MIET

Model Institute of Engineering & Technology

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[SYLLABUS FOR IT]

[SEMESTERWISE COURSE DISTRIBUTION AND PAPERWISE OUTLINE OF BACHOLOR OF ENGINEERING IN INFORMATION TECHNOLOGY]

FOR EXAMINATIONS TO BE HELD IN DECEMBER, 2010 ONWARDS
UNIVERSITY OF JAMMU, JAMMU

COURSE OF STUDY FOR BE IST SEMESTER ENGINEERING
BRANCH: COMMON TO ALL BRANCHES

Course No.	Course Name	Lecture	Tutorial	Pract.	**Marks**			
					Theory	Sessional	Practical	Total
MTH -101	Engg. Math-1	3	2	-	100	25	-	125
PHY -102	Engg. Phy-I	3	1		100	25	-	125
CHM -103	Engg. Chem-I	3	1		100	25	-	125
M -104	Engg. Mech	3	1		100	25	-	125
HUM -105	Comm. Skills	3	1	-	100	25	-	125
M-106	Engg. Graphics	1	-	3	100	-	50	150
PHY -107	Engg. Physics Lab.	-	-	2	-	-	50	50
CHM -108	Engg. Chemistry Lab	-	-	2	-	-	50	50
M -109	Engg. Mech. Lab.	-	-	2	-	-	50	50
M -110	WS Technology	1	-	3	-	-	75	75
Total		17	6	12	600	125	275	1000

UNIVERSITY OF JAMMU
FOR EXAMINATIONS TO BE HELD IN DECEMBER 2010 ONWARDS

CLASS : B.E. IST SEMESTER
BRANCH: COMMON FOR ALL BRANCHES
COURSE TITLE: ENGINEERING MATHEMATICS-I
COURSE NO.MTH-101
DURATION OF EXAM: 3 HOURS

L	T	P	MARKS		
3	2	0	**Theory**	Sessional	**Practical**
			100	25	**0**

SECTION-A

1. Differential Calculus**: Successive differentiation, Leibnitz theorem (without proof), Partial differentiation with errors and approximations, Eular's theorem on homogeneous functions, Taylor's and Maclaurin's series of two variables, Maxima and Minima of functions of two variables, Asymptotes, Double points, curvature, Curve tracing in Cartesian, polar and parametric forms.**

2. Integral Calculus**:- Definite integrals with important properties, differentiation under the integral sign, Gamma, Beta and error functions with simple problems, applications of definite integrals to find length, area, volume and surface area of revolutions, transformation of coordinates, double and triple integrals with simple problems.**

SECTION-B

1. Complex Trignometry**: Hyperbolic functions of a complex variable, Inverse Hyperbolic functions, Logarthmic function of a complex variable, Summation of series by C+ iS method.**
2. **Ordinary Differential Equations: Differential equations of first order and first degree: Exact and non-exact differential equations, Linear and Bernoulli's differential equations. Higher order linear differential equations: Complementary solution, particular integral and general solution of these equations, variation of parameters technique to find particular integral of second order differential equations, Cauchy's and Lagrange's differential equations. Applications of Ordinary Differential Equations to simple Electrical and Mechanical Engg. problems.**
3. **Solid Geometry: Sphere, Intersection of sphere and plane, tangent plane property, cone and cylinder, related problems to right circular cone and cylinder.**

Books Recommended

1. **Engineering Mathematics by B.S. Grewal, Khanna Publications, New Delhi**
2. **Calculus and Analytic Geometry by Thomas and Finney, Addision Weslay, Narosa.**
3. **Differential Calculus by S. Narayan, New Delhi**
4. **Integral Calculus by S. Narayan, New Delhi.**

NOTE**: There shall be total eight questions, four from each section. Each question carry 20 marks. Five questions will have to be attempted, selecting atleast two from each section. Use of calculator is allowed.**

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FOR EXAMINATIONS TO BE HELD IN DECEMBER 2010 ONWARDS

B.E Ist Semester (Common Course) Maximum Marks:125

Subject: Engineering Physics-I	**L**	**T**	**P**	Theory	Sessional
Course No.PHY-102	**3**	**1**	**2**	**100**	**25**

Duration of Exam: 03 hours

SECTION-A

UNIT-1	**MATHEMATICAL PHYSICS**	**NO. OF LECTURES**	**WEIGHTAGE**
	Review of Vector Algebra, Scalar and Vector fields, Gradient of a Scalar field, Divergence and curl of a vector field and their physical significance, solenoidal fields, Guass Divergence theorm, Stokes theorem and their applications, Vector Identities	10	25%
UNIT-II	**ELECTROMAGNETIC FIELDS AND WAVES**		
	Guass's law in vector notation (differential and integral forms), Applications of Guass's law to find electric fields due to a long straight charged wire, Cylindrical and Spherical charge distributions. Derivation of Ampere's Circuital law, Application of Ampere's circuital law to find magnetic intensity due to long cylindrical wire, due to a long solenoid. Differential & Integral form of Faraday's law of electromagnetic induction, Equation of continuity, Displacement current and its significance, Maxwell's field equations (differential and integral forms), Betaron, Electromagnetic wave propagation in free space (e.m wave equations for $\xrightarrow[E]{}$ & $\xrightarrow[B]{}$ fields for free space and their solutions (plane wave solution), velocity of e.m. waves, Relation between E_o & B_o . Definition of Poynting Vetor, Poynting theorem.	16	25%
	SECTION-B		
UNIT-III	**APPLIED OPTICS**		
	Interference in thin films (by reflection and transmission of light), Theory of Newton's rings by reflected light, Determination of wave length and refractive index of monochromatic light by Newton's theory. Fraunhoffer & Fresnel's diffractions Fresnel's half period zones and rectilinear propagation of light, Fraunhoffer diffraction due to a single slit, plane diffraction grating & its theory for secondary maxima and minima. Unpolarized and polarized light, Nicol Prism, Mathematical representation of polarization of different types, Quarter & half wave plates.	12	20%
UNIT-IV	**OSCILLATIONS**		
	Free damped and forced oscillations and their differential equations, Logarithmic decrement, power dissipation & Quality factor, ultrasonic waves and their production by Piezoelectric method and applications (General)	05	15%
UNIT-V	**FIBRE OPTICS**		
	Propagation of light in fibres, numerical aperture, Single mode and multimode fibres, General applications	05	15%

TUTORIALS

S.NO.	TOPICS	UNIT NO.
T-1	Numerical problems based on vector analysis	I
T-2	Numerical problems on Gradient of Scalar fields	I
T-3	Numerical problems on Divergence of Vector fields	I
T-4	Numerical problems on Curl of vector fields	I
T-5	Numerical problems based on Guass divergence theorem and Stokes Theorem	I
T-6	Numerical problems based on the applications of Guass's Law	II
T-7	Numerical problems based on the applications of Ampere's law	II
T-8	Numerical problems pertaining to the applications of Faraday's law	II
T-9	Numerical problems pertaining to the applications of Interference phenomenon, Formation of Newton's rings	III
T-10	Numerical problems pertaining to the applications of diffraction and polarization phenomenon	III
T-11	Numerical problems based on the applications of SHM, damped and forced motion of bodies and applications of ultrasonic	IV
T-12	Numerical problems based on the applications of Fibre optics	V

NOTE: SETTING OF QUESTION PAPER (Instructions for examiners)

i) The question paper will consist of two sections\
   a) Section-1
   &
   b) Section-II

ii) Section-I Comprises of Unit-I and Unit-II
Section-II Comprises of Unit-III, Unit-IV and Unit-V

iii) Number of questions to be set in the paper =8 (eight)
(Four from each section) as per weightage

iv) Number of questions to be attempted =5 (five)
(Selecting at least two from each section)

BOOKS RECOMMENDED

S.NO.	TITLE	AUTHOR
1.	Vector Analysis	Spiegal
2.	Mathematical Physics	Rajput & Gupta
3.	Physics	Reisnick & Hatliday
4.	Optics	Brijlal & Subramaniam
5.	Sound	Subramaniam
6.	Sound	Khanna & Bedi
7.	Fibre Optics	Ghatak, Tyagrajan

UNIVERSITY OF JAMMU
FOR EXAMINATIONS TO BE HELD IN DECEMBER 2010 ONWARDS

CLASS : B.E. IST SEMESTER
BRANCH: COMMON TO ALL
COURSE TITLE: ENGG. CHEMISTRY
COURSE NO.:CHM-103
DURATION OF EXAM: 3 HOURS

L	T	P	MARKS		
3	1	2	**Theory**	Sessional	**Practical**
			100	25	**50**

SECTION - A

1. SPECTROSCOPY

UV Spectroscopy – Electronic transitions, spectrum, shift of bonds with solvents for double bonds, carbonyl compounds and aromatic compounds.
IR-Spectroscopy – Introduction, brief idea about instrumentation, applications and interpretation of IR Spectra, characterization of functional groups and frequency shift associated with structural changes.
'H-NMR Spectroscopy – Theory of 'H-NMR Spectroscopy, equivalent and non-equivalent protons, chemical shift, spin-spin coupling, spin-spin splitting, H'-NMR spectrum of a few organic compounds.

2. EXPLOSIVES
Introduction, classification and types of explosives, requirement for good explosives, preparation and uses of following explosives – Nitrocellulose, TNT, Dinitrobenzene, Picric Acid, Nitroglycerine and Dynamite, Gun Power, RDX, Tetracene.

SECTION - B

1. STEREOCHEMISTRY:-
Optical isomerism, recemerization, asymmetric synthesis, methods for resolution of racemic mixture, enantiomerism and diasteroisomerism.

2. ALLOYS
Introduction, purpose of making alloys, preparation of alloys, classification of alloys. (Ferrous and non-ferrous alloys), alloy steels & copper alloys.

3. LUBRICANTS
Definitions, functions of lubricants, mechanism of lubrication, classification of lubricants (Lubricating oils, semi solid lubricants, solid lubricants) synthetic lubricants, flash and fire points, oiliness, cloud and pour points.

4. DYES AND DRUGS
Classification of dyes and its applications. Define drug and give the applications of following drugs.
a) Narcotics b) Tranquilizers c) Antipyretics d) Antibiotics

FORMAT OF QUESTION PAPER
Total No. of Questions = 08
Questions to be attempted = 05
(Minimum Two from Each Section A & B)

Books Recommended :

1. **Engineering Chemistry — Jain & Jain**
2. **Engineering Chemistry — Sharma, B.K.**
3. **Engineering Chemistry — Dara, S.S.**
4. **Organic Chemistry — Bahl, B.S.**
5. **Organic Chemistry — Soni, P.L.**
6. **Organic Chemistry — Jain, M.K.**
7. **Spectroscopy of Organic Compounds — Silverstain**
8. **Spectroscopy of Organic Compounds — Kalsi, P.S.**

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FOR EXAMINATIONS TO BE HELD IN DECEMBER 2010 ONWARDS

CLASS : B.E. IST SEMESTER
BRANCH: COMMON TO ALL
COURSE TITLE: ENGINEERING MECHANICS
COURSE NO.M-104
DURATION OF EXAM: 3 HOURS

L	T	P	MARKS		
3	1	2	**Theory**	Sessional	**Practical**
			100	25	**50**

SECTION-A (STATICS)

Scope and basic concepts (Rigid body, force, units, etc), concept of free body diagram, Resultant of Co-planar concurrent forces in a plane and space, moment of force, Principle of Moments, Coplanar and spatial applications. Virtual work method and its applications.

Equilibrium and its equations for a planar and spatial systems, Analysis of trusses, Method of joints and sections.

Theory of friction, its laws and applications (inclined plane). Square threaded screws, Bolt friction, Centroids and center of gravity, centroids of lines and composite areas, centroids determined by integration.

Moment of inertia, Area M.O.I, Transfer theorems, Polar M.O.I, Product of inertia, Principal M.O.I, Mohr's circle for area M.O.I, Transfer theorems and axes M.O.I of composite bodies.

SECTION-B (DYNAMICS)

Kinematics of a particle rectilinear motion, motion curves, Rectangular components of curvilinear motion, Flight of Projectile, Normal and tangential components of acceleration, Radial and transverse components, Newton's Laws. D'Alembert's Principle.

Kinematics of rigid bodies: Types of rigid body motion, Angular motion, fixed axis rotation, Analysis of plane motion and its applications, Instantaneous center and Instantaneous axis of rotation.

Kinetics of Particle: Translation, Analysis of a particle as a rigid body.

Kinetics of rigid bodies: Equations of plane motion, fixed axis rotation, Rolling bodies, General plane motion, Impulse and momentum in plane motion, Angular momentum.

RECOMMENDED BOOKS

1.	**Engineering Mechanics (Statics & Dynamics)**	**Beer and Johnson**
2.	**Engineering Mechanics (Statics & Dynamics)**	**Mariam and Kraige**
3.	**Engineering Mechanics (Statics and Dynamics)**	**Timoshenko and Young**
4.	**Engineering Mechanics (Statics and Dynamics)**	**Ferdinand L Singer.**

NOTE : There shall be total eight questions, four from each section. Five questions will have to be attempted selecting atleast two from each section. Use of calculator is allowed.

