Chhattisgarh Swami Vivekanand Technical University, Bhilai

Scheme of Teaching and Examination

B.E. V SEMESTER
ELECTRONICS AND INSTRUMENTATION

S.No.	Board of studies	Subject Code	Subject Name	Period Per Week			Scheme of Exam Theory / Practical			Total Marks	Credit L+(T+P)/2
				L	T	P	ESE	CT	TA		
1	Electronics & Instrumentation	327511 (27)	Signal Conditioning Circuits	3	1	-	80	20	20	120	4
2	Electronics & Instrumentation	327512 (27)	Industrial Instrumentation - I	3	1	-	80	20	20	120	4
3	Electronics & Telecommunication	327513 (28)	Communication Engineering	3	1	-	80	20	20	120	4
4	Electronics & Telecommunication	327514 (28)	Bio-Medical Instrumentation	3	1	-	80	20	20	120	4
5	Electronics & Telecommunication	328515 (28)	Microprocessor & Interfaces	3	1	-	80	20	20	120	4
6	Electronics & Telecommunication	328516 (28)	Automatic Control System	3	1	-	80	20	20	120	4
7	Electronics & Instrumentation	327521 (27)	Automatic Control System Laboratory	-	-	3	40	-	20	60	2
8	Electronics & Instrumentation	327522 (27)	Signal Conditioning Circuits laboratory	-	-	4	40	-	20	60	2
9	Electronics & Instrumentation	327523 (27)	Microprocessor & Interfaces Laboratory	-	-	4	40	-	20	60	2
10	Electronics & Instrumentation	327524 (27)	Electronic Simulation Laboratory - II	-	-	2	40	-	20	60	1
11	Humanities etc.	300525 (46)	Personality Development	-	-	2	-	-	20	20	1
12	Electronics & Instrumentation	327526 (27)	*Practical Training Evaluation/Library	-	-	1	-	-	20	20	-
				18	6	16	640	120	240	1000	32

L-Lecture, T- Tutorial, P- Practical, ESE- End Semester Examination, CT- Class Test, TA- Teacher's Assessment

* To be completed after IV Semester and before the commencement of V Semester

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
BHILAI (C.G.)

Semester : V
Subject: Signal Conditioning Circuits
Total Theory Periods: 40
Total Marks in End Semester Examination: 80
Minimum number of Class tests to be conducted: 2

Branch: E&I/AE&I
Code: 327511 (27)
Total Tutorial Periods: 12

UNIT I : OPERATIONAL AMPLIFIERS

Amplifier fundamentals, OPAMP Symbol and terminology, Block Schematic of OPAMP, Basics of Differential amplifier, Ideal and Practical OPAMP Characteristics, Open and Closed Loop Configuration of OPAMP, Frequency response, Frequency Compensation, Inverting and non-inverting amplifier.

UNIT II : APLICATIONS OF OPAMP

Voltage Follower, Comparator, Zero crossing Detector, Level Detector , Window detector, Precision Half wave & Full wave rectifier, Integrator, Differentiator, Summer, Subtractor, Bridge amplifier, Instrumentation amplifier, Voltage to Current & Current to Voltage converter, Logarithmic Amplifier, Norton Amplifier, Sense amplifier, Bootstrap amplifier.

UNIT III : SIGNAL GENERATORS & CONDITIONERS

Square wave generator, Triangular wave generator, Saw tooth wave generator, Schmitt trigger, Clipper circuit :- Series & parallel clipper , Clipper Clamper Circuit :- Negative & Positive Clamper , High pass RC Circuit as Differentiator , Low pass RC Circuit as integrator . Voltage sweep generator, Current Sweep generator.

UNIT IV : MULTIVIBRATORS

Transistor as Switch, Types of Multivibrator (bistable, astable & monostable), Fixed and self biased binary, use of Commutating Capacitor, improving resolution, Schmitt trigger Emitter Coupled, Mono stable Multi : Collector – Coupled and Emitter – Coupled Multi .

