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國立臺北科技大學

九十三學年度電機工程系博士班入學考試

電力電子組　電力電子試題

填准考證號碼　　第一頁　共一頁

注意事項：

1. 本試題共5題，配分共100分。
2. 請按順序標明題號作答，不必抄題。
3. 全部答案均須答在答案卷之答案欄內，否則不予計分。

1. (1).For a DC-DC converter with 48 V output, is it suitable for using synchronous rectifier to replace conventional diode rectifier? Why? (10%)
   (2).For a DC-DC converter with 3.3 V output, is it suitable for using synchronous rectifier to replace conventional diode rectifier? Why? (10%)

2. (1).What is "VRM"? What are the important features for the design of VRM? (15%)
   (2).What are the advantages of interleave topology for VRM design? (10%)

3. (1).What is "PFC"? What are the important features for the design of PFC? (15%)
   (2).For a DC-DC converter, the output power is 100 W, is fly-back topology or forward topology is preferred? Why? (10%)

4. What is "double forward converter"? What are the advantages of double forward converter? (10%)

5. (1).What are the advantages and disadvantages of induction motor as compared with brushless DC motors? (10%)
   (2).What is "soft start" for motor drive control? What is "soft start" for power converter control? (10%)