

(FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2023 ONLY)

23UBC205

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS): POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY-2024

COURSE NAME: B.C.A

MAXIMUM MARKS: 75

SEMESTER: II

TIME: 3 HOURS

PART - III

DIGITAL COMPUTER FUNDAMENTALS

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

1. What is the value of $(536)_8$ in hexadecimal?
a) 17A b) 15E c) 25E d) F3A
2. Choose the correct statement:_____.
a) PROM contains a programmable AND array and a fixed OR array.
b) PLA contains a programmable AND array and a fixed OR array.
c) PROM contains a fixed AND array and a programmable OR array.
d) PLA contains a programmable AND array and a fixed OR array.
3. How many AND gates are required for 1-to-8 multiplexer?
a) 2 b) 6 c) 5 d) 8
4. What is the Q output of a J-K flip-flop with J=1 and K=1 with 40kHz clock input?
a) Constantly LOW b) Constantly HIGH c) A 20kHz square wave d) A 40kHz square wave
5. How much data can be stored in Blue ray disk per layer?
a) 25KB b) 25MB c) 25GB d) 25TB

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES.

K2

6. Write the radix of binary number system.
7. Define RAM.
8. Analyse the workflow from serial data to parallel data.
9. Outline the basic building block of sequential logic circuit.
10. How you verify whether the magnetic tape is generally a plastic ribbon coated?

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. K3

11. a) Illustrate the flowchart symbols and summarise its meaning.

(OR)

- b) i) Convert binary number 0110011.1011 into octal number.
ii) Convert decimal number 440 into octal number.
iii) Convert decimal number 4321.356 into octal number.
iv) Convert hexadecimal 3A9 to octal.
v) Convert hexadecimal 7.6 to binary.

(CONTD.....2)

- 12.a) Sketch the Boolean Algebra with rules.
(OR)
b) Explain the concept of EPROM.
- 13.a) Explain the functions of full adder.
(OR)
b) Create a Sketch of the the Decoder and illustrate it.
14. a) Examine the Counter.
(OR)
b) Examine Shift Registers in Digital Logic
15. a) Describe the Alphanumeric codes
(OR)
b). List the types of Keyboards.

SECTION – C**(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.**

16. a) Classify the types of Flowchart and explain their characteristics.
(OR)
b) Convert the following.
i) Hexadecimal 2A5 to Octal
ii) Octal 5722 to Binary
iii) Octal 657 to Hexadecimal
iv) Hexadecimal B2E to Binary
v) Hexadecimal 1F7D to Decimal
vi) Hexadecimal 23E to Decimal
vii) Binary 1100111101 to Octal
viii) Binary 10100101010 to Octal
- 17.a) Evaluate the basic logic gates.
(OR)
b) Contrast between ROM and RAM.
18. a) Justify the multilevel NAND and NOR circuits.
(OR)
b) Examine the Multiplexer.
- 19.a) Investigate the J-K Flip-flops
(OR)
b) Interpret the function of Synchronous Counters
- 20.a) Classify the Output devices and explain their functions.
(OR)
b) Examine the characteristics Error detecting and Error correcting codes.
