Oct - 2027

Code: 20219 **B.Sc. (I.T.) Semester -2**

Principle of Digital Electronics

Time: 2:30 Hours **Total Marks: 70**

Q-1(A)	What is Gates? Explain types of Gates.	[07]
Q-1(B)	Discuss Boolean algebra with truth table.	[07]
	OR	
Q-1(A)	Prepare logical circuit from the following. $F(A,B,C) = A + (B \bullet C) . (A' + B')$	[07]
Q-1(B)	State and prove De-Morgan's theorems.	[07]
Q-2(A)	Prepare truth table from the following. $F(A,B,C) = (A+B) + (B \bullet C')$	[07]
Q-2(B)	Explain POS in detail with example.	[07]
	OR	
Q-2(A)	Write a note on Universal Gates.	[07]
Q-2(B)	Explain SOP in detail with example.	[07]
Q-3(A)	Explain encoder and decoder in detail.	[07]
Q-3(B)	Discuss in detail: De Multiplexer.	[07]
	OR	
Q-3(A)	Write a detail note on Comparator.	[07]
Q-3(B)	Discuss in detail: Multiplexer.	[07]
Q-4(A)	Discuss in detail: Shifter.	[07]
Q-4(B)	Differentiate: (1) Half Adder – Full Adder (2) Half Subtractor– Full Subtractor.	[07]
	OR	
Q-4(A)	Explain Binary Adder.	[07]
Q-4(B)	Explain Half Subtractor	[07]
Q-5(A)	Define flip flop. Explain JK flip flop in detail.	[07]
Q-5(B)	Define latches. Explain D-flip flop.	[07]
	OR	
Q-5(A)	Write a detail note on Registers.	[07]
Q-5(B)	Explain Asynchronous Counter.	[07]
