

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

MAKEUP EXAMINATION- APRIL 2018

B. Tech 6th Semester

COURSE CODE: 11B1WEC611

MAX. MARKS: 25

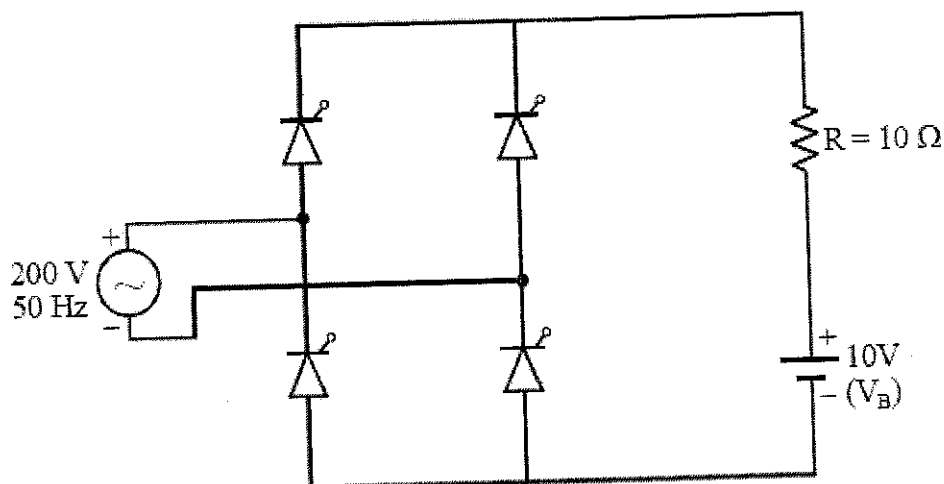
COURSE NAME: POWER ELECTRONICS

COURSE CREDITS: 4

MAX. TIME: 1.5Hrs

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. [6 marks] Explain the working principle of half-wave rectifier with RL load. Derive the expression for its output current.
2. [5 marks] How power diode is different from signal diode? Explain all the types of power diodes.
3. [6 marks] In the circuit shown find the charging current if the trigger angle $\alpha = 90^\circ$



4. [8 marks] Single phase full converter delivers a constant load current I_o . Express its source current in Fourier series and derive the expressions for following performance parameters.
 - (i) Displacement factors
 - (ii) Power factor
 - (iii) Active & reactive power inputs.