2021 Admission onwards)

Time : 2.5 Hours

Maximum : 80 Marks

Credit : 4

**Part A** (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. Why Zener diode used as a voltage regulator?
2. Differentiate BJT and UJT.
3. Draw the equivalent Circuit of Op-amp.
4. Draw the Circuit diagram of a substrator.
5. Write down the applications of precision diode.
6. What is even parity?
7. What are Registers?
8. Define RTL & TTL.
9. Define parallel processing.
10. What are the different ways of operand addressing in 8051?
11. List out the Features of IoT.
12. What are the advantages of IOT?
13. Show the protocols used in Transport layer of IoT.
14. Define Wireless Sensor Networks.
15. Explain the characteristics of Python programming language.

**(Ceiling: 25 Marks)**

**Part B** (Paragraph questions)

Answer *all* questions. Each question carries 5 marks.

16. With neat sketch explain principle and operation of Zener diode.

17. Discuss working of Bridge rectifier and derive its Ripple factor and efficiency.
18. State the distributive laws of boolean algebra. How do they differ from the distributive laws of ordinary algebra?
19. Explain: (a) DMOS (b) VMOS
20. Write notes on the digital logic families comparing the characteristics.
21. How IoT communications APIs are classified?
22. Demonstrate the IOT Components with neat diagram.
23. Discuss the role of communication protocols and embedded systems in IoT.

**(Ceiling: 35 Marks)**

**Part C (Essay questions)**

Answer any *two* questions. Each question carries 10 marks.

24. Convert  $(2567)_{10} = (?)_2 = (?)_8 = (?)_{16}$
25. Draw the logic symbol and construct the truth table for each of the following gates. [1] Two input NAND gate [2] Three input OR gate [3] Three input EX-NOR gate [4] NOT gate [5] Two input AND gate.
26. Define Computer Language. Briefly Explain the categories of computer languages.
27. Explain physical design in detail with an example ii) Explain the IoT protocols with block diagram.

**(2 × 10 = 20 Marks)**

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