Code No. 6031 /S

FACULTY OF INFORMATICS

B.E. 2/4 (IT) I – Semester (Supplementary) Examination, July 2014

Subject : Micro Electronics

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1	Differentiate between intrinsic and extrinsic semiconductor.	2
2	What is a varactor diode? Show its circuit symbol and explain its operation.	3
3	Differentiate between JFET and MOSFET.	3
4	What are the advantages of negative feedback in an amplifier?	2
5	Give the Barkhausen conditions required in order for sinusoidal oscillations to be sustained.	2
6	Define the conversion efficiency η (eta) of a power amplifier.	2
7	Draw the output circuit of a class B power amplifier.	3
8	Define the following with respect to operational amplifier i) CMRR ii) Slew rate	2
9	Draw a circuit of zero crossing computation and show the O/P for the given sinusoidal input.	3
10	List the different terminals of MOSFET.	2

PART – B (50 Marks)

11	a)	What is a limiter? Explain the operation of any two clipper circuits.	6
	b)	How does the varactor diode function as a variable capacitor. Explain?	4
12	a)	Draw the h-parameter small signal model of BJT at low frequency using all four parameters.	4
	b)	Draw and explain the biasing circuits for a JFET.	6
13	a)	What are the causes of cross over distortion? What are the methods to overcome it. Explain?	4
	b)	Draw and explain the operation of any one LC oscillator.	6
14	a)	Define a i) Class A ii) Class B and iii) Class AB amplifier.	4
	b)	Explain the characteristics of power MOSFET.	6
15		Design and explain the operation of a triangular wave generator using operational amplifier.	10
16		Explain the operation of BJT as different amplifier circuits. Compare the characteristics of above circuits with respect to input impedance, A_V, A_I, and output conductance.	10
17		Write short notes on the following : a) Ideal OP-Amp integrator b) Distortions in power amplifier	(5 + 5)

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