Department of Electronics and Telecommunication

Time: 1 hr | Class Test - I | ETU504- Microcontroller and it's Applications | Marks: 15

Qu.1. Compulsory questions — 10 Mks

a) Write an ALP using 8051μC to count the odd numbers in an array of 'n' numbers starting from external memory location BEFEh.

b) Explain the working of a parallel I/O port, with the various operations that can be performed.

Qu.2. Solve any **one** (1) — 5 Mks

a) Define **addressing modes** and explain each one of them in detail.

b) Write a note on the **ON-chip memory organization** of 8051μC

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Qu.1. Write a well commented program to count the numbers of 0's and 1's in an 8-bit number stored at external memory location 0FEEh. Store the count of 0's and 1's in the next consecutive memory locations respectively. 5

Qu.2. Explain the stepwise execution and specify the contents of carry and 22h. 5

```
MOV 22H,#0AAh;
MOV A,22h;
CLR C;
CPL C;
MOV 10h,C;
MOV 0F0h,22h;
XRL A, 0F0h;
SETB 0E0h.7;
SETB C;
RRC A;
MOV 22h,A;
```

22h 0AAh.

A 0AAh

10h C

0f0h 22h.

Qu.3. Define **addressing modes** and explain each with suitable example. 5

OR

Qu.4. Write a note on the ON-chip memory organization of 8051μC 5

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Solve any **three** (3)

Qu.1. Assume an array of 5 bytes is stored from external memory location 3000h. Write an ALP to store largest number in array into the next consecutive location. 5

Qu.2. Write an ALP to accept 5 numbers from port 1 and store them in on-chip RAM locations starting from 30h. 5

Qu.3. Assume an 8-bit number is stored in on-chip RAM location 30h. Write an ALP to store the number of zeroes (0's) in the number in the next memory location. 5

Qu.4. Explain the working of True Bidirectional I/O port. 5