

Code No: 156AV

**R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year II Semester Examinations, August - 2022**

**EMBEDDED SYSTEM DESIGN**

**(Electronics and Communication Engineering)**

**Time: 3 Hours**

**Max.Marks:75**

**Answer any five questions  
All questions carry equal marks**

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- 1.a) Define an embedded system. Explain the characteristics of Embedded Systems.
- b) List out the major application areas of embedded systems. [7+8]
- 2.a) Distinguish about portability and reliability in embedded system design.
- b) What are the various purposes of embedded systems with illustrative examples? [8+7]
- 3.a) Explain the role of sensors in embedded system design.
- b) What are the different factors that needs to be considered in the selection of memory for embedded systems? [7+8]
- 4.a) Illustrate the differences between general purpose and domain specific processors.
- b) Discuss about on-board communication interfaces in brief. [8+7]
- 5.a) What is the need of an embedded firmware? Discuss.
- b) Narrate about the embedded firmware development languages. [7+8]
- 6.a) Explain the functions of Watchdog timer in an embedded system.
- b) Describe the purpose of a Real Time Clock in an embedded system, and explain. [8+7]
- 7.a) How different thread binding models, used for user and kernel level threads?
- b) Define starvation in the process of scheduling context. Explain how starvation can be effectively tackled? [8+7]
- 8.a) How the concept of Shared memory is used in task communication?
- b) Explain message-passing communication system in detail. [8+7]

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