Total No. of Questions—**8**] [Total No. of Printed Pages—**2**

Seat No.	

[5352]-535

S.E. (E&TC/Electronics) (I Sem.) EXAMINATION, 2018
DIGITAL ELECTRONICS
(2015 PATTERN)

Time : Two Hours **Maximum Marks : 50**

N.B. :— (*i*) Answer Q. No. **1** *or* Q. No. **2**, Q. No. **3** *or* Q. No. **4**, Q. No. **5** *or* Q. No. **6**, Q. No. **7** *or* Q. No. **8**.
(*ii*) Neat diagrams must be drawn wherever necessary.
(*iii*) Figures to the right indicate full marks.
(*iv*) Assume suitable data, if necessary.

Q	1	a	Design a full adder using two half adders.	4 M
		b	Minimize the following expression using k-map and implement using logic gates $Y=\sum m(4,5,6,7,12,13,14,15)$	4 M
		c	State the types of shift register and explain any one of them	4 M
Q	2	a	Design 3 bit synchronous counter using Delay flip flop(D-FF)	6 M
		B	Design 4:1 MUX using 2:1 MUX	6 M
Q	3	a	Explain Mealy and Moore circuits with diagram?	6 M
		b	Draw and explain operation of Tri-state TTL inverter?	6 M
Q	4	a	Explain the terms related to ASM chart. I. state box II.Decision box III.conditional box	6 M
		b	Draw and explain the working of 2 input CMOS Inverter	6 M

P.T.O.

Q	5	a	Implement the following functions using PLA $F1=\sum m(0,2,4,6)$ $F2=\sum m(2,3,6,7)$	6 M
		b	Explain the characteristics of DRAM.	4M
		c	State various types of ROMS and their applications.	3M
Q	6	a	Draw the internal organization of asynchronous SRAM	6 M
		b	Explain the general architecture of CPLD	4M
		c	Explain the difference between PLA and PAL	3M
Q	7	a	Draw and explain block diagram of microcontroller	6 M
		b	Explain stack operation and stack pointer register of 8051	4M
		c	What are the different modes of timer of 8051?	3M
Q	8	a	Explain 8051 port structure with neat diagram	6 M
		b	Explain the use of DPTR	4M
		c	State salient features of 8051 microcontroller	3M