

**Dr.J.J.Magdum Trust's
Dr.J.J.Magdum College of Engineering,**

◇ Department of Electronics & Telecommunication
Engineering ◇



**Student Information Manual (SIM)
Academic Year 2024-25 (SY-Sem.-I)**

Student Information Manual (SIM)

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1. Institute Information

Dr J J Magdum College of Engineering was established by Dr J J Magdum Trust, Jaysingpur in the year 1992 with an objective to promote the cause of higher education. The institute is approved by All India Council of Technical Education (AICTE), New Delhi and Government of Maharashtra, affiliated to Shivaji University, Kolhapur. The college offers B. Tech program in Mechanical, Civil, Computer Science Engineering, Electronics & Tele-Communication, Information Technology and M. Tech program in Civil Engineering-Construction Management.

Our Management extends its fullest support in building the institution as a center of excellence with technically superior, ethically strong and competent engineers. The serene campus vibrant with aesthetic bliss in an exhilarating convenient location, well connected by road, rail and air is easily accessible. The eco-friendly ambience creates and bestows a healthy learning atmosphere.

The institution is meticulous with modern laboratory, workshop facilities and state of art computer center providing an excellent infrastructure.

The institution has spacious library with vast collection of Books, Newspapers, National & International Journals, Magazines, and Reference books, Encyclopedia, World of science, ASM hand books and course materials. E-learning through NPTEL Video course by NIT and IIT Professors are available.

The Teaching and Non-Teaching Staff of the institute is a blend of senior experienced and young dynamic faculty members devoted to the noble cause of education. Qualified, experienced, versatile and efficient faculty members mould the students diligently in ethical, moral and academic aspects.

We imparts technology based experiential learning through industry visits, live projects, expert talks, MOOC's, workshops, case studies, upscale labs, and virtual classroom sessions.

Industry-Institute interaction and real-time projects nurture and craft the budding engineers to bloom and flourish in the field with the prowess guidance in the campus. The college equips the students with the latest skills which make them employable and future ready.

Due to able and proper guidance and motivation, many of our students have topped at University. Our training and placement works meticulously to improve and develop life skills to the students and tries hard to seek good jobs for our students. In addition to the academics, the students are engaged in sports and cultural activities which helps them to develop versatile personality. Various Club activities are conducted to encourage, motivate and inspire students from diverse culture to harness the talent through their perseverance.

The institute is having spacious ground and the modern facilities for both indoor and outdoor games and ultra-modern Gymnasium. Due to proper guidance and motivation, many of our students have grabbed prizes at University level and different sport events.

We are committed to stakeholders for best results and produced more than 10000+ engineers getting campus placements.

2. VISION

To be a leading academic organization, creating skilled and Ethical Human Resource by leveraging Technical Education for Sustainable Development of Society.

MISSION

- 1.To produce Competent Technocrats by using Cutting Edge Technologies.
2. To create Ethical and Skilled Human Resource by Integrating Various Extension Activities.
3. To Extend Technological Support to solve societal issues for its Sustainable Development.

QUALITY POLICY

We strive for continual improvement in our performance through methodical academic monitoring, student participation and use of innovative teaching-learning process.

3. DEPARTMENT VISION

To be the most preferred department delivering fundamental and advanced knowledge in Electronics & Telecommunication and related engineering fields using state-of-the-art teaching methodologies to transform the students into knowledgeable and skilled graduates with ethical behavior.

MISSION

- To provide high-quality technical education and prepare the students to tackle the complex engineering Problems using advanced methods with sound footing on fundamental engineering principles.
- To implement technical and managerial skills with innovative research capabilities for exemplary professional conduct.
- To lead and to apply technology for the progress of mankind.
- To adapt to the constantly changing technological environment with highest ethical values as inner strength.

WE ARE COMMITTED TO

- Provide Learning ambience using ICT, open source teaching.
- Offer continuing education programs to fulfill the needs of Industry & Community.
- Establish sustainable relation with parents & alumni.
- Offer globally accepted certification programmes in field of Information Technology.

CORE VALUES

- Faculty & staff development.
- Transparency
- Equity

Program Educational Objectives (PEO)

Graduates will

1. Exhibit analytical and design skills by providing the optimum solutions to the real time problems associated with Electronics & Telecommunication engineering using modern tools and technology.
2. Demonstrate professional skills like leadership, team spirit, communication, project management to deliver the in-time solutions to the analyzed and designed technical problems
3. Display commitment to high standards of professional & personal ethics, and desire for self and long-life learning.

PROGRAM SPECIFIC OUTCOMES (PSOs)

Graduates will be able to,

1. Apply their integrated knowledge of Electronics, Communication and Digital Signal Processing to provide the technical solutions to the problems related with digital communication using simulation tools.
2. Implement the successfully simulated optimum solutions in hardware using modern tools and test those for the designed specifications.

Program Outcomes (POs)

At the end of successful completion of program, Engineering Graduates will be able to:

1. **Engineering Knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/Development of Solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct Investigations of Complex Problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern Tool Usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The Engineer and Society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and Sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and Team Work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive

clear instructions.

11. **Project Management and Finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-Long Learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Students role and Responsibilities

Code of Conduct:-

- Every student must carry his/her identity card while being present on the College Premises.
- Use of Cell phones is strictly prohibited during class/Labs hour.
- Without the permission of the Principal, Students are not allowed to circulate any printed materials within the college campus.
- Every student is expected to maintain the general cleanliness within the classrooms, laboratories and the campus in general.
- Students should handle the college properties with care. Damage to the furniture or any other materials may lead to penalty or suspension from the college.
- Intoxication or possession of narcotics and other dangerous material is strictly prohibited.
- Playing cards, spitting and loitering are strictly prohibited inside the college campus and shall invite severe punishment/disciplinary action
- Attempted or actual theft of and/or damage to property of the College, or property of a member of the College community, or other personal or public property, on or off campus will be considered as a punishable act.
- Every student will remain answerable to the college authority for his/her activity and conduct on the College Premises.
- Any act which obstructs teaching, research, administrative activity and other proceedings of the college is strictly prohibited.
- Indulging ragging, anti-institutional, anti-national, antisocial, communal, immoral or political expressions and activities within the Campus and hostel are strongly prohibited as well as punishable.
- Students are required to check the Notice Board and also website of the college for important announcements.

4. Classroom Instructions:-

- Students should know and obey rules and regulations of department as well as college.
- Students strive to meet Academic Expectations.
- students are expected to take all tests at the scheduled times seriously.
- Maintain discipline in the class.
- A student should maintain at least 75% attendance in the Lectures of every subject and 100% overall performance. Otherwise, he or she will be debarred from the University Examination.
- Latecomers will not be entertained to enter into the classroom.
- Participate in the activities organized in the Department as well as in the College.
- While discussion, students should conduct and express themselves in a way that is respectful of all persons.
- Develop positive attitudes
- Be cooperative and considerate.
- Welcome challenges.
- Be helpful to others
- Be kind, polite, and courteous to others.
- Do the assigned work on time.
- Be prepared for classes with all necessary supplies.
- Be Respectful and Punctual.
- Be in the best of behaviors.

Computer Lab Instructions:

- Students must present a valid ID card before entering the computer lab.
- Remove your shoes/chapels/sandals outside the lab.
- Playing of games on computer in the lab is strictly prohibited.
- Before leaving the lab, students must close all programs positively and keep the desktop blank.
- Students are strictly prohibited from modifying or deleting any important files and install any software or settings in the computer without permission
- Based on the prime priority, users may be requested by the lab in-charge, to leave the workstation any time and the compliance is a must.
- Eating and/or drinking inside the computer lab is strictly prohibited.
- Internet facility is only for educational/ study purpose.
- Silence must be maintained in the lab at all times.

- The lab must be kept clean and tidy at all times.
- If any problem arises, please bring the same to the notice of lab in-charge.
- No bags/ hand bags/ rain coats/ casual wears will be allowed inside the computer lab, however note book may be allowed.
- Lab timing will be as per the academic time table of different classes.
- Every user must make an entry in the Computer Lab Register properly.
- Each student or visitor must take mobile phones in "Switched Off" mode while entering and or working in Computer Lab.
- Conversation, discussion, loud talking & sleeping are strictly prohibited.
- Users must turn-off the computer before leaving the computer lab.
- Maintain silence in lab.
- Computer Lab Assistants are available to assist with BASIC computer and software problems.
- Food and drink are not permitted in the computer lab.
- The use of cell phones is prohibited in the computer lab.
- Please take your calls outside. We also ask that you put your cell phone on vibrate mode.
- Unauthorized copying and/or installing of unauthorized software is not permitted.
- Tampering with the hardware or software settings will not be tolerated.
- Students found Internet surfing or chatting for personal reasons may be asked to leave. Preference is given to students doing course work over those engaged in personal computer use.
- Personal files are not to be stored on the local drive C. Students are responsible for providing their own means of digital storage. All lab computers are set up to remove any data stored or any programs installed by users.

ACADEMIC CALENDAR FOR YEAR 2023-24 SEMESTER I



Dr. J. J. Magdum College of Engineering, Jaysingpur

Department of Electronics and Telecommunication Engineering

ACADEMIC CALENDAR FOR YEAR 2024-25 SEMESTER I

July 2024

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-------------------------------|-------------------|----------------------------------|--------------------------------------|-----|-----|
| | 1 Commencement of sem-I | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 Proctor meet -I | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 Proctor meet-II | 25 Expert lecture on ECD-I (SY | 26 | 27 |
| 28 | 29 T&P ACTIVITY | 30 CMC meeting | 31 Technical Event - ETESA | | | |

HOD

Dean Academics

Principal



Dr. J. J. Magdum College of Engineering, Jaysingpur

Department of Electronics and Telecommunication Engineering

August 2024

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|----------------------|-------------------------------|------------------------|---|--------------------|-------------|
| | | | | 1 Expert lecture on PLC SCADA -TY | 2 | 3 |
| 4 | 5 | 6 T&P ACTIVITY | 7- Proctor meet -I | 8 | 9 | 10 |
| 11 | 12 VAC (TY,BTECH) | 13 VAC (TY,BTECH) | 14 VAC (TY,BTECH) | 15 VAC (TY,BTECH) | 16 CIE-I | 17 CIE-I |
| 18 | 19 | 20 Industrial Visit -TY | 21 Proctor meet -II | 22 MoU -Industry | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30- CMC meeting | 31 |

HOD

Dean Academics

Prindppal



Dr. J. J. Magdum College of Engineering, Jaysingpur


Department of Electronics and Telecommunication Engineering

September 2024

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----------------|---------------------------------|---------------------------------|--|--|--------------------|----------------------------|
| 1 | 2 AUGMENTATION. SY | 3 | 4 Alumni Expert talk on competitive exams | 5 | 6 T&P ACTIVITY | 7 Parents meet-I |
| 8 | 9 | 10 Advisory board meeting | 11 Parents meet | 12 Expert lecture on computer network | 13 VAC BTech | 14 VAC BTech |
| 15 VAC BTech | 16 VAC BTech | 17 | 18 EDC ACTIVITY | 19 MoU - Industry | 20 | 21 Industrial Visit -SY |
| 22 | 23 Advisory board meeting | 24 | 25 Technical Event - ETESA | 26 | 27- CMC meeting | 28 |
| 29 | 30 CIE-II | | | | | |


