

**Metropolitan University**  
**Basic Electronics Engineering**  
**Summer 2021**

Total Marks: 30

Time: 2 hrs

*Answer All questions*

1. Compare the performances between half wave and full wave rectifier by solving the mathematical equations step by step. 10
2. How a voltage regulator works when i) Input voltage changes and ii) Load changes. Calculate their voltage and current. 6
3. How doping does improves the efficiency of a Semiconductor? Describe with example.(Draw picture if necessary) 10
4. An ideal single phase half wave rectifier, 120 V, 50 Hz, supplies power to a load resistor  $R = 50\Omega$  via a single ideal diode. 4
  - (a) Find the average and *rms* values of the load current.
  - (b) Find the circuit power factor and the ripple factor.