

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

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|---|---|-----|
| 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

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|---|--|------|
| 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

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| 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) |