Code No: 153AB **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech II Year I Semester Examinations, October - 2020
ANALOG AND DIGITAL ELECTRONICS
(Common to CSE, IT)

Time: 2 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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1.a)	Define Diffusion capacitance? Also derive the expression for C_D?	
b)	Draw and explain the V-I characteristics of a tunnel diode?	[8+7]
2.a)	What is LED? Explain the construction of LED in brief?	
b)	Explain the working of a full wave rectifier with necessary waveforms?	[7+8]
3.a)	Explain the input and output characteristics of common base configuration.	
b)	Explain thermal run away and thermal stability.	[8+7]
4.	Analyse CE-CE amplifier interms of gains and Impedances.	[15]
5.a)	Draw and explain the CS amplifier with current source load.	
b)	Explain the small signal MOSFET circuit model.	[8+7]
6.a)	Explain ECL gate and write the advantages and disadvantages.	
b)	Draw CMOS NOT gate and then explain the same.	[8+7]
7.	Simplify the following Boolean function using Quine – McClusky method. $F(A, B, C, D) = \sum m(0, 2, 3, 6, 7, 8, 10, 12, 13)$	[15]
8.a)	What is state assignment? Explain with a suitable example?	
b)	Realize D and T flip flops using Jk flip flops.	[8+7]

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