2018 III 14 **1000** **Seat No. :** | | | | | |

Time : 2 Hours

DIGITAL ELECTRONICS & COMPUTERS
(New Pattern)

Subject Code

V	3	3	1

Total No. of Questions : 5 **(Printed Pages : 3)** **Maximum Marks : 50**

INSTRUCTIONS *: i) Answer* ***each*** *question on a* ***fresh*** *page.*
ii) Write the number of the question and sub-question ***clearly****.*
iii) ***All*** *questions are* ***compulsory****.*
iv) Figures to the ***right*** *indicate* ***full*** *marks.*
v) Draw ***neat*** *diagrams* ***wherever*** *necessary.*

1. A) Fill in the blanks : **[2]**

   i) To standardize computer hardware, industry settled on an input output code known as

   ii) The volatile memory used in computers is

   B) Answer the following :

   i) Explain with a neat logic diagram and truth table the working of 2 input TRL NAND gate. **[3]**

   ii) What are non-impact printers ? Explain the working of inkjet printer in brief. **[3]**

   C) Answer the following :

   Draw the internal pin configuration diagram of quad two input NOR gate. **[2]**

2. A) Define the following : **[2]**

   i) Flip-Flop

   ii) Full-adder

B) Answer the following :

i) Draw a neat logic diagram of 4-bit shift right register using D flip-flop and explain its working. **[3]**

ii) State three points of comparison between 8080A and 8085 microprocessor with respect to the following : **[3]**

a) Clock phase

b) Functional chips

c) Status.

C) Answer the following :

Draw the block diagram of a counter type 'A' to 'D' converter. **[2]**

3. A) Fill in the blanks : **[2]**

i) The decimal equivalent of the binary subtraction, $(0101)_2 - (0011)_2$ is

ii) The instruction set of 8080A microprocessor has _____ number of instructions.

B) Do as directed : **[3]**

i) Convert hexadecimal number $(2F59)_{16}$ to its decimal equivalent.

ii) Find the decimal equivalent of $(107)_8$.

iii) Convert the decimal number $(513)_{10}$ into binary equivalent.

C) Answer the following in detail : **[5]**

What is a multivibrator ? With the help of a neat circuit diagram explain the working of a monostable multivibrator.

OR

Explain the working of transistorised Schmitt trigger with the help of a neat circuit diagram.

4. A) Answer the following in **one** word : **[2]**

i) If you cascade three NOT gates, what kind of gate in the over all circuit equivalent to ?

ii) Which pin carries 'RESET OUT' signal in 8085 microprocessor ?

B) Answer the following : **[3]**

Show that NOR gate is equivalent to bubbled AND gate using logic circuit and truth table.

C) Answer the following in detail : **[5]**

What is modulus of counter ? Explain the working of a counter having modulus of 10 with the help of a neat logic circuit diagram.

OR

Explain the working of a 4-bit asynchronous counter with the help of a neat logic circuit diagram.

5. Answer the following :

i) State the diameters of mini and micro floppies. **[2]**

ii) Draw the circuit diagram and truth table of D-flip-flop. **[2]**

iii) What is 'Accuracy' and 'Resolution' in D to A converter. **[2]**

iv) Briefly explain hard disk as a storage device. **[2]**

v) Draw a neat block diagram of a typical microprocessor. **[2]**