HOD


Dean Academics


Principal



Dr. J. J. Magdum College of Engineering, Jaysingpur

Department of Electronics and Telecommunication Engineering

October 2024

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|---|---------------------------|----------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| | | 1 CIE-II | 2 Alumni Expert talk | 3 AUGMENTATION TY | 4 | 5 |
| 6 | 7 DRC presentation | 8 Parents meet - II | 9 EDC ACTIVITY | 10 | 11 Higher study expert talk | 12 |
| 13 | 14 Expert lecture on embedded system | 15 | 16 | 17 R & D Cell Activity | 18 | 19 Industrial Visit - BTECH |
| 20 | 21 | 22 STTP - Faculty | 23 | 24 Expert lecture - III cell | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 | | |


HOD


Dean Academics


Principal

Departmental Time-Table

◆ TIME TABLE ◆

Academic Year: 2024-25

Department: Electronics & Telecommunication Engineering

Class Coordinator: Prof.V.T.Kamble

Semester: I

Class: SY

Class Room No.: 1

W.e.f.:8/7/2024

| TIME | Monday | Tuesday | Wednesday | Thursday | Friday | Sat |
|---------------------|--|---|--|---|---|---------------------------|
| 09.30 am – 10.30 am | E1- ACOM(THM) ACOM LAB | NA Prof.P.A.Magdu m | E1- PL-I (SBP) PL-II LAB | M-III Prof.M. R. Naik | ECD-I Prof.M.R.Jadhav | NA Prof.P.A.Magdu m |
| 10.30 am – 11.30 am | E2-TAM(VTK) MP LAB E3-M III / NA (MRN/PAM) E4-PL-I(SBH) PL-II LAB | PL-I Dr. .S.B. Patil | E2- ECD-I(MRJ) AE LAB E3- ACOM(THM) ACOM LAB E4- TAM(PPB) MP LAB | PL-I Dr. .S.B. Patil | ACOM Dr. T. H. Mohite | NA Prof.P.A.Magdu m |
| 11.30 am – 11.40 am | Short Break | | | | | |
| 11.40 am – 12.40 pm | M-III Prof.M. R. Naik | ENV Prof. P. A. Chougule | NA Prof.P.A.Magdu m | E1- M III / NA (MRN/PAM) | E1- TAM (VTK) MP LAB | |
| 12.40 pm – 01.40 pm | ACOM Dr. T. H. Mohite | ECD-I Prof.M.R.Jadha v | TAM Prof. V. T. Kamble | E2- PL-I (SBH) PL-II LAB E3-ECD-I(MRJ) AE LAB E4- ACOM(THM) ACOM LAB | E2-M III /NA (MRN/PAM) E3- PL-I (SBH) PL-II LAB E4-ECD –I (MRJ) AE LAB | |
| 01.40 pm – 02.30 pm | Lunch Break | | | | | |
| 02.30 pm – 03.30 pm | ECD-I Prof.M.R.Jadhav | E1-ECD-I(SRM) AE LAB | ECD-I Prof.M.R.Jadha v | TAM Prof. V. T. Kamble | ENV Prof. P. A. Chougule | |
| 03.30 pm – 04.30 pm | NA Prof.P.A.Magdu m | E2- ACOM(THM) ACOM LAB E3-TAM(VTK) MP LAB E4- M III /NA (MRN/PAM) | M-III Prof.M. R. Naik | ACOM Dr. T. H. Mohite | TAM Prof. V. T. Kamble | |

Structure of Syllabus:

Class : SY ETC

Semester III

| Sr. No | Code No. | Subject | Semester | Credits |
|--------------|-------------|-----------------------------|----------|-----------|
| 1 | BSC-ETC301 | Engineering Mathematics-III | 3 | 4 |
| 2 | PCC-ETC-301 | Electronic Circuit Design-I | 3 | 5 |
| 3 | PCC-ETC302 | Network Analysis | 3 | 5 |
| 4 | PCC-ETC303 | Transducers and Measurement | 3 | 4 |
| 5 | PCC-ETC304 | Analog Communication | 3 | 4 |
| 6 | PCC-ETC305 | Programming Lab-I | 3 | 3 |
| 7 | MC-ETC-301 | Environmental studies | 3 | 3** |
| Total | | | | 25 |

**over and above credit

Semester IV

| Sr. No. | Code No. | Subject | Semester | Credits |
|--------------|------------|------------------------------|----------|-----------|
| 1 | PCC-ETC401 | Electronic Circuit Design-II | 4 | 5 |
| 2 | PCC-ETC402 | Linear integrated Circuits | 4 | 5 |
| 3 | PCC-ETC403 | Control System Engineering | 4 | 4 |
| 4 | PCC-ETC404 | Digital Communication | 4 | 4 |
| 5 | PCC-ETC405 | Data Structures | 4 | 4 |
| 6 | PCC-ETC406 | Programming Lab-II | 4 | 3 |
| Total | | | | 25 |

| SEMESTER - III | | | | | | | | | | | | | | | | | | | | |
|----------------|------------------------|-----------------|----------------|-----------|----------|----------------|----------|-----------|----------------|-----------|--------------------|-------------|-------|-------------|-----------------------|-------|-----------|------------|-------|-----|
| Sr. No. | Course (Subject Title) | TEACHING SCHEME | | | | | | | | | EXAMINATION SCHEME | | | | | | | | | |
| | | THEORY | | | TUTORIAL | | | PRACTICAL | | | THEORY | | | PRACTICAL | | | TERM WORK | | | |
| | | Credits | No. of Lecture | Hours | Credits | No. of Lecture | Hours | Credits | No. of Lecture | Hours | Hours | Mode | Marks | Total Marks | Min | Hours | Max | Min | Hours | Max |
| 1 | BSC-ETC301 | 3 | 3 | 3 | 1 | 1 | 1 | - | - | - | - | CIE 30 | 100 | 40 | As per BOS Guidelines | - | - | 2 | 25 | 10 |
| 2 | PCC-ETC301 | 4 | 4 | 4 | - | - | - | 1 | 2 | 2 | ESE 70 | 100 | 40 | 50 | | 20 | 2 | 25 | 10 | |
| 3 | PCC-ETC302 | 4 | 4 | 4 | 1 | 1 | 1 | - | - | - | CIE 30 | 100 | 40 | - | | - | 2 | 25 | 10 | |
| 4 | PCC-ETC303 | 3 | 3 | 3 | - | - | - | 1 | 2 | 2 | ESE 70 | 100 | 40 | - | | - | 2 | 25 | 10 | |
| 5 | PCC-ETC304 | 3 | 3 | 3 | - | - | - | 1 | 2 | 2 | CIE 30 | 100 | 40 | 50 | | 20 | 2 | 25 | 10 | |
| 6 | PCC-ETC305 | 2 | 2 | 2 | - | - | - | 1 | 2 | 2 | ESE 70 | 100 | 40 | 50 | | 20 | 2 | 25 | 10 | |
| TOTAL | | 19 | 19 | 19 | 2 | 2 | 2 | 4 | 8 | 8 | | 600 | | | 150 | | | 150 | | |
| SEMESTER -IV | | | | | | | | | | | | | | | | | | | | |
| 1 | PCC-ETC401 | 4 | 4 | 4 | - | - | - | 1 | 2 | 2 | - | CIE 30 | 100 | 40 | As per BOS Guidelines | 50 | 20 | 2 | 25 | 10 |
| 2 | PCC-ETC402 | 4 | 4 | 4 | - | - | - | 1 | 2 | 2 | ESE 70 | 100 | 40 | 50 | | 20 | 2 | 25 | 10 | |
| 3 | PCC-ETC403 | 3 | 3 | 3 | 1 | 1 | 1 | - | - | - | CIE 30 | 100 | 40 | - | | - | 2 | 25 | 10 | |
| 4 | PCC-ETC404 | 3 | 3 | 3 | - | - | - | 1 | 2 | 2 | ESE 70 | 100 | 40 | - | | - | 2 | 25 | 10 | |
| 5 | PCC-ETC405 | 3 | 3 | 3 | 1 | 1 | 1 | - | - | - | CIE 30 | 100 | 40 | - | | - | 2 | 25 | 10 | |
| 6 | PCC-ETC406 | 2 | 2 | 2 | - | - | - | 1 | 2 | 2 | ESE 70 | 100 | 40 | 50 | | 20 | 2 | 25 | 10 | |
| 7 | MC-ETC | - | - | - | - | - | - | - | - | - | CIE 30 | 100 | 10 | - | - | - | - | - | | |
| TOTAL | | 19 | 19 | 19 | 2 | 2 | 2 | 4 | 8 | 8 | | 600 | | | 150 | | | 150 | | |
| TOTAL | | 38 | 38 | 38 | 4 | 4 | 4 | 8 | 16 | 16 | | 1100 | | | 300 | | | 300 | | |

CIE- Continuous Internal Evaluation.

ESE – End Semester Examination

SY ETC

Subject Details

Subject: Engineering Mathematics-III

Lecture Plan

| Dept Of Electronics and Telecommunication Engineering (SY B-Tech Sem I 2023-24) Lecture Plan: Engineering Mathematics - III | |
|---|--|
| Lecture No | Unit 1: Linear Differential Equations and Applications. |
| 01 | Introduction . |
| 02 | Calculations for C.F. |
| 03 | Examples. |
| 04 | To find P.I.-Exponential, Trigonometry(i.e, e^{ax} , $\sin ax/\cos ax$) |
| 05 | To find P.I.- x^m , $e^{ax} x^m$, $e^{ax} \sin ax$, $e^{ax} \cos ax$ |
| 06 | Homo linear different equations -Examples. |
| 07 | Examples. |
| 08 | Applications to Electrical Engg. Problems. |
| 09 | Examples. |
| | Unit 2 : Vector Differential Calculus |
| 10 | Revision of Vector Calculus |
| 11 | Differentiation of vectors |
| 12 | Gradient of scalar point function |
| 13 | Directional derivatives -Examples. |
| 14 | Divergence of vector point function |
| 15 | Solenoidal vector Field -Examples. |
| 16 | Curl of vector point function & irrotational vector field |
| | Unit 3 : Introduction to fuzzy sets |
| 17 | Crisp set and Fuzzy set |
| 18 | Basic concepts of fuzzy sets |
| 19 | Examples |
| 20 | Basic operations on fuzzy sets. |
| 21 | Examples |
| 22 | Properties of fuzzy sets. |
| 23 | Examples |
| | Unit 4 : Fourier Series |
| 24 | Fourier series Introduction & Definition |
| 25 | Function giving points of discontinuity, Examples |
| 26 | Change of interval, Example |
| 27 | Expansion of odd functions - Examples |
| 28 | Expansion of Evenfunctions - Examples |
| 29 | Half range sine series- Examples |
| 30 | lf range cosine series - Examples |

| Unit 5 : Laplace Transform and its Applications. | |
|---|---|
| 31 | Laplace Transform – Defn, Examples, |
| 32 | Properties of Laplace transform |
| 33 | Transform of deri. & inte. Examples |
| 34 | Inverse Laplace Transform |
| 35 | Partial fraction method, Examples |
| 36 | Convolution theorem & Examples. |
| 37 | Application of L.D.E. with const. Coefficient |
| Unit 6: Probability Distributions | |
| 38 | Defn, Introduction, Random Variables, Types |
| 39 | Probability mass function, Distributions |
| 40 | Probability density function |
| 41 | Binomial Distribution & Examples |
| 42 | Poisson Distribution & Examples |
| 43 | Normal Distribution & Examples |
| 44 | Examples |

