B.Sc. – III LECTRONICS

SESSION-2011-2012

Paper I (ELECTRONICS COMMUNICATION)

1. TELECOMMUNICATION :-_ Introduction, Basic Principle Of Communication System, Communication Band, Propagation Of Electromagnetic Waves (Ground, Sky And Space Wave Propagation), Ionosphere, Virtual Height, Critical Frequency And Dead Zones, Skip Distance And Maximum Usable Frequency, Satellite Communication.
2. MODULATION AND DEMODULATION:- Need Of Modulation And Demodulation , Principle Of AM And FM Modulation ,Modulation Index, Modulation Bandwidth And Balanced Modulator.
3. TRANSMITTERS AND RECEIVERS :- Introduction, Functional Block Diagram Of AM Transmitter And Function Of Each Part, Principle Of TRF And Super Heterodyne Receivers, Block Diagram Of Super Heterodyne AM And FM Receivers ,Selection Of IF, Image Signals And Their Rejection, Circuit Diagram Of Different Stages.
4. TRANSMISSION LINES:- Distributed Parameters, Types Of Transmission Lines, Current And Voltage Relation, Line Distortion And Attenuation, Transmission Line Constants, Input Impedance For Short And Open Circuited Lines, Power Factor, Smith Chart, Coaxial Lines.
5. ANTENNA:- Introduction, Current And Voltage Distribution In Antenna, Definition Of Parameters Like Gain, Directional Pattern, Bandwidth, Effective Aperture, Doublet Antenna , Loop Antenna, Effective Length, Resistance And Efficiency Of Antenna.
6. OPTOELECTRONICS:- Opto Detectors And Filters, Acoustics Optic And Magneto Optic Effect, Optical Channel, Free Space, Turbulent And Scattered Channels, Introduction To Optic Fiber And Principle Of Optical Communication, Sources, Leds And Solid State Lasers.

Paper II (VIDEO SYSTEM)

1. TELEVISION APPLICATION:- Television Broadcasting, Close Circuit Television (CCTV), TV Games, Flat Panel Display, High Definition Television (HDTV).
2. CABLE TELEVISION:- Introduction, Cable Channels, Cable Types (Co-Axial Fiber Optics), Cable Loses, Cable Network, Head End Processors, Trunk And Cable Distribution System, Scrambling And Conditional Access System.
3. SATELLITE TV:-Geostationary Orbit, Principles Of Satellite Communication, INTELSAT And INSAT Series Indian Satellites, Block Diagram Of TV, Broadcast Systems, Domestic TV Broadcast, Earth Station Front And Converter And Receiver, Dish Antenna.
4. DIGITAL TV And VIDEO:- Introduction, Advantage Of Digital TV Technology, Principle Of Digital TV, VCD.
5. TELETEXT :-Introduction, Teletext System, Teletext Data Organization, Teletext Decode.
6. VIDEO CAMERAS:- Block Diagram, Principle Of Color TV Camera , Camera Tubes, Camera Adjustment, Separation Of Red, Blue And Green, Dichoric Mirror, Gamma Correction.
7. TV TESTING INSTRUMENT:- TV Signal Generator, Video Pattern Generator, Sweep Generator, Marker Generator, Application Of CRO For TV Testing, TV Text, Chart And Pattern.

Paper III (POWER ELECTRONICS AND INSTRUMENTATION)

1. SCR AND THEIR APPLICATION:- Introduction, Symbolic Representation And Specification, Principle, Operation And Application Of SCR, SCR Rating , Theory And Application Of DIAC, TRIAC And UJT.
2. CONTROLLED RECTIFIERS:- Introduction, Principle Of Phase Controlled Converter Operation; Single
Phase Semi Converter, Single Phase Full Converter, Single Phase Dual Converter, Single Phase Series Converter, Three Phase Half Wave and Full Wave Converter.
3. TRANSDUCERS:- Introduction, Basic Requirement Of Transducers, Classification Of Transducers Transducers In Instrumentation And Control Systems, Types Of Transducers, Piezoelectric Transducer.
4. MEASUREMENT OF VOLTAGE, CURRENT AND RESISTANCE:- Introduction To Voltage Measurement By Conventional Methods Using Moving Coil Galvanometer, Limitations Of Moving Coil Voltmeter And Advantage Of Electronic Voltmeter, Electronic Voltmeter: Block Diagram And Circuit Diagram Based On Differential Amplifier Using Transistor, FET And IC And Their Comparison, Block Diagram And Working Of Different Types Of DVM, RAMP Type DVM, Integrating Type DVM, Potentiometric Type DVM And Dual Slope Integration Type DVM.
5. BRIDGE MEASUREMENTS OF R, L AND C:-
Introduction To AC Measuring Bridges, Balanced Condition, Types Of Sources And Detectors, Resistance Measuring AC Bridges, Maxwell's, Inductance Bridge, Hayes Bridge, Inductance Comparison Capacitance Bridge, Capacitance Comparison Bridge, Block Diagram Of LCR/ Impedance Circuit.
6. CATHODE RAY OSCILLSCOPE:- Introduction, CRO Tube, Block Diagram Of CRO And Its Working Time Base Generator Oscilloscope Controls And Their Location In Circuit Diagram.

Paper IV (COMPUTER TECHNOLOGY)

1. IN SIDE THE PC:-Computer Components , Processors, Memories, I/O Devices, Power Supply, Peripheral Card, Keyboard, FDD,HDD,CD Ram Drive, System Unit, Mother Board, Display Adapter, Sound Cards, LAN And Network Adapter.
2. THE PROCESSORS:- PC Microprocessor, Math Co-Processor, Fabrily Tree, RISC Processor, RISC or CISC- Which Is Superior, Multiprocessor System.
3. THE STORAGE (Disk):- (A) Basics, Disk Concepts, Varieties Of Floppy And Hard Disks, Disk Controllers (IDE Enhanced IDE, SCSI), ADD.
   (B) Optical Storage Technology Overview, Advantages and Disadvantages, CD-ROM Technical Details.
4. MEMORY WORK BENCH: - Data Storage, Memory Segments, Extended Memory, Virtual Memory, Expanded Memory.
5. PRINTERS AND COMMUNICATIONS:- Types Of Printers, Working Principles, Parallel Port, Serial Port, Communication Parameters, Modem And Communications.
6. OPERATING SYSTEM:-Introduction To Windows, Working Principles, File Management In Windows, Control Panel, Accessories.