

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

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



**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SIXTH SEMESTER B.TECH DEGREE EXAMINATION (R&S), MAY 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) Enumerate essential functional blocks of an embedded system.            | (5)   |
| b) With necessary diagrams, explain the bus architecture of ARM 9 processor. | (10)  |
| 2 a) What is meant by DDLC model? Explain in detail                          | (8)   |
| b) Explain any two serial communication standards used in embedded systems.  | (7)   |
| 3 a) Compare serial communication with parallel communication                | (5)   |
| b) Write short note on a) USB b) CAN   | (10)  |

**PART B**

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

- |  |      |
|--|------|
| 4 a) Explain the function of device drivers for handling ISR                       | (5)  |
| b) With necessary diagrams, explain the events occur during an interrupt operation | (10) |
| 5 a) Explain the working of Memory device drivers.                                 | (8)  |
| b) What are the features of Embedded C++ ?   | (7)  |
| 6 a) With a suitable example, differentiate between testing and validation         | (5)  |
| b) What is meant by SoC? Explain with an example.                                  | (10) |

**PART C**

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

- |   |      |
|---|------|
| 7 a) How does an RTOS semaphore protect data? Explain by giving an example                  | (10) |
| b) With suitable examples, explain the terms i) Rate Monotonic Approach<br>ii) EDF Approach | (10) |
| 8 a) Explain remote procedure call with an example.   | (10) |
| b) With a diagram, explain process management in an embedded OS.                            | (10) |
| 9 a) Explain the memory allocation related functions of RTOS                                | (10) |
| b) Explain Task Service functions in RTOS   | (10) |

\*\*\*\*