UNIT V : TIMER & REGULATOR

Timer: Functional Diagram , Monostable & Astable Operation , IC 555 & 556: Block diagram, Applications.
Voltage Regulator: Characteristics , Performance Parameters, Shunt Regulator using OPAMP , Transistorized Series Feedback Regulator ; Safe Operating area , Protection CKT, Short Circuit Protection , Current Limiting Circuit , Fold back Limiting , Three terminal IC Regulator , (LM 317 , LM 337 , 78XX , 79XX) [Only Schematic Diagram and pin Diagram] , General Purpose IC Regulator (723) : Important Features & internal structure , VCO (565)

Text Books:

1. *Gaykwad Ramakant, Operational Amplifier, PHI Publication.*

2. *Millman Halkias, Integrated Electronics, TMH Publication.*

Reference Books:

1. *Millman & Taub pulse, Digital & Switching Waveforms, TMH Publication.*

2. *David . A. Bell Electronics Devices & Circuit PHI Publication.*

3. *K. R. Botkar, Integrated Circuits, Khanna Publications*
4. *Lal Kishore, Operational Amplifiers and Linear Integrated Circuits, PHI*
5. *Soclof Design and Applications of Analog Integrated Circuits, , PHI*

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY BHILAI (C.G.)

Semester : V
Subject: Industrial Instrumentation – I
Total Theory Periods: 40
Total Marks in End Semester Examination: 80
Minimum number of Class tests to be conducted: Two

Branch: E&I / AE&I
Code: 327512 (27)
Total Tutorial Periods: 12

Unit I : Flow Measurements
Introduction - definitions and units- classification of flowmeters - pitot tubes, orifice meters, venturi tubes, flow tubes, flow nozzles, positive displacement flowmeters, variable area flowmeters.

Unit II : Anemometers And Flow Meters
Mechanical anemometers, hot wire / hot film anemometer, Laser Doppler anemometer (LDA), electromagnetic flowmeters, turbine and other rotary element flowmeters, ultrasonic flowmeters, Doppler, cross correlation flowmeters, Vortex flowmeters. Measurement of mass flow rate: Radiation, angular momentum, impeller turbine, constant torque hysteresis clutch, twin turbine, coriolis, gyroscopic and heat transfer type mass flow meters.

Unit III : Flowmeters And Level Measurements
Target flowmeters: V-cone flowmeters, purge flow regulators, flow switches, flowmeter calibration concepts- flowmeter selection and application. Level measurement: Introduction, float level devices, displaced level detectors, rotating paddle switches, diaphragm and differential pressure detectors.: Resistance, capacitance and RF probes: radiation, conductivity, field effect, thermal ,ultrasonic, microwave, radar and vibrating type level sensors - Level sensor selection and application.

Unit IV : Non-Destructive Testing (NDT)
Introduction: Various methods for NDT - advanced NDT techniques - Transmitters: Introduction, terminology, features of smart and intelligent transmitters, Smart and Intelligent temperature, pressure and differential pressure transmitters. Smart and intelligent flowmeters. Other smart and intelligent measurement systems. Integration of intelligent transmitters into knowledge based process management systems.

Unit V : Virtual Instrumentation and EMC
Virtual instrumentation: Definition, parts of the system, windows in data acquisition, personal computers for DAS and instrument control, instrument drivers.
EMC: Introduction, interface coupling mechanism, basics of circuit layout and grounding - interface, filtering and shielding. Electrical and intrinsic safety- enclosures. NEMA types: personnel safety, Explosion hazards and intrinsic safety.

Text Books:
1. Doebelin, E.O.,: " Measurement Systems Application and Design" , fourth edition McGraw Hill International.
2. Patranabis, D., Principles of Industrial Instrumentation, Second Edition Tata McGraw Hill Publishing Co. Ltd.. New Delhi.

