

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- April 2018

B. Tech VI Semester

COURSE CODE: 11B1WEC611

MAX. MARKS: 25

COURSE NAME: Power Electronics

COURSE CREDITS: 4

MAX. TIME: 1.5 Hrs

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

1. [4 marks] A 3- ϕ half-wave converter is also known as three pulse converter. Justify the given statement with circuit diagram and waveforms. CO-2
2. [3 marks] "Power electronics is inter-disciplinary in nature". In what extent do you agree with the statement and why? CO-1
3. [4 marks] Briefly describe the various Power electronics converters with their applications. CO-3
4. [6 marks] Case 1: Design a circuit which converts AC power into DC power when you are given two diodes only.
Case 2: Design another circuit which converts AC power into DC power when you have two SCRs with you.
Compare the two designs. CO-2
5. [8 marks] The input voltage to the circuit is 230V RMS. The load resistance is 10Ω , $\alpha = 60^\circ$. Find the average voltage across the load and the power consumed in the load. If any one of the SCR is open circuited, what is average voltage across the load? CO-2

