F–1730

Sub. Code
7BCEA2

U.G. DEGREE EXAMINATION, APRIL 2019

Computer Science

Allied : COMPUTER ORGANIZATION

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 60 Marks

Part A (10 × 1.5 = 15)

Answer **all** questions.

1. Which number system is used for Micro processor based programming?

2. Write the truth table and symbol for NAND gate.

3. Write the type of parity of the following number.

   (a) 110110

   (b) 110111

   (c) 101010

4. What are the applications of Encoder?

5. Write the complements of the following numbers.

   (a) 1101101 – is complement

   (b) 1111101 – 2's complement

6. Write the truth table of Half – Adder.

7. What are the phases of Instruction cycle?

8. What is meant by address sequencing?

9. Mention the names of Auxillary Memory devices.

10. What is meant by Implied Mode of Addressing and immediate Mode of Addressing?

Part B $(5 \times 3 = 15)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Do the following code conversion.

(i) 235 into Excess–3 code

(ii) 1010101010 – into gray code.

Or

(b) Derive the Basic logic gates from universal gates.

12. (a) Explain about the Universal Logic circuit of Multiplexers.

Or

(b) Explain about the Exclusive – OR gates.

13. (a) Add the 8–bit numbers 01010111 and 00110101. Then show the same numbers in Hexa decimal notation.

Or

(b) Show the Binary Subtraction of 125_{10} from 200_{10}.

14. (a) Explain about the binary Micro program.

Or

(b) Explain the types of Computer Instructions.

15. (a) Explain about the Arithmetic Pipe line.

Or

(b) Explain about the General Register Organization.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. (a) Express decimal 5280 in Excess – 3 code.

(b) Here is an excess –3 Number : 0110 1001 1100 0111 What is the decimal equivalent?

17. Simplify the following :

(a) $y = \overline{A}\,\overline{B}\,\overline{C} + \overline{A}B\overline{C} + A\,\overline{B}\,\overline{C} + AB\,\overline{C}$ using Boolean Laws.

(b) $y = F(A, B, C, D) = \sum_m (7, 9, 10, 11, 12, 13, 14, 15)$ using K–map.

18. Do the following 2's complement arithmetic addition.

(a) +83
+16

(b) +125
–68

(c) +37
–115

(d) –43
–78

19. Explain about the timing and control unit of a digital computer.

20. Explain how a stack is used for Evaluating arithmetic expressions?

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