Reference Books:
1. Flow measurement, "Practical guides for measurement and control" , ISA publication, 1991.
2. Anderew, W.G., : "Applied instrumentation In process industries" - a survey Vol-I Gulf Publishing company.
3. Liptak, B.G.,: "Process measurement & analysis" , IV edition Chilton Book company 1995. Considine, D.M.,: "Process instruments and control & handbook", McGraw Hill 1985.
4. Noltingk, B.E.,: "Instrumentation reference book", II edition Butterworth Heinemann,1996.
5. National Instruments LabView Manual.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
BHILAI (C.G.)

Semester : V

Subject: Communication Engineering

Total Theory Periods: 40

Branch: E&I / AE&I

Code: 327513 (28)

Total Tutorial Periods: 12

Total Marks in End Semester Examination: 80

Minimum number of Class tests to be conducted: Two

Unit I: Radio Communication Systems

Need for Modulation - Principle of AM, FM and PM – basics of AM - modulation index – signal power –DSBSC-SSBSC

Unit II: Transmitters and Receivers

AM and FM transmitters and receivers – Am and FM demodulation – Comparison of AM, FM and PM – Noise – Effects of noise- Sources and Types of noise -

Unit III: Digital Communication Systems

Quantization of Signals, PAM, PPM, PDM, PCM – delta modulation – differential PCM – merits and demerits – comparison of pulse modulation schemes, FSK – ASK - PSK

Unit IV: Data Transmission

Twisted pair and coaxial cables – Fiber optics – Sources and detectors – Fiber optic Complete system - Analog to digital converters (Successive approximation type, R- 2R type)- Error detection and correction – Multiplexing introduction – TDM & FDM

Unit V: Facsimile & Television

Facsimile- Modem functions – RS232 operation - TV signals – TV receivers – Color TV -Introduction to Satellite communication (Basic block diagram) – Introduction to cellular communication (Basic Concept)

Text Books:

1. Roody and Coolen , "Electronic Communication", Prentice Hall of India, 4th Edition, 1999.
2. William Scheweber, "Electronic Communication Systems", Prentice Hall of India, 4th Edition, 2004

Reference Books:

1. Kennedy G, "Electronic Communication Systems", McGraw-Hill, 4th Edition,1987.
2. Simon Haykins, "Communication Systems", 3rd Edition, John Wiley,Inc., 1995.
3. Bruce Carlson. A "Communication Systems", 3rd Edition, Tata McGraw – Hill 1986.
4. Taub and Schilling "Principles of Communication Systems", Second Edition, McGraw-Hill , 1987.
5. Anok singh, "Principles of Communication Engineering", S.Chand and Company Ltd., First edition, 2001.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
BHILAI (C.G.)

Semester : V   **Branch: E&T/E&I/AE&I**
Subject: Bio Medical Instrumentation   **Code: 327514 (28)**
Total Theory Periods: 40   **Total Tutorial Periods: 12**
Total Marks in End Semester Examination: 80
Minimum number of Class tests to be conducted: Two

Unit I : Concept of Biomedical Electronics
Biomedical Engineering, Biometrics, Components of man instrument system, Physiological system of the Body, cells & their stucture, Resting & Action, Bioelectric Potential, The heart & cardiovascular system, Physiological system for the Heart, Mechanical activity of Heart, Electrocardiographic lead system, The Electrocardiogram, Electrocardiography, ECG instrumentation, other Physiological systems.

Unit II : Transducers Signal Conditioning and Recorders
Display devices and recorders, Biomedical signal conditioning Devices, Amplifiers, Electrodes, Electrode theory, Chemical Electrodes, signal conditioning devices, medical preamplifier design, Biopotential recorders, Characteristics, ECG Recording Setup, Electroencephalography (EEG), EEG Recording setup & Analysis, Electromyography, (EMG) Recording Setup, Introduction of Electroretinography (ERG) and Electroculogram (EOG)

Unit III : Radiology
Introduction, Generation of ionizing Radiation, X-Ray System, Radiography, X-Ray Diagnostic, Special techniques in X-Ray, Angiography, Radio Isotope, Imaging, Radiation therapy, Ultra Sonics, properties of Ultra Sound, Ultra sonic Imaging systems, Ultrasonic setup, Echocardiography.

