

Reg. No.:



Name:

University of Kerala

U8747

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

ELECTRONICS

UK2DSCELE100 - Digital Electronics

Academic Level: 100-199

Time: 1 Hour 30 Minutes(90 Mins.)

Max. Marks: 42

Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark Each.Answer all questions

Qn No.	Question	CL	CO
1	Define Serial data.	RE	4
2	Identify the comparator used to compare decimal 2 and 3	RE	2
3	Distinguish between SISO and SIPO.	UN	4
4	Describe the primary function of the IC 7483.	UN	3
5	Infer the outputs of a full subtractor when its inputs are A=0,B=1 and Borrow in=1	UN	1
6	Outline the logic block diagram of a 3x8 decoder.	UN	2

Part B.8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	Summarize the applications of multiplexer and demultiplexer.	UN	3
8	Discuss the use of D flip flop as memory element	UN	1
9	Compare a data selector and a data distributor.	AP	3
10	Solve a) $(11000.11)_2 + (110.01)_2$ b) $(110111)_2 - (100100)_2$	AP	1

Part C. 28 Marks.Time:60 Minutes (Cognitive Level:Apply(AP)/Analyse(AN)/Evaluate(EV)/Create(CR)) Long Answer.7 marks each.Answer all 4 Questions choosing among options * within each question

Qn No.	Question	CL	CO
11	A) Demonstrate the working of 4 : 16 decoder with truth table and logic diagram OR B)	AP	2, 3

Qn No.	Question	CL	CO
	Implement and the design of 8:1 multiplexer using two 4:1 multiplexers.		
12	A) Implement the following Boolean function with 8:1 multiplexer $F(A, B, C, D) = \pi M(0, 3, 5, 6, 8, 9, 10, 12, 14)$ OR B) Analyse the functioning of a 4- bit Ring Counter with the help of necessary diagrams.	AN	3, 4
13	A) Evaluate how a 1 to 8 Demultiplexer works, and Justify its operation with logic diagram and truth table. OR B) Evaluate different methods of binary subtraction with examples	EV	3, 1
14	A) Construct the logic diagram of Half Adder and explain its working. Discuss its limitation. OR B) Elaborate the working of PIPO Shift Register with truth table and logic circuit diagram.	CR	1, 4