ACE
Engineering College
(with a Difference in Excellence)
An AUTONOMOUS Institution

Question Paper Code: EC301ES

ACE-R20

Semester Supplementary Examination
II B. Tech- I Semester- SEPTEMBER-2022
ANALOG AND DIGITAL ELECTRONICS
(COMMON TO CSE,IT)

Time: 3 Hours

Max. Marks: 70

H. T. No

Answer any 5 Questions out of 8 Questions from the following

M=Marks

Q.No	Question	M
1. a)	Derive the expression for diffusion capacitance in PN junction	7
b)	Explain about clipping circuits with anyone of the example.	7
2. a)	Compare the characteristics of PN junction diode, Zener Diode and Tunnel diode.	7
b)	Explain the operation of Full Wave Rectifier with necessary waveforms.	7
3. a)	Explain thermal run away and thermal stability.	7
b)	Compare the performance of BJT as an amplifier in CE, CB, CC configuration	7
4. a)	Explain Emitter follower with necessary diagrams	7
b)	Explain about multistage Common Emitter amplifier	7
5. a)	Why we call FET as a Voltage Controlled Device.	7
b)	Explain the NAND gate circuit using DTL logic family	7
6. a)	Obtain the compliment of the following Boolean expressions i) A'B+A'BC'+A'BCD+A'BC'D'E ii) ABEF+ABE'F'+A'B'EF.	7
b)	Minimize the following expression using K-map and realize using NAND Gates. F (A,B,C,D) = Σm (0,1,2,9,11) +d(8,10,14,15).	7
7. a)	Derive sum and carry for Full Adder and draw the logic diagram with basic gates	7
b)	Realize the function f(A,B,C,D)= Σm (1,4,6,10,14)+d(0,8,11,15) using 8:1 MUX.	7
8. a)	Design the logic for SR flip flop using JK flip flop	7
b)	Explain in detail about Random Access Memory	7