NCC-003-1272002   Seat No. _____

M. Sc. (ECI) (Sem. II) (CBCS) Examination

April / May - 2017

Advanced Digital Electronics : Paper - VI

Faculty Code : 003

Subject Code : 1272002

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

1   Answer the following questions in brief. : (any **seven**)   14

(1)   Explain working of RS Flip-Flop as key de-bouncer.

(2)   Explain in brief synchronous and asynchronous inputs to Flip-Flop.

(3)   What is mulfivibrator? Define various types of multivibrators.

(4)   Explain modules of counter.

(5)   Draw the diagram of ring counter and explain in brief.

(6)   Compare asynchronous counter with synchronous counter.

(7)   Enlist types of Analog to Digital converters.

(8)   Define resolution and conversion time for an Analog to Digital converter.

(9)   Enlist various types of programmable logic devices.

(10)   Compare fixed logic to programmable logic.

2   Attempt any **two** of the following questions :   14
(Each 7 marks)

(1)   Enlist and explain various timing parameters of Flip-Flop.

(2)   Enlist various types of shift register. Explain working of any two types of shift register with help of necessary diagrams.

(3)   With help of neat diagrams explain both types of Digital to Analog Converter.

3 Answer the following questions :

    (1)   Describe programmable Logic Array (PLA) architecture. **5**

    (2)   Design a mod-6 asynchronous counter and explain its **5**
          working with help of neat diagram.

    (3)   Write a detailed note on JK flip-flop. **4**

<p align="center">OR</p>

3 Answer the following questions :

    (1)   How counters can be cascaded? Explain with suitable **5**
          example.

    (2)   With neat diagram explain the working of a 4-bit **5**
          shift counter.

    (3)   Write a detailed note on various programmable **4**
          interconnect technologies.

4 Answer the following questions :

    (1)   With necessary diagrams explain flash type Analog **5**
          to Digital converter.

    (2)   Write a note on monostable multivibrator. **5**

    (3)   Explain working of 3-bit binary asynchronous counter **4**
          with help of neat diagram.

5 Answer any **two** of the following questiton. (Each 7 marks) **14**

    (1)   Write a detailed note on D latch,Also explain edge
          triggering.

    (2)   With help of neat diagrams explain working of 3-bit
          binary synchronous counter.

    (3)   With help of neat diagrams explain successive
          Approximation type Analog to Digital converter.

    (4)   Give a detailed account on complex programmble Logic
          Devices (CPLD) architecture.