

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Electronics & Communication)
Semester: I
Syllabus with Effect from: June - 2011

Paper Code: PS01CELC02	Total Credit: 4
Title Of Paper: Analog Interface Electronics	

Unit	Description in Detail	Weightage (%)
I	Energy bands in semiconductor material, intrinsic and extrinsic semiconductor, carrier transportation, diffusion current, drift current, mobility, resistivity, generation and recombination of carriers, Hall Effect.	20%
II	PN Junction diode characteristics & its application, zener diode, LED, LDR, tunnel diode, Varactor diode, Schottkey diode, BJT, JFETs, MOSFETs.	20%
III	Differential amplifier and its DC & AC analysis, block diagram of OPAMP, its parameters, frequency response, current mirror and current loading biasing, concept of ideal op-amp, specification of standard op-amp like IC 741, LM 324, μA 741.	20%
IV	Voltage amplifier, summing amplifier, averaging amplifier, current source, differential amplifier, instrumentation amplifier, filters: LPF, HPF, BPF and all pass filter.	20%
V	Active diode circuits rectifiers, peak detector, clipper and clamper, comparator: Zero crossing detectors, limit detectors, window comparator and Schmitt triggers. Differentiator, Integrator, Waveform Generator and conversion using op-amp oscillators.	20%

Basic Text & Reference Books:-

- Electronics Principle: A.P. Malvino
- Op Amps and Linear Integrated Circuits: Ramakant Gayakwad, PHI 3rd Edition 1993.
- Integrated electronics: Millman & Halkies, McGraw Hill, 9th reprint, 1995.