Recommended Books:

Text Books:

01. Higher Engineering Mathematics, by B. S. Grewal (Khanna Publication Delhi.)
02. Applied Mathematics Wartikar P N and Wartikar J N , (Pune Vidyarthi Grah Prakashsn)

Reference Books:

01. Advance Engineering Mathematics by Erwin Kreyszig (Wiley India.)
 02. Mathematical Methods of Science and Engineering, by Kanti B. Datta (Cengage Learning.)
 03. Advanced Engineering Mathematics, 3e, by Jack Goldberg (Oxford University Press.)
 04. Engineering Mathematics by V. Sundaram (Vikas Publication.)
 05. Higher Engineering Mathematics, by B. S. Grewal (Khanna Publication Delhi.)
 06. Higher Engineering Mathematics, by B. V. Ramana (Tata McGraw-Hill)
 07. Advanced Engineering Mathematics, by H. K. Das (S. Chand Publication.)
 08. Fuzzy Sets and Fuzzy Logic: Theory and Applications, by George J. Klir and Bo Yuan (Prentice Hall of India Private Limited.)
 09. Applied Mathematics by Navneet D. Sangle (Cengage Publication)
- General

Assignment Questions

Assignment no. 1

1) Solve : $2 \frac{d^3 y}{dx^3} + \frac{d^2 y}{dx^2} + 2 \frac{dy}{dx} + y = \cos x + \cosh x$

2) Solve : $(D^2 - 6D + 9)y = e^{3x}(1 + x)$

3) Solve $(D^2 - 6D + 9)y = 6e^{3x} + 7e^{-2x} - \log 2$

4) Solve : $(D^3 + D^2 + D + 1)y = \sin 2x$

5) Solve $(D^3 - 2D + 4)y = 3x^2 - 5x + 2$

6) Solve $x^2 \frac{dy}{dx^2} - 3x \frac{dy}{dx} - 4y = x^4$

7) A condenser of capacity C discharged through an inductance L and resistance R

in series and the charge q at time t satisfies the equation $L \frac{d^2q}{dt^2} + R \frac{dq}{dt} + \frac{q}{C} = 0$

.Given that L= 0.25 henries, R = 200 ohms,

C= 2×10^{-6} farads and that when t= 0 charge q is 0.002 coulombs and the current

$\frac{dq}{dt} = 0$. Obtain the value of q in terms of t.

Assignment no. 2

1) Find the value of K if the following function is a probability density function.

$$f(x) = Kx^2(1 - x^3), 0 \leq x \leq 1$$

$$= 0, \text{ otherwise}$$

2) Find the directional derivative of $\phi = 4xz^3 - 3x^2y^2z$ at $(2, -1, 2)$ in the direction from this point towards the point $(4, -4, 8)$.

3) Find the tangential and normal component of acceleration of a particle moving on the curve $x = t^3 + 1, y = t^2, z = t$ at $t = 1$.

4) Find a, b, c if $\vec{F} = (axy + bz^3)\vec{i} + (3x^2 - cz)\vec{j} + (3xz^2 - y)\vec{k}$ is irrotational & find its scalar potential ϕ such that $\vec{F} = \nabla\phi$.

5) Fit a Poisson distribution to the following data and calculate theoretical frequencies.

Deaths : 0 1 2 3 4

Frequency: 123 59 14 3 1

6) An insurance salesman sells policies to 5 men, all of identical age in good health. According to the actuarial tables, the probability that a man of this particular age will be alive 30 years hence is $\frac{2}{3}$. Find the probability that in 30 years.

i) All 5 men ii) atleast 3 men iii) only 2 men iv) atleast 1 man will be alive.

7) An Aptitude Test for selecting engineers in an industry is conducted on 100 candidates. The average score is 42 and standard deviation is 24. Assuming normal distribution for the scores find:

i) The number of candidates whose score is more than 60.

ii) The number of candidates whose score lies between 30 and 60.

(Given: For S. N. V. z the area under normal curve from z= 0 to z= 0.5 is 0.1915 and from z = 0 to z = 0.75 is 0.2735)

Assignment no. 3

1) If the fuzzy sets C and D are defined by the following membership functions

$$C = \frac{0.1}{x_1} + \frac{0.6}{x_2} + \frac{0.8}{x_3} + \frac{0.9}{x_4} + \frac{0.7}{x_5} + \frac{0.1}{x_6}$$

$$D = \frac{0.9}{x_1} + \frac{0.7}{x_2} + \frac{0.5}{x_3} + \frac{0.2}{x_4} + \frac{0.1}{x_5} + \frac{0}{x_6} \text{ then find } C \cup D.$$

2) If $A(x) = \frac{x}{x+1}$ where $X = \{0, 1, 2, 3, 4, 5\}$ find $^{0.2}A$.

3) Find the scalar cardinality of the fuzzy sets A where $A = \frac{0.5}{x} + \frac{0.4}{y} + \frac{1}{z}$

4) Let $X = \{a, b, c, d, e, f, g, h, i, j\}$ and

$$A = \frac{0}{a} + \frac{0.2}{b} + \frac{0.5}{c} + \frac{0.2}{d} + \frac{0}{e} + \frac{1}{f} + \frac{0}{g} + \frac{0.5}{h} + \frac{1}{i} + \frac{0.1}{j} \text{ then find } |A|.$$

5) If $A = \{0.1/5 + 0.7/6 + 0.9/7\}$, $B = \{0.2/5 + 0.8/6 + 1/7\}$ then find degree of subset hood $S(A, B)$.

6) Find the α cuts and strong α cuts of A for $\alpha = 1, 0.99, 0.1$

$$A(x) = \frac{20x}{20x+5} \text{ for all } x \in [10, 20, 30, 40, 50]$$

7) Consider the fuzzy sets defined by $A(x) = \frac{x}{x+2}$ and $B(x) = \frac{x}{x+5}$, $x = \{$

$0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$. Find

$|A|, |B|, S(A, B), S(B, A)$.

Assignment no. 4

1) Obtain the fourier series expansion for $f(x) = \frac{(\pi-x)^2}{4}$, $0 < x < 2\pi$

2) Find the fourier series for $f(x) = x^2$, $0 < x < 2$. Deduce that $\frac{\pi^2}{12} = \frac{1}{1^2} - \frac{1}{2^2}$

$$+ \frac{1}{3^2} - \frac{1}{4^2} + \dots$$

3) Obtain the fourier series for $f(x) = \pi x$, $0 \leq x \leq 1$

$$= \pi(2-x), 1 \leq x \leq 2. \text{ Hence deduce that } \frac{\pi^2}{8} = \frac{1}{1^2} + \frac{1}{3^2} +$$

$$\frac{1}{5^2} + \frac{1}{7^2} + \dots$$

4) Expand $f(x) = x - x^2$ as a fourier series for $0 \leq x \leq 2$

5) Find half range cosine series for $f(x) = x + 1, \quad 0 < x < \pi$

6) Find half range sine series for $f(x) = x, \quad 0 < x < 1$

$= 2 - x, \quad 1 < x < 2$. Hence deduce that $\frac{\pi^2}{8} = \frac{1}{1^2} + \frac{1}{3^2} +$

$$\frac{1}{5^2} + \frac{1}{7^2} + \dots$$

7) Obtain the fourier series for $f(x) = 9 - x^2$ in $(-3, 3)$

Assignment no. 5

1) Find $L\{e^{-3t}(2\cos 5t - 3\sin 5t)\}$

2) Find $L\{t e^{-4t} \sin 3t\}$

3) Find Laplace transform of $\frac{e^{-at} - e^{-bt}}{t}$

4) Find the Laplace transform of $\int_0^t \frac{e^u \sin u}{u} du$

5) Using Convolution theorem find the inverse laplace transform of $\frac{s^2}{(s^2 + a^2)^2}$

6) Find the inverse laplace transform of $\frac{1}{(s-2)^2(s+3)}$

7) Solve using laplace transform $(D^2 + D)y = t^2 + 2t$ at $t = 0, y = 4$ and $Dy = 2$

Assignment no. 6

1) The probability density function of a random variable x is zero except at $x=0,1,2$. At these points $P(0)=3c^3, P(1)=4c-10c^2, P(2)=5c-1$ Find c and $P(0 \leq x < 2)$.

2) It is 1 in 100 that an article is defective. There are in a box 100 articles of this type. Assuming Binomial distribution find the probability that the box contains **i)** no defective **ii)** two or more defectives.

3) The life time of army shoes is normally distributed with mean 8 months and standard deviation 2 months. If 5000 pairs are issued, how many pairs would be expected to need replacement after 12 months (Standard Normal Variate from $z=0$ to $z=2$ is 0.4772).

4) Find the mean and standard deviation of normal distribution of marks in an examination where 58% of the candidate obtained marks below 75, 4% got above 80. (for 0.08 area, $z=0.2$ and for 0.46 area, $z=1.75$)

5) In a company on an average 2 accidents occur every year. Assuming Poisson distribution find the probability that **i)** Next year is free of accidents **ii)** At least one accident occur in next year

6) Five coins are tossed at a time 160 times . Number of heads obtained in each toss are recorded as below. Fit a binomial distribution under the hypothesis that when(i) coins are unbiased

| | | | | | | | |
|-----------------|----|----|----|----|----|----|-----|
| X: heads | 0 | 1 | 2 | 3 | 4 | 5 | 72 |
| f: No of tosses | 16 | 25 | 39 | 45 | 23 | 12 | 180 |

7) The processing time of certain processor is normally distributed with mean 45 seconds and std deviation 3 seconds . What is the probability that a problem assigned to the processor will be processed in 41 to 43 seconds. (Given $A(-1.33 \leq z \leq 0) = 0.4082$, $A(-0.66 \leq z \leq 0) = 0.2454$)

