BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: B.TECH **SEMESTER: VII**
BRANCH: EEE **SESSION: MO/2022**

SUBJECT: EE507 ADVANCED POWER ELECTRONICS

TIME: 2 HOURS **FULL MARKS: 25**

INSTRUCTIONS:
1. The total marks of the questions are 25.
2. Candidates attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

				CO	BL
Q1	(a)	Draw the different modes of an ideal switch.	[2]	CO1	BL2
Q1	(b)	Define turn-on and turn-off times of the power BJT with characteristics.	[3]	CO1	BL1
Q2	(a)	Draw the Basic Structure of n-channel Power MOSFET.	[2]	CO1	BL2
Q2	(b)	Analyze the switching characteristics of power MOSFET.	[3]	CO1	BL4
Q3	(a)	What do you mean by volt second balance and ampere second balance?	[2]	CO2	BL1
Q3	(b)	Develop heat transfer model using conduction mechanism.	[3]	CO2	BL5
Q4	(a)	What do you meant by core flux resetting and What are the various methods of achieving core flux resetting?	[2]	CO3	BL3
Q4	(b)	Design forward converter with demagnetizing winding.	[3]	CO5	BL6
Q5	(a)	How is flux walking problem solved in half bridge and full-bridge converters?	[2]	CO3	BL5
Q5	(b)	Design half bridge converter and discuss appropriate modes of operations.	[3]	CO5	BL6

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