

Term End Examination July – 2026

Course	: BSCIT	Date	: 21/07/2026
Subject Code	: BSCIT-401	Time	: 03:00pm to 05:15pm
Subject Name	: Digital Electronics	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three)

(30)

1. Discuss Hardware, Software and Von Neumann Architecture with suitable diagrams.
2. Discuss Binary, Decimal, Octal and Hexadecimal Number Systems with examples.
3. Explain Logic Gates and Boolean Algebra in detail.
4. Discuss RAM, ROM and various types of memory used in computer systems.
5. Discuss Stack Organization, Addressing Modes and Program Interrupts.

Section B

Answer the following (Attempt any four)

(20)

1. Differentiate between Analog Signals and Digital Signals.
2. Explain 1's Complement and 2's Complement with suitable examples.
3. Discuss Binary Codes, BCD Code, Excess-3 Code and Gray Code.
4. Explain Encoder, Decoder and Multiplexer.
5. Explain Register Transfer Language (RTL) and Micro Operations.
6. Explain Input-Output Organization and DMA (Direct Memory Access).

Section C

Part – A (Multiple Choice Questions)

(10)

1. A digital computer processes information using:
A) Decimal Digits Only
B) Binary Digits
C) Analog Signals Only
D) Hexadecimal Digits Only
2. One byte is equal to:
A) 4 bits
B) 8 bits
C) 16 bits
D) 32 bits
3. Which architecture forms the basis of modern digital computers?
A) Harvard Architecture
B) Client-Server Architecture
C) Von Neumann Architecture
D) Peer-to-Peer Architecture
4. Which number system has base 16?
A) Binary
B) Decimal
C) Octal
D) Hexadecimal
5. Which logic gate produces output 1 only when all inputs are 1?
A) OR Gate
B) NOR Gate
C) AND Gate
D) XOR Gate
6. Which memory is volatile?
A) ROM
B) RAM
C) PROM
D) EPROM
7. Which device converts multiple input lines into fewer output lines?
A) Decoder
B) Encoder
C) Register
D) Counter

8. RTL stands for:

- A) Register Transfer Language
- C) Register Translation Logic

- B) Runtime Transfer Logic
- D) Real Time Language

9. DMA stands for:

- A) Direct Memory Access
- C) Direct Module Access

- B) Data Memory Allocation
- D) Dynamic Memory Access

10. Which unit performs arithmetic and logical operations?

- A) Control Unit
- C) Arithmetic Logic Unit

- B) Memory Unit
- D) Input Unit

Part – B (State whether the following statements are true or false)

(10)

- 1 Digital signals use discrete values.
- 2 Binary Number System has base 10.
- 3 Von Neumann Architecture uses a stored-program concept.
- 4 1's Complement is obtained by changing 0s to 1s and 1s to 0s.
- 5 NAND gate is a universal gate.
- 6 RAM is a volatile memory.
- 7 Decoder converts coded input into coded output.
- 8 Register Transfer Language is used to describe data transfers between registers.
- 9 DMA allows data transfer without continuous CPU intervention.
- 10 ALU performs arithmetic and logical operations.
