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Code No. : 14516-O

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E.(Mech. Engg.) II Year II-Semester Old Examinations, May-2019

Applied 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. Differentiate between Intrinsic and Extrinsic semiconductors.
2. Compare drift and diffusion current.
3. What is rectifier? List the applications of rectifiers.
4. Mention different types of filters.
5. Draw the structure of PNP and NPN transistors.
6. List different types of feedback in amplifiers.
7. List the ideal characteristics of an operational amplifier.
8. Name universal logic gates.
9. Give different types of transducers.
10. Name any two registers of 8051 microcontroller.

Part-B (5 × 10=50 Marks)

All sub-questions carry equal marks.

11. a) Explain the VI characteristics of PN junction diode.
b) How Zener diode can be used as a voltage regulator? Explain.
12. a) Describe the working of half wave rectifier with the help of circuit diagram and waveforms.
b) Draw the block diagram of DC power supply and describe the functionality of various blocks.
13. a) Draw the circuit diagram to plot the input/output characteristics of NPN transistor in CE configuration.
b) With the help of circuit diagram explain the working principle of Hartley Oscillator.
14. a) Explain how you use operational amplifier as an adder.
b) Write the truth tables for basic logic gates.
15. a) Explain the principle of operation of capacitive transducer.
b) Draw the block diagram of 8051 microcontroller and give its important features.
16. a) Explain the Zener diode characteristics.
b) Write the working principle of solar cell.
17. Answer any *two* of the following:
 - a) Crystal oscillator
 - b) De-Morgan's laws
 - c) 8051 timers and counters