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B.E IST SEMESTER
BRANCH: COMMON TO ALL
TITLE: COMMUNICATION SKILLS
COURSE NO: HUM-105
DURATION: 3 HOURS

L	T	P	MARKS
3	1	-	THEORY: 100
			SESSIONALS: 25

Exercises in comprehension, grammar vocabulary, usage, pronunciation, spelling and composition based on the following texts:

i. Contemporary English Prose
Edited by Menon
Oxford University Press

ii. Developing English Skills
Edited by Thanker, Desai and Purani
Oxford University Press

Or

English through Reading-II
Edited by Bhasker and Prabhu

Note: Test-I carries 50% weightage in the question paper and Text-II carries 50% weightage
Question Paper:

1. Six short answer questions on comprehension to be set from Text-I. Students expected to answer any three in about 150 words each (30 marks)
2. Phrases and idioms from text I to be used in sentences. Hundred percent choices to be given (20 marks)
3. Completing a paragraph of which the first two or three short Sentences are given (10 marks)
4. Exercise on tenses from Text II (5 marks)
5. Exercises on active/passive transformation from Text-II (5 marks)
6. Forming verbs or adjectives or nouns from the given words-text-II (5 marks)
7. Propositions from text-II (5 marks)
8. Matching words and their meanings Text-II (5 marks)
9. Forming words ending in-ify,-ize,-tion, ec. From Text-II (5 marks)
10. Filling in the blanks with a given set of words in brackets-Text-II (5 marks)
11. Questions on miscellaneous exercises from Text-II such as Question tags - articles etc.

or

Marking Stress or Syllable in given words. (5 marks)

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FOR EXAMINATIONS TO BE HELD IN DECEMBER 2010 ONWARDS

CLASS: B.E. IST SEMESTER
BRANCH: COMMON TO ALL
COURSE TITLE: ENGINEERING GRAPHICS
COURSE NO.Eng-106
DURATION OF EXAM: 3 HOURS

L	T	P	MARKS		
1	0	3	**Theory**	Sessional	**Practical**
			100	0	**50**

UNIT-1

Introduction: Conventional lines and signs used in Engineering Drawing, Printing and Lettering, Curves used in Engineering Practice: Cycloidals, Involutes, Spirals and Hellices, Locus of a point on simple mechanisms.

Theory and practice of Orthographic projections.
Projection of points and Lines: Projections of points and lines in different quadrants w.r.t principle reference planes, Finding of true length, True inclinations and traces of lines.
Projection of Planes: Projections of a plane w.r.t. the principle planes in simple and inclined positions. Rotation method and the Auxiliary plane method. Space relation of a plane and a line. To locate a point on a plane given its projections. Parallel relation of lines and planes. Shortest distance between a line and a plane.

UNIT-2

Projection of Solids: Classification and main features-Prisms and Pyramids. Projection of solids inclined to both the reference planes by (1) Rotation Method, and (II) Auxiliary plane method. Projection of solids in combination (Co-axial) in simple and inclined positions.
Sectioning of Solids: Object of sectioning, Types of cutting planes, True shape of section, Auxiliary views of sections of multiple co-axial solids in simple and titled conditions.

UNIT-3
Interpenetration of Solids and Intersection of Surface: Intersection of geometrical solids/hollow sections, Tracing of lines of intersection by line method and by section method.
Development of Surfaces: Classification of surfaces, Methods of development-Straight line method and Radial line method, Development of solids and hollow sections in full or part development of transition pieces. To draw projections from given development.

UNIT-4
Isometric Projection: Isometric scale, Isometric axes and Isometric planes, Isometric projection of solids and simple machine blocks.
Orthographic Projections: Orthographic projection of simple blocks (First & Third angles), to draw the third view from given two views. Missing lines in projection.

RECOMMENDED BOOKS

1.	**Engineering Drawing**	**N.D Bhatt**
2.	**Practical Geometry**	**V. Laxminarayan & GEV**
3.	**Engineering Graphics**	**K.L. Narayanan & P. Kamaish**
4.	**Principles of Engineering Graphics**	**P.E Giesecks**
5.	**Engineering Graphics**	**Frederic & Michelle.**

NOTE **At least two questions to be attempted from Unit-I and at least one question from each of the Units-II, III and IV in the theory examination paper.**

B.E Ist Semester	Maximum Marks
Subject: Engineering Physics Lab-I	Sessional
Course No.: PHY-107	50

S.No.	Experiment No.	Title of Experiment
1.	**Exp-I**	To plot a graph between the distance of the knife edges from the center of gravity and the time period of a compound pendulum. From the graph, find **a) Acceleration due to gravity** **b) Radius of gyration and the moment of inertia of the bar about an axis through the center of gravity.**
2.	**Exp-II**	To find the dispersive power of a given prism using a spectrometer.
3.	**Exp-III**	To find the refractive index of a given liquid using a hollow prism
4.	**Exp-IV**	To find the focal lengths of a convex mirror and a concave lens using a convex lens and a concave mirror respectively.
5.	**Exp-V**	To find the frequency of A.C mains using an electrical vibrator.
6.	**Exp-VI**	To draw the V-I characteristics of a forward and reverse bias P-N junction diode.
7.	**Exp-VII**	To study the common base characteristics of PNP junction transistor.
8.	**Exp-VIII**	To study the common emitter characteristics of PNP junction transistor.
9.	**Exp-IX**	To study the common base characteristics of NPN junction transistor.
10.	**Exp-X**	To study the common Emitter characteristics of NPN junction transistor.
11.	**Exp-XI**	To evaluate the value of Planck's constant.
12	**Exp-XII**	To study the characteristics of a Solar Cell.

NOTE: A minimum of six experiments is to be performed in a semester.

BOOKS RECOMMENDED

	TITLE	**AUTHOR**
1.	**Practical Physics**	Warsnop & Flint
2.	**Practical Physics**	Chauhan & Singh (Vol. I & Vol. II)
3.	**B.Sc. Practical Physics**	C.L Arora

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COURSE NO. CHM – 108

CHEMISTRY PRACTICAL :

1. **Determine the percentage of $CaCO_3$ in precipitated chalk. You are provided with IN HCl and 0.IN NaOH.**
2. **To analyse the given antacid tablets.**
3. **Determine Volumetrically the %age purity of given sample of Ferrous sulphate, x gms of which have been dissolved per litre provided N/10 $KMnO_4$**
4. **Determine Volumetrically the number of molecules of water of crystallization present in the given sample of Mohr's salt, x gms. of which have been dissolved per litre provided N/10 $K_2Cr_2O_7$ (using an external indicator).**
5. **Determine Volumetrically the percentage of Cu in a sample of $CuSO_4$ crystals, Z gms of which have been dissolved per litre, provided 0.IN $Na_2S_20_3$.**
6. **To determine the coefficient of viscosity of an unknown liquid using Ostwald Viscometer.**
7. **Determine the surface tension of a unknown liquid using Stalagmometer.**
8. **To prepare a pure and dry sample of Aspirin**
9. **To prepare a pure and dry sample of Glucosazone**
10. **Determine the method of purification of organic compounds by coloumn chromatography.**
11. **Determine the aniline point of a given lubricating oil.**

Books Recommended :

1. **Experimental Engineering Chemistry Shashi Chawla**
2. **Lab. Manual on Engg. Chemistry Basin, S K & Sudha Rani**

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COURSE NO. M-109

Engg. Mechanics Lab

Lab work shall be based on theory course of Engineering Mechanics Paper

CLASS : B.E. IST SEMESTER
BRANCH: COMPUTER ENGG., CIVIL ENGG., MECH. ENGG., ELECTRICAL ENGG., ELECTRONICS & COMM. ENGG.
COURSE TITLE: WORKSHOP TECHNOLOGY
COURSE NO.WS-110

L	T	P	MARKS		
1	0	3	**Theory**	Sessional	**Practical**
			0	0	**75**

Course Content:

Introduction to workshop as a fabrication unit. Information regarding various material of construction i.e Ferrous and Non-Ferrous, wood, plastics, etc. Basic fabrication process i.e castings, Mechanical working, welding and machining.

Wood working and pattern making practice, Information about working hand and wood working machines, various methods of joining of wooden parts for the fabrication of patterns, Pattern materials and allowances, pattern construction procedures, preservation of patterns.

Moulding and casting practice. Sand Moulding, Natural foundry sands and synthetic sands, preparation of moulding sands, mould making procedure, cast iron and aluminum and pouring, melting crucible process, Extraction of Castings.

Cold and hot working processes, basic tolls and equipment used in mechanical working. Forging furnace operation, Smith forgoing operations.

Books**:**

1. **Manufacturing process and materials by Campbell.**
2. **Manufacturing Process by P.N. Rao**
3. **Workshop Technology by Hajra and Chowdhary Vol.I**

Shop Practice:

Unit-1 Pattern Making:
- **i) Baring block pattern**
- **ii) Split pattern of "bench Vice" (Sliding Jaw).**

Unit-II Moulding and Casting
Moulding and Castings of Patterns at Unit I.

Unit-III Hand forging of:

- **i) Haxagonal headed bolt from a cylindrical rod.**
- **ii) Cubical Block from a Cylindrical section.**

UNIVERSITY OF JAMMU, JAMMU
FOR EXAMINATIONS TO BE HELD IN JUNE, 2011 ONWARDS
COURSE OF STUDY FOR BE 2ND SEMESTER ENGINEERING
BRANCH: COMMON TO ALL BRANCHES

Course No.	Course Name	Lecture	Tutorial	Pract	**Marks**			
					Theory	Sess.	Pract	Total
MTH –201	Engineering Math-1I	4	2	-	100	25	-	125
PHY -202	Engineering Phy-II	3	1	-	100	25	-	125
CHM -203	Engineering Chem-II	3	1	-	100	25	-	125
COM -204	Computer Programming	3	1	-	100	25	-	125
HUM-205	Engineering Economics	3	1	-	100	25	-	125
M -206	Machine Drawing-I	1	-	3	100	25	-	125
M -207	Workshop Technology-II	1	-	3	-	-	75	75
PHY –208	Engineering Physics II Lab	-	-	2	-	-	50	50
CHM –209	Engineering Chemistry II Lab	-	-	2	-	-	50	50
COM –210	Computer Programming Lab	-	-	2	-	-	75	75
Total		18	6	12	600	150	250	1000

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B.E 2ND Semester Maximum Marks:125

Course No: MTH-201	**L**	**T**	Theory	Sessional
Course Title: Engg. Math-II	**4**	**2**	**100**	**25**

Branch : Common to all branches
Duration of Exam: 3 hours

SECTION-A

1. Introduction to infinite series & sequences:- Convergence and divergence of a series, Leibnitz test, p-test, comparison test, Cauchy's root test, D' Alembert Ratio Test, Raabe's Test, Logarithmic test, alternating series..
2. Fourier Series: Introduction, Euler's formulae, sufficient conditions for a Fourier expansion, functions having points of discontinuity, change of intervals. Odd and even functions, Fourier expansion of Odd and even periodic functions, half range series, typical wave forms, Parseval's formula, complex form of Fourier -series.
3. Power Series Solutions of Second order O.d.e: Analytic function, ordinary point, singular point, regular and irregular singular points of o.d.e. Y " +P(x)Y' + Q(x)Y=0, Series solution of such differential equations about an ordinary point, Frobenius series solution about a regular singular point.

SECTION-B

2. First Order partial differential equations:-
   Formation of p.d.e, First order linear p.d.e, Non-Linear p.d.e. of Ist order, solution by Charpit's method, Four Standard forms of non-linear p.d.e with reference to Charpit's technique.

3. Higher Order Linear p.d.e: Homogenous and Non-homogenous higher order linear partial differential with constant coefficient inverse operator I/f (D,D'), Rules for finding P.I and C.F, Non-Linear equations of 2nd order. Application of p.d.e, method of separation of variables to solve equations of vibrations of strings (or one dim wave equation), one dim and two dim heat flow equations, Laplace equations, transmission line).

4. Matrices & determinants: Introduction, Rank of matrix, Elementary transformations, Elementary matrices, Inverse using elementary transformation, Normal form of a matrix, Vector spaces, Linear dependence and independence of vectors, consistency of linear system of equations, linear and orthogonal transformations, Eigen values and Eigen vector, Properties of Eigen value, Cayley Hamilton Theorem, Reduction to diagonal form, Reduction of quadratic form to canonical form, complex matrices.

BOOKS RECOMMENDED

1. Advanced Engineering Mathematics by R.K. Jain, S.R.K Iyenger, 2nd edition, Narosa, New Delhi.
2. Higher Engineering Mathematics by Dr. B.S. Grewal
3. Engineering Mathematics by Dr. Bhopinder Singh
4. Engineering Mathematics by B.S. Grewal Khanna Publication, New Delhi.
5. Partial differential equations by Singhania

Note : There shall be total eight questions, four from each section. Each question carry 20 marks. Five questions will have to be attempted, selecting atleast two from each section. Use of calculator is allowed.

