

Proposed w.e.f Session 2018-19
UPDATED SCHEME & SYLLABI FOR B.Sc. (Hons)-I.T.
Course: B.Sc. (Hons) Information Technology
Examination Scheme

I. Theory Papers(Semester System of Examination)

1. Syllabus in each Theory Paper is divided in 4 units.
 - i. A Student is required to attempt 5 questions in all.
 - ii. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
 - iii. Two questions will be set from each unit. A student is required to attempt one question from each unit.
 - iv. All questions carry equal marks.
 2. Use of simple calculator is permissible.
 3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
 4. Distribution of Marks :
40 + 10 = 50 marks of 3 hours duration for each Theory Paper.
- * For each paper question paper will be of 40 marks and 10 marks in each theory paper is awarded through internal assessment in each semester.
5. Workload- 3 periods per week per theory paper

II. Practical Paper (Annual Examination System)

- i) The Practical examination will be held at the end of Even semester in one sitting of three hours.
- ii) A candidate is required to perform minimum of 6 experiments out of the list provided during course of study in odd semester & even semester of the corresponding session as the case may be and is required to perform one experiment in examination.
- iii) Distribution of Marks: As per details given in each Practical Paper separately.
- iv) Maximum 10 students in one group during course of study and also in examination.
- v) Workload- 3 periods per week per group per practical paper

**B.Sc. (Hons) Information Technology-I Examination Scheme
(Proposed w.e.f Session: 2018-19)**

Semester	Paper Code	Nomenclature Of Paper	Internal Assessment *	Max. Marks	Total Marks	Pass Marks	Exam Duration	Exam System
1	BSIT -101	Communication Skills (English)-I	10	40	50	20	3 Hrs	Semester
	BSIT -102	Mathematical foundations for Information Technology-I	10	40	50	20	3 Hrs	
	BSIT -103	Fundamental of EM Waves	10	40	50	20	3 Hrs	
	BSIT -104	Electronic Devices and Circuits	10	40	50	20	3 Hrs	
	BSIT -105	Electronic Communication-I	10	40	50	20	3 Hrs	
	BSIT -106	Computer Fundamentals	10	40	50	20	3 Hrs	
	BSIT-201	Communication Skills (English)-II	10	40	50	20	3 Hrs	Semester
	BSIT-202	Mathematical foundations for Information Technology-II	10	40	50	20	3 Hrs	
	BSIT-203	Applications of EM wave	10	40	50	20	3 Hrs	
	BSIT-204	Digital Electronics-I	10	40	50	20	3 Hrs	
	BSIT-205	Electronic Communication-II	10	40	50	20	3 Hrs	
	BSIT-206	Programming Techniques	10	40	50	20	3 Hrs	
Common for Sem I & Sem II	BSIT-207	Analog Electronics (IT Lab- I)	-	50	50	20	3 Hrs	Annual
	BSIT-208	Digital Electronics (IT-Lab II)	-	50	50	20	3 Hrs	
	BSIT-209	Electronic Communication (IT Lab III)	-	50	50	20	3 Hrs	
	BSIT-210	Computer Fundamentals & Office Tools (IT Lab IV)	-	50	50	20	3 Hrs	

Semester -I
Course: B.Sc. (Hons) IT
Paper Code: BSIT-101
Nomenclature: Communication Skills (English)

Max. Marks: 40+10*
Time: 3hrs.

Unit I

Communication:- Meaning, need, objectives, significance, elements essential for effective communication, barriers to communication. Channels of communication: Formal, Informal, downward, upward, horizontal, internal, external, Seminar, Group Discussion, Interview, Meetings, Conference.

Unit II

Types of Communication:-

1. Verbal
 - (a) Oral – Face to face conversation, speech, telephonic, video, radio, Television, Voice over internet.
 - (b) Written – email, letter, report, memo, circulars, minutes.
2. Non Verbal
 - (a) Appearance (Speaker & Surrounding) – Clothing, hairstyle, neatness, use of cosmetics, room size, lighting, decoration, furnishing.
 - (b) Body language – facial expressions, gestures, postures.
 - (c) Sounds – Voice tone, volume, speech rate.

