Bhoj Reddy Engineering College for Women: Hyderabad

Department of Electronics and Communication Engineering

Lesson plan of faculty member for the academic year 2016–17

Class: II B Tech Branch-Section: IT-A Semester: I

Subject: Electronic Devices And Circuits Lectures per week: 4+1 (Tutorial)

Lecture Number	Topics to be covered	Date (s)
UNIT – I: P-N Junction Diode		
1	Introduction to Semiconductor materials	13 June 2016
2	Qualitative Theory of p-n junction diode	14 June 2016
3	P-N junction as a diode	15 June 2016
4	Diode equation	18 June 2016
5	Tutorial (G2,G3,G1) - Problems related to Diodes	13, 15, 17 June 2016
6	V-I characteristics, temperature dependence of V-I characteristics	20 June 2016
7	Ideal versus Practical resistance levels (static and dynamic)	21 June 2016
8	Diffusion Capacitance	22 June 2016
9	Transition Capacitance	25 June 2016
10	Tutorial (G2, G3, G1) - Problems related to Resistances	20, 22, 24 June 2016
11	Diode equivalent circuits	27 June 2016
12	Load line analysis	28 June 2016
13	Breakdown mechanisms in semiconductor diodes	29 June 2016
14	Zener diode Characteristics	2 July 2016
15	Tutorial (G2, G3, G1) - Problems related to Diode Equation	27, 29 June, 1 July 2016
16	Special purpose electronic devices, Varactor diode, photo diode	4 July 2016
17	SCR Characteristics	5 July 2016
18	Tunnel diode characteristics	9 July 2016
19	Tutorial (G2, G1) - Problems related to Diode Equation	4, 8 July 2016
UNIT-II: Rectifiers And Filters		
20	P-N junction as a Rectifier	11 July 2016
21	Half wave rectifier	12 July 2016
22	Full wave rectifier (center tapped), Full wave rectifier (bridge)	13 July 2016
23	Harmonic components in a Rectifier Circuit	16 July 2016
24	Tutorial (G2, G3, G1) - Problems related to Half wave Rectifiers	11, 13, 15 July 2016
25	Inductor Filters, Capacitor Filters	18 July 2016
26	L section Filters, π section Filters	19 July 2016
27	Comparison of Rectifiers, Filters	20 July 2016
28	Voltage regulation using zener diode	23 July 2016
29	Tutorial (G2, G3, G1) - Problems related to Rectifiers	18, 20, 22 July 2016
UNIT-III: Bipolar Junction Transistor (BJT) and UJT		
30	Basic concepts of Junction Transistor	25 July 2016
31	Transistor Currents components	26 July 2016
32	BJT construction, BJT operation, Symbol	27 July 2016
33	Transistor as an Amplifier	30 July 2016
34	Tutorial (G2, G3, G1) - Problems related to zener voltage regulator	25, 27, 29 July 2016
35	CB configuration characteristics	2 August 2016
36	CE configuration characteristics	3 August 2016
37	CC configuration characteristics	6 August 2016
38	Tutorial (G3, G1) - Problems related to Transistor configurations	3, 5 August 2016
39	BJT Specifications and BJT Hybrid Model	16 August 2016
40	Determination of h-parameters from Transistor Characteristics	17 August 2016
41	CB Amplifier analysis using h-parameters	20 August 2016
42	Tutorial (G3, G1) - Problems related to h – parameter analysis	17, 19 August 2016

43	CE Amplifier analysis using h-parameters	22 August 2016
44	CC Amplifier analysis using h-parameters	23 August 2016
45	Comparison of CE,CB,CC Amplifier Configurations	24 August 2016
46	UJT Characteristics	27 August 2016
47	Tutorial (G2, G3, G1) - Problems related to Biasing Techniques	22, 24, 26 August 2016
UNIT-IV: Transistor Biasing & Stabilization		
48	Operating Point, The DC & AC load line analysis	29 August 2016
49	Need for biasing, Biasing types	30 August 2016
50	Fixed Biasing	31 August 2016
51	Emitter Feedback Bias	3 September 2016
52	Tutorial (G2, G3, G1) - Problems related to Biasing	29, 31 August, 2 September 2016
53	Collector - Emitter Feedback Bias	6 September 2016
54	Voltage Divider Bias	7 September 2016
55	Bias Stability, Stabilization Factors	10 September 2016
56	Tutorial (G3, G1) - Problems related to Stabilization	7, 9 September 2016
57	Stabilization against variations in V_{BE} and β	13 September 2016
58	Bias compensation using Diodes and Transistors	14 September 2016
59	Thermal Runaway, Thermal Stability	17 September 2016
60	Tutorial (G3, G1) - Problems related to Stabilization	14, 17 September 2016
61	Analysis of a Transistor Amplifier Circuit using h-parameters	19 September 2016
UNIT-V: Field Effect Transistor and FET Amplifiers		
62	The Junction Field Effect Transistor (JFET)	20 September 2016
63	JFET Construction, Principle of operation and symbol	21 September 2016
64	Pinch – off voltage, JFET Small Signal Model	24 September 2016
65	Tutorial (G2, G3, G1) - Problems related to Stabilization	19, 21, 23 September 2016
66	MOSFET Construction, Principle of operation and symbol	26 September 2016
67	MOSFET Characteristics in Enhancement Mode	27 September 2016
68	MOSFET Characteristics in Depletion Mode	28 September 2016
69	FET Amplifiers	1 October 2016
70	Tutorial (G2, G3) - Problems related to Stabilization	26, 28 September 2016
71	FET Common Source Amplifier	3 October 2016
72	FET Common Drain Amplifier	4 October 2016
73	Tutorial (G2) - Problems related to Stabilization	3 October 2016
74	Generalized FET Amplifier	29 October 2016
75	Tutorial (G1) - Problems related to Stabilization	28 October 2016
76	Biasing of FET, FET as a variable resistor	31 October 2016
77	Comparison of BJT and FET	1 November 2016
78	Revision, Discussion of previous question papers	2 November 2016
79	Tutorial (G2, G3) - Problems related to Stabilization	31 October, 2 November 2016

Text books:

1. J. Millman, C.C.Halkias, “Electronic Devices and Circuits”, 2/e, TMH, 1998.
2. Mohammad Rashid, “Electronic Devices and Circuits”, Cengage Learning, 2013.
3. David A. Bell, “Electronic Devices and Circuits”, 5/e, Oxford.
4. K Lal Kishore, “ Electronic Devices and Circuits ”, 2/e, B.S Publications, 2005.
5. K S Srinivasan, “ Electronic Devices and Circuits ”, 1/e, Anuradha Publications, 2003.

Name and signature of the faculty: Radhika Ravikrindi ----

Name and signature of Head of the Department: Ms N Shribala ----