

(6 pages)

Reg. No. :

Code No.: 30787 E

Sub. Code: EECA 31

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024.

Third Semester

Computer Application

Elective – MICROPROCESSOR AND
MICROCONTROLLER

(For those who joined in July 2024 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions

Choose the correct answer

1. Which of the following is not true about 8085 microprocessor?
 - (a) It is an 8-bit microprocessor
 - (b) It is a 40 pin DIP chip
 - (c) It is manufactured using PMOS technology
 - (d) It has 16 address lines

2. Which of the following addressing mode is used by 8085 microprocessor for array and list operations?

(a) Base-Register (b) Direct
(c) Indexed (d) Immediate

3. The _____ is an 8-bit register that is part of the arithmetic/logic unit.

(a) Register (b) Flags
(c) Program counter (d) Accumulator

4. The _____ performs the actual numerical and logic operation such as 'add', 'subtract', 'AND', 'OR' etc.

(a) ALU (b) CPU
(c) Memory (d) Address bus

5. Results are stored in R/W memory locations called the _____.

(a) Input buffer (b) Output buffer
(c) Stack (d) Program counter

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6. The conversion of _____ to BCD is performed by dividing the number by the powers of ten.
- (a) decimal (b) binary
(c) octal (d) hexadecimal
7. The _____ is used to transfer data bytes between I/O and system memory at high speed.
- (a) Input Interrupt (b) Program counter
(c) DMA (d) Priority resolver
8. The _____ stores the masking bits of the interrupt lines to be masked in 8259.
- (a) Interrupt Request Register
(b) Interrupt Mask Register
(c) Priority Resolver
(d) In-Service Register
9. The 8051 microcontroller has _____.
- (a) 4K bytes of on-chip ROM
(b) 8K bytes of on-chip ROM
(c) 16K bytes of on-chip ROM
(d) 32K bytes of on-chip ROM
10. The number of flags present in 8051 that respond to math operations are _____.
- (a) 2 (b) 3
(c) 4 (d) 5

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PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions by choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Discuss about computer languages.
- Or
- (b) Describe Internal data operations and 8085 registers.
12. (a) Draw the Architecture of 8085.
- Or
- (b) Discuss about Program Counter and Stack Pointer.
13. (a) Register BC contains 2793 H and registers DE contain 3182 H. Write instruction to add these two 16-bit numbers and place the sum in memory locations 2050 H and 2051 H.
- Or
- (b) Describe the program for multiplication of two 8-bit unsigned numbers.
14. (a) Write note on 8085 interrupts.
- Or
- (b) Sketch the block diagram of 8257 DMA controller.

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15. (a) Write about microcontroller.

Or

- (b) Describe 8051 pin diagram.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions by choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Draw the block diagram of digital computer and explain.

Or

- (b) Sketch and explain 8085 bus organization.

17. (a) Explain in detail Functional Block Diagram of 8085 Microprocessor.

Or

- (b) Explain 8085 instruction set.

18. (a) Write a program to convert ASCII to BCD 8-bit number where the starting address is 2000 and the number is stored at 2050 memory address and store result in 3050 memory address.

Or

- (b) Illustrate BCD-to-Binary conversion.

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19. (a) Differentiate SIM and RIM instructions in 8085 microprocessor.

Or

- (b) Explain the block diagram of 8259 programmable interrupt controller.

20. (a) Illustrate the architecture of 8051 microcontroller.

Or

- (b) Summarize control registers of 8051 microcontroller.
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