Unit IV : Biotelemetry & Impartibly
Instrumentation Biotelemetry, Introduction, Physiological parameters, Biotelemetry system, Radio telemetry system, Problems in implant telemetry, Application of telemetry in patient care, EEG measurements, EMG measurement, PACE MAKERS, Methods of stimulation, types of pacing modes, power sources in Pacemaker, types of Defibrillators, Kinds of Defibrillators, stimulator, other types of stimulators.

Unit V : Patient Monitoring System
Medical Diagnosis and information systems. Patient monitoring systems: Intensive care operating room, recovery, room monitoring, Ambulatory patient monitoring, Tomography, Principles of computer assisted tomography.

Name of Text Books:
1. Biomedical Instrumentation & Measurement by L. Cromwell, F.J. Weibell and E.A. Pfeiffer, 2nd Ed., PHI
2. Principles of Medical Electronics & Biomedical Instrumentation, C Raja Rao & S.K Guha, University Press

Name of Reference Books:
1. Electronics in Medicine and Biomedical Instrumentation – Nandini K. Jog, PHI
2. Biomedical Instrumentation – Dr. A. Arumugam, Anuradha Agencies, Chennai.
3. Handbook of Biomedical Instrumentation by R.S. Khandpur, TMH Pub. Co.
4. Introduction to Biomedical Engineering, Domach, Pearson Education

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
BHILAI (C.G.)

Semester : V   **Branch: AEI/CS/EI/EEE/ET&T/IT**
Subject: Microprocessor & Interfaces   **Code: 328515 (28)**
Total Theory Periods: 40   **Total Tutorial Periods: 12**
Total Marks in End Semester Examination: 80
Minimum number of Class tests to be conducted: Two

UNIT – I
Microprocessor Architecture: Introduction to Microprocessors, Architecture of 8085, Pin Configuration and Function; internal register & flag register, Generation of Control Signals: Bus Timings: Demultiplexing of address / data bus; Fetch Cycle, Execute Cycle, Instruction Cycle, Instruction Timings and Operation Status, Timing Diagram.

UNIT – II
Instruction Set and Programming with 8085: Instruction for Data Transfer. Arithmetic and Logical Operations. Branching Operation: Machine Cycle Concept; Addressing Modes; Instructions Format: Stacks. Subroutine and Related Instructions. Elementary Concepts of Assemblers, Assembler Directives, Looping and Counting: Software Counters with Time Delays: Simple Programs using Instruction Set of 8085: Debugging: Programs Involving Subroutines. Programs for Code Conversion e.g. BCD to Binary, Binary to BCD. Binary to Seven-Segment LED Display. Binary to ASCII. ASCII to Binary: Program for Addition Subtraction: Programs for Multiplication and Division of Unsigned Binary Numbers.

UNIT – III
Data Transfer and Device Selection: Format of Data Transfer: Modes of Data Transfer: Type of I/O Addressing: Condition of Data Transfer: Microprocessor Controlled Data Transfer: Peripheral Controlled Data Transfer: Absolute and Linear Select Decoding: Memory and I/O Interfacing: Use of Decoders Selection: Memory organization and Mapping.

UNIT – IV
Interrupts: Restart Instruction; Hardware Implementation: Interrupt Processing; Multiple Interrupts and Priority Concepts: Interrupt Structure of 8085: Instructions related to interrupts: Pending Interrupts: Use of Interrupt and Handshaking Signals in Interfacing: Application of Interrupts and Illustrative Programs.

