

S.B. Roll No.....

**ELECTRONICS -I**  
**3<sup>RD</sup> Exam/Elect/0525/0252/Nov'2016**

**Duration: 3 hrs**

**M. Marks: 75**

**SECTION A**

**Q:1 Fill in the blanks:-**

**15x1=15**

- a. The process of adding impurities is called \_\_\_\_\_
- b. The unit of inductance is \_\_\_\_\_
- c. The turn on voltage of Germanium diode is \_\_\_\_\_ volt.
- d. LED stands for \_\_\_\_\_.
- e. Usually, a zener diode is used as a \_\_\_\_\_.
- f. A current source with \_\_\_\_\_ internal resistance is called ideal voltage source.
- g. The opposition to the flow of current in a.c. source is called \_\_\_\_\_.
- h. Resistivity of semi conductors lies between \_\_\_\_\_ and \_\_\_\_\_.
- i. An ideal diode has \_\_\_\_\_ forward resistance.
- j. The max. efficiency of full wave rectifier is \_\_\_\_\_
- k. The capacitor circuit does not allow to pass \_\_\_\_\_ component.
- l. The valence electrons are present in \_\_\_\_\_ orbit of an atom.
- m. \_\_\_\_\_ diode has a negative resistance.
- n. The \_\_\_\_\_ biasing is most widely used.
- o. \_\_\_\_\_ region of the transistor is the best place for operating point.

**SECTION B**

**NOTE:- Attempt any five questions:**

**5x6=30**

- Q:2
- a) Classify different types of materials on the basis of Energy band diagram.
  - b) Describe the working of PNP transistor.
  - c) Describe the working of a FULL wave rectifier.
  - d) How does temperature effect the conductivity of an intrinsic semiconductor?
  - e) Write a short note on PN- junction. Draw its V-I characteristics.
  - f) Explain zener diode as voltage regulator.
  - g) Discuss the advantages of FET over conventional transistor.
  - h) What is faithful amplification? Explain in brief.

**SECTION C**

**NOTE:- Attempt any three questions:**

**3x10=30**

- Q 3: Sketch output characteristics curve for NPN transistor in CB configuration and also indicate active, cut-off, saturation regions.
- Q 4: Draw circuit diagram of HALF wave bridge rectifier and explain its working with the help of a input and output waveforms.
- Q 5 : Write a note on various types of Filters in detail.
- Q 6: Explain R-C coupled amplifier with the help of circuit diagram. Draw its gain versus frequency characteristics and indicate cut-off frequency and band width.
- Q 7: Explain the construction, working of JFET with suitable diagram.