Subject: Electronic Circuit Design-I

Lecture Plan

| | |
|-----|--|
| 1. | Low pass RC circuits(analysis for square ,step, ramp, exponential input) |
| 2. | High pass RC circuits(analysis for square ,step, ramp, exponential input) |
| 3. | High pass RC circuit as a differentiator, Low pass RC circuit as integrator |
| 4. | Clipping circuits: Transistor clippers, Transfer characteristics, |
| 5. | Clipping circuits: Diode clippers, Transfer characteristics, |
| 6. | Clamping circuits: Classification, Clamping operations, |
| 7. | Clamping circuit theorem, Practical clamping circuits, |
| 8. | Multistage voltage multipliers. Circuit design is expected |
| 9. | Rectifiers: Half wave , analysis for different parameters: PIV, TUF, efficiency, ripple factor, regulation, form factor etc. |
| 10. | Rectifiers: Full wave: center tap type, analysis for different parameters: PIV, TUF, efficiency, ripple factor, regulation, form factor etc. |
| 11. | Rectifiers: Full wave: tap and bridge type, analysis for different parameters: PIV, TUF, efficiency, ripple factor, regulation, form factor etc. |
| 12. | Filters: Need of filters, Type: capacitor, Analysis for ripple factor. |
| 13. | Filters: Need of filters, Type: inductor, Analysis for ripple factor. |
| 14. | Filters: Need of filters, Type: LC, Analysis for ripple factor. |
| 15. | Filters: Need of filters, Type: CLC, Analysis for ripple factor. |
| 16. | Design of unregulated power supply with filter using full wave rectifier. Problems and revision |
| 17. | Need of voltage regulator, Stabilization factors, |
| 18. | Analysis & Design of Shunt regulator (using Zener diode), |
| 19. | Analysis & Design of Shunt regulator (using BJT), |
| 20. | Analysis & Design of emitter follower regulator, |
| 21. | Analysis & Design of series pass voltage regulator (using BJT), |
| 22. | Pre- regulator & Overload protection circuit |
| 23. | Introduction to BJT, Need of Biasing, Stability factor, |
| 24. | Biasing of CE Configuration- Fixed Bias, Collector to Base Bias |
| 25. | Voltage Divider Bias (Analysis & Design), |
| 26. | FET: Introduction to JFET, Basic construction and operation of JFET |
| 27. | Biasing of CS configuration- Fixed Bias, |
| 28. | Self Bias (Analysis of the same). |
| 29. | H-Parameters |
| 30. | Hybrid model for transistor (CE, CB& CC configuration), |
| 31. | Amplifier equations for Voltage Gain, Current gain |

| | |
|-----|---|
| 32. | Amplifier equations for Input resistance & Output resistance |
| 33. | Amplifier equations for Voltage Gain, Current gain taking Rg of source into account. |
| 34. | Amplifier equations for Input resistance & Output resistance taking Rg of source into account. |
| 35. | Low frequency response: Effect of emitter bypass capacitor(CE) |
| 36. | Low frequency response: Effect of Coupling capacitor(CC), |
| 37. | Amplifier response to square wave, percentage Sag calculation, (Numerical are expected) |
| 38. | High frequency response: Hybrid π model , Derivation for CE short circuit & resistive current gain |
| 39. | β cutoff, α cutoff frequency, approximate amplifier |
| 40. | High freq. response to square wave, gain bandwidth product, (Numerical are expected). Design of single stage RC coupled amplifier |

List of Experiments

| Sr.No. | Name of Expt. | Performing / Study |
|--------|--|--------------------|
| 1 | Design and study the performance of Low pass filter: a. Frequency response for sinusoidal input | Performing |
| 2 | Design and study of High pass filter: a. Frequency response for sinusoidal input | Performing |
| 3 | Study of clipper circuits (Series/ Shunt). | Performing |
| 4 | Study of clamping circuits (Positive & Negative Type). | Performing |
| 5 | Design and Study of full wave rectifier with capacitive filter. | Performing |
| 6 | Design and Study of Zener shunt regulator | Performing |
| 7 | Design and Study of emitter follower regulator | Performing |
| 8 | Design and Study of series pass voltage regulator | Performing |
| 9 | Design and Study of Single stage RC-Coupled Amplifier | Performing |
| 10 | Simulation of FWR using C-filter | Performing |

Recommended Books:

Text Books:

1. Electronic devices & circuits, Allen Mottershed Prentice- Hall India
2. Electronic devices & circuits, J. Millman & C.Halkias, Tata McGraw Hill Publication.
3. A Monograph on Electronics Design Principles N.C. Goyal & R.K. Khetan-Khanna Publishers
4. Pulse digital and switching circuits Millman Taub,Tata MCGraw hill 2nd edition

Reference Books:

1. Electronic devices & circuits,David A. Bell ,Oxford University
2. Electronic devices & circuits', Salivahanan, N Sureshkumar, Tata McGraw Hill Publication
3. Electronic devices & circuittheory, Robert L. Boylsted, Louis Nashelsky, Pearson Education

Subject: Network Analysis

Lecture Plan

| Dept of E&TC Engineering (SY B-Tech Sem I 2023-24) | |
|---|--|
| Lecture Plan: Network Analysis | |
| Lecture No | Unit 1: Network Fundamentals |
| 01 | Network Elements & its types, Energy sources |
| 02 | KVL & KCL |
| 03 | series & parallel connection of passive elements(R,L,C) |
| 04 | Combination of energy sources ,Current Division & Voltage division, |
| 05 | source transformation ,Star-Delta transformation, |
| 06 | Mesh & Super mesh analysis |
| 07 | Node & super node analysis |
| 08 | Graph Theory: graph of network & its parts, tree & co-tree, incidence matrix, Tie Set matrix, cut sets |
| Unit 2: Network Theorems | |
| 09 | Superposition Theorem, |
| 10 | Thevenin's Theorem, |
| 11 | Norton's Theorem |
| 12 | Maximum Power Transfer Theorem |
| 13 | Reciprocity Theorem |
| 14 | Compensation theorem |
| 15 | Duality theorem |
| 16 | Millman's Theorem |
| Unit 3: Resonance | |
| 17 | Definition, Types: series & parallel resonance, Series resonance-resonant frequency |
| 18 | variation of impedance, admittance, current & voltage across L & C with respect to. Frequency, |
| 19 | Effect of resistance on frequency response |
| 20 | Selectivity, B.W. &Quality factor |
| 21 | Parallel resonance–Ant resonance frequency, Resonant frequency for a tank circuit, |
| 22 | variation of impedance & admittance with frequency |
| 23 | Selectivity, Quality factor. & B.W |
| 24 | Comparison of series and parallel resonant circuits. |
| Unit 4: Two Port Network & Network Functions | |
| 25 | Two port network: Z, Y, ABCD , h parameters |
| 26 | Interrelation of different parameters, Interconnections of port |

| | |
|----|---|
| | network (Series, Parallel, Cascaded, Series- Parallel) |
| 27 | Network Functions: Network functions for one port & two port networks |
| 28 | Driving point impedance and admittance of one port network, Driving point impedance & admittance function |
| 29 | Transfer function Concept of complex frequency, significance of poles & zeros |
| 30 | Restrictions on poles& zeros for transfer& drawing point's function |
| 31 | Stability of circuit using Routh criterion, |
| 32 | Pole zero diagram, Time response from pole zero plot |
| | Unit 5: Filters |
| 33 | Definitions, classification & characteristics of different filters |
| 34 | decibel & Neper. Filter fundamental such as attenuation constant (α), phase shift (β) |
| 35 | propagation constant (γ) and characteristic impedance (Z_0) |
| 36 | Design & analysis of constant K, M derived (low pass filters): |
| 37 | Design & analysis of constant K, M derived (high pass filters): |
| 38 | Design & analysis of constant K, M derived (band pass filters): |
| 39 | Design & analysis of constant K, M derived (band stop filters): |
| 40 | T & Pi sections |
| | Unit 6: Transient Response |
| 41 | Network Solution using Laplace transforms |
| 42 | Initial Conditions of elements |
| 43 | Steady state response (Voltage & Current) |
| 44 | transient response (Voltage) |
| 45 | transient response (Current) |
| 46 | DC response of RL circuit |
| 47 | DC response of RC circuit |
| 48 | DC response of RLC circuit |

Recommended Books:

Text Books:

1. A. Sudhakar ,ShyammohanS.Palli 'Circuit & Network – Analysis & Synthesis' IIIrd Edition – Tata McGraw Hill Publication
2. Ravish Singh, "Networks Analysis & Synthesis" Tata McGraw Hill Publication
3. A.Chakrabarti 'Circuit Theory (Analysis & Synthesis)' - IIIrd Edition Dhanpat Rai& co
4. William H Hayt, Jack E Kimmerly and Steven M.Durbin, Engineering Circuit Analysis,Tata McGraw Hill

Reference Books:

1. D. Roy Choudhury 'Networks & Systems' - New Age International Publisher

2. Soni Gupta 'Electrical Circuit Analysis' Dhanpat Rai & Co.
3. Boylestad 'Introductory Circuit Analysis - Universal book stall, New Delhi
4. M.E. Van Valkenburg 'Network Analysis' - IIIrd Edition, Pearson Education / PHI
5. Joseph Edminister 'Theory & Problems of Electronic Circuit (Schaum's series) - Tata McGraw Hill, Publication
R.G. Kaduskar, S.O. Rajankar, T.S. Khatavkar, Network Fundamentals and Analysis - Wiley India

Assignments

Assignment-1

Example 1.15 : For the circuit shown in the Fig. 1.76, find the current through $30\ \Omega$ resistance using mesh analysis.

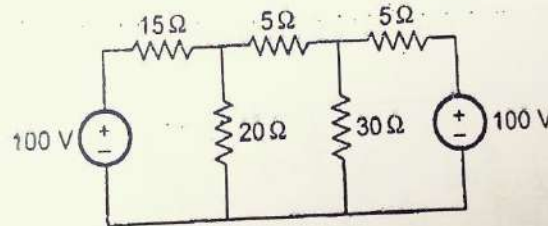


Fig. 1.76

Example 1.18 : For the circuit shown in the Fig. 1.86, find node voltages V_1 , V_2 and V_3 using node analysis.

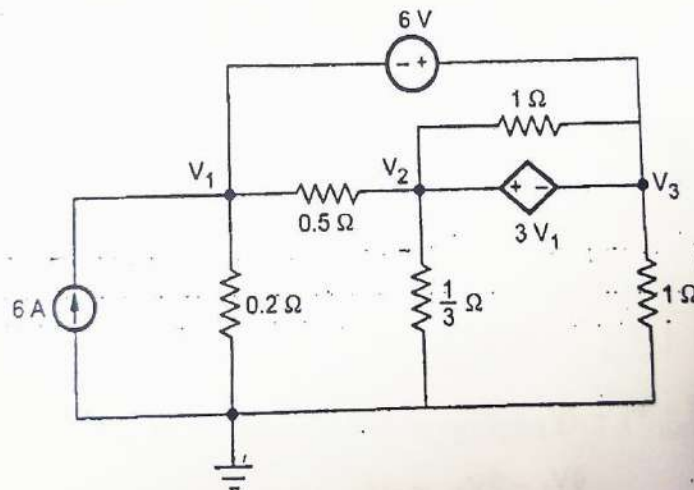


Fig. 1.86

Example 1.21 : Find equivalent resistance between points A-B.

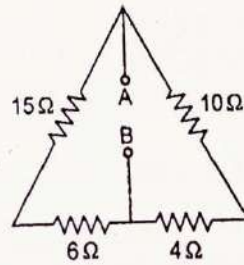


Fig. 1.97

Example 1.22 : Determine the current in $12\ \Omega$ resistor shown in the Fig. 1.98 using source transformation method.

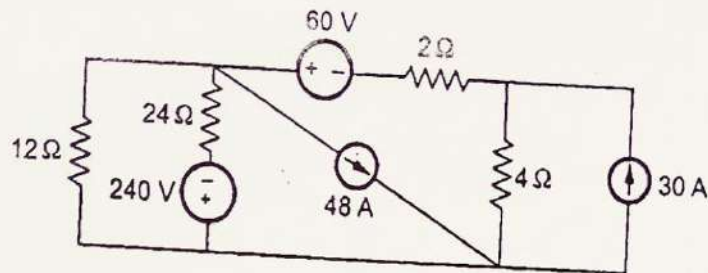


Fig. 1.98

Solution :

Example 1.44 : In the circuit of Fig. 1.121, find I through loop analysis.

