

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: IMSC
BRANCH: PHYSICS**

**SEMESTER : III
SESSION : MO/2022**

SUBJECT: PH202 DIGITAL SYSTEM AND APPLICATIONS

TIME: 3:00 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	Explain graphically the difference between analog and digital circuits.	[2]	CO1	Understand
Q.1(b)	Describe phase measurement with CRO.	[3]	CO1	Understand
Q.1(c)	Convert, $(347)_{10} = ()_2 = ()_8 = ()_{16} = ()_{BCD}$	[5]	CO1	Evaluate
Q.2(a)	Explain graphically the duty cycle.	[2]	CO2	understand
Q.2(b)	Describe universal gates.	[3]	CO2	remember
Q.2(c)	State and prove De Morgan's theorem.	[5]	CO2	apply
Q.3(a)	Explain Karnaugh Map.	[2]	CO2	understand
Q.3(b)	What are different types of multiplexers? How many select lines are required for 8:1 MUX?	[3]	CO3	analyse
Q.3(c)	Describe RAM, ROM, Memory interfacing, Memory organization & addressing.	[5]	CO4	remember
Q.4(a)	What is memory cell is the fundamental building block of computer memory? SR Latch Logic Diagram and its truth table.	[2]	CO3	understand
Q.4(b)	Make a JKFlipFlop using NAND Gate and its truth table. Where are they used?	[3]	CO3	remember
Q.4(c)	What is Shift Registers. What is its type? Describe anyone.	[5]	CO4	remember
Q.5(a)	What is microprocessor? How do you represent?	[2]	CO5	remember
Q.5(b)	What are the commands of assembly language?	[3]	CO5	remember
Q.5(c)	Draw the block diagram of 8085 microprocessor architecture.	[5]	CO5	understand

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