Roll No. .....

Total No. of Questions : 09] [Total No. of Pages : 02

B.Tech. (Automation & Robotics/ECE/ETE) (Sem. -5th)

MICROPROCESSORS AND MICROCONTROLLERS

SUBJECT CODE : BTEC - 504 (2011 Batch)

Paper ID : [A2106]

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

1) **Section - A is Compulsory consisting of Ten questions carrying Two marks each.**
2) **Section - B contains Five questions carrying Five marks each and students has to attempt any Four questions.**
3) **Section - C contains Three questions carrying Ten marks each and students has to attempt any Two questions.**

Section - A

Q1)

a) What is a microcontroller? Write any two applications of microcontrollers.

b) Name the general purpose and special purpose registers of 8085.

c) Explain the following signals of a microprocessors

i) RESET OUT ii) ALE

iii) SID iv) INTR

d) Explain the instructions to move and retrieve the data from the stack.

e) What is the function of program counter in a microprocessor.

f) How many I/O ports can be connected with microprocessor 8085 in peripheral mapped I/O scheme. Can I/P and O/P port have same port address.

g) Which register bank register is used if we alter RS0 and RS1 of the PSW by the following two instructions

SETB PSW. 3

SETB PSW.4

h) Specify the contents of Accumulator after execution of following instructions

MVI A, 14H

XRA A

Tell the status of flags after execution.

i) Differentiate between memory mapped I/O and peripheral mapped I/O.

j) Explain PSW register of 8051.

Section - B

Q2) What are interrupts? Discuss different interrupts of 8051.

Q3) Explain the following instructions of 8085.

DAA, XCHG, LHLD, CALL, JMP

Q4) Write an assembly language in 8085 to add two 16-bit numbers and store the result in some memory location.

Q5) Explain the difference between MOVX and MOVC instructions of 8051. How much data memory space is supported by 8051.

Q6) What is machine cycle and instruction cycle . How many T-States are required for opcode fetch operation

Section - C

Q7) What are microprocessors. Discuss in detail the generic architecture of a microprocessor.

Q8) Explain the arithmetic and logical instructions of 8051. Specify the flags affected in each case.

Q9) Discuss the interfacing of 8051 with external memory.