UNIVERSITY OF JAMMU, JAMMU

FOR EXAMINATIONS TO BE HELD IN JUNE, 2011 ONWARDS

B.E IInd Semester (Common Course) Maximum Marks:125
Course No. PHY-202 **L** **T** Theory Sessional
Course Title : Engineering Physics-II **3** **1** **100** **25**
Branch : Common to all branches
Duration of Exam: 3 hours

UNIT-1	RELATIVISTIC DYNAMICS	**NO. OF LECTURES**	**WEIGHTAGE**
	Concept of Relativity, Frames of reference, Galilean Transformations, Michelson and Morley's experiment, Postulates of Special Theory of relativity, lorentz transformations, Length Contraction, Time dilation, variation of mass with velocity (Velocity addition), mass energy equivalence ($E^2=P^2c^2+m_o^2c^4$).	10	25%
UNIT-II	WAVE-PARTICLE DUALITY		
	Black Body radiation spectrum (Characteristics & Energy distribution), Wien's laws, Rayleigh Jeans Law excluding mathematical derivations, ultraviolet Catastrophe, Planck's hypothesis and Planck's radiation law, Explanation of black body radiation characteristics on the basis of Planck's law, photon concept. Compton effect, derivation of the direction of emission and the change in wavelength of scattered photons, direction of recoil electron and discussion of observed results. Debroglie's hypothesis, concept of matter waves, Davisson & Germer's experiment, wavepacket, Phase and Group velocity, Heisenberg's uncertainty principle. Experimental illustration of uncertainty principle using single slit.	12	25%
UNIT –III	QUANTUM MECHANICS		
	Wave function definition, interpretation and significance of wave function, Schrodinger's wave equations (Steady-State and time dependent) for 1-dim case, concept of operators and expectation values, Applications of Schrodinger's equation (Time independent) to a) Particle in a 1-dimensional box of infinite height, b) single step potential barrier, c) Tunnel effect, d) Quantum Mechanical harmonic oscillator with concept of Zero point energy.	14	25%
UNIT-IV	SOLID STATE PHYSICS		
	Intrinsic & extrinsic semi-conductors, Fermi & impurity levels, Impurity compensation, charge neutrality equation and semi-conductor conductivity. Einstein's relation, drift and diffusion current. Introductory concepts of advanced materials viz; conducting polymers dielectric materials, Nanomaterials, Smart materials and High T_c materials.	7	15%
UNIT-V	LASERS		
	Principle of Laser action, population Inversion, Einstein's Coefficients, He-Ne & Ruby Lasers, Holography	5	10%

TUTORIALS

B.E IInd Semester
Subject: Engg: Physics-II
Course No.Phy-202

S.NO.	TOPICS	UNIT NO.
T-1	Numerical problems based on Length contraction & time dilation	I
T-2	Numerical problems based on variation of mass, energy mass equivalence etc.	I
T-3	Numerical problems pertaining to energy spectrum of Black body radiations, Wien's displacement/R-J laws, Planck's law	II
T-4	Numerical problems based on photo-electric effect, work functions	II
T-5	Numerical problems based on Compton effect, recoil energy of electron etc.	II
T-6	Numerical problems based on the characteristics of De-broglie waves, Davisson-Germer's Expt.	II
T-7	Numerical problems related to Heisenberg's uncertainty principle	II
T-8	Numerical problems based on Schrodinger's wave equation, expectation values of certain physical quantities and operators	III
T-9	Numerical problems to find the Eigen function and eigen values for particle in a box	III
T-10	Numerical problems to find the reflection and transmission co-efficients for a particle penetrating a potential barrier	III
T-11	Simple numerical problems based on finding the bandgaps in semi-conductor materials etc.	IV
T-12	Simple numerical problems based on finding the energy level difference in Lasers etc.	V

NOTE: SETTING OF QUESTION PAPER (Instructions for Examiners)

i) The question paper will consist of two sections

a) Section-I
&
b) Section-II

ii) Section-I Comprises of Unit-I and Unit-II
Section-II Comprises of Unit-III, Unit-IV and Unit-V

iii) Number of questions to be set in the paper =8 (eight)
(Four from each section as per weightage)

iv) Number of questions to be attempted =5 (five)
(Selecting at least two from each section)

BOOKS RECOMMENDED

	TITLE	**AUTHOR**
1)	Modern Physics	Beiser
2)	Modern Physics	Blatt
3)	Modern Physics	Gupta & Gupta
4)	Basic Electronics	Millman & Halkias
5)	Material Science	S.L. Kakani, Amit Kakani

UNIVERSITY OF JAMMU, JAMMU

FOR EXAMINATIONS TO BE HELD IN JUNE, 2011 ONWARDS

B.E 2ND Semester Maximum Marks:125
Course No: CHM-203 **L** **T** Theory Sessional
Course Title: Engg. Chem-II **3** **1** **100** **25**
Branch : Common to all branches
Duration of Exam: 3 hours

SECTION-A

1. **ENVIRONMENTAL CHEMISTRY :**
Concept of Environmental chemistry, segments of environment (a brief idea about atmoshphere, hydrosphere and lithosphere)

AIR POLLUTION – Introduction, Types of air pollution and control of air pollution.

WATER POLLUTION : Introduction, Sources of water pollution and methods of controlling water pollution.

CHEMICALS AND METAL TOXICOLOGY (Biochemical effects of Pb, Hg, As, Zn, Cd, Ni, Se, CN, O_3 and pesticides in brief on man).

2. **INORGANIC CEMENTING MATERIALS** :
Cement and Lime – Introduction, classification of lime, manufacture and properties of lime, setting and hardening of lime.

Cement, types of cement, manufacture of Portland cement, setting and hardening of cement.

3. **WATER TREATMENT**
Introduction, types of water, softening of water by different processes, chemical methods and sterilization, priming and foaming, sludge and scale formation, determination of hardness of water by soap titration method and EDTA method. Radioactivity of water, numericals on hardness and softening of water.

SECTION-B

1. **PLASTICS:**
Introduction, importance of plastics and uses, classification of plastics, moulding constituents of a plastic, moulding of plastics into articles (compression moulding, injection moulding, transfer moulding and extrusion moulding) Preparation , properties and uses of following plastic materials:
a) Polymethyl methacrylate b) Epoxy resins c) Alkyd resins.

2. **RUBBER**
Introduction , types of rubber, treatment of latex, vulcanization of rubber, preparation, properties and uses of following synthetic rubber: Buna-S, Buna-N & Butyl rubber.

3. **PAINTS**

Introduction, requisites of a good paint, constituents of a paint, manufacture of a paint, properties and uses of important white pigments such as white lead, Zinc oxide and Lithophone.

BOOKS RECOMMENDED :

1.	Engineering Chemistry	Jain & Jain
2.	Engineering Chemistry	Sharma, B.K.
3.	Engineering Chemistry	Dara, S.S.
4.	Engineering Chemistry	Shashi, Chawla
5.	Organic Chemistry	Bahl, B.S.
6.	Environmental Chemistry	De, A.K.
7.	Textbook of Environmental Chemistry	Tyagi & Mehra
8.	Polymer Science	Gowrikar, V.R. etal.

Note : There shall be total eight questions, four from each section. Each question carry 20 marks. Five questions will have to be attempted, selecting atleast two from each section. Use of calculator is allowed.

UNIVERSITY OF JAMMU

FOR EXAMINATION TO BE HELD IN JUNE 2011 ONWARDS

CLASS: B.E 2nd SEMESTER
BRANCH: COMMON FOR ALL BRANCHES
COURSE TITLE: COMPUTER PROGRAMMING USING C
COURSE NO: COM –204
DURATION OF EXAM: 3 HOURS

L	T	P	MARKS Theory	MARKS Sessionals
3	1	-	100	25

SECTION-A

1. Basic structure of Computer, Stored Program Concept, Binary Arithmetic – Addition, Subtraction, Multiplication, Data Representation – Fixed and Floating Point, Semiconductor Memories.

2. Introduction to C, Data Types, Constants, Variables, Expressions, Statements, Operators, Data Input and Output.

3. Control Statements, Arrays, Recursion, Storage Classes, Library Functions.

SECTION-B

4. Functions, User Defined Data Types, Structures, Unions, Passing Structure to Functions.

5. Pointers, Operation on Pointers, Passing Pointers to Functions, Data Files – Opening, Closing, Creating Data Files

Books Recommended:-

1. Programming With C - Byron Gottfried.
2. Programming With C - E. Balaguruswamy.
3. C The Complete Referance – Herbert Schildt.
4. Let us C - Yashwant Kanitkar.
5. Digital Computer Fundamentals - Thomas C. Bartee.
6. Digital Computer Design - V . Rajaraman.

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

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FOR EXAMINATIONS TO BE HELD IN JUNE, 2011 ONWARDS

B.E. 2nd Semester Maximum Marks: 125
Course No. HUM-205 Theory Sessional
Course Title: Engineering Economics **L T** **100** **25**
Branch: Common to all branches **3 1**
Duration of Exam : 3 Hours

SECTION-A

UNIT-1

	Definitions of Economics
	a) Science of Wealth
	b) Science of Material Welfare
	c) Science of Scarcity
	Economic System
	a) Features of Capitalism
	b) Features of Socialism
	c) Features of Mixed Economy
UNIT-II	
	Consumer Behaviour
	a) Cardinal Utility Analysis: The Concept and Utility Maximisation: Laws of Diminishing Marginal Utility and Equi-Marginal Utility.
	b) Ordinal Utility Analysis: Meaning and Properties of Indifference Curves and Utility Maximization.
	Demand Theory:
	a) Meaning of Demand and law of Demand
	b) Factors Affecting Demand
	c) Elasticity of Demand (Price Elasticity, Income Elasticity and Cross Elasticity)
	d) Demand Forescasting
	SECTION-B
UNIT-III	
	Theory of Production:
	a) Factorsof Production and Production Function.
	b) Isoquants : Meaning & Properties
	c) Law of Variable Proportions & Returns to scale
	Costs and Cost Analysis
	a) The Concept of Marginal, Average, Fixed and Variable Costs.
	b) The Shape of Fixed, Average and Marginal Cost Curves (short run)
	Market and Market Structures
	a) Meaning and Feature of Perfect Competition, Monopolistic Competition, Oligopoly and Monopoly.
	b) Price Determination Under Perfect competition and monopoly.
UNIT-IV	
	Some commonly used Economic Concepts
	a) Meaning, Types and Methods to Control Inflation.
	b) Concept of Stock Market

	c) Meaning & Concept of National Income	
	d) Functions of Commercial Bank & Central Bank	
	e) Features of Development and Under Development	
	f) Meaning & Phases of Trade/Business Cycle	
	g) Index Number : Construction and difficulties in measurement of Index Number.	
BOOKS RECOMMENDED		
1.	K.K.Dewett	: Modern Economic Theory
2.	H.L Ahuja	: Advanced Economic Theory
3.	M.L. Jhingan	: Macro Economics
4.	P.N Chopra	: Business Economics/Advanced Eco. Theory

Note: There shall be total eight questions, four from each section. Each question carry 20 marks. Five questions will have to be attempted, selecting atleast two from each section. Use of calculator is allowed.

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FOR EXAMINATIONS TO BE HELD IN JUNE, 2011 ONWARDS

B.E. 2nd Semester Maximum Marks: 125
Course No. M-206 Theory Sessional
Course Title: Machine Drawing-I **L P** **100** **25**
Branch: Common to all branches **1 3**
Duration of Exam : 3 Hours

SECTION-A

1. I.S. Code for Machine Drawing.
2. Types of Sections and Recommended Scale, Dimensioning and Sectioning of Machine elements.
3. Drawing and sketching of machine elements in Orthographic Projections.
4. Different types of Joints: Riveted joints, Threaded fasteners, Knuckle joint, Cotter Joints: Gib and Cotter, Sleeve and Spigot.
5. Stud assembly, Pipe joints including expansion joint.
6. Shaft pulley, cone pulley, Fast and loose pulley, etc.

SECTION-B

1. Simple assemblies: Shaft couplings and Clutches, Muff Coupling, Split muff, Flange Couplings: Solid and Flexible, Protected and Unprotected, Universal Coupling.
2. Bearings: Pedestal bearing including Hanger bearings, Pivot bearing and Swivel bearing.

RECOMMENDED BOOKS:-

1. Machine Drawing — P.S. Gill
2. Machine Drawing — Sidheshwar and Kannaih
3. Machine Drawing — N.D. Bhatt

NOTE:-

1. There will be Six questions in all, five from **Section- A** (each of 15 marks) and one Compulsory question of 55 marks from **Section - B.**

2. Students are required to attempt Four questions in all, three form Section-A and one compulsory question involving assembly from **Sections–B**.

