Qu.1. Compulsory questions   10 Mks

  a) Write an ALP using $8051\mu C$ 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$8051\mu C$

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

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

```
MOV 22H,#0AAh;
MOV A,22h;
CLR C;      clear
CPL C;      complement
MOV 10h,C;
MOV OFOh,22h;
XRL A, OFOh;
SETB OEOh.7;
SETB C;
RRC A;
MOV 22h,A;
```

22h   0AAh.

A   0AAh

10h   c

ofoh   22h.

10h   c

1111

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

Department of Electronics and Telecommunication

Date: 04th Aug., 2017   ETU504   Microcontroller and Applications   Class Test 1   Mks.: 15

Solve any **three** (3)

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

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

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

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

Department of Electronics and Telecommunication Engineering

Date: 27th Aug., 2019

Time; 4.30pm to 5.30pm

Session Class Test - I

ETU504 - Micro-Controller and Its Applications

Marks: 15

All questions are compulsory.

Q1. Write an ALP to implement the expression $f = (a+b+c) \times d$ and store the value of 'f' in the given expression. The numbers are stored from memory locations 3000h. 03

Q2. Explain the significance of PSEN and EA 02

Q3. Explain how the flags of PSW would be affected if **01111111b** in accumulator is added with **00000001b**. 05

Q4. **Twenty bytes** of data are stored in locations from **6Ch to 7Fh** of internal RAM. Count the number of bytes which contains **00h** and store this count of NULL bytes in the next consecutive RAM location. 05