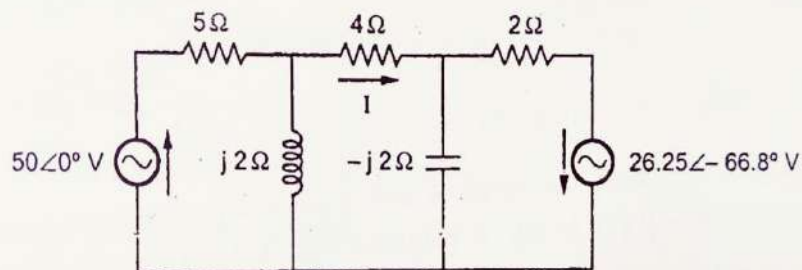
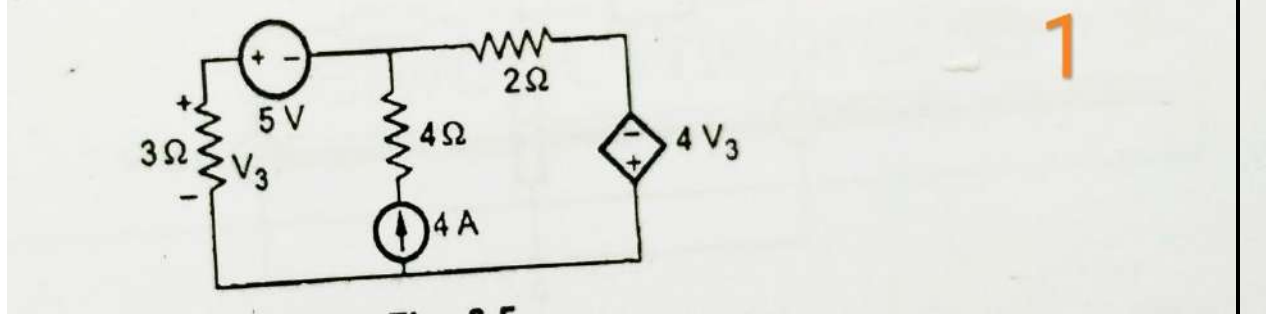


Fig. 1.121

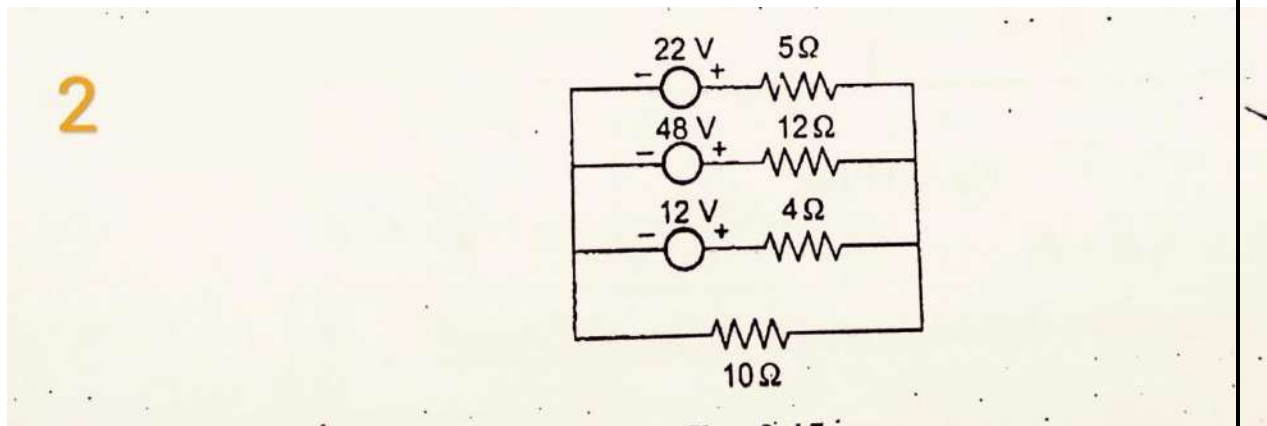
Assignment 2

1. Determine the current through 2 ohm resistor of network shown in below fig using superposition theorem

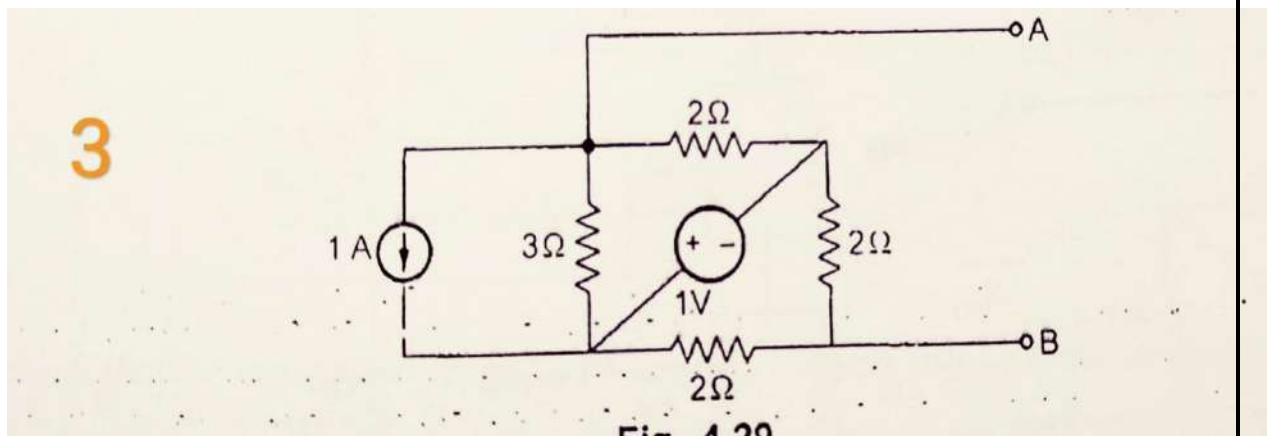
superposition principle



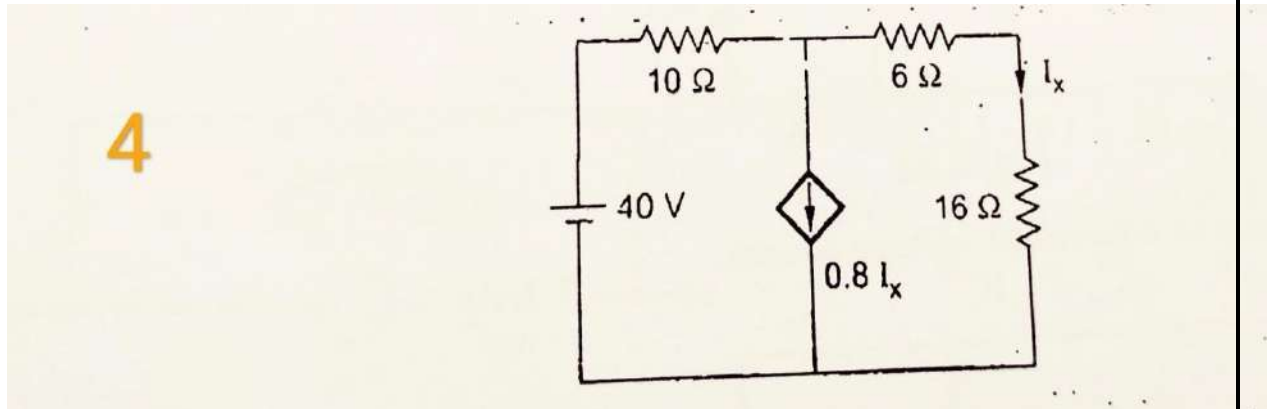
2. Use millimans theorem to find current through 10 ohm resistor.



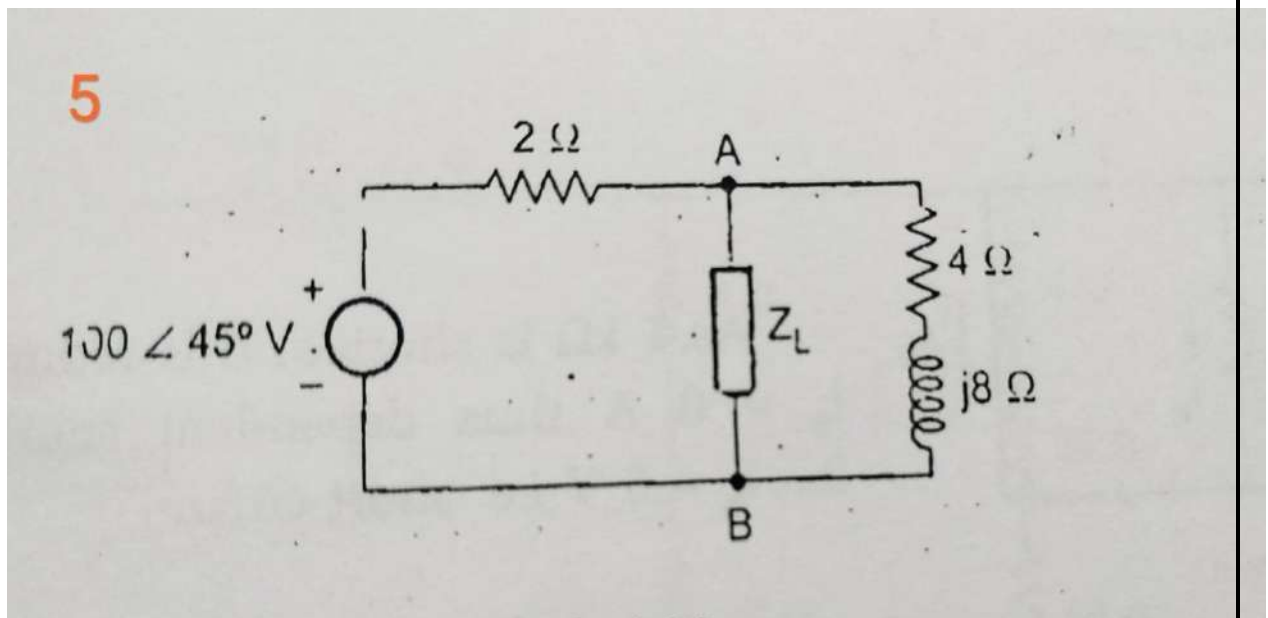
3. Determine the Norton current across AB using Norton Theorem.



4. Find the current through 16 ohm resistor using Norton Theorem in below fig



5. Find the load impedance connected across the terminals AB for maximum transfer



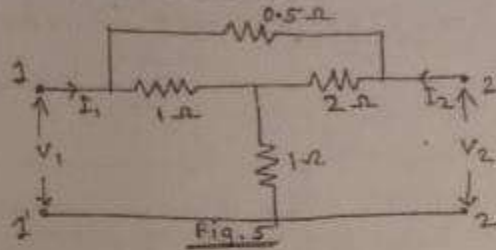
Assignment 3

ASSIGNMENT NO 3

Last date for submission :

Q1. Derive 'Y' parameters in terms of Z-parameter.

