



2018 III 14

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Seat No. :

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Time : 2 Hours

**DIGITAL ELECTRONICS & COMPUTERS  
(New Pattern)**

**Subject Code**

V	3	3	1
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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]