

Dr. Babasaheb Ambedkar Open University
Term End Examination February – 2026

Course	: BCAR/DCAR	Date	: 14-Feb-26
Subject Code	: BCAR/DCAR-203	Time	: 03:00pm to 05:15pm
Subject Name	: Digital Electronics and Computer Organisation	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three) (30)

1. Explain the Positional and Non-Positional Number.
2. Explain 2's Complement using Example.
3. Explain OR Gate, AND Gate & NOR Gate with digital circuit.
4. Explain Half Adder with Truth-table and circuit.
5. Explain Input / Output Devices.

Section B

Answer the following (Attempt any four) (20)

1. Discuss the Hexadecimal Number System.
2. Explain Fractional Numbers.
3. Explain Excess-3 code on detail. Explain the issues with BCD which can be overcome with Excess-3 code.
4. What are The Boolean Algebraic Properties?
5. Write a short note on Multiplexer.
6. What is Asynchronous Data Transfer? Explain Handshaking in detail.

Section C

Part – A (Multiple Choice Questions) (10)

1. Why do we use gray codes?
A To count the no of bits changes B To rotate a shaft
C Error correction D To count the no of bits changes and To rotate a shaft
2. A binary digit is called a _____
A bit B byte
C number D All
3. The gray code equivalent of (1011) is _____
A 1101 B 1010
C 1110 D None of above
4. The binary equivalent of gray code 1111 is _____
A 1101 B 1010
C 1011 D 1110
5. $A + A' =$ _____
A 0 B A
C 1 D A'

- 6 D'Morgan's law is _____ and _____
 A $A + B = B + A$ and $AB = BA$ B $(A + B)' = A' B'$ and $(AB)' = A' + B'$
 C $(A + B)' = AB$ and $(AB)' = A + B$ D All of above
- 7 K Map is used to Boolean expression _____
 A Expand B Minimize
 C Sum D All of above
- 8 OMR stands for _____
 A Original Mark Recognition B Optical Memory Recognition
 C Optical Mark Recognition D Original Memory Recognition
- 9 MICR stands for _____
 A Memory Ink Character Recognition B Magnetic Ink Character Recognition
 C Master Ink Character Recognition D Multiple Ink Character Recognition
- 10 IOP Stands for _____
 A Input Output Print B Input Output Processor
 C Input Output Predication D Input Output Presence

Part – B (Do as Directed)

(10)

- 1 PROM Stands for _____
- 2 EPROM Stands for _____
- 3 DVD Stands for _____
- 4 What is Cycle time?
- 5 Flip-Flop is Two state device. (True / False)
- 6 A register capable of shifting in one direction is called a Unidirectional Shift Register. (True / False)
- 7 Lower-order bit is known as First-bit. (True / False)
- 8 _____ is a register, which goes through a pre-defined sequence of states when clock pulse is applied.
- 9 F1 function key is used for getting help. (True / False)
- 10 A 16-bit address bus can generate _____ addresses.
