

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014****Subject code: 2725202****Date: 18-06-2014****Subject Name: Protocols and Interfaces****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Describe the elements of a computer system. **07**
 (b) Explain 8051 architectural features. What are the devices internally present in the classic 8051? **07**
- Q.2** (a) Describe serial interfaces, timer/counters and interrupts in 8051. **07**
 (b) Explain the following and their advantages. **07**
 i) STOP instruction ii) WAIT instruction iii) Processor idle mode operation
- OR**
- (b) List serial Bus communication protocols. Briefly explain USB protocol. **07**
- Q.3** (a) Explain interrupt driven data transfer with the help of a neat diagram. Discuss Pros and Cons of the same with respect to other methods of data transfer. **07**
 (b) What are the essential units in a Microprocessor, Microcontroller, Embedded processor, DSP? List each of these. **07**
- OR**
- Q.3** (a) Draw Block level diagram of PC architecture with details of various bus protocols (used for communication between blocks) and I/O devices. Explain the necessity of using various bus protocols for communication. **07**
 (b) What is the reason for the bounces in a key? Write a sample code along with a flowchart for a software debouncing routine. **07**
- Q.4** (a) Define context. Discuss any two context switching architectures. **07**
 (b) Explain the protocols PCI and PCIexpress in detail. **07**
- OR**
- Q.4** (a) List Disk storage protocols. Compare any two Disk storage protocols. **07**
 (b) List various LAN network protocols. Discuss 802.3(MAC sub layer) protocol in detail. **07**
- Q.5** (a) Describe briefly the functionality of Special memories CAM, SDRAM, Video RAM. Discuss their applications **07**
 (b) What do you mean by portable, reliable and readable code? Demonstrate the same with code examples. **07**
- OR**
- Q.5** (a) Discuss various types of Memory architectures, their advantages and disadvantages and applications. **07**
 (b) Explain UART protocol. Write a program to receive the data which has been sent in serial form and send it out to port0 in parallel form. Also save the data at RAM location 60H. **07**
