

D 13823

(Pages : 2)

Name.....

Reg. No.....

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2016

(CUCBCSS-UG)

Complementary Course

BCS 1C 01—COMPUTER FUNDAMENTALS

Time : Three Hours

Maximum : 64 Marks

Part A

Answer all questions.

Each question carries 1 mark.

1. What is the binary equivalent of the decimal number 107 ?
2. Differentiate between 7-bit ASCII and 8-bit ASCII.
3. Define a tautology in Boolean algebra.
4. Define half-adder logic circuit.
5. Draw the circuit diagram for the Boolean function $\overline{x \cdot y} + z$.
6. Describe the role of Memory Buffer Register (MBR) in a CPU.
7. What is Cache memory ?
8. Differentiate between CD-R and CD-RW discs.
9. List various symbols used for drawing flow charts.

(9 × 1 = 9 marks)

Part B

Answer all questions.

Each question carries 2 marks.

10. Convert the binary number $(11010011)_2$ to its hexadecimal equivalent.
11. State and prove De-Morgan's laws in Boolean algebra.
12. Differentiate between RISC and CISC processors.
13. How OCR software recognize characters ?
14. Draw a flow chart to find the greatest of three numbers.

(5 × 2 = 10 marks)

Turn over

Part C

*Answer any five questions.
Each question carries 5 marks.*

15. Write the ASCII-7 coding for the word ROAD in both binary and hexadecimal notations. How many bytes are required to store this word using the same coding ?
16. Prove that $x \cdot y + \bar{x} \cdot z + y \cdot z = x \cdot y + \bar{x} \cdot z$.
17. Explain how data can be stored and retrieved in hard disks.
18. Simplify the Boolean function $F(A, B, C, D) = \Sigma(4, 6, 7, 15)$.
19. Decode and codeword 1110110 created using Hamming code.
20. Design a half-adder combinational circuit.
21. Write notes on Voice Response System.
22. Explain about various types of printers.

(5 × 5 = 25 marks)

Part D

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

23. With the help of neat diagram, explain the working of a digital computer.
24. Briefly explain the following :—
 - (a) Canonical forms of a Boolean expression.
 - (b) Memory hierarchy.
25. Write short notes on :
 - (a) Commonly used input devices.
 - (b) Various coding schemes to represent data in computers memory.

(2 × 10 = 20 marks)