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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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