

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION-SEPTEMBER-2023

M.Tech-I Semester

COURSE CODE (CREDITS): 21M11EC112 (3)

MAX. MARKS: 15

COURSE NAME: Embedded Systems and Applications

COURSE INSTRUCTOR: Dr. Pardeep Garg

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory. (b) Marks are indicated against each question in square brackets. (c) The candidate is allowed to make suitable numeric assumptions wherever required for solving problems.

Q1. Define embedded system. Why is it hard to define? Discuss in detail the three main characteristics of embedded systems that distinguish such systems from other computing systems. **[CO-1, 1+2=3 marks]**

Q2 (i) Describe the design metrics of embedded system that may compete with one another, providing an intuitive explanation of the reason behind the competition. **[CO-1, 2 marks]**

Q2 (ii) Discuss the concept of 'market window' and why is it so important for products to reach the market early in this window? **[CO-1, 1 mark]**

Q3. n elements in an array have to added ($n=10$). In the context of embedded system, discuss and compare the three processor technologies w.r.t their functioning, architecture and other technical details. **[CO-1, 3 marks]**

Q4. What does design technology in embedded systems mean? Discuss in detail the ideal top-down design process, and productivity improvers. **[CO-1, 3 marks]**

Q5. What is ARM processor, its history, and its application areas? What are the main features of ARM processor? Why was RISC developed, discuss its features; and then discuss the advanced features which led the development of ARM processor? **[CO-1, 3 marks]**