

INDIRA UNIVERSITY, PUNE

SCHOOL OF INFORMATION TECHNOLOGY- BSC CS

Term End Examination (2025 Pattern) April- May – 2026- Semester – II

Course Name: Principles of Digital Electronics
Course Code: 25BSC209T

Max. Marks: 25
Time: 1 Hr. 30 Minutes

Instructions

- All questions are compulsory.
- Use of scientific calculators are not allowed.
- Draw neat diagrams to get full marks.
- The meaning of A' is a compliment of A & so on.

Q1.	Attempt any 5 out of 7. (1 Mark each) a) What is the 'radix' in case of number systems? b) Define weighted code with one example. c) Draw the symbol & write the truth table for 2 input AND gate. d) Identify the gate from given statement. "If one of the input is at Logic-1 then output of the gate is logic-0". e) How many variables are eliminated by quad and pair in solving the Boolean equation in K-Map? f) Define the term 'Negative logic' in case of logic gates. g) Find the number of select lines for 1:16 demultiplexer.	(5 Marks)	CO1
Q2.	Attempt any 2 out of 4. (5 marks each) a) Compare TTL and CMOS logic families. b) With necessary diagram, explain EX – OR gate as a controlled inverter. c) Convert the following with proper steps. $(128)_{10} = (\dots\dots\dots)_2$ and $(101011)_{\text{Gray}} = (\dots\dots\dots)_{\text{BCD}}$ d) What is multiplexer? With suitable logic diagram explain the 4:1 multiplexer.	(10 Marks)	CO2

Q.3	Attempt all questions. (10 Marks) a) Solve the following Boolean equation using K-map and draw the logic diagram for the simplified equation. $Y_{(A,B,C,D)} = \sum (0,2,3,4,6,8,10,12,14)$. b) With suitable logic diagram explain the four-bit parallel adder. OR	CO3
Q.3	Attempt all questions . (10 Marks) a) Explain ALU with suitable block diagram. b) What is decoder? Draw suitable block diagram for BCD to seven segment decoder interfaced with common cathode seven segment display. Write the truth table only to display a digit zero.	CO3
