



Seat No.	
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**F.E. (Semester – I) Examination, 2014
BASIC ELECTRONICS ENGINEERING
(2012 Pattern)**

Time : 2 Hours

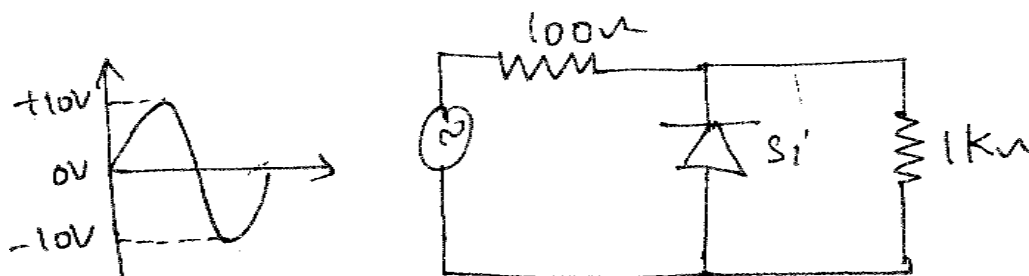
Max. Marks : 50

- 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 :

$$\overline{\overline{AB} + \overline{AB}}$$

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