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FOR EXAMINATIONS TO BE HELD IN JUNE, 2011 ONWARDS

B.E 2ND Semester Maximum Marks : 75

	L	P	Prac/Lab
Course No: M-207			
Course Title: Workshop Technology-II	**1**	**3**	**75**

Branch : Common to all branches
Duration of Exam : 3 Hours

WELDING SHOP

1. Introduction to Welding as a fabrication process, Welding application and general safety precautions.
2. Introduction to Gas and Arc welding processes.
3. Preparation of single V-butt joint by Gas and Arc welding processes.
4. Preparation of double V-butt joint, Lap joint, Tee joint and Corner joint by Gas and Arc welding processes.

FITTING SHOP

1. Assembly of Snap fitting of flat pieces (Male, Female).
2. Assembly and fitting of two L-shaped rectangular flat pieces.

SHEET METAL SHOP

1. Introduction to sheet metal tools.
2. Practice of making regular geometrical and traditional shapes in sheet metal, which includes:
    a) Square elbow
    b) Tee joint
    c) Funnel making
    d) Tray and riveted handle.

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FOR EXAMINATIONS TO BE HELD IN JUNE, 2011 ONWARDS

B.E 2ND Semester Maximum Marks : 50
Course No: PHY-208 **P** Prac/Lab
Course Title: Engineering Physics Lab-II **2** **50**
Branch : Common to all branches
Duration of Exam : 3 Hours

S.NO.	EXPERIMENT NO.	TITLE OF EXPERIMENT
1.	Exp-1	To determine the wavelength of sodium light using a plane diffraction grating.
2.	Exp-II	To find the wavelength of a monochromatic source of light using Fresnel's Biprism.
3.	Exp-III	To determine the specific rotation of sugar using laurent's half shade polarimeter.
4.	Exp-IV	Verification of Faraday's laws.
5.	Exp-V	To find the wavelength of monochromatic light using Newton's rings Apparatus.
6.	Exp-VI	To find the co-efficient of self-induction of a coil by Anderson's bridge using head phone.
7.	Exp-VII	To determine the value of e/m for electron by a long solenoid (Helical method).
8.	Exp-VIII	To find the impedance of LCR series and parallel circuits.
9.	Exp-IX	To study the Zener diode characteristics.
10.	Exp-X	To find the specific resistance of given wire by using carry Foster's Bridge.
11.	Exp-XI	To find the wavelength of He-Ne gas laser.
12.	Exp-XII	To find the diameter of a thin wire using He-Ne gas laser.

NOTE: AT LEAST A MINIMUM OF SIX EXPERIMENTS IS TO BE PERFORMED IN A SEMESTER.

BOOKS RECOMMENDED

	TITLE	AUTHOR
1.	B.Sc Practical physics	C.L. Arora
2.	Practical Physics	Worsnop & Flint
3.	Practical Physics	Chauhan & Singh (Vol.I & Vol. II)

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FOR EXAMINATIONS TO BE HELD IN JUNE, 2011 ONWARDS

B.E 2ND Semester Maximum Marks : 50
Course No: CHM-209 **P** Prac/Lab
Course Title: Engineering Chemistry Lab-II **2** **50**
Branch : Common to all branches
Duration of Exam : 3 Hours

EXPERIMENTS

1. Determine the total hardness of a sample of water by complexometric method (using EDTA).
2. Determine the chloride content in supplied water sample using Mohr's method (Argentometric method).
3. Determine dissolved oxygen in the given sample of water (winkler's method).
4. Determine the free chlorine in the given sample of water.
5. Determine the acidity of a given water sample.
6. Determine the alkalinity of a given water sample.
7. Determine the percentage of calcium oxide in cement.
8. Organic Analysis: Identify the following organic compounds (preparation of at least one derivative).
    a) Carboxylic acids
    b) Compounds containing alcoholic and phenolic OH groups
    c) Aldehydes & Ketones
    d) Carbohydrates
    e) Amides, amines, anilides and nitro compounds
    f) Hydrocarbons
    g) Compounds containing sulphur or halogen

LIST OF BOOKS RECOMMENDED

1. Experimental Engineering Chemistry — Shashi Chawla
2. Lab. Manual on Engineering Chemistry — Basin, S K & Sudha Rani
3. A Manual of Practical Engineering Chemistry — Dr. Rajinder Kumar

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FOR EXAMINATIONS TO BE HELD IN JUNE, 2011 ONWARDS

B.E 2ND Semester Maximum Marks : 75

Course No: COM-210	**P**	Prac/Lab
Course Title: Computer Programming Using C Lab.	**2**	**75**

Branch : Common to all branches

Duration of Exam : 3 Hours

The practicals will be based on the topics covered under Theory Syllabus. The Students are required to perform at least 15 Programs.

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COURSE SCHEME

FOR B.E. 3RD SEMESTER I.T. ENGINEERING

FOR EXAMINATIONS TO BE HELD IN DECEMBER 2011 ONWARDS

Course No.	Course Name	Hours/ Weeks			Marks			
		L	T	P	Thry.	Sess.	Pract.	Total
IT-301	FOUNDATION OF IT	3	1	..	75	25	..	100
HUM-301	ORGANIZATION MANAGEMENT	2	1	..	50	25	..	75
IT-302	COMPUTER ORGANIZATION	3	1	..	100	50	..	150
MTH-313	ENGINEERING MATHEMATICS - III	3	2	..	100	50	..	150
COM-301	OBJECT ORIENTED PROGRAMMING USING C++	3	1	..	100	50	..	150
ECE-313	BASIC ELECTRONICS	3	1	..	100	50	..	150
COM-302	OBJECT ORIENTED PROGRAMMING LAB	..	..	3	..	..	75	75
IT-303	COMPUTER ORGANIZATION LAB.	..	..	3	..	..	50	50
IT-304	FOUNDATION OF IT LAB	..	..	3	..	..	50	50
ECE-314	BASIC ELECTRONICS LAB.			3			50	50
	TOTAL	**17**	**7**	**12**	**525**	**250**	**225**	**1000**

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FOR EXAMINATION TO BE HELD IN DECEMBER 2011 ONWARDS

		MARKS	
L	**T**	**THEORY**	**SESSIONAL**
3	**1**	**75**	**25**

CLASS: B.E 3RD SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: FOUNDATION OF IT
Course No. IT –301
DURATION OF EXAM: 3 HOURS

SECTION - I

Information concept & Processing

Definition of Information, Need for Information, Quality of Information, Value of Information Categories and Levels of Information in Business Organization, Data concepts and Data Processing, Data Representation- Number System.

Computer Appreciation

Definition of an Electronic Digital Computer, History, Generations, Characteristics and applications of computers. Classification of computers.

Elements of Computers Processing System

Hardware CPU, Peripherals, Storage Media, Software Definition, Role and Categories Firmware and Human-ware.

SECTION - II

Computer & Communication

Need for Data Transmission Over Distances, Types of Data Transmission, Media for Data Transmission Networking of Computers-Introduction of LAN & WAN. Client Server Architecture.

Programming Language Classification

Computer Languages, Generation of Languages, Translators-Interpreters. Compilers, Assemblers. Introduction to 4GLS.

Information Technology Applications of India

Scientific, Business. Educational and Entertainment Applications, Industry Automation, Weather Forecasting, Awareness of Ongoing IT Projects in India NICNET ERNET etc.

Suggested Text Books & References.

1. Rajaraman, V. Introduction of Computer.
2. Morris, Computer Organization”
3. Hamacher, Computer Organization”
4. Kanter, Managing Information System.”

NOTE: There shall be total Eight Questions of 15 marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section. Use of Calculator is allowed.

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		MARKS	
L	**T**	**THEORY**	**SESSIONAL**
2	**1**	**50**	**25**

CLASS: B.E 3RD SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: ORGANIZATION MANAGEMENT
Course No. HUM –301
DURATION OF EXAM: 3 HOURS

SECTION – I

CONCEPT AND EVOLUTION OF MANAGEMENT

Features and Signification of Mangement, Roles and responsibilities. The management process & Function, History of Management thought, theories & Approaches to management.

PLANNING

Characteristics, Significance and Limitations, Purpose and process of Planning. Types of Managerial plans, Planning Premises and Forecasting.

DECISION MAKING

Fundamentals & Process of Decision Making, Types of Decisions, Techniques of Decision Making, Limitations of Relational Decisional Making.

SECTION – II

ORGANIZING

Factors Influencing Organizing, Significance and Common Errors in Organizing, Departmentation. Span of control, Levels of Organisation, Line & Staff Relationship, Delegation and Decentralization.

DIRECTING AND LEADING

Aspects of Directing , Principles of Directing , Leadership- characteristics, Functions and styles, Communication : Means Types & Barriers.

CONTROLLING AND COORDINATING

Basic control process, Pre-requisities of control, Techniques of Controlling. Recent trends, Co-ordinating: Importance and Principles , External & Iternal Co-ordination

SUGGESTED TEXT BOOKS & REFERENCES

1. Koontz, H & Weihrich, H., Essentials of Management", Mc Graw Hill Int.
2. Prasad, L.M. Principles & Practice of Management."
3. Allen, Management & organization." Mc Graw Hill Int.
4. Jain, J.K. Principles & Functions of Management. Prateek Prak.
5. Agrawal, R.D. Organization and Management.

NOTE: There shall be total Eight Questions of 10 marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section. Use of Calculator is allowed.

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		MARKS	
L	**T**	**THEORY**	**SESSIONAL**
3	**1**	**100**	**50**

CLASS: B.E 3RD SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: COMPUTER ORGANIZATION
Course No. IT –302
DURATION OF EXAM: 3 HOURS

SECTION - I

REPRESENTATION OF INFORMATION

Number systems, integer and floating point representation, character codes (ASCII, EBCDIC), Error detection & correction codes

BASIC BUILDING BLOCK

Boolean Algebra, Combination logic design, flip-flops, registers, counters. ALU, Arithmetic and Logic Operations, Faster algorithms and their implementation, Organisation of Central Units (Hardwired and Microprogrammed), Microprogramming Organisation. Memory types and Organisation. Address decoding and selecting.

SECTION - II

PERIPHERAL DEVICES

I/O devices (tapes and disks). Programmed & Interrupt control, mechanisms, I/O controllers.

Bus bandwidths. Assembly Language Programming Programmers model of a machine. Example of a typical 16 to 32 bit processor. Registers, Addressing modes, instruction set, use of an assembly language for specific programs for typical programs like: Table search, Subroutines Symbolic and numeric manipulations, and I/O.

Suggested Text Books & References.

1. Gear C.W., ``Computer Organisation and Programming.” Mc Graw, Hill 1975.
2. Tannenbaum, A.S. “ Structured Computer Organisation,” Prentice-Hall of India.
3. Mano, M.M., “Computer System Architecture,” Prentice-Hall of India, 1983.
4. Langholz, G., Grancioni, J. and Kandel, A.L. “Elements of Computer Organisation”, Prentice Hall International, 1988. Assembler, “ Manual for the Choosen Machine”.
5. Hayes, “ Computer Architecture and Organisation”, Mc Graw-Hill International Edition.
6. Sloan, F.E., “ Computer Hardware and Organisation”, 2”d Edn, Galgotia Puble., Pvt. Ltd.

NOTE: There shall be total Eight Questions of 20 marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section. Use of Calculator is allowed.

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FOR EXAMINATION TO BE HELD IN DECEMBER 2011 ONWARDS

		MARKS	
L	**T**	**THEORY**	**SESSIONAL**
3	**2**	**100**	**50**

CLASS: B.E 3RD SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: ENGINEERING MATHEMATICS-III
Course No. MTH-313
DURATION OF EXAM: 3 HOURS

UNIT-I.

Theory of analysis of Complex Variables

1. Complex functions, limit, continuity, Differentiability, Analytic function, Necessary and sufficient condition for f(z) to be analytic.
2. Cauchy-Riemann equations in polar form, Harmonic function, Harmonic conjugate, complex integration, Simply connected and multiply connected regions, Cauchy Integral theorem, Cauchy integral formula, Cauchy integral formula for derivatives, Cauchy's inequality, Liouville's theorem.
3. Transformations, conformal mapping, bilinear transformation.

UNIT-II

Numerical Methods and Analysis

1. Definition of Operators. Finite & divided difference table, Newtons & Lagrange's interpolation formulae,
2. Numerical solution of Algebraic and transcendental equations by Regula-Falsi Method, Newton-Raphson Method and Direct Iterative method.
3. Solution of difference equations, solution of differential equations by Picards and Eular's Method.

UNIT-III

Laplace Transforms

1. Laplace Transform, properties of L.T, Inverse Laplace transform.
2. L.T of Unit step function, Impulse function, periodic function, initial value theorem, Final value theorem, convolution theorem.
3. Application of L.T to solve linear differential equations & convolution type integral equations.

UNIT-IV

Fourier Integrals and Transforms

1. Fourier Integrals, Fourier Integral Representation, Fourier Transforms, Fourier sine and cosine transforms.
2. Fourier transforms and their inverse formulae, properties of Fourier Transforms, Parseval's Identity,
3. Application of F.T to solve integral equations.

