

( 4 )

- (V) How can you convert an RS flip-flop into a JK flip flop ?

PART - II

2. How many types of multivibrators are there ? What are their characteristics ? Use IC 555 to design them. 10
3. Derive expressions for Voltage gain, current gain, power gain, input impedance and output impedance of a CE BJT amplifier. 10
4. Given the following truth table. Obtain the Boolean functions  $F(A, B, C)$  in Sum of Product form as well as in Product of Sum form corresponding to this truth table. 10

A	B	C	Output = $F(A, B, C)$
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	0

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5. Discuss the use of Operational Amplifier OP-AMP 741 as. 10
- (a) A logarithmic amplifier
- (b) An oscillator.
6. Design a logic circuit for half-adder. What is its drawback ? How it is removed in full-adder ? 10
7. State and prove Superposition theorem and Reciprocity theorem. 10
8. Write notes on any two : 10
- (i) De Morgan's law
- (ii) Power supply
- (iii) Register.

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