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BIEL-024

B.Tech. – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

Term-End Examination

December, 2017

BIEL-024 : EMBEDDED SYSTEMS DESIGN

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks. Missing data, if any, may be suitably assumed.*

1. (a) Explain in detail, the design cycle involved in the development phase for an embedded system. *7*

(b) What are the steps followed for selecting the processor in the design of an embedded system ? *7*

2. (a) What is Message Queuing in RTOS ? *4*

(b) Explain the reference of the following terms used in context of RTOS : *10*

(i) Timer function

(ii) Events

(iii) Memory Management

3. (a) Give the structural architecture of a PIC microcontroller. *6*

(b) What are the various interrupts used in a PIC microcontroller ? Explain the function performed by each interrupt. *8*

4. (a) Draw the internal architecture of the 8515 AVR microcontroller and enlist the function performed by each pin. *10*

(b) Give comparisons between PIC and 8515 AVR microcontroller. *4*

5. (a) Write down the features of CAN bus, SHARC link ports and Bluetooth Protocol. *7*

(b) Draw and explain the boundary scan architecture for the IEEE 1149 (JTAG). *7*

6. Draw and explain the I2C bus structure. Also, in detail, give the functions of various protocols used in the bus. *14*

7. Write short technical notes on any ***two*** of the following : *2×7=14*

(a) Embedded System Project Management

(b) Interrupt Routines in an RTOS Environment

(c) Integrated Development Environment (IDE)