BOOKS RECOMMENDED

1. Higher Engineering Mathematics by B.S. Grewal
2. Engineering Mathematics-III by Bhopinder Singh
3. Advanced Engineering Mathematics by Jain & Iyengar

NOTE: There shall be total Eight Questions of 20 Marks each, Two questions from each Unit, students have to attempt Five Questions selecting at least one from each Unit. Use of Calculator is allowed.

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		MARKS	
L	T	THEORY	SESSIONAL
3	1	100	50

CLASS: B.E 3RD SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: OBJECT ORIENTED PROGRAMMING USING C++
Course No. COM –301
DURATION OF EXAM: 3 HOURS

SECTION - I

1. **Review of Pointers:** Passing parameters, Array of Pointers, Character Pointers. Programming Techniques: Unstructured, Procedural, Modular. Introduction to objects, object & cohesion. (30)

2. Overview of C++, Object Oriented programming, Encapsulation, Polymorphism, Inheritance, Console I/O, C++ Comments.
Classes, Metaclass, Abstract class, Public and private variables, Constructor and Destructor Functions, Constructors taking parameters, Object pointers, In-Line Functions, Automatic Inlining, Friend Functions, This Pointer, New & Delete, Array of Objects. (50)

SECTION - II

1. Function Overloading, Overloading Constructor Functions, Operator overloading, Overloading Binary and Unary Operators, Overloading Relational & logical Operators. (30)

2. Inheritance, Using Protected Members, multiple inheritance, Virtual Base Classes, Introduction to Virtual Functions. (30)

3. C++, I/O Basics, Ifstream, Ofstream, Fstream, Open(), Close(), EOF(), Binary I/O, Get(), Put(), Read(), Write(), Random Access, Seekg(), Seekp(), Tellg(), Tellp(). (20)

BOOKS RECOMMENDED:
1. Turbo C++ - by Robert Lafore.

Reference Books:
1. Programming in C++ by Balaguruswamy.
2. C++ the Complete Referance by Herbert Schildt.
3. Mastering C++ by K.R. Venugopal & T. Ravishankar & R.K.

NOTE: There shall be total Eight Questions of 20 Marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section. Use of Calculator is allowed.

UNIVERSITY OF JAMMU, JAMMU
FOR EXAMINATION TO BE HELD IN DECEMBER 2011 ONWARDS

		MARKS	
L	T	THEORY	SESSIONAL

3	**1**	**100**	**50**

CLASS: B.E 3RD SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: BASIC ELECTRONICS
Course No. ECE-313
DURATION OF EXAM: 3 HOURS

UNIT-I

Semiconductor Diodes: Introduction to P-N junction diodes, Equivalent circuit & symbol, P-N junction as rectifier, Volt-ampere characteristics, Temperature dependence of V-I characteristics, Diode capacitances, Static & dynamic resistances, Zener diode and its break down phenomena, Tunnel diode, Schotky diode, LED, photo diode, varactor diodes. Rectifiers & Filters: Half wave, Full wave & bridge rectifiers with necessary derivations, Capactor filter phenomenon.

UNIT-II

Bipolar Junction Transistor: Introduction, Transistor basics (unbiased & biased transistor), Generalized transistor equation, Transistor current components, Early effect, Transistor configurations & characteristics, Need for stabilization, Type of biasing circuits with necessary derivations, Load line concept (AC & DC), Bias stabilization (S, S' S"), Thermal runway, Bias Compensation Techniques,

UNIT-III

Field Effect Transistor: Introduction, Construction of JFET, Operation, Symbol, JFET-Characteristics, JFET Parameters and their relationship, Biasing of FET with necessary derivations. Comparison between JFET and BJT & MOSFET, FET small signal model & its analysis. MOSFET (Depletion & enhancement), Characteristics, Symbol and Operation.

UNIT-IV

Operational Amplifiers: Introduction , Block diagram, Circuit symbol features & Electrical parameters of OP-Amp, Concept of slew rate & CMRR, Op-amp in open loop & closed loop configuration with derivation. OP-amp as voltage follower, Inverter, I-V converter, Summing, Scaling & average amplifiers(Non Inverting & Inverting), Instrumentation Amplifier, Op-amp as clipper, clamper, peak detector, peaking amplifier, comparator & voltage limiters. Integrator, Differentiator, Oscillator, Square wave, Triangular wave & Saw-tooth wave generator, Filters,

BOOKS RECOMMENDED

1. Integrated Electronics-by Miliman & Halkias (Tata McGraw Hill)
2. Integrated Electronics-by Malvino (Tata McGraw Hill)
3. Electronic devices –by Bolystead (PHI Edition)
4. Op-Amp & its Application- by Ramakant Gyakwad.

NOTE: There shall be total Eight Questions of 20 Marks each, Two questions from each Unit, students have to attempt Five Questions selecting at least one from each Unit. Use of Calculator is allowed.

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FOR EXAMINATION TO BE HELD IN DECEMBER 2011 ONWARDS

			MARKS
L	**T**	**P**	**PRACTICAL**
-	**-**	**3**	**75**

CLASS: B.E 3RD SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: OBJECT ORIENTED PROGRAMMING LAB
COURSE NO. COM-302
DURATION OF EXAM: 3 HOURS

The Practicals will be based on Computer Languages Theory Syllabus. The students are required to submit at least 10 Programs covering at least 2 programs from each unit.

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FOR EXAMINATION TO BE HELD IN DECEMBER 2011 ONWARDS

L	T	P	MARKS PRACTICAL
-	-	3	50

CLASS: B.E 3RD SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: COMPUTER ORGANIZATION LAB.
COURSE NO. IT-303
DURATION OF EXAM: 3 HOURS

ORGANISATION LAB

1. W.A.P to complete two strings.
2. W.A.P to read two numbers, add them and display the result.
3. W.A.P to read two numbers, multiply them and display the result
4. W.A.P to find the average of n numbers in an array.
5. W.A.P to convert lowercase alphabet into uppercase.
6. W.A.P to find average of n numbers using subroutine.
7. W.A.P to compute the factorial of a given number.
8. W.A.P to print the reverse of a string.
9. W.A.P to clear the screen using subroutine.
10. W.A.P to calculate the number of characters in a given string.

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L	T	P	MARKS PRACTICAL
-	-	3	50

CLASS: B.E 3RD SEMESTER

BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: FOUNDATION OF I.T. LAB.
COURSE NO. IT-304
DURATION OF EXAM: 3 HOUR

1. HARDWARE LAB

Study of all the internet component of a computer system (C.P.U, RAM, ROM, I/O PORT, Processor, Bus, Chips, Hard disk, Floppy disk and Drive etc.) and their connections/installation.

2. NETWARE LAB

i) What is Netware
ii) Who is Who in Netware.
iii) Netware Commands
iv) Hardware installation
v) Software installation
vi) Networking the system (Ethernet, Token Ring, ARCnet)
vii) Cable Type
viii) Setting up login Script and user group.
ix) Adding security features.
x) Printing Data in Network.
xi) Managing Netware Console (Shutting down Netware etc)

3. VISUAL INTRODUCTION TO WINDOWS

i) Starting, Shutting down Windows.
ii) Study of Desktop, Menu, Icons, Tools, and their access/function.
iii) Microsoft Office 97 (Word, Excel, Power Point).

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L	T	P	MARKS
-	-	3	Practical 50

CLASS: B.E 3RD SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE TITLE: BASIC ELECTRONICS LAB
Course No. ECE-314
DURATION OF EXAM: 3 HOURS

List of Practical's

1. To study the operation characteristics of the P.N. junction, Ge/Si (Forward & Reverse Characteristics).
2. To study the operation characteristics of Zener diode (Forward & Reverse Characteristics).
3. Half wave Rectifier.
4. Full wave / Bridge Rectifier.
5. To study the operation characteristics (Input / Output) of PNP / NPN Transistor (Common Emitter / Common Base).
6. To study the frequency response of signal amplifier (CE/CB).
7. To study the characteristics of FET.
8. Determination of h parameter from transistor characteristics.
9. Design of self Bias circuits using BJT.
10. Design of self Bias circuits using FET.

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COURSE SCHEME
FOR B.E. 4TH SEM COMPUTER ENGG.
FOR EXAMINATION TO BE HELD IN JUNE 2010, 2011 & 2012

Course No.	Course Name	Hours/ Weeks			Marks			
		L	T	P	Thry.	Sess.	Pract.	Total
IT-401	SYSTEM ANALYSIS & DESIGN	2	1	..	50	25	..	75
MTH-414	GRAPH THEORY	2	1	..	75	25	..	100
HUM-403	MANAGEMENT ACCOUNTINGS & FINANCE	3	1	..	100	25	..	125
IT-402	DATA STRUCTURE & PROG. METHODOLOGY	3	1	..	100	50	..	150
IT-403	SYSTEM SOFTWARE	3	1	..	100	50	..	150
ECE-404	DATA COMMUNICATION	3	1	..	100	50	..	150
IT-404	SYSTEM SOFTWARE LAB.	..	..	3	..	..	50	50
IT-405	DATA STRUCTURE LAB.	..	..	3	..	..	50	50
IT-406	MINI PROJECT (SYSTEM ANALYSIS & DESIGN)	..	..	3	..	..	50	50
ECE-405	DATA COMMUNICATION LAB.			3			50	50
COM-405	PC HARDWARE & MAINTENANCE LAB.			2			50	50
	TOTAL	**16**	**6**	**14**	**525**	**225**	**250**	**1000**

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For Examination to be held in June 2010, 2011, & 2012

CLASS: B.E. 4TH SEMESTER					**MARKS**	
BRANCH: INFORMATION TECHNOLOGY	**L**	**T**	**P**	**Theory**	**Sess**	**Practical.**
COURSE NO. : IT-401	**2**	**1**	**-**	**50**	**25**	**-**
COURSE TITLE: SYSTEM ANALYSIS & DESIGN						
DURATION OF EXAM: 3 HOURS						

SECTION - I

Overview of system analysis and design, Business system concepts, system development life cycle, project selection, feasibility analysis, design implementation testing and evaluation.

Feasibility Studies
Technical and economical feasibility cost and benefit analysis, system requirement specification and analysis, fact finding techniques. Draw flow diagrams, data dictionaries, process organization and interaction, decision trees and table: structural English advanced modeling methods, ER Diagram & DFDS, Entity relationship model.

SECTION - II

Project Selection
Source of project requests, managing project review and selection, preliminary investigation.

Detailed Design
Modularization, module specification, files design, system development involving database, program design, practical design, System control and quality assurance, system administration and training, conversion and operation plans hardware and software selection.

Suggested Text Books & References

1. Raja Raman. V.”system analysis and design “prentice-hall
2. Murdic, R.G. ROSE, J.E. & Claggt, J.R. “information systems for modern management “Prentice-Hall India.
3. Wigardes. K. Svenson, A. Sehong, L.A. & Dahlgren, G., “Structured Analysis and Design of information System:, McGraw Hill Book Company
4. Thomas. & Prince. “Information systems for Planning & Control”.
5. Aktas,” Structure Analysis and Design of information System” Prentice-Hall International.
6. Hawrys Zbiewyes, I.T. “Introduction to system analysis & design “, Prentice-Hall India.
7. Sern J.A., “Analysis & Design of Information System”, McGraw Hill.

NOTE: There shall be total Eight Questions of 10 marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section. Use of Calculator is allowed.

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				MARKS		
CLASS: B.E. 4TH SEMESTER						
BRANCH: INFORMATION TECHNOLOGY	**L**	**T**	**P**	**Theory**	**Sess**	**Pract.**
COURSE NO. : IT-402	**3**	**1**	**-**	**100**	**50**	**-**

COURSE TITLE:DATA STRUCTURE PROG. & METHODOLOGY
DURATION OF EXAM: 3 HOURS

SECTION - I

Introduction of C Language (Related to Data Structure)

Elementary Data Structures

Arrays and strings; packing; space arrays; algorithm development; complexity; simple example of algorithm development; recursion.

Searching & Sorting techniques

Sequential Search, Divide and conquer binary search; selection and insertion sort; merge-sort: quick- sort; complexity of sorting.

Structured approach to programming

Step wise refinement approach. Reasoning about programs, Program specification, Pre-and post condition, weakest pre-conditions, program assertions, loop invariants. Programming style documentation, basic concepts of program testing.

SECTION - II

Linear lists

Stacks; stack use-post fin notation recursion removal, queues-circular queues. Linked list-definition on Pascal and C; creation and deletion of nodes; circular and doubly linked lists; applications of list.

Non Linear lists

Graphs and representation sets-UNION and FIND operations; graph algorithms; optimization and greedy method; minimum spanning tree, shortest path, Trees, AVL trees, Threaded trees, Heap sort; tries and B-trees; external search. Tables and information retrieval; mashing; depth first and breadth first search; examples of backtracking. String algorithms-pattern search and text editing.

