POSSESION OF MOBILES IN EXAM IS UFM PRACTICE.

Name Vaibhav Enrollment No. 2110[redacted]

Jaypee Institute of Information Technology, Noida

T-2 Examination, EVEN 2023
B. Tech IV Semester

Course Title: Digital Systems
Course Code: 18B11EC213

Maximum Time: 1 Hr
Maximum Marks: 20

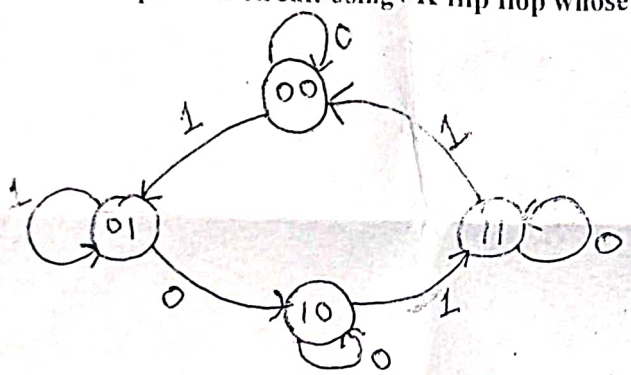
CO1: Familiarize with the fundamentals of number system, Boolean algebra and Boolean function minimization techniques.
CO2: Analyze and design combinational circuit using logic gates.
CO3: Analyze state diagram and design sequential logic circuits using flip flops.
CO4: Understand the classification of signals and systems and learn basic signal operations and Fourier analysis.
CO5: Understand various steps involved in digitization and transmission of signal.

Note: Attempt all questions. All questions are compulsory.

Q.1 Convert D flip flop in to JK flip flop. [CO3, 4]

Q.2 Design a 2-bit magnitude comparator using 1-bit magnitude comparator. [CO2, 4]

Q. 3 Design the clocked sequential circuit using JK flip flop whose state diagram is shown below: [CO3, 4]



Q.4 Design a MOD-5 counter to count the random sequence 0, 1 3, 7, 6. Design should be circulatory to ensure that if we end in any unwanted state, the next clock pulse will reset the counter to zero. Implement the circuit using T-flip flop. [CO3,4]

Q.5 Design a 4-bit bidirectional shift register with parallel load such that its mode control is as given below. (using 4 x 1 MUX) [CO3, 4]

Mode Control		Register Operation
S1	S0	
0	0	Parallel load
0	1	No change
1	0	Shift right
1	1	Shift left