NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
MID TERM EXAMINATION

Subject: Basic Electronics
Max Marks: 30
Branch: CSE

Semester: 3rd
Hours: 1.5
Date: 26-09-18

Note: All questions are compulsory.

1. (a) With a neat circuit diagram explain the working of center tapped full wave rectifier and show that its efficiency is 81.2%
Also derive the expression for its average Dc load current (I_{DC}) and RMS load current (I_{RMS})

   (b) What are energy bands and how are they formed? Explain briefly the energy band diagram of P and N type semiconductors. [7, 3]

2. (a) Explain the working of tunnel diode. Draw the input and output characteristics.

   (b) A silicone diode has a reverse saturation current of 2.5μA at 300K. Find the forward voltage required for a current of 10mA [5, 5]

3. Explain the following: [5.5]
   (a) Diode switching time

   (b) Effect of temperature on diode characteristics

   (c) Diode capacitance [3,3,4]