Suggested Text Books & References

1) Wirth Niclaus, “Algorithms + Data structures = Programs”, PHI, 1978.
2) Horwitz & Sahni “Fundamentals of data structures”, Comp. Sc. Pr. 1978
3) Knuth, “Theart of computer programming”, Vols. 1-2, Add.Wes. 1970-80.
4) Aho,Hopcroft, & Ullman, J.E., “Data structures & algorithms”, Add.Wes. 1982.
5) Tanonbaum & Augenstein “Data structures with Pascal” PHI 1985.
6) Trembley and Sorenson, “Data structures using Pascal”, McGraw Hill 1985.
7) Stubbas,D, “Data structures with Abstract Data Types and Modula 2”, Brooks & Cole Publications Comp. 1987.

NOTE: There will be Eight questions of 20 Marks each, Four from each Section, Students shall have to attempt five questions, selecting at least two from each Section. Use of Calculator is allowed.

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CLASS: B.E. 4TH SEMESTER **MARKS**

BRANCH: INFORMATION TECHNOLOGY	**L**	**T**	**P**	**Theory**	**Sess**	**Practical.**
COURSE NO. : IT-403	**3**	**1**	**-**	**100**	**50**	**-**

COURSE TITLE: SYSTEM SOFTWARE
DURATION OF EXAM: 3 HOURS

SECTION - I

Machine architecture, instruction set, addressing modes of the chosen machine, arithmetic & logic operations, floating point operations.

C Programming

Review of syntax of C with emphasis on features like pointers, Bit operations, Preprocessors, files, Assemblers, Cross Assemblers, Two pas assembler design, data structures and algorithms.

Macro Processors

Definitions, nested macro-definitions, macro expansion, conditional macro expansion, linking, loading and Relocation, Static and dynamic linking, Loading- and Relocations, Editors, Debuggers, Interactive programming environments

SECTION - II

DOS

Introduction to interrupts, structure of the interrupt vector table, interrupt types, software interrupts,

Hardware interrupts, interrupts at a glance, interrupt calls from C, internal structure of DOS. Booting DOS, COM & EXE Programs. BIOS. Memory resident programs. Running Batch files, Programming Examples of text handling, file management, interface and device drivel programming in C.

Suggested Books & References

1. Donovan, J.J. “System Programming”’ Tata- McGraw Hill.
2. Dhamdhare, D.M, “Introduction to System Software”, Tata- McGraw Hill Publishers Comp. 1986.
3. Michael Tischer, “PC System Programming”, Abacus.
4. Cooper Mullish, “The sprit of C, An Introduction to Modern programming”Jaico publication New Delhi, 1987.
5. Dhamdhare, “System Programming and Operating system”, Tata- McGraw Hill.
6. Gottfried, “Programming with C, Schaum”, Tata- McGraw Hill.

NOTE: There will be Eight questions of 20 Marks each, Four from each Section, Students shall have to attempt five questions, selecting at least two from each Section. Use of Calculator is allowed.

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B.E IV SEMESTER **M Marks:**

BRANCH: I.T					
COURSE NO:MTH-414	**L**	**T**	**P**	**TH**	**SSESS**
COURSE TITLE: GRAPH THEORY	**2**	**1**	**-**	**75**	**25**

DURATION OF EXAM: 3 HOURS

Algebraic System

Definition, examples and related basic theorems on Groups, Sub groups, cosets & normal subgroups. Rings, Integral domains and fields with examples.

Graph Theory

Basic terminology, multi graphs and weighted graphs, connectivity; walk, trail and path, circuits & Cycles, shortest path in weighted graphs, Algorithm of shortest path, Hamiltonian and Eulerian paths and circuits, Eulerian trail & circuit, Eulerian graphs, Hamiltonian cycle, Hamiltonian graph, Konisberg Bridge problem,

Planar Graph

Introduction to Planar Graph, maps and region. Euler's formula. Kuratowski's graphs and Kuratowski's theorem.

Trees and Cut Sets

Trees, Rooted Trees, path lengths in rooted trees, prefix codes binary search trees, spanning trees and cut sets and circuits.

BOOKS RECOMMENDED

1. Discrete Mathematics by C.L. Liu (Mc-Graw Hill Book Company).
2. Graph Theory by Narsingh Deo (Prentice-Hall of India Pvt. Ltd. New Delhi)

NOTE: There will be Eight questions of 15 Marks each, out of which Question No.1 of objective type/multiple choice is compulsory. Students shall have to attempt total five question in all. Use of Calculator is allowed.

L	T	P	Marks Theory	SESS
3	1	-	100	25

B.E 4TH SEMESTER

Branch: Information Technology

Course No:HUM-403

Course Title: Management Accounts & & Finance

Duration of Examination: 3 Hours

SECTION - I

INTRODUCTION

Management Accounting-Meaning and Definition, Characteristics, Objectives, Scope and functions of Management Accounting-Financial Accounting, Cost Accounting and Management Accounting-Tools and Techniques of Management Accounting-Advantages and Limitations of Management Accounting-Management Accountant: functions and duties-Essential Qualities.

FINANCIAL STATEMENT ANALYSIS

Introduction-objectives analysis of financial statement-tools of financial statement analysis-Multi-step income statement, Horizontal analysis, Common sized analysis, Trend analysis,

RATIO ANALYSIS

Ratio Analysis- Meaning and rationale, advantages and limitations. Types of ratios Liquidity Ratios, Solvency Ratios, Profitability Ratios, Efficiency Ratios, Integrated Ratios.

SECTION - II

FUNDS FLOW AND CASH FLOW STATEMENT

Meaning of Fund flow statement- Uses of fund flow statement.

Funds Flow Statement and Income Statement, Preparation of Funds flow statement

Meaning of Cash flow statement- Preparation of Cash Flow Statement. Difference between Cash Flow Analysis and Funds Flow Analysis. Utility of Cash Flow Analysis. Limitation of Cash Flow Analysis.

MARGINAL COSTING AND BREAK-EVEN ANALYSIS

Definition and characteristics of Marginal costing, Marginal costing vs Absorption costing, Marginal cost equation, Profit/Volume Ratio, Cost- Volume-Profit Analysis, Break Even Point.

BUDGETORY CONTROL

Meaning and purpose, components of effective budget programme, Classification and types of budgets, performance Budgeting, Zero Base Budgeting.

Books Recommended:-

01. R.N Anthony, G.A, Walsh: Management Accounting
02. M.Y Khan, K.P Jain: Management Accounting
03. R.K. Sharma and Shashi K. Gupta-Management Accounting
04. Pandey I.M :Financial Management

NOTE: There shall be total eight questions, four from each section. Five questions will have to be attempted selecting at least two from each section. Use of calculator is allowed.

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CLASS: 4TH SEMESTER **MARKS**
BRANCH: INFORMATION TECHNOLOGY **L T P Theory Sess. Pract.**
COURSE NO.: ECE- 404 **3 1 - 100 50 -**
COURSE TITLE:DATA COMMUNICATION
DURATION OF EXAM: 3 HOURS

SECTION - I

Fundamentals of Digital Communication

Communication Channel, Measure of information, Encoding of source output. Shannon's Encoding algorithms, Discrete and continues channel, Entropy aocling Variable length codes, Data compression. Shannon- Hantly Theorem. Base band data transmission, Basem band puleshaping. Inter Symbol Interface (ISI), Dubinary Base band PAM, systemMany signaling schemes, Equalisation, Synchronisation Scrambler and Unscramble.

Band pass data transmission system ASK, PSK, FAK, DPSK & PSK, MSK, Modulation schemes coherent and Non coherent detector. Probability of Error, (PE), Performance Analysis and comparison.

SECTION - II

Error detection and correction codes

Linear Block Encoding, Algebraic Codes, Cyclic Codes, Convolution codes. Best Error, Correcting Codes performances of codes.
Synchronous and Asynchronous transmission, Modem, serial interface Circuit switching packet, switching, Hybrid switching, Architecture of computer network OSI model, data communication protocols.

Suggested Text Books & References

1. Shanmavgaon, K.S. Wiley John and sons," Digital and Analog Communication System"
2. Roden, M.S. " Analog and Digital Communication System" .P.H.I.
3. Scheber W.L. "Data Communication". MGH
4. Tanebaum. " Computer Networks".

NOTE: There shall be total eight questions, four from each section. Five questions will have to be attempted selecting at least two from each section. Use of calculator is allowed.

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CLASS: 4TH SEMESTER **MARKS**
BRANCH: INFORMATION TECHNOLOGY **P Pract.**
COURSE NO.: IT-404 **3 50**
COURSE TITLE: SYSTEM SOFTWARE LAB.
DURATION OF EXAM: 3 HOURS

Implement the following using C program.

1. Introductions:
   A. Simple Examples

B. Decision control statements/looping

2. Functions:
   A. Call by value/ call by reference.
   B. Recursive functions.
   C. Passing an array elements to a function.

3. Structure/Unions:
   A. Definition
   B. Array of structure
   C. Array with structure
   D. Passing structure elements to a function
   E. Passing an entire structure to a function

4. Pointers:
   A. Introduction
   B. Distinguish between '&' and '*'
   C. Pointer to pointer
   D. Function returning pointers
   E. Dynamic memory allocation function (malloc / calloc / free)

5. File handling:

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	MARKS	
CLASS: 4TH SEMESTER		
BRANCH: INFORMATION TECHNOLOGY	**P**	**Pract.**
COURSE NO.: IT-405	**3**	**50**
COURSE TITLE: DATA STRUCTURE LAB.		
DURATION OF EXAM: 3 HOURS		

1. Familiarity with Turbo C IDE (Integrated Development Environment)
2. C Programs on
   a. Control Statements (alternation)
   b. Control Statements (Repetition)
   c. Arrays
   d. Functions
   e. Structures
   f. Pointers
3. Write a program to search an element from a list of elements using
   a. Binary Search b. Linear Search
4. Write a program to Sort a list of elements using
   a. Bubble Sort
   b. Selection Sort
   c. Insertion Sort
   d. Merge Sort
   e. Quick Sort
5. Write program to
   a. Create a Linked List b. Insert a node in Linked List at specific location
   c. Delete a desired a Node

6. Write a program to
   a. Create a doubly linked list b. Insert a Node at a desired place
   c. Delete a desired Node
7. Write a program to implement a Stack using
   a. Arrays b. Push an element on Stack
   c. Pop an element from it
8. Write a program to implement a Stack using
   a. Linked List b. Push an element on Stack
   c. Pop an element from it
9. Write a program to
   a. Create a Queue b. Insert an element in Queue
   b. Delete an element from it
10. Write a program to
   a. Create a Binary Tree
   b. Pre-order Traversal of Binary Tree
   c. Post-order Traversal of Binary Tree
   d. In-order of Binary Tree
11. Write a program to find shortest path in a graph
12. Write a program to implement Depth First search
13. Write a program to implement Breadth First Search

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CLASS: 4TH SEMESTER		**MARKS**
BRANCH: INFORMATION TECHNOLOGY	**P**	**Practical**
COURSE NO.: IT-406	**3**	**50**
COURSE TITLE: MINI PROJECT (SYSTEMS ANALYSIS & DESIGN)		
DURATION OF EXAM: 3 HOURS		

Q-1 Case Study of Stock Monitoring System

Q-2 Case Study of Recruitment Agency

The case study will be done with the help of Data Flow Diagrams, Pseudo Codes, RDBMS (Access, Oracle) & Front End (Visual Basic & Java)

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CLASS: 4TH SEMESTER		**MARKS**
BRANCH: INFORMATION TECHNOLOGY	**P**	**Pract.**
COURSE NO.: ECE- 405	**3**	**50**
COURSE TITLE: DATA COMMUNICATION LAB.		
DURATION OF EXAM: 3 HOURS		

Q-1 To find the amplitude modulated waveform and to calculate the modulation index.

Q-2 To find the frequency modulated waveform and to plot the FM for different carrier frequency.

Q-3 To find the S-curve of a FM modular.

Q-4 To study the transmitter and receiver of a PCM and plot the no. of Bits Transmitted & received.

Q-5 To observe the output waveform of a PAM with the help of a CRO and plot the amplitude & frequency of the modulating, carrier & modulated signal.

Q-6 To observe the output waveform of a PWM with the help of CRO and plot the amplitude & frequency of the modulating, carrier & modulated signal.

Q-7 To observe the output waveform of a PPM with the help of CRO and plot the amplitude & frequency of the modulating, carrier & modulated signal.

Q-8 To study the method of error detection and its correction.

Q-9 To observe & plot the output waveform of a ASK.

Q-10 To observe & plot the output waveform of a FSK.

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CLASS: 4TH SEMESTER		**MARKS**
BRANCH: INFORMATION TECHNOLOGY	**P**	**Pract.**
COURSE NO.: COM- 405	**2**	**50**

COURSE TITLE: PC HARDWARE & MAINTENANCE LAB.
DURATION OF EXAM: 3 HOURS

List of Practical's:-

1. Study of Keyboards – Mechanical Keyboards, Membrane Keyboards,
2. Study of Printers – Dot Matrix, Inkjet Printers.
3. Study of SMPS.
4. Assembling the units of Computer,.
5. Fault Finding in the various units of Computer, fault finding Codes and Beeps.
6. Software loading at different Platforms such as DOS, Windows –95 /98 2000.