Unit III

Writing skills – I

Official Letters: Meaning of official correspondence, distinction between official and business correspondence, essential of good draft, classification of official correspondence, Memorandum, Endorsement.

Unit IV

Writing skills – II

Telegram, Notifications, communiqués, employee manuals, fax, Resume, Resume Writing.

Reference Books:

1. Super text book on English Language, communication skills by Jindal Gautam and Siken Sharma.
2. Basic Communication Skills for Technology, by Rutherford & J. Andrea.
3. Handbook of Practical Communication Skills, by Wright & Chrissie.
4. Communication Skills and Functional Grammar, by Sadhna Gupta.

Note:

- I. Syllabus in each Theory Paper is divided in 4 units.
 - I. A Student is required to attempt 5 questions in all.
 - II. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
 - III. Two questions will be set from each unit. A student is required to attempt one question from each unit.

- IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
 3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
 4. Distribution of Marks: 40+10*= 50.
* Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
 5. Work load – 3 periods per week per theory paper.

Semester-I
Course: B.Sc. (Hons) IT
Paper Code: BSIT-102

Nomenclature: Mathematical foundations for Information Technology-I

Max. Marks: 40+10

Time: 3hrs.

UNIT-I

Matrix Algebra:- Rank of Matrix, Eigen vectors, Characteristic equation, Diagonalization.

UNIT-II

Differential Equations:- Formation of differential equations, , ordinary Differential equations of the first order and degree, exact equation, Linear equations of higher order with constant coefficient, Homogenous linear equations.

UNIT-III

Sets and Propositions:- Introduction, combination of sets, Finite and infinite sets, uncountably, Mathematical induction, principle of inclusion and exclusion, multisets, properties of binary relations.

UNIT-IV

Relations and Functions:-

Equivalence relations and partitions, partial relations, functions and pigeon Hole Principle, Propositions.

Reference Books:

1. Discrete Mathematics by R.C.Joshi
2. Calculus and Differential Equation by Jevason's publications for B.Sc I
3. Algebra and Trigonometry by Jevason's publications for B.ScI

Note:

- I. Syllabus in each Theory Paper is divided in 4 units.
 - I. A Student is required to attempt 5 questions in all.
 - II. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
 - III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
* Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester-I
Course: B.Sc. (Hons) IT
Paper Code: BSIT-103
Nomenclature: Fundamental of EM Waves

Max. Marks: 40+10*
Time: 3hrs.

Unit 1

Vector background and electric field:- Mathematical expression and significance of Gauss's Divergence Theorem and Stokes Theorem; Electric Field as gradient of electric potential, Electric Flux, Gauss's law, concept of displacement current, Scalar and vector potential.

Unit 2

Electromagnetism:- Maxwell's equation in Differential and Integral forms, Plane wave equations in : Free space, Conducting media, Non conducting media, Transverse nature of electromagnetic waves, Skin effect, Poynting Theorem and Poynting vector.

Unit 3

A.C. Circuit analysis:- Capacitance and Resistance (CR) circuit, Inductance and Resistance (LR) circuit, Inductance and Capacitance (LC) circuit, Capacitance, Inductance and Resistance (LCR) circuit; Series and parallel resonance circuit, Quality Factor.

Unit 4

Fundamentals of EM waves:- EM spectrum, Reflection, Refraction, Diffraction Polarization. Fundamentals of Transmission lines, characteristics impedance, Losses in Transmission line, Quarter and half wavelength lines, Reactance properties of transmission lines.