UNIT – V
Architecture of Peripheral Interfacing Devices: Architecture, Pin Diagram and functioning of 8155/8156 (RAM), 8355/8755 (ROM), 8255 (PPI). Simple programs like Initialization and I/O operations of the ports, Timer operation of 8155.
Programmable Internal Timer 8253/8254: Block Diagram, Pin Configuration, Modes, Initialization Instruction, Interfacing and Simple Programmes to generate various types of signals.
Architecture, Pin diagram, description and initialization of Keyboard and display interface (8279), USART (8251)

Name of Text Books:
1. Microprocessor Architecture, Programming and Application by R. S. Gaonkar, Wiley Eastern
2. Digital Systems – From Gates to Microprocessors by Sanjay K. Bose, New Age International Publishers.

Name of Reference Books:
1. 8085 Microprocessor Programming & Interfacing – N.K. Srinath, PHI
2. Digital Computer Electronics – Malvino, TMH
3. Microprocessors: Theory and Applications – Intel and Motorolla, Rafiquuzzaman, PHI.
4. 0000 to 8085: Introduction to Microprocessor for Engineers and Scientists, Ghosh & Sridhar, PHI

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
BHILAI (C.G.)

Semester : V
Subject: Automatic Control Systems
Total Theory Periods: 40
Total Marks in End Semester Examination: 80
Minimum number of Class tests to be conducted: Two

Branch: E&T/E&I/AE&I
Code: 328516 (28)
Total Tutorial Periods: 12

UNIT I : Mathematical Model of Physical Systems
Differential Equation of Physical system. Transfer function, Block Diagram Algebra, signal flow graphs. Feedback characteristics of control systems. Feedback & Non feedback systems, reduction of parameter variation, control of system Dynamic. Control of the effect of dynamic signal by use of feedback, regeneration feedback.

UNIT II : Time Response Analysis
Design specification and performance Indices. Standard Text signals, Time response of first and second order system, steady state error and error constants, Effect of adding a zero to a system. Design specification of second order system stability concept, Routh- Hurwitz stability criteria relation stability analysis.

UNIT III : Root Loci's Technique
Root loci's concept construction for Root loci, Root contours, system with transportation by Polar Plots, Bode Plots. All pass and minimum phase system.

UNIT IV : Stability in Frequency Domain
Nyquist stability criteria, Assessment of relation stability. Realization of basic compensators, Cascade compensation in time and frequency Domain. Feedback compensation.

UNIT V : Sate Variable Analysis and Design
Concept of stab, state variables and state model. State model for linear continuous time systems, Diaganalization, solution of state equation, concept of controllability and observability. Pole placement by state feedback.

Name of Text Books:
1.   Control System Engineering, L. Nagrath and Gopal, New Age International Publications
2.   Automatic Control System, B.C. Kuo, PHI

Name of Reference Books:
1.   Modern Control Engineering, Ogata, Pearson Education
2.   Modern Control Engineering, Roychoudhury, PHI
3.   Control Engineering – A Comprehensive Foundation, Ramakalyan, Vikas Publishing House Pvt. Ltd.
4.   Introduction to Control Engineering, Ajit K. Mandal, New Age International Publications.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
BHILAI (C.G.)

Semester : V   **Branch: E&I/AE&I**
Subject: Automatic Control System Laboratory   **Code: 327521 (27)**
Total Practical Periods: 40
Total Marks in End Semester Examination: 40

List of Experiments: (To be performed minimum 10 experiments)

1)   To determine the Gain of an Open Loop and Closed Loop System.
1)   To Study the Effect of Disturbance On an Open loop and Closed Loop System.
2)   To Determine the Transfer function of a DC Servomotor.
3)   To Study the time response of a second order system.
4)   Characteristics of Synchro Transmitter and Receiver Pair.
5)   Determination of Transfer Function of an AC Servomotor.
6)   To study a potentiometer as an Error Detector.
7)   Study of bode Plot of a Type 0, Type Type II Systems and I.
8)   Displacement Measurement using LVDT.
9)   Simulation of Transfer Function using Op-Amp (Analog Computer Trainer)
10)   Study of P, PI controller on second order system.
11)   Study of PID controller on second order system.
12)   To study the operation and Characteristic of a Stepper Motor.
13)   To study the Lag Compensator and Lead Compensator.
14)   To study the Lag-Lead Compensator.

