

**Dr. Babasaheb Ambedkar Technological University, Lonere****EXTC/Electrical/Computer/IT Department****Semester Examination****EX106**

Subject: Basic Electronics Engineering (BETX)

Date: **04 MAY 2017**

Semester: I

Max. Marks: 60

Instructions to students:

**Time:- 2.00 pm - 5.00 pm**

1. Attempt any five questions from question no. 1 to question no. 6.
2. Assume suitable data wherever necessary and mention it clearly.

- Q. 1 A. What is the need of Engineering materials? & classify them. [8]  
B. Summarise Quantum numbers [4]
- Q. 2 A. Explain Drift current and diffusion current with neat diagrams [6]  
B. A cylindrically shaped section of n-type silicon has a 1 mm length and 0.1 mm<sup>2</sup> cross sectional area. Compute its conductivity and resistance when it is purely intrinsic material. (The electron and hole density for intrinsic Si is  $1.5 \times 10^{10} / \text{cm}^3$  Mobility constants for electrons and holes are 1500 cm<sup>2</sup>/Vs and 500 cm<sup>2</sup>/Vs respectively). [6]
- Q. 3 A. Define Clipper and summarise different types of them. [4]  
B. Illustrate Fixed Bias for transistor. [4]  
C. Define PIV and describe Full wave Centre tapped Rectifier. [4]
- Q. 4 A. Explain various types of fixed resistors [6]  
B. Find out the values of capacitors using colour coding  
(i) Brown, Black, Orange [3]  
(ii) Wide red, Yellow [3]
- Q. 5 SOLVE ANY TWO:  
A. Write a short note on Galvanometer [6]  
B. Classify different types of transducers. [6]  
C. Explain piezoelectric transducer. [6]
- Q. 6 A. Construct EX-OR gate by using NOR gates only [4]  
B. Simplify  $Y = \overline{A}\overline{B}\overline{C} + \overline{A}B\overline{C} + \overline{A}B\overline{C} + A\overline{B}\overline{C} + A\overline{B}C$  [4]  
C. (i) Convert  $(1567.84)_{10} = (?)_{16}$  [2]  
(ii) Convert  $Y = AB + AC + A$  into standard SOP form [2]

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