Q2. Obtain Z-parameters for figure 5.

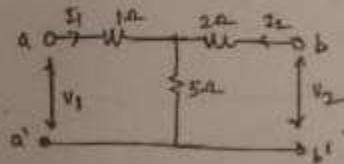


Q3. Z-parameters of two port network are

$$Z_{11} = 20 \Omega \quad Z_{12} = Z_{21} = 10 \Omega \quad Z_{22} = 30 \Omega$$

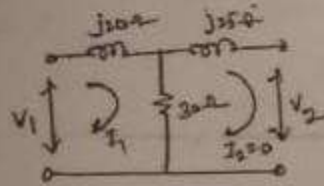
Find its ABCD parameters.

Q4. Find the transmission parameter for the circuit given below.



Q5. Derive the equation for h-parameters in terms of z-parameters.

Q6. Determine the z and y parameters of the network shown in figure.



Q7. Derive the relation for z-parameters in terms of ABCD parameters.

Subject: Transducers and Measurement

Lecture Plan

| Chapter No | No. of Lecture | Topics to be covered in each Lecture |
|------------|----------------|--|
| | | Transducers & Sensors |
| 1 | 1 | definition and various types of transducers |
| | 2 | Classifications of transducers |
| | 3 | Selection factors and general applications of transducers |
| | 4 | Detail study of transducers |
| | 5 | Types of sensors |
| | 6 | Hall Effect Transducers, Digital Transducers: Shaft Encoder |
| | 7 | Digital Resolver, Digital tachometer |
| | | Sensors |
| 2 | 8 | Proximity Sensors, optical Sensors |
| | 9 | IR sensors, Piezo – electric sensors Smart Sensors: Fiber optic sensor |
| | 10 | Film sensors, Nano sensors, Electrochemical sensors |
| | 11 | biosensors, MEMS |
| | | Signal Conditioning and Data Acquisition System |
| 3 | 12 | Introduction, AC & DC Signal Conditioning |
| | 13 | Chopper Stabilized Amplifier, Instrumentation Amplifier |
| | 14 | Isolation and Programmable Gain Amplifier, Grounding and Shielding |
| | 15 | Principles and working of different types of ADC and |
| | 16 | DAC |
| | 17 | Instrumentation Techniques: Introduction to Process Instrumentation |

| | | |
|---|--|---|
| | 18 | Instrumentation set up for measurement of nonelectrical quantity such as weight using strain gauge |
| | Introduction to Measurement | |
| 4 | 19 | Introduction to Measurement. Performance Characteristics, Static Characteristics |
| | 20 | Error in Measurement, Types of Static Error. Sources of Error, Dynamic Characteristics |
| | 21 | Statistical Analysis, Electrical Standards |
| | 22 | Atomic Frequency and Time Standards |
| | 23 | Graphical Representation of Measurements as a Distribution |
| | 24 | Digital voltmeters- Introduction, Types of DVM |
| | 25 | General specifications of DVM, digital multimeter, digital measurements of time Q meter, Instrument calibration |
| | Measurement & Display Devices | |
| 5 | 26 | CRO: Dual Beam, Dual trace |
| | 27 | Sampling, Digital Storage |
| | 28 | Measurement of Phase and frequency using Lissajous pattern |
| | 29 | CRO Probes: active, passive, current, attenuators |
| | 30 | Display Devices & Principle LED, LCD, and Graphics display |
| | 31 | Signal generators. Function Generators |
| | 32 | Spectrum analyser Logic analyser |
| | Bridges | |
| 6 | 33 | Measurement of Resistance with Bridges Wheatstone's Bridge |
| | 34 | Kelvin Double Bridge |
| | 35 | AC Bridges such as Haye's Bridge, Wein Bridge |
| | 36 | Maxwell's-Wein Bridge, Maxwell' L/C Bridge Descourty's Bridge & Schering |

ASSIGNMENT QUESTIONS/QUESTION BANK

| Unit- I (Assignment 1) Transducers 16 to 24 Marks | | | |
|---|---|---------------|---------------------------------------|
| Que. No. | Question | CO No. | Remark |
| 1. | Explain the important characteristics of a transducer. | PCC-ETC303.1 | Common for All |
| 2. | List different types of pressure transducers. Explain bellows in detail. Write the advantages and disadvantages | PCC-ETC303.1 | |
| 3. | List various types of flow transducer. Explain anyone. | PCC-ETC303.1 | |
| 4. | List different types of ultrasonic flow meter. Explain any one in detail. | PCC-ETC303.1 | |
| 5. | List various types of sound transducer, with neat diagram explain any One sound transducer | PCC-ETC303.1 | |
| 6. | List different types of bourdon tubes explain it with the help of Principle, construction and working. | PCC-ETC303.1 | |
| 7. | Explain linear variable differential transformer. Write the advantages and Disadvantages. | PCC-ETC303.1 | |
| 8. | List General application of Transducers | PCC-ETC303.1 | Additional questions for Fast Learner |
| 9. | Compare Active and Passive Transducer | PCC-ETC303.1 | |
| Unit-II: (Assignment 2) Sensors 16 to 24 Marks | | | |
| 1. | Explain proximity sensors. | PCC-ETC303.1 | Common for All |
| 2. | Draw and explain block diagram of SMART Sensor | PCC-ETC303.1 | |
| 3. | Explain MEMS Sensor System | PCC-ETC303.1 | |
| 4. | Explain fiber optics sensor | PCC-ETC303.1 | |
| 5. | Draw and explain IR Sensor | PCC-ETC303.1 | |
| Unit-II: (Assignment 3) Signal Conditioning & Data Acquisition System 16 to 24 Marks | | | |
| 1. | Explain the diagram of Chopper stabilized amplifier. Also Write the Advantages and disadvantages. | PCC-ETC303.2 | Common for All |
| 2. | Draw and explain block diagram of DAS | PCC-ETC303.2 | |
| 3. | Explain AC Signal conditioning system | PCC-ETC303.2 | |
| 4. | What is DAC? Explain any one in detail | PCC-ETC303.2 | |
| 5. | Define Filter. Explain active filter. | PCC-ETC303.2 | |
| 6. | Explain DC Signal conditioning system. | PCC-ETC303.2 | |

| | | | |
|-----|--|--------------|--------------------------------------|
| 7. | Explain the block schematic of successive approximation ADC. Write advantages and disadvantages. | PCC-ETC303.2 | |
| 8. | Explain the block schematic of parallel comparator ADC | PCC-ETC303.2 | |
| 9. | Explain the block schematic of Instrumentation system | PCC-ETC303.3 | |
| 10. | Explain Instrumentation set up for measurement of non-electrical quantity such as weight using strain gauge. | PCC-ETC303.3 | |
| 11. | Explain Instrumentation amplifier | PCC-ETC303.3 | Additional question for Fast Learner |

Unit- IV:(Assignment 4) Introduction to Measurement 16 to 24 Marks

| | | | |
|----|---|--------------|--------------------------------------|
| 1. | With neat sketch explain working of successive approximation type digital Voltmeter. | PCC-ETC303.4 | Common for All |
| 2. | State general specifications of DVM. | PCC-ETC303.4 | |
| 3. | What is a standard? State and explain different types of standards depending on functions and applications. | PCC-ETC303.4 | |
| 4. | With neat sketch explain working of Digital Multimeter. | PCC-ETC303.4 | |
| 5. | Explain various types and sources of Errors in measurement system. | PCC-ETC303.4 | |
| 6. | Explain working of Q-meter in detail. | PCC-ETC303.4 | |
| 7. | Explain Digital frequency meter. | PCC-ETC303.4 | Additional question for Fast Learner |

Unit- V: (Assignment 5) Measurement & Display Devices 16 to 24 Marks

| | | | |
|----|---|--------------|--------------------------------------|
| 1. | Explain working of CRO with block schematic. | PCC-ETC303.4 | Common for All |
| 2. | With block schematic explain Signal Generator. | PCC-ETC303.4 | |
| 3. | What is Attenuator? Explain types of Attenuators in detail. | PCC-ETC303.4 | |
| 4. | Explain in detail spectrum analyzer | PCC-ETC303.4 | |
| 5. | With block Schematic explain function generator. | PCC-ETC303.4 | |
| 6. | Explain in detail Dual beam CRO | PCC-ETC303.4 | Additional question for Fast Learner |

Unit- VI: (Assignment 6) Bridges 12 to 18 Marks

| | | | |
|----|--|--------------|----------------|
| 1. | Derive expression for Hay's Bridge. | PCC-ETC303.4 | Common for All |
| 2. | Explain Descourty's Bridge. | PCC-ETC303.4 | |
| 3. | Explain Wheat Stones Bridge. | PCC-ETC303.4 | |
| 4. | Obtain an expression for Kelvin's Bridge | PCC-ETC303.4 | |

Experiment List

| Exp No. | Name of Experiment | Nature of Experiment |
|----------------|--|-----------------------------|
| 01 | To Study Weight measurement using Strain Gauge | Performing |
| 02 | To study Displacement measurement using LVDT | Performing |
| 03 | To study Temperature measurement using RTD | Performing |
| 04 | To study Temperature measurement using Thermistor | Performing |
| 05 | To study Temperature measurement using Thermocouple | Non-Performing |
| 06 | To Study of CRO for Measurement of amplitude and frequency | Performing |
| 07 | To study Measurement of phase and frequency by Lissajous pattern using CRO | Performing |
| 08 | Study of function generator | Non-Performing |
| 09 | Study of DC bridges | Performing |
| 10 | Study of smart sensors | Performing |

Recommended Books

1. A.K. Sawhney , "A Course In Electrical, Electronics Measurement And Instrumentation" Dhanpat Rai & Co Microprocessor architecture,
2. programming & applications- Ramesh S. Gaonkar, New Age Internationalpublication. (Chapter4,5,6)
3. S. Kalsi, "Electronic Instrumentation", 3rd Edition, MGH

REFERENCE BOOKS:

1. Welfrick Cooper, "Electronic Instrumentation and Measurement Techniques" Dhanpat Rai & Sons.
2. John Turner, "Instrumentation for Engineers And Scientists" , IInd Edition , Wiley India. Modern Digital Electronics, R.P.Jain, 3rd Edition, Tata McGraw-Hill,2003
3. David A Bell, "Electronic Instrumentation and Measurements", IIIrd Edition, Oxford

