

Roll No.

OLE-3032
B. Tech. 3rd Semester (CSE)
Examination – April, 2021

DIGITAL ELECTRONICS
Paper : PCC-CSE-205-G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note: Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. (i) Binary numbers and their utilities.
- (ii) Differentiate between multiplexers and demultiplexers.
- (iii) Discuss D flip flop.
- (iv) A/D converter.

- (v) CPLDS.
- (vi) Half adder.

UNIT – I

2. Convert the followings :
 - (i) 1000100.100 binary into its octal equivalent
 - (ii) 1567.346 octal into its hexadecimal equivalent
 - (iii) 13456.89 decimal into binary
 - (iv) 13589ACF. BD hexadecimal into binary
3. Explain the working of exclusive OR gates. Also discuss Boolean algebra in detail.

UNIT – II

4. Simplify the Boolean function using K Map
 $F(A, B, C, D) = \Sigma m(0, 2, 5, 7, 8, 10, 13, 15)$ and implement the result using gates.
5. Discuss Decoders and Encoders in detail with examples.

UNIT – III

6. What is synchronous counter ? Design a modulo 5 counter.
7. Explain the following :
 - (a) RS flip-flop
 - (b) T flip-flop

UNIT – IV

8. Discuss digital to analog converters in details with circuit diagrams.
 9. Write the short notes on the followings :
 - (a) Sequential memory
 - (b) Programmable logic array
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