Roll No _____ **Examination May-2014** Total no of page-1

MICRO PROCESSORS & MICROCONTROLLERS

BTEC-504

Paper ID-A2106

Time 3Hrs MAX.MARKS-60

Section-A (Compulsory) 10x2=20

Q1: (a) What is the difference between Embedded system and General purpose computers?

(b) Differentiate between hardware and software interrupts.

(c) List the important features of 8051.

(d) What is memory mapped I/O and I/O mapped I/O?

(e) Compare RS232C and RS422A standards.

(f) State the function of HOLD pin in 8085.

(g) What is the difference between simple I/O and strobed I/O?

(h) What is the difference between EQU and DB directive?

(i) How switching between register banks is possible in 8051?

(j) What is the function of assembler, editor and linker?

Section-B (Attempt any four) 4x5=20

Q2: (a) Explain the internal circuitry of port0 of 8051.How it can be used as i/p and o/p port.

(b) With neat diagram explain the timer / counter functions in 8051 Micro Controller.

Q3: Exchange the nibble of two data by writing an ALP of 8051. Also draw flowchart.

Q4: Discuss in detail the internal & external memory organization of 8051 & its interfacing.

Q5: Give the assembly language implementation of the following.

(i) REPEAT – UNTIL (ii) FOR

Q6: Using software approach, generate square wave with period 20msec at serial o/p pin of 8085

Section-C (Attempt any two) 2x10=20

Q7: Design an address decoding logic using a 3:8 decoder (74138) to interface a total of 64k memory locations in the address range from 00000 to FFFFF with 8085. Divide 64k memory locations in eight blocks of 8 k locations each and generate eight chip select signals.

Q8: Show interfacing of ADC0809 with 8051. What are the various programming steps required by 8051 to start conversion & getting data from ADC.

Q9: (a) Explain the operation of 8251 in Asynchronous mode of communication.
(b) Write 8051 program to transmit word "ARNS" serially at 4800 baud, 8-bit data with one stop bit. Assume crystal frequency=12MHz.

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