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**BTECH**  
**(SEM VI) THEORY EXAMINATION 2024-25**  
**EMBEDDED SYSTEM**

TIME: 3 HRS

M.MARKS: 70

**Note:** Attempt all Sections. In case of any missing data; choose suitably.

**SECTION A**

**1. Attempt all questions in brief.**

**02 x 7 = 14**

Q no.	Question	CO	Level
a.	Explain Real time scheduling in Embedded System.	1	K2
b.	Name the different components of embedded system hardware	1	K2
c.	Define CAN Bus.	2	K2
d.	Elaborate data flow graph in Embedded Firmware Development Environment.	3	K2
e.	Discuss the functions of RTOS?	4	K2
f.	Mention the different states of thread.	4	K2
g.	Mention the design issue of Embedded System Application Development.	5	K2

**SECTION B**

**2. Attempt any three of the following:**

**07 x 3 = 21**

Q no.	Question	CO	Level
a.	Discuss watchdog timer.	1	K2
b.	Discuss I/O Device Ports and Serial Bus communication protocols.	2	K2
c.	Explain the different phases of EDLC	3	K2
d.	What are the functions of RTOS?	4	K2
e.	Mention Automotive Applications in Embedded System Application Development.	5	K2

**SECTION C**

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

**07 x 1 = 07**

Q no.	Question	CO	Level
a.	Elaborate the working and benefits of Direct memory Access (DMA) in Embedded System.	1	K2
b.	Define in circuit emulator with its benefits and area of industrial applications. Differentiate between in circuit emulator and chip debugging.	1	K2

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

**07 x 1 = 07**

Q no.	Question	CO	Level
a.	Discuss the seven layers of OSI model in Embedded Networking.	2	K2
b.	Describe the serial peripheral interface (SPI) and inter integrated circuits (I2C).	2	K2



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

**07 x 1 = 07**

Q no.	Question	CO	Level
a.	Elaborate the different phases of EDLC in Embedded System.	3	K2
b.	Differentiate between Concurrent Model and Object-Oriented Model in brief.	3	K2

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

**07 x 1 = 07**

Q no.	Question	CO	Level
a.	Elaborate the different interrupt routines in RTOS.	4	K2
b.	Describe briefly about RT Linux real time operating system.	4	K3

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

**07 x 1 = 07**

Q no.	Question	CO	Level
a.	Discuss the case study of Washing Machine-Automotive Applications.	5	K2
b.	Elaborate the benefits and the challenges involved in Embedded System application Development.	5	K2

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