Hall Ticket Number :										

R-11 / R-13

Code: 1G132

II B.Tech. I Semester Supplementary Examinations May 2017

Digital Logic Design

(Computer Science & Engineering)

Max. Marks: 70 Time: 3 Hours

Answer any **Five** questions
All Questions carry equal marks (**14 Marks** each)

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1.	a)	Convert the given decimal number 2344 to Base 4, Base8, Base16, and BCD	8M
	b)	List out weighted codes and explain one in detail with example	6M
2.	a)	Minimize the given Boolean function f = B'C'D+A'B'D'E+A'B'DE	6M
	b)	Obtain the Dual and complement of the function AB'+AC+A'B'C	8M
3.	a)	Minimize the function F=Σ(0,1,2,3,5,8,10,14) and implement using basic gates	8M
	b)	Minimize the function F=Σ(0,1,2,3,7) and implement using NAND gates	6M
4.	a)	Design 2 to 4 Decoder	7M
	b)	Implement 8X1 Multiplexer by using 4X1 Multiplexers	7M
5.	a)	Design 3 Bit Asynchronous Up counter and explain	7M
	b)	Design 4 Bit serial In serial Out shift register and explain	7M
6.	a)	Define synchronous sequential logic circuit	4M
	b)	Design Mod-10 Synchronous up counter by using DFFs	10M
7.	a)	Define Asynchronous Counter	4M
	b)	Write about Pulse Mode asynchronous sequential circuits	10M
8.	a)	Design 4X3 PROM	8M
	b)	Write the HDL code for half Adder	6M

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Hall Ticket Number :										

R-11 / R-13

Code: 1G334

II B.Tech. I Semester Supplementary Examinations May 2017

Electronic Devices and Circuits

(Common to CSE & IT)

Max. Marks: 70 Time: 3 Hours

Answer any **Five** questions
All Questions carry equal marks (**14 Marks** each)

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1. a) Explain V-I characteristics of PN- Junction diode with neat sketches. 7M
   b) Explain the breakdown mechanism of Zener diode with relevant diagram. 7M

2. a) With circuit and necessary wave forms, explain the operation of Half Wave Rectifier. 8M
   b) An A.C. supply of 220 V is applied to a halfwave rectifier circuit through a transformer with a turns ratio of 10:1 . Find (i) DC output voltage (ii) PIV. Assume the diode is ideal. 6M

3. a) Explain the input and output characteristics of Common Emitter configuration of BJT. 10M
   b) Explain how transistor works as an amplifier. 4M

4. a) What is biasing? Explain the need of it. List out different types of biasing methods. 8M
   b) In a silicon transistor circuit with fixed bias, V_{CC} = 9 V, R_C= 3 KΩ, $R_{B=}$ 8 KΩ ,β=50, V_{BE}= 0.7 V. Find the stability factor. 6M

5. a) With a neat construction diagram explain the principle and operation of JFET. Draw its characteristics. 8M
   b) Differentiate Depletion and Enhancement MOSFETS. 6M

6. a) Explain the operation of Push- pull amplifier in detail with neat sketches. 8M
   b) Find the h_{oe} in terms of Common Base (CB) *h*- parameters. 6M

7. a) What is the importance of negative feedback in amplifiers and discuss in detail about current shunt feedback amplifier. 10M
   b) The Voltage gain of an amplifier without feedback is 60dB. It decreases to 40dB with feedback. Calculate the feedback factor. 4M

8. a) Discuss the basic concept behind the operation of a Wien-bridge oscillator with the help of suitable circuitry and derive expression for relevant oscillation frequency. 8M
   b) The values of the two capacitors C_1 and C_2 of the resonant circuit of a colpitt oscillator are C_1 = 20pF and C_2 = 70pF.The inductor has a value of 22μH. What is the operating frequency of oscillator? 6M

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