Question Paper

Exam Date & Time: 26-May-2023 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal School of Information Sciences (MSIS), Manipal
Second Semester Master of Engineering - ME (Embedded Systems) Degree Examination - May 2023

Virtual Prototyping (Elective -II) [ESD 5238]

Marks: 100   **Duration: 180 mins.**

Friday, May 26, 2023

Answer all the questions.

1)	Explain constructors? Explain with an example for complex numbers using C++. (TLO 1.3, CO1, L2)	(10)
2)	Design a full adder as a combinatorial circuit using SystemC with monitor and driver. (TLO 2.2, CO2, L6)	(10)
3)	Design an SR flip-flop using SystemC with monitor and driver. (TLO 2.2, CO2, L6)	(10)
4)	Design a SystemC FSM which outputs 1 if number of 0s is odd and number of 1s is even. (TLO 2.2, CO2, L6)	(10)
5)	Describe the DMI interface of TLM with an example. (TLO 3.1, CO3, L2)	(10)
6)	Differentiate between loosely timed and approximately timed models in TLM. (TLO 3.1, CO3, L2)	(10)
7)	Write SystemC and TLM code for connecting an initiator to a mod7 counter through blocking interface. (TLO 3.2, CO3, L3)	(10)
8)	Distinguish between CPLD and FPGA. (TLO 3.3, CO3, L2)	(10)
9)	Explain the mixed-signal design verification challenges? (TLO 1.1, CO1, L2)	(10)
10)	Describe the use of VP in SOC flow. (TLO 1.1, CO1, L2)	(10)

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