**18ECD23**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **June, 2022** | **Electronics & Communication Engineering** | | |
| **Six Semester** | **Embedded systems** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer* ***ANY ONE*** *question from each Unit.* | | | (4X10=40 Marks) |

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| 1. | a) | What is an embedded system? What are the components of embedded system? | CO1 | |  |
|  | b) | List the important considerations when selecting a processor. | CO1 | |  |
|  | c) | Define Tradeoff. | CO2 | |  |
|  | d) | Define feature size. | CO2 | |  |
|  | e) | What are the different operation modes in ARM cortex M3/M4. | CO2 | |  |
|  | f) | Full form of LIFO. | CO1 | |  |
|  | g) | Define MUTEX. | CO3 | |  |
|  | h) | Write a short note on RTOS. | CO3 | |  |
|  | i) | What are the applications of IOT. | CO4 | |  |
|  | j) | Full form of GPIO. | CO4 | |  |
| **Unit - I** | | | | | |
| 2. | a) | Write the applications of embedded systems | CO1 | **5M** | |
|  | b) | Explain how an embedded system designer selects a microprocessor | CO1 | **5M** | |
|  |  | **(OR)** |  |  | |
| 3. | a) | Explain about processor technology. | CO1 | **5M** | |
|  | b) | Explain about IC Technology. | CO1 | **5M** | |
| **Unit - II** | | | | | |
| 4. | a) | Explain about the introduction to ARM family. | CO2 | **5M** | |
|  | b) | Explain Thumb state switching. | CO2 | **5M** | |
|  |  | **(OR)** |  |  | |
| 5. | a) | Explain about pipeline in ARM cortex M3/M4. | CO2 | **5M** | |
|  | b) | Explain about memory map. | CO2 | **5M** | |
| **Unit - III** | | | | | |
| 6. |  | Explain the architecture of KERNEL. | CO3 | **10M** | |
|  |  | **(OR)** |  |  | |
| 7. | a) | Explain about semaphore. | CO3 | **5M** | |
|  | b) | Explain about Messages Queues, event registers. | CO3 | **5M** | |
| **Unit - IV** | | | | | |
| 8. |  | Explain TIVAC-TM4C123G block diagram. | CO4 | **10M** | |
|  |  | **(OR)** |  |  | |
| 9. | a) | Write short notes on I2C. | CO4 | **5M** | |
|  | b) | Explain PWM in ARM processor. | CO4 | **5M** | |

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