

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester: 6
Subject Code: 03108351
Subject Name: Embedded Systems

Date: 04/05/2019
Time: 10:30 AM TO 1:00 PM
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective type questions - (fill in the blanks, one word answer, mcq-not more than five in case of mcq) (all are compulsory) (each of one mark) **(15)**

1. The time taken to respond to an interrupt is known as
 - a. Interrupt delay
 - b. Interrupt time
 - c. Interrupt latency
 - d. Interrupt function
2. Which can activate the ISR?
 - a. Interrupt delay
 - b. Function
 - c. Procedure
 - d. Structure
3. Which factor determines the cache performance?
 - a. Software
 - b. Peripheral
 - c. Input
 - d. Output
4. Which storage element is used by MAC and IBM PC?
 - a. CMOS
 - b. Transistor
 - c. Capacitor
 - d. Inductor
5. Which company developed I2C?
 - a. Intel
 - b. Motorola
 - c. Phillips
 - d. IBM
6. _____ is the monetary cost of manufacturing each copy of the system, excluding NRE cost.
7. COMS stands for_____.
8. The difference between the on-time and delayed triangle areas is called_____.
9. In digital circuit design,_____ is a design abstraction which models a synchronous digital circuit.
10. Full form of TTL_____.
11. _____ is the task of making design metric values the best possible.
12. Baud rate can define the timing in the UART.true/false
13. 8250 is the most commonly used UART. Yes/no
14. _____ helps in the generation of waveforms
15. _____no. of comparators present in the direct mapping cache.

Q.2 Answer the following questions. (attempt any three) **(15)**

- A) Explain custom single-purpose processor basic model in detail.
- B) What are the different ways for optimizing the FSM?D?
- C) Discuss on CMOS transistor implementations.
- D) Write a note on UART.

Q.3 A) Describe harvard and von neumann architecture. **(07)**

- B) Write short note on superscalar and VLIW architecture. **(08)**

Or

- B) List down the types of scheduling in RTOS with example. **(08)**

Q.4 A) Define the following terms with example 1) timers 2) counter and 3) watchdog timers. **(07)**

Or

A) Differentiate between serial and parallel protocols. **(07)**

B) What is real time operating system? Discuss rtos services and capabilities. **(08)**