VEER NARMAD SOUTH GUJARAT UNIVERSITY

Syllabus for B. Sc. Semester VI

Subject: Physics (PHY-6010)

Paper – X

[2 credit course- 2 hours per week]

Unit – I **Instruments & measurement** **Duration: 15 hrs**

Exhaust pumps and their characteristics (15.1), rotary oil pumps (15.2), molecular pump (15.3), diffusion pump (15.4), other methods of producing low pressures (15.5), pressure gauges (15.7)

Text book: Mechanics by D S Mathur, S Chand & co. (2nd edition)

Unit – II **Digital Electronics** **Duration: 15 hrs**

Combinational circuits (15.10), multiplexer (15.10.1), demultiplexer (15.10.2), encoders (15.10.3), decoders (15.10.4), digital comparator (15.10.5), flip-flop (15.11), RS flip-flop (15.11.1), clocked SR flip-flop (15.11.2), D flip-flop (15.11.3), edge-triggered D flip-flop (15.11.4), edge-triggered JK flip-flop (15.11.5), the master-slave JK flip-flop (15.11.6), T flip-flop (15.11.7), D flip-flop using JK flip-flop (15.11.8), preset and clear function in a flip-flop (15.11.9), sequential logic circuits (15.12), registers (15.12.1), counters (15.12.2), synchronous counters (15.12.3), A/D and D/A converters (15.13), sampling and quantization (15.13.1), digital-to-analog converter (DAC) (15.13.2), analog-to-digital converter (ADC) (15.13.3)

Text Book: A text book of Electronics by S Chattopadhyay,
New central book agency, Kolkata

Note: Illustrative problems on all the relevant topics should be covered.

REFRENCE BOOKS:

9. Instrumentation by Rangan, Sarma & Mani, Tata McGraw Hill
10. Instrumentation by B Jones
11. Digital electronics by Gothman, PHI publication
12. Microelectronics by Millman & Grabel, McGraw Hill
13. Integrated electronics by Millman & Halkias, McGraw Hill
14. Digital principles & applications by Malvino & Leach, Tata McGraw Hill
15. Digital computer electronics by Malvino, Tata McGraw Hill
1. Digital electronics, principles & applications by Tokheim, Tata McGraw Hill