

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION MO/2023)**

**CLASS: BTECH  
BRANCH: ECE**

**SEMESTER: VII  
SESSION: MO/2023**

**SUBJECT: EC421 REAL TIME EMBEDDED SYSTEM**

**TIME: 02 Hours**

**FULL MARKS: 25**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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		CO	BL
Q.1(a)	What is a real-time embedded system? Mention some applications of an embedded system?	[2] 1	1
Q.1(b)	What is RTL Design and why is it important?	[3] 1	2
Q.2(a)	What is ASIC? Write names of different types of ASIC's.	[2] 1	2
Q.2(b)	Explain the design flow of FPGA?	[3] 2	2
Q.3(a)	Distinguish between behavioral and structural modeling in VHDL design?	[2] 1	1
Q.3(b)	How signal declaration is done in VHDL? Explain with example.	[3] 2	2
Q.4(a)	What is the function of LUT in FPGA?	[2] 1	1
Q.4(b)	Write a VHDL code for blinking a single LED.	[3] 2	2
Q.5(a)	Write the control byte register format for ADC Max 1112 serial interface.	[2] 1	1
Q.5(b)	What is the role of start, parity, and stop bits in UART?	[3] 2	2

**:::::22/09/2023 M:::::**