20U130S (Pages: 2) Name: …….

Reg. No……...

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

(CUCBCSS-UG)

CC15U CSC1 C01 - COMPUTER FUNDAMENTALS

(Computer Science - Complementary Course)

(2015 to 2018 Admissions - Supplementary)

Time: Three Hours Maximum: 64 Marks

PART A

Answer ***all*** questions. Each question carries 1 mark.

1. 2's complement of 1011100001 is ----------
2. Define half subtractor.
3. State two basic De Morgan's theorems.
4. What are the five basic functions performed by a computer system?
5. Machine language programs written for one computer will generally not run on another computer with a different CPU. Explain why?
6. If a disk pack has 5 disk plates,2500 tracks,125 sectors and 512 bytes per sector then storage capacity of a disk is ----------
7. What is a parity bit?
8. Find the complement of the Boolean Function (x' + y + z). (x' +y' + z')
9. What is a flowchart?

(9 x 1 = 9 Marks)

PART B

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

10. Carry out following conversions.

    a) 135_{10} = $(\ldots\ldots)_2$ b) $2ACB_{16}$ = $(\ldots\ldots)_8$ c) 105_5 = $(\ldots\ldots)_4$

11. Simplify the Boolean function x. y + x'. z + y. z
12. What is a Register? Briefly explain different types of registers.
13. Explain Monitor.
14. Write an algorithm to find the largest of three numbers.

(5 x 2 = 10 Marks)

PART C

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

15. Encode the four bit data word 0111 using Hamming code.
16. Explain various pointing and draw devices.

17. Explain Magnetic disc with figure. Mention its advantages and disadvantages.
18. Construct a logic circuit for the Boolean expression A.B'.C.(A+B.D) using NOR gate only.
19. Write an algorithm and a flow chart to find sum of first n natural numbers.
20. Convert the following to binary:
    $(2DEF)_{16}$, $(6145)_{8}$, $(1245)_{10}$, $(0.ABC)_{16}$, $(0.315)_{8}$, $(0.78)_{10}$
21. Explain half adder and full adder.
22. Explain different types of Printer.

(5 x 5 = 25 Marks)

PART C

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

23. Discuss the working of the following Keyboard, MIDI, Microphone, OCR, and OMR.
24. Discuss types, hierarchy, properties and features of primary memory.
25. (a) Convert the decimal numbers 1124 to equivalent binary, octal and hexadecimal numbers.
    (b) Multiply 10111_2 and 101111_2
    (c) Add 110011_2 and 10111010_2
    (d) Subtract 10110011_2 from 1010100101_2

(2 x 10 = 20 Marks)

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