Apparatus Required:
1)   An open and closed loop system with two input signals (one acting as reference and the other as the disturbance signal).
2)   A R-L or R-C Circuit, Bread board, CRO, Multimeters, Function Generator.
3)   Synchro Transmitter-receiver Pair.
4)   An AC Servomotor.
5)   A Potentiometer.
6)   Bode Plot Analyzer.
7)   Linear Variable Differential Transformer.
8)   Analog Computer trainer
9)   P, PI, PID Controller trainer.
10) Stepper Motor.
11) Lag Compensator, Lead Compensator, Lag-Lead Compensator.

Reference Books:

1)   Control System Engg. By Nagrath and Gopal, JW
Linear control systems; Prof. B.S.Manke, Khanna Publication.

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
BHILAI (C.G.)

Semester : V   **Branch: E&I/AE&I**
Subject: Signal Conditioning Circuits Laboratory   **Code: 327522 (27)**
Total Practical Periods: 50
Total Marks in End Semester Examination: 40

Experiments to be performed:

Design, fabricaiton and to study the characteristics of:

1. OP-AMP as voltage follower

2. Monostable Multivibrator using transistors

3. Astable Multivibrator using transistors

4. Clipper and clamper circuits using OP-AMP

5. RC integrator and differentiator circuits

6. OP-AMP as zero crossing detector

7. Op-AMP as precision half wave & full wave Rectifier

8. OP-AMP as log and Antilog AMP

9. Study of integrator & differentiator circuit using OPAMP.

10. Summer and subtractor using OPAMP.

11. Schmitt trigger circuit using OPAMP.

12. Monostable Multiviabrator using IC555

13. Astable Multiviabrator using IC555.

14. Peak detector using OP-AMP.

15. Bistable Multiviabrator using Transistor.

List of Equipments/Machine Required:
Discrete Components, Function Generator, Power Supply, CRO, IC 741.

Recommended Books:
Laboratory Manual for Operational Amplifiers and Linear ICs, David Bell, PHI

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
BHILAI (C.G.)

Semester : V   **Branch: E&I/AE&I**
Subject: Microprocessor & Interfaces Lab   **Code: 327523 (27)**
Total Practical Periods: 50
Total Marks in End Semester Examination: 40

Programmes to be executed (but should not be limited to):

1. **REVERSING AN ARRAY :** A Block of 16 bytes are residing at locations starting from BLOCK 1 WAP to transfer the block in reverse order at locations starting from BLOCK 2.

2. **SORTING IN ASCENDING ORDER :** A block (16 bytes are residing at locations starting from DATA : Write a program to arrange the word in the same location in ascending order

3. **BINARY ADDITION :** 16 bytes are residing at location starting from DATA WAP : to add all bytes and store the result location SUM and SUM + 1

4. **BCD ADDITION :** 16 BCD NUMBER are residing at location starting from DATA WAP to add all bytes and store the result location SUM and SUM + 1

5. **MULTIPLICATION :** Two bytes are residing at location DATA 1 and DATA 2 Write a program to multiply the two bytes and store the result at location PROD 1 and PROD 2

6. **BINARY TO BCD :** A binary number is residing at location BIN > WAP to convert the binary number in to its equivalent BCD and store the result at BCD and BCD + 1

7. **BCD TO BINARY :** A BCD number is residing at location BCD ; Write a program to convert the BCD number into its equivalent binary and store the result at BIN

8. **MULTIBYTE ADDITION:** Two 10 bytes are residing at location starting from DATA 1 and DATA 2 respectively , Write a program two add them up and store the result at location starting from RESULT (result space 11 bytes)

9. **MULTIBYTE BCD ADDTION :** Two 6 digit BCD numbers are residing at location starting from DATA 1 and DATA 2 respectively. Write a program to add them up and store the result at locations starting from RESULT (Result space 7 bytes)

10. **RST 6.5 :** A block of 16 bytes is residing at location starting from ; DATA Reverse the block and store the bytes at REVERSE whenever the RST 6.5 key is pressed.