Reference Books:

1. Electromagnetic Theory by B.B Laud
2. Foundations of Electromagnetic Theory by John R. Reitz.
3. Electricity, Magnetism, Electromagnetic Theory & Electronics Devices by V.K. Sharma
4. Electronic Communication by Wayne Tomasi

Note:

1. Syllabus in each Theory Paper is divided in 4 units.
 - I. A Student is required to attempt 5 questions in all.
 - II. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
 - III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
 - * Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester-I
Course: B.Sc. (Hons) IT
Paper Code: BSIT-104
Nomenclature: Electronic Devices and Circuits

Max. Marks: 40+10*
Time: 3hrs.

UNIT-I

Introduction to semiconductor:- Intrinsic and Extrinsic semiconductors, Energy Band diagram, P type and N type Semiconductor PN junction diode and its characteristics, Space charge capacitors and diffusion capacitors (simple idea only). Zener Diode, Zener Diode as voltage regulator.

UNIT-II

Rectifiers:- Rectifier-HWR, FWR, Bridge FWR, Rectifier Parameters. Filters, L & C Filters (Simple idea only), Voltage Multiplier Circuits, Shunt and series clipping circuits, Clamping circuits.

UNIT-III

Bipolar Junction Transistor:- Junction Transistors, working of Transistor, Potential curves in unbiased and biased transistors, transistor current components Early effect, static characteristics of CB and CE configuration (Active Saturation and cutoff regions), Transistor as an amplifier.

UNIT-IV

Field Effect Transistor:- Junction field effect transistors (JEET), Qualitative description of JEET, Drain and transfer characteristics of JEET, MOSFET-Depletion and enhancement type, and their drain and transfer characteristics. Small signal low frequency FET model, CS and CD low frequency model.

Reference Books:

1. Electronic Devices, Applications and integrated circuit by Kulshreshtha & Mehta.
2. Integrated Electronics by Millman & Halkias.

Note:

- I. Syllabus in each Theory Paper is divided in 4 units.
 - I. A Student is required to attempt 5 questions in all.
 - II. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
 - III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
* Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester-I
Course: B.Sc. (Hons) IT
Paper Code: BSIT-105
Nomenclature: Electronic Communication-I

Max. Marks: 40+10*
Time: 3hrs.

Unit-I

Analog Modulation:- Communication Model, Modulation: AM, FM, PM (Quantitatively & Qualitatively), Demodulation, Relationship between FM & PM, Fourier Theorem, Fourier analysis.

Unit-II

Digital Modulation:- Analog to digital conversion: Pulse Modulation system, the sampling theorem for low pass and Band pass signals, PAM, channel Bandwidth for PAM, sampling rate, natural Sampling, quantization of signals, quantization errors

Unit-III

Modulation Systems:- The PCM System, Bandwidth requirements of PCM, Noise in PCM System, Companding, DPCM, Delta Modulation System, Noise in Delta Modulation System, Comparison of PCM & DM System.

UNIT-IV

Digital Communication:- Elements of digital communication, Analysis & design of communication system, bit rate, baud rate, transmission rate, Bandwidth requirement, ec transmission errors, echo suppressor, Echo canceller, Characteristics of digital Communication.

Reference Books:

1. Principles of communications system by Taub and Schilling
2. Electronic communication System by George Kennedy.
3. Data communication By Forouzan.
4. Analog & digital communication By K. Sam shamunagam
5. Computer Network By Tannenbaum

Note:

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 - III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
 - * Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester-I
Course: B.Sc (Hons) IT
Paper Code: BSIT-106
Nomenclature: Computer Fundamentals

Max. Marks: 40+10
Time: 3hrs.

Unit-I

Introduction to computer system:- What is a Computer, Evaluation & Generation of computers, Applications and characteristics of computers, elements of Computer (Hardware, Software), common input & output devices (Basic idea). Types of Computers: Micro, Mini, Main frame, super computers, Block diagram of PC architecture, concept of files and directories.

Unit-II

Secondary storage devices:- Sequential and direct access devices, Magnetic disk, Floppy Disk, Winchester Disk, Mass Storage, Optical Disk, Magnetic Bubble Memory, Charged Coupled Device, Cache Memory, Storage hierarchy.

