PAPER ID-410154

Roll No: | | | | | | | | | | | | |

BTECH
(SEM VI) THEORY EXAMINATION 2023-24
EMBEDDED SYSTEM

TIME: 3 HRS   **M.MARKS: 100**

Note: **1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   Attempt *all* questions in brief.

a.	What is the need of Watch Dog timer?	02
b.	What are the temporal requirements?	02
c.	Mention the features of CAN.	02
d.	Give the limitations of polling technique.	02
e.	Mention different models used for the development of an embedded system.	02
f.	What is state machine model?	02
g.	Compare preemptive and non preemptive scheduling.	02
h.	Define thread and process.	02
i.	What are the goals of design process?	02
j.	What are the input parameters are used in engine control unit?	02

SECTION B

2.   Attempt any *three* of the following:

a.	Explain the Design processor for Embedded system.	10
b.	Explain the RS 232, RS 422 and RS 485 protocol.	10
c.	Illustrate with functional description about the different phases of Embedded Design Life Cycle Method.	10
d.	Explain in detail about Inter Process communication and context switching.	10
e.	With suitable diagram explain in detail about the concept of smart card system application.	10

SECTION C

3.   Attempt any *one* part of the following:

a.	With a neat diagram explain the working of Direct Memory Access (DMA) with architecture and timing diagram.	10
b.	Briefly explain about Real Time Clock.	10

4.   Attempt any *one* part of the following:

a.	Explain I/O Device ports and its characteristics.	10
b.	What are the device drivers in embedded systems and explain its types.	10

5.   Attempt any *one* part of the following:

a.	Mention the essential and objectives of EDLC. Discuss in detail about the different phases of EDLC.	10
b.	With a suitable example, explain about the State Machine Model of Chocolate Vending Machine (ACVM).	10

6.   Attempt any *one* part of the following:

a.	Explain the terminologies semaphores, Mailbox, pipes and shared memory in RTOS.	10
b.	Explain how the interrupt is handled by RTOS and illustrate the features of RTLinux RTOS.	10

7.   Attempt any *one* part of the following:

a.	With suitable diagram explain in detail about the concept of Engine control Unit in embedded system.	10
b.	With suitable diagram explain in detail about the concept of washing machine application.	10