JNTUA UNIVERSITY
PREVIOUS QUESTION PAPERS

Code: 15A04702 **R15**

B.Tech IV Year I Semester (R15) Regular Examinations November/December 2018

EMBEDDED SYSTEMS

(Common to ECE & EIE)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) State the need of separate data and address bus.
(b) List out any four applications of embedded systems.
(c) Write any two differences between Von Neumann and Harvard architecture.
(d) List out the chip peripherals of TM4C processors.
(e) What are the various parameters needed to select the embedded hardware?
(f) State the difference between synchronous, Iso-synchronous and Asynchronous communication from serial devices.
(g) Mention the uses of quadrature encoder interface.
(h) State the function of Watchdog timer.
(i) Draw the frame format of 12C communication.
(j) What are the advantages of adding Wi-Fi capability to the microcontroller?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Elaborate on the types of embedded processor and various memory types.

OR

3 Explain about the design process of an embedded system and tools needed for the design.

UNIT – II

4 Explain the block diagram of TM4C embedded processor in detail.

OR

5 Differentiate the design philosophy of CISC & RISC and list out the salient features of ARM cortex processor.

UNIT – III

6 Explain about the various building blocks of an embedded controller.

OR

7 How does an ICE differ from an emulator? Also explain the code generation tools for the development of an embedded system.

UNIT – IV

8 With suitable interfacing diagram, explain the functionalities of GPIO control and programming system registers.

OR

9 With necessary interfacing diagram, elaborate on timer and real time clock interfacing.

UNIT – V

10 Explain the implementation procedure and programming 12C and USB interface using TM4C.

OR

11 Elucidate the principles of Tiva based embedded system application using the interface protocols for communication with external devices.

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