

B.Sc. (CBCS Pattern) Semester-II
USELT04 - Electronics Paper-II - Digital Integrated Circuit

P. Pages : 2

Time : Three Hours



GUG/W/24/11579

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw neat and labelled diagram wherever necessary.

Either:

1. a) What is the difference between Half adder and Full adder? Write down the truth table for half adder and explain how it will implement using gates. **10**

OR

- b) What is encoder? Explain the working of decimal to BCD encoder using gates. Draw the logic diagram of 2:1 mux using basic gates. **10**

Either:

2. a) Draw the block diagram of IC 5555 and explain the function of each block. Draw the circuit diagram of astable multivibrator using IC-555. **10**

OR

- b) Draw the logic diagram of D-Flip flop and explain its working with truth table. **10**
What is race around condition in JK Flip Flop? How can it be rectified?

Either:

3. a) What is Counter? Explain the working of 4-bit binary ripple counter with truth table. Also draw the timing diagram. **10**

OR

- b) Explain the working of Johnson counter with the help of timing diagram and truth table? **10**
Differentiate between ring counter & Johnson counter.

Either:

4. a) What is register? Describe the construction and working of SISO shift register. Draw the timing diagram. **10**

OR

- b) What is D/A converter? Explain the working of 4 bit R-2R ladder D/A converter. **10**

5. Attempt **any ten** out of the following.

1x10
=10

- a) What is SOP and POS?
- b) Define Decoder.
- c) What is K-Map?
- d) What is preset and clear input of FF?
- e) Draw the logic diagram of RS Flip Flop using NAND gate.
- f) What is an edge triggered Flip Flop?
- g) What is decade counter?
- h) What is modulus of counter?
- i) What is Asynchronous counter?
- j) What is Sample and hold circuit?
- k) State two drawback of single slope converter.
- l) Define accuracy.
