

SARDAR PATEL UNIVERSITY
Programme & Subject: B.Sc (Instrumentation – Vocational)
Semester: V
Syllabus with Effect from: June-2013

| | |
|--|------------------------|
| Paper Code: US05CINV06 | Total Credit: 3 |
| Title Of Paper: Signal Conditioning & Communication | |

| Unit | Description in detail | Weightage (%) |
|------|---|---------------|
| I | AC and DC Bridge Wheatstone Bridge, Kelvin Bridge, AC Bridges and their applications, Maxwell Bridge, Hay Bridge, Schering Bridge, Unbalance conditions, Wein Bridge. | 25% |
| II | Shift register and D/A Conversion Technique: The Shift Register, Shift Right Register, Shift Left Register, Ring Counter, Bidirectional Register, Controlled Buffer Register, Tri-state switch, Specification of D/A converters, Resolution, Linearity, Accuracy, Settling Time, Temp. Sensitivity Weighted Resistor converter, R-2R D/A converter. | 25% |
| III | A/D Conversion Technique Types of A/D converters, Parallel Comparator type, Successive Approximation type, Counter type, Dual slop type, Voltage to Frequency & Voltage to time converter, Interconnecting S/H and A/D converter. | 25% |
| IV | Modems and Interfaces Introduction, Low-speed Modem operation, Modem Interfaces, Asynchronous and Synchronous Operation, The Bell 103-Type Modem, The Schmitt trigger as an Interface circuit and tri- state buses. | 25% |

Basic Text & Reference Books:-

- Electronics Instrumentation and Measurement Techniques - By Cooper and Helfrick.(Unit 1)
- Digital Integrated Electronics (TMH) - By Herbert Taub and Donald Schilling (Unit 2,3)
- Radio Engineering (Unit 4,5 & 6) - By G.K. Mithal, (Khanna publisher Delhi)
- Basic Radio and Television – By S.P. Sharma
- Monochrome and Colour Television – By R.R. Gulati
- Digital Principles and Applications (TMH) – By Malvino and Leach.
- Electrical and Electronics Measurements and Instrumentation – By A.K. Shawny.
- Fundamental of Digital Circuits – By A. Anand Kumar