11. **EDITING OF ASCII STRING :** A string of ASCII characters is residing at locations starting from READ which contain " I $ WILL $ BE $ AN $ ENGINEER ". Edit string in such a way that it should contain " I $ will $ be $ Engineer ". Keep the edited string in the same locations. Product the string from further editing . ($ stands for a blank)

12. **SIGNED BINARY ADDITION:** A block of 16 signed binary numbers is residing at locations NUMBERS . Add them up and store the result (in signed binary) at locations from RESULT

13. **ASCII CODE CONVERSION :** A string of 16 ASCII characters are residing at locations starting from DATA . The string consists of codes for capital letters, small letters and BCD digits (09) . Convert the ASCII characters . In such a way that the codes for capital letters be converted into corresponding codes for small letters, codes for small letters into that of capital letters and codes for BCD digits into that of BCD numbers and store them at the same locations.

14. **PARITY CHECK:** A block of 32 bytes is residing at DATA count the number (BCD) of times even and odd PARITY bytes are appearing consecutive memory locations. Keep the count at MATCH.

15. **SERIES GENERATION** : Two BCD numbers a and b are residing at locations DATA 1 and DATA 2 respectively . Write a program to form a series in BCD with the elements of a. a + 2b , a + 4b , a + 6b ………. Stop the generation of the series whenever any element of the series in BCD with the elements of the series exceeds (99). Store the result at locations starting from RESULT. Count the number (BCD) of elements in the series and store it at NUMBER.

List of Equipments/Machine Required:
8085 based microprocessor kit, MASM assembler, 8085 simulator, PCs.

Recommended Books:
8085 Microprocessor Programming & Interfacing – N.K. Srinath, PHI

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY
BHILAI (C.G.)

Semester : V　　　　　　　　　　　　　　　　　　　　**Branch: E&I/AE&I**
Subject: Electronic Simulation Laboratory – II　　　　**Code: 327524 (27)**
Total Practical Periods: 28
Total Marks in End Semester Examination: 40

Experiments to be performed:

1. To Design, implement and Simulate Fixed bias and self bias transistorized circuit for determining the bandwidth
2. To Design, implement and Simulate Fixed bias and self bias for studying the low frequency and high frequency effect.
3. To Design, implement and Simulate Miller integrator for determining the nonlinearities.
4. To Design, implement and simulate current Sweep generator for determining the nonlinearities.
5. To Design, implement and Simulate Inverting and non inverting amplifier for determining the bandwidth
6. To Design, implement and Simulate Integrator & differentiator for studying output responses for different inputs.
7. To Design, implement and Simulate zero crossing detector & comparator for studying output responses for different inputs.
8. To Design, implement and Simulate Series Voltage regulator.
9. To Design, implement and Simulate 1st & 2nd order LPF for determining the   bandwidth and studying output responses for different inputs.
10. To Design, implement and Simulate 1st & 2nd order HPF for determining the bandwidth
11. To Design, implement and Simulate Half ware & Full ware rectifier way op-Amp for determining the bandwidth.
12. To Design, implement and Simulate Series and Shunt Clipper for studying output responses
13. To Design, implement and Simulate Clamping circuit for studying output responses for different inputs
14. To Design, implement and Simulate Clamping Circuit with op-Amp for studying output responses for different inputs.
15. To Design, implement and Simulate Instrumentation Amplifier using three op-Amp for determining the bandwidth
16. To Design, implement and Simulate Monostable & Astable using 555 timer
17. To Design, implement and Simulate R -2R ladder type Digital to analog converter
18. To Design, implement and Simulate Flash type Analog to digital

List of Equipments/Machine Required:
Desktop PCs, Simulation Software for Analog Circuits like MULTISIM, PSPICE etc.

