

A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE
(AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120



Bachelor of Science (Semester 5) Internal Examination - 2025
COURSE CODE : US05MIELE01 (Digital electronics 1)

Date: 24 – 09 – 2025(Wednesday)

Time: 10:45 A.M. -11:45 A.M.

Total marks :20

Q.1 Multiple choice questions. (Attempt All)

06

- 1 The logical expression of X – NOR gate is _____.
A) $AB + \overline{AB}$ C) $AB + \overline{AB}$
B) $AB + \overline{AB}$ D) $\overline{AB} + \overline{AB}$
- 2 The NOR gate output will be high for input condition _____.
A) 00 C) 10
B) 01 D) 11
- 3 Which gates are required to construct half adder logic circuit?
A) NAND,NOR C) NOR, AND
B) AND,OR D) XOR,OR
- 4 The clear input is used to make Q output _____.
A) 1 C) invalid
B) 0 D) valid
- 5 How many flip flops are required to construct 16 bit shift register?
A) 4 C) 10
B) 8 D) 16
- 6 The process of mapping a Hard disk is known as _____.
A) Less complex C) faster
B) To eliminate invalid state D) Fewer inputs



Q.2 Write a note on NAND gate

07

OR

Q.2 With necessary circuit diagram explain working of full adder and subtractor.

07

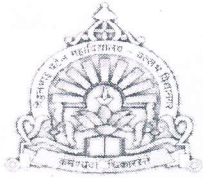
Q.3 What is bidirectional shift register? With necessary circuit diagram explain it.

07

OR

Q.3 Write a note on D flip flop.

07



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B.Sc. (Semester 5) Quiz - 2025

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Date: 24-09-2025 Day: Wednesday

Time: 10 minutes

Total marks :05

Q-1 Whether the following statement is true or false. Write your answer in the box

- (i) X-OR gate is also called an equality gate. | |
- (ii) When two inputs of NOR gate are connected together, it forms NOT gate. | |
- (iii) Shift register is useful for data transfer from one location to another. | |
- (iv) NAND gate is a memory element. | |
- (v) Main function of flip flop is to generate clock pulse. | |