7. Use of Antivirus Software.

8. Preparation of user Manuals/ Service Manuals for various Computer Blocks.

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COURSE SCHEME
FOR B.E. 5TH SEMESTER I.T. ENGINEERING.
FOR EXAMINATION TO BE HELD IN Dec 2010 ONWARDS

Course No.	Course Name	Hours/ Weeks			Marks			
		L	T	P	Theory	Sess.	Pract.	Total
HUM-501	MANAGERIAL ECONOMICS	3	1	..	75	25	..	100
IT-502	FORMAL LANGUAGE AND AUTOMATA THEORY	3	1	..	75	25	..	100
IT-503	RELATIONAL DATABASE MANAGEMEMT SYSTEM	3	1	..	100	50	..	150
IT-504	MICROPROCESSOR BASED SYSTEM DESIGN	3	1	..	100	50	..	150
IT-505	OPERATING SYSTEMS-1	3	1	..	100	50	..	150
IT-506	COMPUTER NETWORKS	3	1	..	100	50	..	150
IT-507	OPERATING SYSTEM LAB	..	..	3	..	..	50	50
IT-508	DATABASE LAB	..	..	3	..	..	50	50
IT-509	MICROPROCESSOR LAB	..	..	3	..	..	50	50

IT-510	COMPUTER NETWORKS LAB			3			50	50
TOTAL		**18**	**6**	**12**	**550**	**250**	**200**	**1000**

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CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY

COURSE TITLE: MANAGERIAL ECONOMICS	**L**	**T**	**P**	**MARKS**	
				THEORY	**SESSIONAL**
	3	**1**	**-**	**75**	**25**

COURSE CODE: HUM - 501
DURATION OF EXAM – 3Hrs

SECTION-A

MICROECONOMICS:

i) Introduction
ii) Importance of Micro Economics.

DEMAND ANALYSIS:

i) Revealed Preference Hypothesis
ii) Recent Developments in Demand Theory

PRODUCTION FUNCTION:

i) Cobb- Douglas Production function
ii) Concept of cost of production
iii) Cost output relationship - long run.

MARKET DYNAMICS:

i) Pricing under Monopolistic Competition Determination of Short Period Price and output
ii) Pricing Policies, Profit Concepts & Measurement, Entry Deterring Pricing, Predatory Pricing, Implicit Price Fixing.
iii) Multi- product Pricing, Peak load pricing, Two part Tariff, Product Life Cycle, Information Problems and Associated Cost.

SECTION-B

FIRM AS AN ORGANIZATION:

i) Objectives of the Firm, Types of the Firm, Firm Versus Markets, Uncertainty and Firm
ii) Vertical and Horizontal Integration.
iii) Diversification, Merges and Takeovers.

MACROECONOMICS AGGREGATES AND CONCEPTS

i) Simple Macroeconomic Models,
ii) Monetary
iii) Theory of Business Cycle
iv) Input Output Analysis.

SUGGESTED TEXT BOOKS & REFERENCES

1. Managerial Economics Gupta, G.S.
2. Managerial Economics Davis, H.
3. Managerial Economics ELBS - Pitman.
4. Mote, V.N. Paul Sarnual & Gupta, G.S. “Managerial Economics: Concepts and Cases”, Tata McGraw Hill Co. Ltd. New Delhi.
5. Ramakrishnan Rao, T.V.S. “Theory of firms: Economic and Managerial Aspects”, Affiliated East West Press Pvt. Ltd. New Delhi.
6. K.K. Dewell –Modern Economic Theory.

NOTE: There shall be total Eight Questions of 15 marks each, four questions from each Section. Five Questions have to be attempted selecting at least two from each Section.

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CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY

COURSE TITLE: FORMAL LANGUAGE AND AUTOMATA THEORY	L	T	P	MARKS THEORY	MARKS SESSIONAL
	3	1	-	75	25

COURSE CODE: IT-502
DURATION OF EXAM – 3HRS

UNIT-1

Theory of Automata and Formal Languages

Module 1 - Introduction; alphabets, Strings and Languages; automata and Grammars

Module 2 - Finite automata (FA) -its behavior; DFA -Formal definition, simplified notations (state transition diagram, transition table), Language of a DFA. NFA -Formal definition, Language of an NFA, Removing, epsilon transitions. Equivalence of DFAs and NFAs

Module 3 - Regular expressions (RE) -Definition, FA and RE, RE to FA, FA to RE, algebraic laws for RE, applications of REs. Regular grammars and FA, FA for regular grammar, Regular grammar for FA

Module 4- Proving languages to be non-regular -Pumping Lenma, applications. Some closure properties of Regular languages -Closure under Boolean operations, reversal, homomorphism, inverse homomorphism, M hill-Nerode theorem

Module 5-DFA Minimization Some decision properties of Regular languages -emptiness, finiteness, membership, equivalence of two DF As or REs. Twoway finite automata, Finite automata with output

Module 6 -Context-free Grammars (CFGs) -Formal definition, sentential forms, leftmost and rightmost derivations,, the language of a CFG. Derivation tree or Parse tree - Definition, Relationship between parse trees and derivations. Parsing and ambiguity, Ambiguity in grammars and Languages

UNIT-2

Module 7- Pushdown Automata (PDA) -Formal definition, behavior and graphical notation, Instantaneous descriptions (Ids), The language of PDA (acceptance by final state and empty stack). Equivalence of acceptance by final state and empty stack, Equivalence of PDAs and CFGs, CFG to PDA, PDA to CFG.

Module 8 - DPDAs -Definition, DPDAs and Regular Languages, DPDAs and CFLs. Languages of DPDAs, DPDAs, and ambiguous grammars.

Module 9 - Simplification of CFGs -Removing useless symbols, epsilon- Productions, and unit productions, Normal forms -CNF and GNF

Module 10- Proving that some languages are not context free -Pumping lemma for CFLs, applications. Some closure properties of CFLs -Closure under union, concatenation,

Kleene closure, substitution, homomorphism, reversal, intersection with regular set, etc. Some more decision properties of CFLs, Review of some undecidable CFL problems.

Module 11 -Turing Machines -Formal definition and behavior, Transition diagrams, Language of a TM, TM as accepters and deciders.TM as a computer of integer functions Programming techniques for TMs -Storage in state, multiple tracks, subroutines.Variants of TMs -Multitape TMs, Nondeterministic TMs.
TMs with semi-infinite tapes, multistack machines. Equivalence of the various variants with the basic model

Module 12- Recursive and recursively enumerable languages, Some propertiesof recursive and recursively enumerable languages, Codes for TMs. A language that is not recursively enumerable (the diagonalization language). The universal language, Undecidability of the universal language, The Halting problem, Undecidable problems about TMs.

Module 13- Post's Correspondence Problem (PCP) -Definition, Undecidability of PCP. Other undecidability problems e.g. some problems related to CFLs Module 14 (2 Lectures) Context sensitive language and linear bounded automata. Chomsky hierarchy

Suggested Text Books & References

- Hopcroft and Ullman. "Introduction to Automata theory Languages an Computation", Narosa.
- Mishra & Chandra Shekaran, "Theory of Computer Science", Prentice Hall.
- Kohan, "Theory of Computer Science".
- Korral, "Theory of Computer Science".

NOTE: There shall be total Eight Questions of 15 marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section.

UNIVERSITY OF JAMMU

FOR EXAMINATION TO BE HELD IN DEC. 2010 ONWARDS.

CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE: RELATIONAL DATA BASE MANAGEMENT SYSTEM

L	T	P	MARKS	
			THEORY	SESSIONAL
3	1	-	100	50

COURSE CODE: IT-503
DURATION OF EXAM – 3HRS

UNIT-1

Introduction
Data Base System Concepts and architecture, Data models, scheme and instances, Data independence

Data Modelling Using the Entity-Relationship Model
ER model concepts, Notations for ER diagram, Extended E.R. model. Relation-ships of higher degree.Relational Data Model and Languages
Relational data Model concepts, constraints, relational algebra. Relational Calculus, Tuple and Domain calculus.
SQL, data definitions queries and up-dates in SQL, QBE, Data definitions, queries and up-dates in QBE.

Example DBMS System ORACLE
Basic architecture. DML,DCL,DDL.Commands,PL/SQL,Triggers.

UNIT-2

Database Design
Functional dependencies. Normal Forms. First, second, and third functional personal normal forms. BCNF,
Multi-valued dependencies Fourth Normal form. Join Dependencies and fifth Normal form, Inclusion Dependencies.

Query Processing and Optimisation
Algorithms for executing query operations. Heuristics for query optimizations.

Transaction Processing Concepts
Transaction and system concepts, schedules and Recoverability seriazability of schedules.

Concurrency Control Techniques
Locking Techniques for concurrency control Time stamping and concurrency control.

Suggested Text Books & References

- Silberschatz,surdershan and Korth, "Database System Concepts".
- Jeffry D. Ulman, "Principles of Data Base Systems", Second Edition. Galgotia Pub.
- Date, C.J. "An Introduction to Database System", Vol. I, II & IIIrd, Addison-welsey.
- Prakash, Naveen "Introduction to Database Management", Tata McGraw Hill.
- Desai,Bipin,"An Introduction to Database Concepts"

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FOR EXAMINATION TO BE HELD IN DEC. 2010 ONWARDS.

CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE: MICRO-PROCESSOR BASED SYSTEM DESIGN

L	T	P	MARKS	
			THEORY	SESSIONAL
3	1	-	100	50

COURSE CODE: IT-504
DURATION OF EXAM – 3HRS

Section A

Introduction : Microcomputer structure and Operation, The 8086 Microprocessor Family- Overview, Arc hitecture of processor 8085 and 8086.
Assembly Language Programming: Introduction to 8085 and 8086, Programming Development steps, Constructing machine Development codes for 8085 and 8086 instructions, Assembly Language Program Development Tools, Implementation of 8086 Simple sequence program Jumps, Flags, and Conditional jumps, Loops and Constructs, Instruction Timing and Delay Loops
Strings, Procedure : String instructions, Writing and Using Procedures

Instruction Description and Assembler Directives and Macros: Instruction Descriptions, Assembler Directives Systems Connections, Writing and using Assembler Macros
Interrupts: 8086 Interrupts and Types, Software Interrupt Applications
Coprocessor : The 8087 Math Coprocessor – Architecture.

Section B

Peripheral Devices : Programmable Peripheral Interface (8255), Programmable Interval Timer (8253/54), Programmable Interrupt Controller (8259/8259A), DMA Controller (8237), Multipurpose Programmable Device (8155).

Digital and Analog Interfacing: Programmable Parallel Ports and Handshake Input/Output, Interfacing Keyboards and Alphanumeric Displays, Interfacing Microcomputer Ports to Devices
Memory Interfacing: Memory Map Table and Interfacing ROM and RAM with micro-computer system
Case studies: Multi-user/Multitasking OS, Concepts, 80286 Microprocessor, 80386 Microprocessor, 80486 Microprocessor, Pentium Processor.

BOOKS RECOMMENDED

1. Hall Douglas V, “Microprocessors and Interfacing”, Tata McGraw-Hill 1989.
2. Berry B Brey ,“The Intel Microprocessors: 8086/8088, 80186/80188, 80286, 80386 And 80486, Pentium and Pentium ProProcessor Architecture, Programming and Interfacing”, Pearson Education 2003.
3. Mathur Aditya P, “Introduction to Microprocessors” Tata McGraw-Hill 1989.
4. Ray A Kbhurchandi, K M, “Advanced microprocessors and peripherals“,Tata McGraw Hill 2000.
5. James L Antonakos, “An Introduction to the Intel Family of Microprocessors: A Hands-On Approach Utilizing the 80x86 Microprocessor Family”, First Edition**.** Cengage Learning, New Delhi

NOTE: There shall be total Eight Questions of 20 marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section. Use of Calculator is allowed.

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FOR EXAMINATION TO BE HELD IN DEC. 2010 ONWARDS.

CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE: OPERATING SYSTEM I

L	T	P	MARKS	
			THEORY	SESSIONAL
3	1	-		

COURSE CODE: IT-505 **100** **50**
DURATION OF EXAM – 3HRS

SECTION A

Introduction
Operating System- objectives , functions, services and components. The Evolution of Operating Systems,-Batch,Interactive, time-sharing and real time systems. Concepts of Multitasking, multiprogramming, buffering, spooling.

Operating System Structure
System components, operating system service, System structure.

Concurrent Processes
Concept of a Process, Inter processes Communication, Process generation, Process scheduling. Principles of concurrency. The Producer/consumer problem, The critical section problem,Semaphores, Classical problems in concurrency,

CPU Scheduling
Scheduling concepts, Performance Criteria, Scheduling algorithms, Algorithm Evaluation, Multiprocessor scheduling.

Dead Locks
System model, Dead lock Characterization. Prevention, avoidance and detection. Recovery from dead lock,Combined approach.

SECTION B

Memory Management
Base machine, Resident Monitor, Multiprogramming with fixed partitions. Multiprogramming with variable partitions. Multiple Base Registers.
Paging ,Segmentation,Page segmentation, Virtual Memory concept, Demand Paging,Performance, Page Replacement algorithms, Allocation of frames, Thrashing, Cache memory organization impact on performance.