Unit-III

Introduction to computer software: - What is Software, Relationship between Software and Hardware, Types of softwares: System Software (Meaning and its type), Application software, Acquiring Software, Software Development Steps, Firmware, Middleware.

Unit-IV

Windows: - Windows as an interface, Introduction to desktop, accessories, internet: definition, basic services and uses, multimedia: meaning, multimedia components, applications Word: Introduction of Word, creating, editing a document, modifying and formatting a document, using the speller in word, Creating and using macros.

Reference Books:

1. Computer Fundamentals by P.K Sinha
2. Digital Fundamentals by Thomas L. Floyd

Note:

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 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
* Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester –II
Course: B.Sc. (Hons) IT
Paper Code: BSIT-201
Nomenclature: Communication Skills (English)-II

Maximum Marks: 40+10
Time: 3 Hours

Unit-I

Business Communication Skill:- Business Letters: Objectives and importance of business letters, layout of business letter, Seven C's of effective business communication.

Unit-II

Official Corresponding Skill:- Letters of appreciation, reference, appointments, Quotations, placing an order, letter of recommendation, proposals, contracts, brochures, Précis Writing.

Unit-III

Functional Grammar: - Articles, agreement between verb and subject, Tenses, Active and passive voice, Auxiliaries.

Unit IV

Phonetics Transcription: - Introduction to Phonetics, Detailed study of vowels and consonants, Phonetics transcription of single syllabic words, Stress and intonation

NOTE: Any two assignments out of the following to be given for Internal Assessment. PPT, Models, Blogs, Animation, Short Film, Short Documentary, Audio Clip, Video Clip. Models of communication displayed through charts, diagrams, graphs, posters, sketch, painting.

Reference Books:

1. Super text book on English Language, communication skills, by Jindal Gautam and Siken Sharma.
2. Basic Communication Skills for Technology, by Rutherford & J. Andrea.
3. Handbook of Practical Communication Skills, by Wright & Chrissie.
4. Communication Skills and Functional Grammar, by Sadhna Gupta.

Note:

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 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
* Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester -II
Course: B.Sc. (Hons) IT
Paper Code: BSIT-202

Nomenclature: Mathematical foundations for Information Technology-II

Max. Marks: 40+10
Time: 3hrs.

UNIT-I

Computational Techniques:- Iterative Method to find Real Root : Bolzano/Bisection Method, Regula Falsi Method, Newton Raphson Methods and their Convergence.

UNIT-II

Simultaneous linear Equations:- Gauss Elimination Method, Gauss Jordan Method, Triangularization Method, pivoting, ill conditioned equation, refinement of solution.

UNIT-III

Numerical Methods-I:- Gauss-seidal Iterative Method, Euler Method, Modified-Euler Method. Taylor-series Method, Runge-Kutta Method. Predictor corrector Method, Jacobi Method.

UNIT-IV

Numerical Methods-II:- Newton Forward Interpolation formula, Newton Backward Interpolation formula, Newton's divided difference formula, Lagrange's Interpolation formula, Approximation of functions by Taylor series and chebyshev polynomial.

Reference Books:

1. Higher Engineering Mathematics by R.S.Grewal.
2. Numerical Methods for scientific and engineering by Jain & Iyenger.
3. Computer based numerical Algorithms by E.V.Krisnamurthy and S.sen (east-West Press)
4. Discrete Mathematical structures with application to computer science by J.P. Tremblay & Manohar
5. A text book of matrices by Shanti Narayana
6. Numerical Analysis by Jeevansons Publications for B.Sc.III.

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 - III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
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* Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester-II
Course: B.Sc. (Hons) IT
Paper Code: BSIT-203
Nomenclature: – Applications of EM wave

Max. Marks: 40+10
Time: 3hrs.

