| Name:<br>Student University Roll No.: | Printed Pages: |
|---|---|

School of Engineering

First Sessional Examination, Odd Semester (AS: 2023-24)

B. Tech: Year: 2nd Semester: 3rd

| Course Title: DLD<br>Course Code: BCS 3303 | M.M.: 30<br>Time: 1 *hr* |
|---|---|

*Instructions if any: Read the question Carefully.*

| | SECTION 'A'<br>Q.N.1. Attempt all parts of the following: | Course Objective | Marks |
|---|---|---|---|
| a) | Subtract the following using 2's complement :<br>(101)2 - (10110)2 | CO1 | 1 |
| b) | Write gray code of 15. | CO1 | 1 |
| c) | Convert (67A9)16 - (. ) 10 | CO1 | 1 |
| d) | Write truth table and representation symbol of XNOR. | CO1 | 1 |
| e) | (10)10 - (7)10 using 10's complement. | CO1 | 1 |
| | **SECTION 'B'**<br>**Q.N.2. Attempt any two parts of the following:** | **Course Objective** | **Marks** |
| a) | Implement AND, NOR gate using NAND gate with truth table. | CO1 | 7.5 |
| b) | Simplify the Boolean function by Tabulation method: $f = €( 0,2,8,10,11,14,15)$ | CO1 | 7.5 |
| c) | Write and discuss gray code along with its application and justify cyclic nature of it. | CO1 | 7.5 |
| d) | Obtain the simplify expression in POS form $f = \pi ( 1,3,5,7,13,15)$. | CO1 | 7.5 |
| | **SECTION 'C'**<br>**Q.N.3. Attempt any one part of the following** | **Course Objective** | **Marks** |
| a) | Using K-map derive SOP for the f(a,b,c,d,e) =€(1,2,4,7,12,14,15,24,27,29,30,31). | CO1 | 10 |
| b) | Explain weighted and not weighted code , briefly explain BCD and excess 3 code along with its generated sequence. | CO1 | 10 |
| c) | What is error code, derive the hamming code for the sequence (1011). | CO1 | 10 |

***Table 1: Mapping between COs and questions***

*(Number of COs may vary from course to course)*

| COs | Questions Numbers | Total Marks |
|---|---|---|
| CO1 | Apply the basic concept of Boolean algebra for the simplification and implementation of logic function using suitable gates. | 30 |