Subject: Analog Communication

Lecture Plan

| LECTURE NO | CONTENTS |
|------------|---|
| 1 | Elements of electronic communication systems, Need for modulation, channel, |
| 2 | Frequency spectrum, time and frequency domain signals, |
| 3 | Amplitude Modulation principles, AM envelope |
| 4 | frequency spectrum & BW, phase representation of AM wave |
| 5 | Modulation index, % modulation (Numericals expected) |
| 6 | AM modulating circuits: Low level AM modulation, medium power AM modulation |
| 7 | AM transmitters: Block of low level DSBFC, High level DSBFC, Trapezoidal patterns |
| 8 | Evolution and descriptions of SSB, Suppression of carrier using balanced modulator |
| 9 | Suppression of unwanted sideband, Methods: Filter system phase shift & third method Vestigial sideband(VSB) |
| 10 | Instantaneous frequency, Concept of angle modulation |
| 11 | Frequency spectrum |
| 12 | Narrow band & Wide Band FM |
| 13 | Modulation Index, Bandwidth |
| 14 | Phase modulation |
| 15 | Bessel's Function and its mathematical Analysis |
| 16 | Generation of FM Direct and Indirect Method |
| 17 | Comparison of FM and PM |
| 18 | Simplified block diagram of AM receiver |
| 19 | Receiver parameters: Sensitivity, Selectivity, BW |
| 20 | Dynamic range, Tracking, fidelity |
| 21 | Types of AM receiver: TRF and super heterodyne (block diagram) |
| 22 | AM detection types: using diode, practical diode detector |
| 23 | Distortion in diode detector. Negative peak clipping & diagonal clipping |
| 24 | Demodulation of SSB using : product demodulator & diode balanced modulator |
| 25 | Automatic Gain Control (AGC) |
| 26 | Double conversion FM receivers |
| 27 | Block diagram, FM demodulator |
| 28 | Tuned circuit frequency discriminators |
| 29 | Slope detectors |
| 30 | Foster's seeley discriminator |
| 31 | Ratio detectors |
| 32 | PLL-FM demodulators FM noise suppression |
| 33 | Sources of noise, Types of noise |
| 34 | Introduction, Sampling theorem Occurrence of aliasing error |
| 35 | Mathematical proof of sampling thm PAM: Channel BW for PAM, Natural Sampling |
| 36 | Flat-top Sampling, PAM & TDM Signal Recovery,; PWM: Uses of PWM |

Experiment list

| Sr. No. | Experiment List |
|---------|---|
| 1. | Implementation of Amplitude Modulation (AM). |
| 2. | Implementation of AM using trapezoidal pattern for calculation of modulation index. |
| 3. | Implementation of Amplitude Modulation – Demodulation. |
| 4. | Implementation of Frequency Modulation (FM). |
| 5. | Implementation of Frequency Modulation – Demodulation. |
| 6. | Implementation of Sampling and reconstruction. |
| 7. | Implementation of Pulse Amplitude Modulation(PAM). |
| 8. | Implementation of Pulse Width Modulation(PWM). |
| 9. | Implementation of Pulse Position Modulation(PPM). |
| 10. | Implementation of Pulse Amplitude Modulation - Time Division Modulation (PAM-TDM). |
| 11. | Implementation of Single Side Band(SSB). |
| 12. | Visit Report of AM or FM station. |

Recommended Books:

Text Books:

1. George Kennedy, "Electronic Communications", McGraw Hill Kennedy.
2. Wayne Tomasi 'Electronics Communication System' -Fundamentals through Advanced.-Vth Edition- Pearson Education.
3. V. Chandra Sekar, "Analog Communication", OXFORD University press.

Reference Books:

1. B.P. Lathi, "Analog and Digital Communication", OXFORD University press.
2. Simon Haykin, "An introduction to analog & digital communications", John Wiley & Sons
3. R P Singh, S D Sapre 'Communication System-Analog & Digital' IInd Edition -Tata Mc Graw Hill Publication
4. Blake"Electronic Communication Systems",2nd Edition CENGAGE learning
5. Louis E. Frenzel, "Principals of electronic communication system", IIIrd Ed., TMH Pub

Assignments**Assignments No.1**

1. Draw and explain block diagram of analog communication.
2. Draw and explain classification of modulation.
3. Draw and explain AM for $m=1, m>1, m<1, m=0$.

Assignments No.2

1. Draw and explain FM, PM with modulation index.
2. Draw and explain Narrow band & Wide Band FM
3. Draw and explain Ratio detectors
4. Draw and explain Fosters seeley discriminator
5. Draw and explain PLL-FM demodulators

Assignments No.3

1. Draw and explain noise classification.
2. Draw and explain PAM, PWM, PPM.
3. Draw and explain Sampling and reconstruction

Subject: Programming Lab-I

Lecture Plan

| Unit No. | Lecture No. | Topics To Be Covered In Each Lecture |
|----------|-------------|---|
| 1 | | Programming Fundamentals |
| | 1 | Flow chart, Algorithm, Standard notations, |
| | 2 | Selection Procedure, Loops |
| | 3 | Sub Algorithms |
| | 4 | Compilers, Interpreters, The Library and Linking |
| 2 | | Introduction to C |
| | 5 | Introduction to Constants, |
| | 6 | Variables , Data Types |
| | 7 | Operators, Expressions, |
| | 8 | Structure of C Programming |
| | 9 | Identifiers, Decision & Loop control statements |
| 3 | | Arrays and Structures |
| | 10 | Arrays::Introduction to 1-Dimensional arrays, Declaration and Initialization of 1-Dimensional arrays, Declaration |
| | 11 | Initialization of 2-Dimensional arrays, Declaration and Initialization of Multi-Dimensional arrays. |
| | 12 | Structures-Declaring of Structures |
| | 13 | Accessing Structure elements, arrays of structures |
| 4 | | Functions and Pointers |
| | 14 | Introduction of functions, Need for functions,, Multifunctioning programming, Elements of function |
| | 15 | Definition and declaration of functions, return values and their types, function call, arguments, return value, nesting and recursion |
| | 16 | Pointers- Introduction to pointers, pointer variables, Pointers- Introduction to pointers, pointer variables |
| 5 | | Strings |
| | 17 | Declaration and Initialization of string, Reading from Terminal |
| | 18 | Writing to screen, Standard library string functions |
| 6 | | File handling |
| | 19 | File operation, counting character tabs, spaces ,file copy program, |
| | 20 | file opening modes, text file- binary file, Real time case study. |

List of Experiments

| Sr. No. | Name of Experiment |
|---------|---|
| 1 | Develop Program using decision control statements |
| 2 | Develop Program using control statements |
| 3 | Develop Program using loop control statements |
| 4 | Develop Program using functions |
| 5 | Develop Program using pointers |
| 6 | Develop Program using array |
| 7 | Develop Program using two dimensional arrays |
| 8 | Develop Program using structures |
| 9 | Develop Program using dynamic memory allocation |
| 10 | Develop Program using strings |
| 11 | Develop Program using any sorting technique |
| 12 | Develop Program using file handling. |
| 13 | Mini project |

Recommended Books

Text Book

1. Let Us C Yashawant Kanetkar, 13th Edition BPB Publications (unit II, VI)
2. Programming in ANSI C , E Balagurusamy, 5th edition, Tata Mc Graw Hill (unit III. IV, V)

Reference books

1. The C Programming Language, Brian W. Kernighan, Dennis M. Ritchi , IInd edition, Prentice Hall of India.

Syllabus of Environmental Studies

Nature of Subject: Mandatory Course (Annual type)

Teaching Scheme:

Lectures: 2 lecture/div/Sem (For III& IV)

Examination Scheme:

70 marks- Theory Paper (Conducted in IVSEM)

30 marks- Environmental Project Report ((For IV Sem)

Total Lectures allotted: 60

SEM (III)

Unit 1. Nature of Environmental Studies: (3 lectures)

- ☐ Definition, scope and importance. Multidisciplinary nature of environmental studies Need for public awareness.
- ☐ Concept of sustainability. Sustainable development and its goals with Indian context.

Unit 2. Ecosystems: (9 lectures)

- ☐ Concept of an ecosystem.
- ☐ Structure and function of an ecosystem. Producers, consumers and decomposers. Energy flow in the ecosystem.
- ☐ Ecological succession.
- ☐ Food chains, food webs and ecological pyramids.
- ☐ Introduction, types, characteristics features, structure and function of the following ecosystem:-
- ☐ Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem, d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) Degradation of the ecosystems and it's impacts.

Unit 3. Natural Resources and Associated Problems: (8 lectures)

- a) Forest resources: Use and over-exploitation, deforestation, dams and their effects on forests and tribal people.
- b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
- c) Mineral resources: Usage and exploitation. Environmental effects of extracting and using mineral resources.
- d) Food resources: World food problem, changes caused by agriculture, effect of modern agriculture, fertilizer-pesticide problems.
- e) Energy resources: Growing energy needs, renewable and non- renewable energy resources, use

of alternate energy sources. Solar energy , Biomass energy, Nuclear energy,
f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Consumerism, ecological foot prints, carbon foot prints, carbon credits. Role of an individuals in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Unit 4. Biodiversity and its Conservation: (8 lectures)

- ❑ **Introduction- Definition: genetic, species and ecosystem diversity.**
- ❑ **Bio-geographical classification of India.**
- ❑ **Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.**
- ❑ **India as a mega- diversity nation.**
- ❑ **Western Ghat as a biodiversity region.**
- ❑ **Hot-spots of biodiversity.**
- ❑ **Threats to biodiversity: habitat loss, poaching of wildlife, man- wildlife conflicts**
- ❑ **Endangered and endemic species of India,**
- ❑ **Conservation of biodiversity: In-situ and Ex- situ conservation of biodiversity. Convention on Biological Diversity.**

Unit 5. Environmental Pollution: (8 lectures)

- ❑ **Definition: Causes, effects and control measures of:**
- ❑ **Air pollution,**
- ❑ **Water pollution**
- ❑ **Soil pollution**
- ❑ **Marine pollution**
- ❑ **Noise pollution**
- ❑ **Thermal pollution**
- ❑ **Nuclear hazards.**
- ❑ **Global Level Environmental Problems like Global warming, acid rain, ozone layer depletion**
- ❑ **Nuclear accidents and holocaust.**
- ❑ **Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Solid waste management control rules.**
- ❑ **Role of an individual in prevention of pollution.**

Unit 6. Social Issues and the Environment: (9 lectures)

Human population growth, impact on environment.

- ❑ **Human Health and welfare.**
- ❑ **Environmental ethics: Role of Indian religious traditions and culture in conservation of the environment.**
- ❑ **Environmental movements- Chipko Movement, Appiko Movement, Silent Valley. Resettlement and rehabilitation of people; its problems and concerns.**
- ❑ **Water conservation, rain water harvesting, watershed management. Water conservation by Dr.Rajendra Singh, Anna Hazare etc.**
- ❑ **Disaster management: floods, earthquake, cyclone, tsunami and landslides. Wasteland**

reclamation.

☒ **Environmental communication and public awareness, case studies.**

Unit 7. Environmental Protection- Policies and practices: (5 lectures)

☒ **Environmental Protection Act.1986**

☒ **Air (Prevention and Control of Pollution) Act.1981**

☒ **Water (Prevention and control of Pollution) Act - 1974**

☒ **Wildlife Protection Act-1972**

☒ **Forest Conservation Act-1980**

☒ **National and International conventions and agreements on environment**

Unit 8. Field Work (Environmental Project Report) (10 lectures)

Visit to a local area to document environmental assets-

River/forest/grassland/hill/mountain.

or

Visit to a local polluted site/Industry

or

Urban/Rural/Industrial/Agricultural

or

Study of common plants, insects, birds.

or

Study of simple ecosystems - ponds, river, hill slopes, etc. (Field work is equal to 10 lecture hours)

References:

1) Agarwal, K.C.2001, Environmental Biology, Nidi Pubi. Ltd., Bikaner.

