

Code No: 156BK

R18

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

INTRODUCTION TO EMBEDDED SYSTEMS

(Information Technology)

Time: 3 Hours

Max.Marks:75

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

- 1.a) Discuss why micro controllers are preferred for embedded systems.
- b) Distinguish between general purpose computing system and embedded system. [7+8]
- 2.a) What are the various purposes of embedded systems in detail with an example.
- b) Classify the quality attributes of embedded systems and explain how to implement them. [8+7]
- 3.a) What is Digital Signal Processor? Explain the role of DSP in embedded system design.
- b) List out the various features in USB communication protocol. [8+7]
- 4.a) Write an application program for dancing LED.
- b) How Watchdog timer works in an embedded system? [8+7]
- 5.a) Explain the 'High Level language' based 'Embedded firmware' development technique.
- b) What are the similarities and differences between strings and character arrays? [8+7]
- 6.a) What are the different types of pre-processor directives available in 'Embedded C'? Explain them in detail.
- b) What is an Interrupt? Explain its properties. What is its role in embedded application development? [8+7]
- 7.a) Discuss about Multiprocessing and Multitasking techniques used in RTOS.
- b) Compare threads and processes in detail. [8+7]
- 8.a) Explain the firmware embedding process for OS based embedded products.
- b) What are the different files generated during the cross-compilation of an Embedded C file? Explain them in detail. [7+8]

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