Unit-I

Propagation of EM Waves:- Ground wave propagation, sky wave propagation and space wave propagation, multipath propagation, Troposphere scattering, Fading, Free space path loss.

Unit-II

Antenna: Basic antenna operation, Radiation mechanism, Elementary doublet, Current and voltage distribution, radiation pattern, antenna gain, antenna resistance, bandwidth, beamwidth, polarisation, resonant antenna, non resonant antenna, effect of ground on antenna.

Unit-III

Antenna Techniques:- Coupling at medium frequency, General consideration, selection of feed point, antenna coupler, Directional high frequency antenna: Dipole arrays; folded antenna and its application.

Unit-IV

Satellite Communication:- History, Orbital mechanics, Kepler's three laws of planetary motion, satellite orbit, satellite elevation categories, Elevation angle, Azimuth angle, Orbital Perturbations, Longitudinal changes, Inclination changes, Remote sensing (Basic idea) and its application.

Reference Books:

1. Electronic Communication Systems by George Kennedy
2. Electronic Communication systems by Wayne Tomasi

Note:

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 - II. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
 - III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
* Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester-II
Course: B.Sc. (Hons) IT
Paper Code: BSIT-204
Nomenclature:-Digital Electronics-I

Max. Marks: 40+10
Time: 3hrs.

Unit-I

Number Systems: Binary, Octal, Hexadecimal number system and base conversions, Binary Arithmetic operations, 1's and 2's complement representation and their arithmetic. Binary codes-BCD, Grey, cyclic, ASCII, EBCDIC, Parity Bit Code, Unicode, Sequential Code.

Unit-II

Logic Gates and K-Map: AND, OR, NOT, XOR, XNOR, NOR, NAND (Definition, Symbols & Truth table). Boolean Algebra: Postulates, Duality Principle, De Morgan's Law, Simplification of Boolean Identities, Standard SOP & POS Forms, Simplification using K-map, don't care condition implementation of SOP & POS form using NAND and NOR Gate.

Unit III

Logic Families-I: - Unipolar & Bipolar Logic families, Characteristics of Digital IC's. (fan in, fan out, propagation delay, Noise Margin, level of Gating), Resistance Transistor Logic RTL(NOR), Direct Coupled Logic(DCTL), Diode Transistor Logic, High Threshold Logic HTL,DTL (NAND).

Unit-IV

Logic Families-II: - TTL, Schott-key TTL, MOS logic, CMOS Logic Gate (NAND, NOR).

Reference Books:

1. Digital Electronics by R.P. Jain

Note:

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 - III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
* Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester-II
Course: B.Sc. (Hons) IT
Paper Code: BSIT-205
Nomenclature: Electronic Communication-II

Max. Marks: 40 + 10

Time: 3hrs.

UNIT –I

Digital Modulation Techniques: - FSK, PSK, DPSK, BPSK, QPSK, ASK, Similarity b/w BPSK & BFSK (qualitative analysis only)

UNIT-II

Error Control Coding:- Methods of Controlling Errors , Types of Errors , Types of Codes ,Matrix Description of Linear Block Codes , Error Detection and Error correction capabilities of Linear Block Codes, Single Error-Correcting Hamming Codes.

UNIT-III

Binary Cyclic Codes:- Algebraic Structure of Cyclic Codes, Encoding Using an (n-k) Bit Shift Register, Syndrome Calculation ,Error Detection and Error Correction.

UNIT –IV

Information Theory and Coding:- Discrete messages, The concept of amount of information, average information, entropy, information rate, Shannon-Fano coding, Shannon's theorem, channel capacity, comparison of error rate in codes and uncoded transmission, Huffman coding, Shannon- Hartley theorem and its implications.

Reference Books:

1. Principle of Communication by Taub Schilling
2. Analog & Digital Communication Systems by K. Sam Shanmugham

Note:

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 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
* Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester-II
Course: B.Sc (Hons) IT
Paper Code: BSIT-206
Nomenclature: Programming Techniques

Max. Marks: 40+10
Time: 3hrs.