Recommended Books:
1.　　　Experiments and SPICE Simulations in Analog Electronics Laboratory, Maheswari & Anand, PHI
2.　　　Manuals of MUSLTISIM
3.　　　Manuals of PSPICE

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

Semester : B.E. V   Branch : Common to All Branches
Subject   :   Personality Development   Code   : 300525 (46)
No. of Periods : 2 pds/week   Tutorial Periods : NIL
Total Marks in End Semester Exam. : NIL   Teacher's Assessment : 20 Mks
Minimum number of class tests to be conducted : 2

Objective: The course is introduced to develop one's outer and inner personality tremendously and enrich the abilities to enable one to meet the challenges associated with different job levels. Personality Development is essential for overall development of an individual apart from gaining technical knowledge in the subject.

Unit – I
Personality concepts:
- **What is Personality –** its physical and psychic aspects. How to develop a positive self-image. How to aim at Excellence. How to apply the cosmic laws that govern life and personality.
- **How to improve Memory**. How to develop successful learning skills. How to develop and effectively use one's creative power.
- How to apply the **individual MOTIVATORS** that make you a self-power personality.

Unit – II
Interpersonal Skills:
- **Leadership:** Leaders who make a difference, Leadership: your idea, What do we know about leadership? If you are serious about Excellence. Concepts of leadership, Two important keys to effective leadership, Principles of leadership, Factors of leadership, Attributes.
- **Listening:** Listening skills, How to listen, Saying a lot- just by listening, The words and the music, How to talk to a disturbed person, Listening and sometimes challenging.
- **How to win friends** and influence people, How to get along with others. How to develop art of convincing others. How can one make the difference. How to deal with others particularly elders. Conflicts and cooperation.

Unit – III
Attitudinal Changes:
- **Meaning of attitude,** benefits of positive attitudes, how to develop the habit of positive thinking.
- **Negative attitude and wining:** What is FEAR and how to win it. How to win loneliness. How to win over FAILURE. How to win over PAIN. How to win over one's ANGER and others anger. How to overcome CRITICISM. What is stress and how to cope up with it? What is crisis and how to manage it.
- How to apply the **character MOTIVATORS** that elevate you and your personality to the top, the art of self motivation.
- How to acquire **mental well-being.**
- How to acquire **physical well-being.**
- How to formulate effective **success philosophy.**

Unit –IV
Decision Making:
How to make your own LUCK. How to plan goals/objectives and action plan to achieve them. How to make RIGHT DECISION and overcome problems. How to make a Decision. Decision making : A question of style. Which style, when ? People decisions : The key decisions. What do we know about group decision making ? General aids towards improving group decision making. More tips for decisions of importance.

Unit – V
Communication Skills:
- **Public Speaking:** Importance of Public speaking for professionals. The art of Speaking - Forget the fear of presentation, Symptoms of stage fear, Main reason for speech failure, Stop failures by acquiring Information; Preparation & designing of speech, Skills to impress in public speaking & Conversation, Use of presentation aids & media.
- **Study & Examination:** How to tackle examination, How to develop successful study skills.
- **Group discussions:** Purpose of GD, What factors contribute to group worthiness, Roles to be played in GD.

Reference Books:
1. How to develop a pleasing personality by Atul John Rego, Better yourself books, Mumbai, 2000.
2. How to Succed by Brain Adams, Better Yourself books, Mumbai, 1969.
3. Basic Managerial skills for all by E. H McGrawth, Prentice Hall India Pvt Ltd, 2006.
4. The powerful Personality by Dr Ujjawal Patni & Dr Pratap Deshmukh, Medident Publisher, 2006.
5. Great Words win Hearts by Dr Ujjwal Patni, Fusion Books, 2006.
6. Personality : Classic Theories & Modern Research; friedman ; Pearson Education 2006.
7. How to win friends and influence people by Dale Carnigie, A.H. Wheeler 2006.