

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  | (10) |
|   | ii) EDF Approach                                                         |      |
| 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) |

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