

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE –
RAIGAD -402 103
Mid Semester Examination – October - 2017

Branch: Group B

Sem:- I

Subject with Subject Code:- Basic Electronics Engineering (EXE105) Marks: 20

Date:- October 5, 2017

Time:- 1 Hr.

Instructions:-

- i) All questions are compulsory
- ii) Figures to the right indicates marks
- iii) Assume suitable data whenever necessary

Q. 1. Write the appropriate choice for the following questions (06)**I. The diameter of an atom ranges from about**

- a) 1×10^{-10} μm to 5×10^{-10} μm
- b) 1×10^{-10} cm to 5×10^{-10} cm
- c) 1×10^{-10} mm to 5×10^{-10} mm
- d) 1×10^{-10} m to 5×10^{-10} m

II. Which of the material whose conductivity falls between those of conductors and insulators: a) Gold, b) Germanium, c) Silver, d) Teflon**III. Which of the trivalent impurity material has 3 valence electrons?**

- a) Arsenic, b) Gallium, c) Antimony, d) Bismuth

IV. Complete transfer of one or more electrons from one atom to different atom forms

- a) ionic bonds, b) covalent bonds c) metallic bonding d) co-ordinate bonding

V. The total energy of revolution of a revolving electron in an atom can

- a) Have any value above zero, b) never be positive, c) never be negative, d) not be calculated

VI. Pairs of outer shell electrons not used in bonding are called as

- a) valence electrons, b)loner electrons, c) electrovalent electrons, d) lone pairs

Q. 2. Attempt any one of the following: (06)

- a) Explain the ionic bond and covalent bond of the atom.
- b) Discuss the intrinsic and extrinsic semiconductors.

Q. 3. Attempt any two of the following (08)

- a) Draw and explain the energy band structure of metals, semiconductors and insulators.
- b) Explain the concept of Fermi energy level in p- type semiconductor
- c) Explain the zener breakdown and avalanche breakdown .