Unit-I

Flowcharts:- Purpose of program planning, Meaning, Use, Symbols Used Levels of Flowcharts, Flowcharting rules, Advantages and limitations, Decision tables, pseudocode: Meaning, pseudocodes for Basic Logic(Control) Structures, Advantages and Limitations.

Unit-II

Introduction to Computer problem-solving aspect:- Algorithms: its meaning, representation of Algorithm, Top down Design Implementation of algorithms, Program Verifications, Efficiency of Algorithms, Analysis of Algorithm.

Unit-III

Fundamental Algorithms:- Summation of a set of numbers, Factorial computation, Sine Function Computation, Fibonacci sequence, Reversing the digits of an integer, Algorithm for factoring methods: Square root of number, Smallest divisor of an integer, Greatest Common Divisor, Generating Prime numbers, Pseudo Random numbers, raising a number to a large power, algorithm techniques for merge, sort, search operations.

Unit-IV

Excel: - Spreadsheet, creation, manipulation of spreadsheet, importing database, concepts of macros, charts and graphs.

Reference Books:

1. How to solve it by Computer by R.G. Dromey
2. Programming languages & Techniques by Trat
3. Programming Handling Techniques by J.Chhabra

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 - III. Two questions will be set from each unit. A student is required to attempt one question from each unit.
 - IV. All questions carry equal marks.
2. Use of simple calculator is permissible.
3. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
4. Distribution of Marks: 40+10*= 50.
 - * Each question paper will be of 40 marks and 10 marks in each theory paper are awarded through internal assessment in each semester.
5. Work load – 3 periods per week per theory paper.

Semester 1 & 2
Course: B.Sc. (Hons) IT
Paper Code: BSIT-207 (IT LAB-I)
Nomenclature: Analog Electronics (Practical)

M.M: 50
Time: 3 hrs

Instruction for the examiners: A candidate is required to perform one experiment out of the list below.

Note:-

1. This practical paper is to be studied during Semester 1 & 2. But the examination is to be held after Semester 2 only.
2. A candidate is required to perform 6 Experiments from the list given below.
3. The number of students in a group must not exceed 10.
4. Workload – 3 periods per week per group

Distribution Of Marks

Experiment: 25 Practical Work Book: 15
Viva
Voce: 10

1. To study the V-I characteristics of PN junction diode.
2. To study the zener diode as voltage regulator.
3. To study half wave voltage multiplier Ckt. Using diode.
4. To study HWR and FWR and measurement of ripple factor with and with C filter.
5. To study diode as shunt clipping element.
6. To study diode as clamping element.
7. Study of CB characteristics and calculate H parameter from graph.
8. Study of CE characteristics and calculate H parameter from graph.
9. Study of JFET characteristics.
10. To measure Av, Ai, Ap. In CB, CC Transistor amplifier.
11. Study of fixed bias arrangement for transistor.

Semester 1 & 2
Course: B.Sc. (Hons) IT
Paper Code: BSIT-208 (IT LAB-II)
Nomenclature: Digital Electronics (Practical)

M.M: 50
Time: 3 hrs

Instruction for the examiners: A candidate is required to perform one experiment out of the list below.

Note:-

1. This practical paper is to be studied during Semester 1 & 2. But the examination is to be held after Semester 2 only.
2. A candidate is required to perform 6 Experiments from the list given below.
3. The number of students in a group must not exceed 10.
4. Workload – 3 periods per week per group

Distribution of Marks

Experiment: 25
Practical Work Book: 15
Viva Voce: 10

LIST OF EXPERIMENTS

1. Measurement of voltage. Time period and phase-shift Biasing CRO.
2. Measurement of resistance by colour code method and using M/M and to design a potential divider arrangement and familiarization of components such as capacitors, potentiometer, diode, transistors, etc.
3. Study of basis logic gate (AOI).
4. Study of DTL NAND gate.
5. Study of TTL NAND gate.
6. Digital trainer using AOI.
7. Digital trainer using NAND.
8. To study of RC Ckts. As integrating and differentiating Ckts.
9. To verify maximum power transfer theorem for DC network
10. To study RC low pass filter and measurement of cut-off frequency from graph.
11. To study RC High pass Filter.
12. To study the application of Superposition theorem.

