



UTTARAKHAND OPEN UNIVERSITY, HALDWANI (NAINITAL)

उत्तराखण्ड मुक्त विश्वविद्यालय, हल्द्वानी (नैनीताल)

M.Sc. Physics (MSCPHY12)

First Year Assignment

Last Date of Submission: 15 May 2013

Course Title: Semiconductor Devices Analog and
Digital electronics

Course Code: PHY-504

Year : 2012-13

Maximum Marks : 40

Section 'A' contains 08 short answer type questions of 5 marks each. Students are required to answer 4 questions only. Answers of short answer type questions should be in 250 words approximately.

Section A

- 1- Describe the construction, working and applications of Zener diode.
- 2- Give a comparison of three rectifiers i.e. half wave, full wave and bridge rectifiers.
- 3- Describe voltage – series feedback amplifier.
- 4- Describe operational amplifier as a wave form generator.
- 5- Explain logical gates system and give the symbols and truth table.
- 6- Draw the circuit diagrams of half and full adder, and explain their truth table.
- 7- What is a flip flop? Explain RS and JK flip flop.
- 8- Describe shift registers.

Section 'B' contain 04 long answers type question of 10 marks each and students are required to answers 02 questions only.

Section B

- 1- What are JFET (junction field effect transistor) and MOSFET (metal oxide field effect transistor)?
- 2- What is operational amplifier? How operational amplifier works as and integrator, differentiator and comparator.
- 3- Give the DeMorgan's theorem and describe Karnaugh map.
- 4- Describe A-D and D-A converters.