

Hall Ticket Number:

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

Code No. : 13217 O2

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**  
**B.E (CSE : CBCS) III-Semester Backlog (Old) Examinations, December 2018**  
**Introduction to Electronics Engineering**

Time: 3 hours

Max. Marks: 70

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

**Part-A (10 × 2=20 Marks)**

1. What is doping? Writ its necessity.
2. Compare half wave rectifier with full wave rectifier.
3. Define  $\alpha$  and  $\beta$  of BJT and derive the relation between them.
4. What is voltage regulation?
5. How an amplifier can be converted into an oscillator?
6. Determine the values of  $I_c$  and  $I_e$  for the transistor circuit of  $\beta = 200$  and  $I_b=0.125\text{mA}$ .
7. Write the logic diagram for full adder using logic gates.
8. List out various Logic gates.
9. Differentiate between LED and LCD.
10. Distinguish between photodiode and phototransistor.

**Part-B (5 × 10=50 Marks)**

- 11.a) Describe the operation of a Half wave rectifier with a neat diagram. A half wave rectifier ,having a load of  $1000\Omega$  rectifies an alternating voltage of  $325\text{V}$  peak value and the diode has a forward resistance of  $100\Omega$ .calculate (a) peak, average and rms value of current (b) dc power output (c) ac input power and (d) efficiency of the rectifier. [7]
- b) Explain about the forward and reverse biasing of P-N Junction diode. [3]
12. a) Explain the construction and operation of JFET. [4]
- b) What are h-parameters? Draw a neat sketch of hybrid model of a CE configured BJT. [6]
13. a) Explain about the general characteristics of negative feedback amplifiers. [5]
- b) With a neat diagram explain the working of Colpitt's oscillator. [5]
14. a) How does an operational amplifier act as a differentiator and an integrator? Illustrate. [6]
- b) List the characteristics of an ideal op-amp. [4]
15. a) Discuss the constructional details of C.R.O. and give its applications. [5]
- b) Differentiate between Capacitive and Inductive transducer. [5]
16. a) Give the operation of Bridge rectifier with neat diagram. A  $230\text{V}$ ,  $50\text{Hz}$  voltage is applied to the primary of a  $4:1$  step-down transformer used in a bridge rectifier having a load resistance of  $600\Omega$ .Assuming diodes to be ideal, determine (a) dc output voltage (b) dc power delivered to the load (c) PIV and (d) output frequency. [7]
- b) Compare PN junction diode and Zener diode. [3]
17. Answer any *two* of the following:
  - a) Advantages of crystal oscillator. [3]
  - b) Characteristics of ideal Operational amplifier. [4]
  - c) Applications of LVDT [3]

\*\*\*\*\*