Semester 1 & 2
Course: B.Sc. (Hons) IT
Paper Code: BSIT-209 (IT LAB-III)
Nomenclature: Electronic Communication (Practical)

M.M: 50
Time: 3 hrs

Instruction for the examiners: A candidate is required to perform one experiment out of the list below.

Note:-

1. This practical paper is to be studied during Semester 1 & 2. But the examination is to be held after Semester 2 only.
2. A candidate is required to perform 6 Experiments from the list given below.
3. The number of students in a group must not exceed 10.
4. Workload – 3 periods per week per group

Distribution of Marks

Experiment: 25
Practical Work Book: 15
Viva Voce: 10

LIST OF EXPERIMENTS

1. Study of Amplitude Modulation and demodulation and calculation of modulation index (using Kit)
2. Study of Frequency Modulation. Wave form tracing (using Kit).
3. Study of pulse Amplitude Modulation using IC 555 (using Kit).
4. Study Pulse width Modulation using IC 555 (using Kit).
5. Study of Pulse Position Modulation using IC 555 (using Kit).
6. Study of ASK Modulation and Demodulation (using Kit).
7. Study of FSK Modulation and demodulation (using Kit).
8. Design of IC-555 timer as Monostable Multivibrator.
9. Design of IC-555 timer as Astable Multivibrator.
10. Study of propagation in Optical fiber (using optical fibre kit).
11. Study of time Division multiplexing of voice and data (using optical fibre kit).
12. Study of Digital multiplexing (using optical fibre kit).
13. To calculate the attenuation of the signal transmitted through optical fibres of different length (using optical fibre kit).
14. Calculation of bit rate for digital link and bandwidth for analog link.
15. Manchester coding for fibre optic communication (using optical fibre kit).
16. Voice coding: A-law and Mu-law (using optical fibre kit).

Semester 1 & 2
Course: B.Sc. (Hons) IT
Paper Code: BSIT-210 (IT LAB-IV)
Nomenclature: Computer Fundamentals & Office Tools(PRACTICAL)

M.M: 50
Time: 3 hrs

Instruction for the examiners: A candidate is required to perform one experiment out of the list below.

Note:-

1. This practical paper is to be studied during Semester 1 & 2. But the examination is to be held after Semester 2 only.
2. A candidate is required to perform 6 Experiments from the list given below.
3. The number of students in a group must not exceed 10.
4. Workload – 3 periods per week per group

Distribution of Marks

Experiment: 25
Practical Work Book: 15
Viva Voce: 10

LIST OF EXPERIMENTS

1. Familiarization with basic DOS commands like screen handling, file & directory, disk, system handling commands.
2. Installation of MS DOS, windows & other S/W.
3. In MS DOS creation of auto exec. Bat file & config.sys files and its implementation in installation of PC.
4. Learn to create a folder, copy files, move files, delete files in Windows
5. Learn to use the menu commands of MS-Word to Create, Edit, Modify, Format a document
6. Setting up of various input/output devices (monitor, printer, mouse, keypad etc.) in window environment.
7. Learn to use menu commands of MS-EXCEL to create and manipulate a spread sheet.
8. Plot graphs and charts in MS EXCEL.
9. Use of multimedia applications using various multimedia tools.
10. Internet: creating & sending e-mail, downloading, accessing, surfing, chatting, sending attachments.
11. Assembling of a system/ Identification of H/W components.
12. H/W (Peripherals) installation.
13. Use of S/W Tools (scandisk, antivirus, defragmentation etc)
14. Installation of S/W (OS, Application).