2) Bharucha Erach, The Biodiversity of India, Mapin Publishing pvt. Ltd.,Ahmedabad 380013, India, Email:mapin@icenet.net (R)

3) Brunner R.C.,1989, Hazardous Waste Incineration, McGraw Hill Inc., 480p

4) Clank R.S. Marine Pollution, Clanderson Press Oxford (TB)

5) Cunningham, W.P. Cooper, T.H.Gorhani, E. & Hepworth, M.T.2001,

6) Environmental Encyclopedia, Jaico Publ. Hpise, Mumbai, 1196p

7) De A.K., Environmental Chemistry, Wiley Western Ltd.

8) Down to Earth , Cebtre fir Scuebce and Environment (R)

9) Gleick, H.,1993, Water in crisis, Pacific Institute for studies in Dev. Environment & Security. Stockholm Env. Institute. Oxford Univ. Press 473p

10) Hawkins R.e., Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)

11) Heywood, V.H.& Watson, R.T.1995, Global Biodiversity Assessment,Cambridge Univ. Press 1140p.

12) Jadhav, H.& Bhosale, V.M.1995, Environmental Protection and Laws, Himalaya Pub. Hcuse, Delhi 284p.

13) Mickinney, M.L.& School. R.M.1196, Environmental Science Systems & Solutions, Web enhanced edition, 639p.

14) Mhaskar A.K., Mastter Hazardous, Techno-Science Publications (TB)

15) Miller T.G.Jr., Environmental Science. Wadsworth Publications Co. (TB)

16) Odum, E.P.1971, Fundamentals of Ecology, W.B.Saunders Co. USA, 574p.

17) Rao M.N.& Datta, A.K.1987, Waste Water Treatment, Oxford & IBH Publ. Co.

Pvt. Ltd.,

18) Sharma B.K., 2001, Environmental Chemistry, Gokel Publ. Hkouse, Meerut

19) Survey of the Environment, The Hindu (M)

20) Townsend C., Harper, J. and Michael Begon, Essentials of Ecology, Blackwell Science (TB)

21) Trivedi R.K. Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, vol. I anfd II, Environmental Media (R)

22) Trivedi R.K. and P.K. Gokel, Intriduction to air pollution, Tecgbi-Science Publications (TB)

23) Wagner K.D.,1998, Environmental management, W.B. Saunders Co.Philadelphia, USA 499p.

24) Paryavaran shastra - Gholap T.N.

25) Paryavaran Sahastra - Gharapure

M) Magazine (R) Reference (TB) Textboo

RUBRICS B. TECH PROJECT EVALUATION

Course Outcomes in project work: 1. Project/Seminar Review Form

Project/Seminar Evaluation Sheet

Name of Student:-

Class:

Roll No.:

Name of Seminar Topic:

Name of Guide:

Academic Year:

Semester:

Marking Scheme:

| Sr. No. | Details | Max. Marks | | Valuated Marks |
|---------|---|--------------|--------------|----------------|
| | | For 25 Marks | For 50 Marks | |
| 1. | Selection of Seminar Topic (Scope, Relevance) | 2 | 5 | |
| 2. | Literature Survey | 3 | 10 | |
| 3. | Presentation | 5 | 10 | |
| 4. | Understanding of Subject | 3 | 5 | |
| 5. | Seminar Report | 4 | 5 | |
| 6. | Question Answer | 3 | 5 | |
| 7. | Interaction with Guide | 5 | 10 | |

Total:

Sign of Guide:

Date:

| Sr. No. | Details | Max. Marks | | Valuated Marks |
|---------|---|--------------|--------------|----------------|
| | | For 25 Marks | For 50 Marks | |
| 1. | Selection of Seminar Topic (Scope, Relevance) | 2 | 5 | |
| 2. | Literature Survey | 3 | 10 | |
| 3. | Presentation | 5 | 10 | |
| 4. | Understanding of Subject | 3 | 5 | |
| 5. | Seminar Report | 4 | 5 | |
| 6. | Question Answer | 3 | 5 | |

Total:

Name and Sign of Judge:

| Sr. No. | Details | Max. Marks | | Valuated Marks |
|---------|---|--------------|--------------|----------------|
| | | For 25 Marks | For 50 Marks | |
| 1. | Selection of Seminar Topic (Scope, Relevance) | 2 | 5 | |
| 2. | Literature Survey | 3 | 10 | |
| 3. | Presentation | 5 | 10 | |
| 4. | Understanding of Subject | 3 | 5 | |
| 5. | Seminar Report | 4 | 5 | |
| 6. | Question Answer | 3 | 5 | |

Total:
Name and Sign of Judge:
Total Marks: Details of sr. no. 7+ Average of sr.no.1 to 6

| Total Marks | Details of sr.no. 7 | Average of sr.no.1 to 6 |
|-------------|---------------------|-------------------------|
| | | |

Rubrics for Project Work assessment

- **Project marking scheme**

(Semester-I)

| Activity | Nature of Activity | Total Marks for Activity | Rubric for Activity | | | |
|----------|--|--------------------------|---------------------|------------|--------------|-----------|
| | | | Unsatisfactory | Developing | Satisfactory | Excellent |
| A1 | Submission of Project Topic with names of group member | A1= 0.08* TM1 | 0.00*A1 | 0.40*A1 | 0.80*A1 | 1.00*A1 |
| A2 | Presentation of Synopsis in front of DRC | A2= 0.08* TM1 | 0.00*A2 | 0.40*A2 | 0.80*A2 | 1.00*A2 |
| A3 | Introduction and literature Review presentation | A3= 0.24* TM1 | 0.25*A3 | 0.60*A3 | 0.85*A3 | 1.00*A3 |
| A4 | Methodology and future work presentation | A4= 0.30* TM1 | 0.25*A4 | 0.60*A4 | 0.90*A4 | 1.00*A4 |
| A5 | Guide Marks | A5= 0.30* TM1 | 0.25*A5 | 0.60*A5 | 0.90*A5 | 1.00*A5 |

- **Project marking scheme**

(Semester-II)

| Activity | Nature of Activity | Total Marks | Rubric for Activity | | | |
|----------|--------------------|-------------|---------------------|------------|--------------|-----------|
| | | | Unsatisfactory | Developing | Satisfactory | Excellent |
| | | | | | | |

| | | for Activity | | | | |
|----|---|-------------------------|---------|---------|---------|---------|
| A6 | Progress presentation 1 | A6= 0.20* TM2 | 0.20*A6 | 0.65*A6 | 0.90*A6 | 1.00*A6 |
| A7 | Progress presentation 2 | A7= 0.20* TM2 | 0.20*A7 | 0.65*A7 | 0.90*A7 | 1.00*A7 |
| A8 | Final presentation in front of DRC along with submission of spiral bound copy | A8= 0.30* TM2 | 0.25*A8 | 0.70*A8 | 0.95*A8 | 1.00*A8 |
| A9 | Guide Marks | A9= 0.30* TM2 | 0.25*A9 | 0.70*A9 | 0.95*A9 | 1.00*A9 |

***TM1:- Term Work Marks in Sem-I for Project**

***TM2:- Term Work Marks in Sem-II for Project**

11. Departmental Faculty Details

Academic Year: 2024-25

| Sr. No | Name of Faculty | Qualification | Email Id | Mobile No. |
|---|------------------------|---------------------|-------------------------------|------------|
| 1 | Mr. M. M. Kolap | M.E.(E&TC) | mandar.kolap@jjmcoe.ac.in | 9273961061 |
| 2 | Dr.(Mrs.)S.B.Patil | Ph.D. | shubhangi.patil@jjmcoe.ac.in | 9422618670 |
| 3 | Mrs. M. U. Phutane | Ph.D. (Pursuing) | manisha.phutane@jjmcoe.ac.in | 7709904600 |
| 4 | Mrs. P. P. Belagali | Ph.D. (Pursuing) | pooja.belagali@jjmcoe.ac.in | 9158895225 |
| 5 | Dr.(Mrs). T. H. Mohite | Ph.D. | tejashree.mohite@jjmcoe.ac.in | 9689228701 |
| 6 | Mr. V. T. Kamble | M.E.(E&TC) | vinay.kamble@jjmcoe.ac.in | 8551937575 |
| 7 | Miss.S.S.Karadge | M.E.(E&TC) | Supriya.karadge@jjmcoe.ac.in | 8983626193 |
| 8 | Miss.M.R.Jadhav | M.E.(E&TC) | madhuri.jadhav@jjmcoe.ac.in | 9579282406 |
| 9 | Mrs.S.B.Holkar | M.E.(E&TC) | Sayali.holkar@jjmcoe.ac.in | 9665397982 |
| 10 | Mrs.P.A.Magdum | M.E.(E&TC) | Pooja.magdum@jjmcoe.ac.in | 8600660869 |
| Load shared with Electrical Department | | | | |
| 01 | Dr. M. B.Bhilawade | Ph.D. | milind.bhilawade@jjmcoe.ac.in | 9420675861 |

12. Department Staff:

| Sr. No | Name of Staff | Qualification | Email Id | Mobile No. |
|--------|--------------------|---------------|-----------------------------|------------|
| 1 | Mr. P. K. Upadhye | DEE | pramod.upadhye@jjmcoe.ac.in | 9860833636 |
| 2 | Mr. K. M. Kulkarni | DEE | kiran.kulkarni@jjmcoe.ac.in | 9689898399 |
| 3 | Mrs. H. S. Swami | B.E. | hemlata.swami@jjmcoe.ac.in | 8806899901 |

13. Activity Record: Department Activity

Year2024-25

| SR NO | Name of Activity | Date | Targeted Audience |
|-------|------------------|-----------|-------------------|
| 1 | Teachers day | 5/09/2024 | SY,TY, Btech ETC |
| | | | |
| | | | |

Year2023-24

| SR NO | NameofActivity | Date | Targeted Audience |
|-------|---------------------------|------------|-------------------|
| 1 | Engineersday | 15/09/2023 | SY,TY, Btech ETC |
| 2 | TECHNOVISION2K22 | 15/09/2023 | SY,TY, Btech ETC |
| 3 | Coded Electronics | 29/09/2023 | SY,TY, Btech ETC |
| 4 | Quizika2k23 | 12/10/2023 | SY |
| 5 | Freshers and Inauguration | 23/10/2023 | College level |
| 6 | Ashwamedh2k23 | 09/11/2023 | SY,TY, Btech ETC |

Year2022-23

| SR NO | Name of Activity | Day Date | Targeted Audience |
|-------|---------------------------|----------------------|-------------------|
| 1 | Engineersday | Thursday,15/09/2022 | SY,TY, Btech ETC |
| 2 | Quizika2k22 | Thursday,15/09/2022 | SY,TY, Btech ETC |
| 3 | ETESAFEST2K22 | Thursday,29/09/2022 | SY,TY,Btech ETC |
| 4 | Coded Electronics | Monday,12/10/2022 | SY |
| 5 | HORIZON2K22 | Wednesday,23/11/2022 | Collegel evel |
| 6 | Freshers and Inauguration | Friday,09/12/2022 | SY,TY,Btech ETC |
| 7 | Ashwamedh2k23 | Saturday20/5/23 | National level |