

Hall Ticket Number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Code No. : 21512

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (I.T.) II Year I-Semester (Main & Backlog) Examinations, Nov./Dec.-2016

Micro Electronics

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

1. Draw the circuit symbols of Zener diode and varactor diode.
2. List any two devices in which rectifiers are used.
3. Which mode(s) of operation are used to operate BJT as a switch?
4. Compare the Doping characteristics of Emitter, Base and Collector regions.
5. Draw the circuit symbols of JFET and MOSFET.
6. What is CMOS logic?
7. Write the expression for closed loop gain of a positive feedback Amplifier.
8. Draw the schematic symbol of a crystal oscillator.
9. Draw the circuit for using op-Amp as a differentiator.
10. What is the gain of op-amp in the inverting configuration?

Part-B (5 × 10 = 50 Marks)

11. a) Explain about biasing methods of a semiconductor diode. [4]
b) With a neat circuit diagram, describe the functioning of Bridge-wave rectifier. [6]
12. a) With a neat circuit diagram, explain how to use bipolar junction transistor as an amplifier. [5]
b) Draw the small signal h-parameter equivalent model of bipolar junction transistor. [5]
13. a) How a MOSFET can be used as a switch? [5]
b) Realize 2-input NAND gate using CMOS logic. [5]
14. a) Discuss the advantages of negative feedback. [6]
b) Derive the expression for loop gain of a negative feedback amplifier. [4]
15. a) Explain the operation of square-wave generator using op-amp. [5]
b) Derive the expression of frequency in the above circuit. [5]
16. a) With neat circuit diagrams, explain the functioning of positive and negative clamping circuits. [6]
b) Derive the relationship between current amplification factors 'α' and 'β'. [4]
17. Answer any *two* of the following:
 - a) Physical structure of MOSFET [5]
 - b) RC phase shift oscillator [5]
 - c) Anti Logarithmic amplifier using Op-Amp. [5]
