[4656] – 103

Seat No.	

F.E. (Semester – I) Examination, 2014
BASIC ELECTRONICS ENGINEERING
(2012 Pattern)

Time : 2 Hours Max. Marks : 50

Instructions : *1) **Neat** diagrams must be drawn **wherever** necessary.*
*2) Black figures to the **right** indicate **full** marks.*
*3) Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam table is **allowed**.*
*4) Assume suitable data, if **necessary**.*

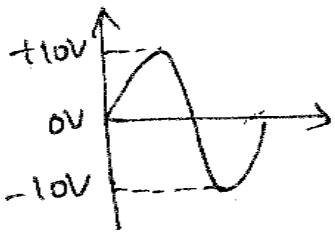
1. A) Compare performance of half wave rectifier and full wave rectifier with respect to following parameters :
   1) IDC
   2) Irms
   3) Rectifier efficiency
   4) Ripple factor
   5) PIV
   6) TUF. **6**

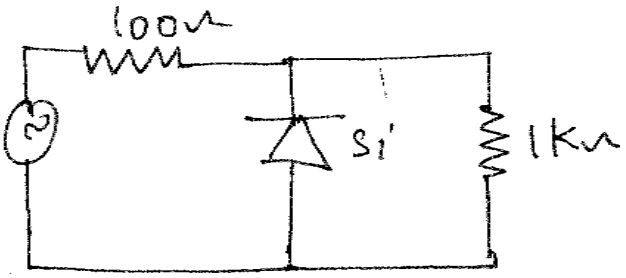
   B) Explain how transistor can be used as an amplifier with the help of D.C. load line approach. **6**

OR

2. A) Explain the operation of n-channel enhancement type MOSFET with its characteristics. **6**

   B) Determine the O/P waveform for the circuit shown in fig. **6**





P.T.O.

3. A) Explain the working of inverting summing amplifier with two inputs along with its wave forms. **6**

   B) State and prove the De-Morgan's theorem. Simplify the following Boolean expression :

   $\overline{\overline{A}B + A\overline{B}}$ **6**

OR

4. A) With the help of block diagram of IC555 explain its operation in Astable mode. **6**

   B) Compare Microprocessor and microcontroller. **6**

5. A) Explain the operation of SCR with the help of V-I characteristics. **7**

   B) Explain the selection criteria of a Transducer. **6**

OR

6. A) Define 'Dark current'. Draw and explain the characteristics of photo transistor. **6**

   B) Explain the construction of DIAC and draw its characteristics. **7**

7. A) Draw and explain the electromagnetic or IEEE frequency spectrum. **7**

   B) Compare AM and FM. **6**

OR

8. A) Draw and explain the block diagram of GSM. **7**

   B) A carrier of 10 V peak and frequency 100 KHz is amplitude modulated by a sinewave of 4 V peak and frequency 1000 Hz. Determine the modulation index for the modulated wave and draw the frequency spectrum for AM wave. **6**

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