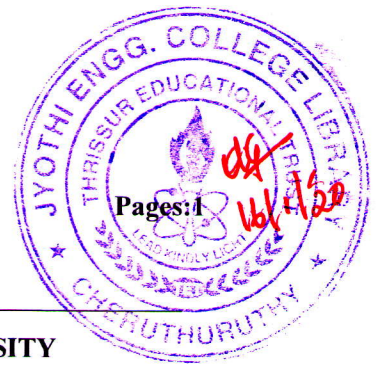


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Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
SIXTH SEMESTER B.TECH DEGREE EXAMINATION(S), DECEMBER 2019

**Course Code: EC308**

**Course Name: Embedded Systems**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any two full questions, each carries 15 marks*

Marks

- 1 a) Describe the various hardware and software components used in embedded system design. (8)
- b) Define the frame structure and various data transfer modes in HDLC. (7)
- 2 a) With a suitable example, explain the various stages of embedded system design process. (7)
- b) With neat sketches, explain the working principle of CAN Bus. (8)
- 3 a) Describe the various types of Embedded system Development Life-Cycle Models (8)
- b) Explain the frame structure of I2C bus (7)

**PART B**

*Answer any two full questions, each carries 15 marks*

- 4 a) With neat sketches, discuss the various operations in DMA Controllers (10)
- b) List the features of Embedded C++ (5)
- 5 a) Discuss the use of ISR in the case of automatic chocolate vending machine (5)
- b) Comment on the various debugging techniques used in embedded system design (10)
- 6 a) With the help of an example, explain the functions of device drivers for on board bus (7)
- b) Distinguish between clear-box and black box testing methods in embedded system. List suitable examples. (8)

**PART C**

*Answer any two full questions, each carries 20 marks*

- 7 a) Describe the structure of a Process control block (PCB). (10)
- b) Explain the memory allocation related functions in Micro C/OS-II (10)
- 8 a) Discuss the concept of inter process communication (10)
- b) Comment on the basic features of VxWorks RTOS (10)
- 9 a) Describe the use of mail boxes and remote procedure calls (10)
- b) Explain briefly the process management with its states (10)