Course: B. Tech.          Branch : EE          Semester :6

Subject Code & Name:  BTEEC603 &  Power Electronics

Max Marks: 60          Date:          Duration: 3  Hr.

*Instructions to the Students:*
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

| | | (Level/CO) | Marks |
|---|---|---|---|
| **Q. 1** | **Solve Any Two of the following.** | | |
| **A)** | **Define (i) Latching Current (ii) Holding current (iii) Forward Break Over voltage** | | **6** |
| **B)** | **With the help of neat waveforms explain V-I characteristics of MOSFET** | | **6** |
| **C)** | **Discuss different triggering methods of SCR** | | **6** |
| | | | |
| **Q.2** | **Solve Any Two of the following.** | | |
| **A)** | **With the help of neat circuit diagram & waveforms explain operation single phase half wave  controlled rectifier with R Load** | | **6** |
| **B)** | **Explain difference between Semi converter & Full converter** | | **6** |
| **C)** | **List out the advantages of Freewheeling diode** | | **6** |
| | | | |
| **Q. 3** | **Solve Any One of the following.** | | |
| **A)** | **Draw a neat circuit diagram of three phase bridge Inverter and with the help of neat waveforms explain 180 degree mode of operation** | | **12** |
| **B)** | **Draw a neat circuit diagram  and explain operation of  Buck regulator & also  derive its output voltage equation** | | **12** |
| | | | |
| **Q.4** | **Solve Any Two of the following.** | | |
| **A)** | **What is step down chopper? Derive its output voltage equation & prove it.** | | **6** |
| **B)** | **Discuss different control strategies used in choppers** | | **6** |
| **C)** | **List out advantages & applications of chopper** | | **6** |
| | | | |
| **Q. 5** | **Solve Any One of the following.** | | |

| | | | |
|---|---|---|---|
| A) | Draw a neat circuit diagram of single phase Stepdown Cycloconverter & with neat waveforms explain its operation | | 12 |
| B) | Write a note on single phase dual converter | | 12 |
| | | | |
| | *** End *** | | |

**The grid and the borders of the table will be hidden before final printing.**