I/O Management & Disk Scheduling
I/O Devices and the organization of I/O function, I/O Buffering, Disk I/O Operating System Design Issues.

File System
File Concept-File organization and Access mechanism, File Directories, File Sharing, Implementation issues.

Protection & security
Introduction to security,Protection- Goals of protection,Domain of protection,Access & rights.
Security & threats-the problems of security, authentication, program threats, System threats, Threat monitoring

SUGGESTED TEXT BOOKS & REFERENCES

· Milenkovic M., “Operating System : Concept & Design”, McGraw Hill.
· Tanenbaum, A.S. “Operating System Design & Implementation”, Practice Hall, NJ
· Silbersehatz A. and Peterson, J.L. “Operating System Concepts” Wiley
· Stalling, Willam “Operating Systems”, Maxwell McMillan International Editions 1992
· Dietel, H.N. “An introduction to operating Systems”, Addison Wesley.

NOTE: There shall be total Eight Questions of 20 marks each, Four questions from each Section, students have to attempt five Questions selecting at least two from each Section.

CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY

COURSE TITLE: COMPUTER NETWORKS	**L**	**T**	**P**	**MARKS**	
COURSE CODE: IT-506	**3**	**1**	**-**	**THEORY**	**SESSIONAL**
				100	**50**

DURATION OF EXAM – 3HRS

Unit-1

Overview

Basic elements of a computer network. Overview of OSI reference model, topology design. Characteristics of Peer-to-peer, Server- based, Broadcast and Point-to-Point networks .Characteristics and features of LAN,WAN, MAN .

Data link layer

Design issues for data link layer-Flow control protocols:Stop-and-wait and Sliding window. ARQ based Error control. Link protocols :HDLC and SLIP and PPP protocols.

Local/Personal Area Networks

ALOHA, Slotted ALOHA, IEEE LAN standards: 802.2(LLC),802.3(CSMA/CD),802.3(Token Ring),FDDI, 802.11(WLAN).

UNIT-2

Network Layer

Design issues for the Network Layer Routing algorithm: Dijkstra's shortest path routing,Distance vector routing, Link state routing. Principles of congestion control. Principles of Internetworking. Tunneling, Fragmentations. IP Address classes and subnetting. The Internet protocols: IP,ICMP,ARP,RARP,RIP,OSPF,EGP and BGP.

Transport layer

The design issues for transport layer. TCP and UDP. TCP/IP applications like TELNET,SMTP,FTP and HTTP.

Computer Networks

X.25, Frame-relay and ATM networks.Brief functioning of upper layers E-mail and other applications.

Suggested Text Books & References

- Black, "Computer Networks",
- Forozoun, "Data communicationetworks".
- Tanenbaum "Computer Networks".
- Dugglas, "TCP/IP and internetworking".

NOTE: There will be Eight questions of 20 Marks each, Four from each Section, Students shall have to attempt five questions, selecting at least two from each Section. Use of Calculator is allowed.

CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE: OPERATING SYSTEM LAB L T P MARKS
COURSE CODE: IT-507 - - 3 PRACTICAL
DURATION OF EXAM – 3HRS 50

- Do using Assembly/C Programming

1. Scheduling Algorithm
2. First come first serve (FIFS)
3. Shortest job first (SJF)
4. Round Robin scheduling
5. First Fit Memory Management Technique
6. Best-Fit
7. Banker's Algorithm for Deadlock Evidence
8. Paging
9. Segmentation
10. Disk Scheduling Algorithm
11. Changing attributes of files

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CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE: DATABASE LAB L T P MARKS
COURSE CODE: IT-508 - - 3 PRACTICAL
DURATION OF EXAM – 3HRS 50

1. SQL COMMANDS

A) Data Definition Language (DDL)
   1. Creating Tables
   2. Creating Tables with data from another table
   3. Dropping table
   4. Altering Definition of a table
   5. Using Constraints
   6. Dropping a Column
   7. Creating Views
   8. Inline Views
   9. Dropping a view
   10. Materialized view

B) Data Manipulation Language (DML)
   1. Inserting values into a table
   2. Updating columns into a table
   3. Deleting rows from table
   4. Manipulating base tables through views
   5. Querying a table
      a) Conditional retrival of rows
      b) Ordering result of a query
      c) Grouping result of a Query

6. Querying Multiple Tables
   a) Equi Joins
   b) Cartesian Joins
   c) Outer Joins
   d) Self Joins
   e) Union Operator
   f) Intersect Operator
   g) Minus Operator
   h) Nesied Queries
   i)

C) Transation Control Language
1. Database security & Priveledges
2. Grant Command
3. Revoke
4. Commit
5. Rollback

D) PLSQL
1. PLSQL block structures
2. SQL with PL/SQL
3. Writing PL/SQL Code
4. Cursor Management in PL/SQL
5. Exception Handling in PL/SQL
6. Subprogress in PL/SQL
   a) Procedure
   b) Function
7. Stored Packages
8. Trigger

E) Working with objects

F) Working with method

G) Working with Large objects

H) Using collection

I) Data portioning & parallel & parallel processsing

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FOR EXAMINATION TO BE HELD IN DEC. 2010 ONWARDS

CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE: MICROPROCESSOR LAB L T P MARKS
COURSE CODE: IT-509 - - 3 PRACTICAL
DURATION OF EXAM – 3HRS 50

1. Wap IN Assembly Language 8085 to add two 8 bit number
2. Wap IN Assembly Language 8086 for 8 bit addition
3. Wap IN Assembly Language 8086 for 16 bit addition
4. Wap IN Assembly Language 8086 to divide a given number
5. Interface of relay kit with CPU
6. Wap IN Assembly Language to find whether number is even or odd
7. Wap IN Assembly Language to convert from HEX. To BCD
8. Wap IN Assembly Language to convert from BCD. To HEX

9. Studyof different motherboards having processors like 286,386,486
10. Study of different signals from parallel ports of CPU
11. Status reading of different signals from printer
12. To study arithmetic logic unit of a processor

*Above experiments are to be done on MASM & 8086 Trainer Kit.

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FOR EXAMINATION TO BE HELD IN DEC. 2010 ONWARDS

CLASS- BE.5TH SEMESTER
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE: COMPUTER NETWORKS LAB L T P MARKS
COURSE CODE: IT-510 - - 3 PRACTICAL
DURATION OF EXAM – 3HRS 50

1. Study of any network operating system.
2. Study of various Protocols
3. Study of various Network Topologies
4. Installation of Network Operating System
5. Administration of NOS
6. Concept of fault Tolerence in network
7. Study of client/ server environment
8. Implementation & Administration of Network
9. Study of bridges, switches, Hubs, Roulers, Gateways etc.

UNIVERSITY OF JAMMU
COURSE SCHEME
FOR B.E. 6TH SEM I.T. ENGINEERING
FOR EXAMINATION TO BE HELD IN JUNE 2011 ONWARDS

Course No.	Course Name	Hours/ Weeks			Marks			
		L	T	P	Theory	Sess.	Pract.	Total
IT-601	INDIAN BUSINESS ENVIRONMENT AND HUMAN RESOURCE MNGMT	3	1	..	75	25	..	100

COM-602	ANALYSIS AND DESIGN OF ALGORITHMS	3	1	..	75	25	..	100
IT-603	INTERACTIVE COMPUTER GRAPHICS	3	1	..	100	50	..	150
IT-604	SIMULATION & MODELLING	3	1	..	100	50	..	150
COM-606	SOFTWARE ENGINEERING	3	1	..	100	50	..	150
IT-606	OPERATING SYSTEM -II	3	1	..	100	50	..	150
IT-607	OPERATING SYSTEM LAB	..	..	3	..	..	50	50
IT-608	COMPUTER GRAPHICS LAB	..	..	3	..	..	50	50
IT-609	SIMULATION & MODELLING LAB	..	..	3	..	..	50	50
COM-610	SOFTWARE ENGINEERING LAB	--	--	3	--	--	50	50
	TOTAL	**18**	**6**	**12**	**550**	**250**	**200**	**1000**

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FOR EXAMINATION TO BE HELD IN JUNE 2011 ONWARDS

	L	T	P	MARKS	
	3	1	-	THEORY	SESSIONAL
CLASS- BE.6TH SEMESTER				75	25

BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE- INDIAN BUSINESS ENVIRONMENT & HRM
COURSE CODE: IT-601
DURATION OF EXAM – 3HRS

SECTION- A

Fundamentals of Business Environment
Concept of Business Environment and their interrelationship, Macro and Micro Environment, Business and Society. Ethics and Social responsibility of business

Economic and Legal Environment
Introduction to Indian Economy and its various phases.
New Industrial Policy, Fiscal and Monetary policy ,Salient Features of FEMA and MRTP, International Trade.
Introduction to Company Law, cyber law and consumer law.
Roles, Characteristics, Present Position & Problems
Agriculture Sector, Electronics and Information Technology Sector, Public Sector

SECTION-B
HRM Basics
Fundamentals of HRM, Objectives of and Challenges to HRM, Job Design and Job Analysis, Job Evaluation and Organizational Development.

HR Planning
Recruitment and Selection, Training and Development, Performance Appraisal, Knowledge management.

NOTE: There shall be total Eight Questions of 15 marks each, four questions from each Section. Five questions have to be attempted selecting at least two from each Section.

SUGGESTED TEXT BOOKS & REFERENCES
· Singh, Avtar “Company Law”.
· Datt and Sundharam, “Indian Economy”, S. Chand & Company
· Cherunilam, F., “Industrial Economics-Indian Perspective”, Himalaya Publication House.
· Chawala & Garg, “Mercantile Law”.
· Agarwal, A.N., “Indian Economy”, Wishwa Prakashan, New Delhi.
· Pareek & Rao, “Designing & Managing Human Resource Systems”, IBH, New Delhi.
· Werther, W.D. & Davis, K., “Human Resource and Personal Management”, 3rd International Student Edition.
· C.B Memoria

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FOR EXAMINATION TO BE HELD IN JUNE 2011 ONWARDS

	L	T	P	MARKS	
	3	1	-	THEORY	SESSIONAL
CLASS- BE.6TH SEMESTER				**75**	**25**

BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE- ANALYSIS AND DESIGN ALGORITHMS
COURSE CODE: COM-602
DURATION OF EXAM – 3HRS

Section A

Introduction to Algorithms, Analyzing the Performance of an Algorithm, Space /Time complexity, Asymptotic Notation, Recurrence Relations, Performance measurement, write Algorithms in SPARK's.

Heap & Hash Tables:- Representing a Heap, Operations on Heaps, Applications, Building a Heap, Hash Table, Hashing Functions, Resolving Collision by separate Chaining, Open Addressing, Quadratic Probing, Double Hashing, Rehashing.

Lower Bound Theory:- Comparison Trees For searching & Sorting , Parallel Comparison trees, Oracle & Adversary Arguments, Lower Bounds through Reduction.

NP-Hard and NP- Complete Problems: -Basic concepts, Non-Deterministic Algorithms, Polynomial Time Algorithms,NP-hard & NP –complete classes, Look's Theorem, Introduction to Approximation Algorithms.

Section B

Design Techniques:-

1. Divide and Conquer:- General methods, Binary Search, Finding the Maximum & Minimum, Mergesort, Quick Sort & Selection sort, Strassen's Matrix, Multiplication.
2. Greedy Method :- General Methods, Optimal Storage on Tapes, Knapsack Problem, Job Sequencing with Deadlines, Optimal Merge Patterns, Single Source, shortest path..
3. Dynamic Programming :- General Methods, Multistage Graphs, I/O Knapsack, Reliability Design, Traveling Salesperson problem.
4. Back Tracking :- General Method, The 8- Queens Problem, Hamiltonian Cycles, Knapsack Problem.
5. Branch & Bound :- The method, I/O Knapsack Problem, Traveling Salesperson Problem.

References:-

1. **Fundamentals of Computer Algorithms.** by Ellis Horowitz, Sartaj Sahni.
2. **Data Structure & Algorithm by J.M. Hopcraft , Ullman.**

Note :- There shall be eight questions of 20 marks each, four from each section. Five questions have to be attempted selecting atleast two questions from each section. Use of Calculator is allowed

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	L	T	P	MARKS	
	3	1	-	THEORY	SESSIONAL
CLASS- BE.6TH SEMESTER				**100**	**50**

BRANCH –INFORMATION TECHNOLOGY

COURSE TITLE- INTERACTIVE COMPUTER GRAPHICS
COURSE CODE: IT-603
DURATION OF EXAM – 3HRS

SECTION -A

Line Generation
Points, lines generation algo DDA, Bresenham's, Plains, Pixels and frame buffers, Vectors, Vector and character generation

Graphics Primitives
Display devices, Primitive operations, Display-file structure. Display control text.

Polygons
Polygons representation, Entering polygons, Filling Polygons

Segments
Segments table, Creating, Deleting and renaming a segment Visibility, Image transformation.

Windowing and Clipping
Viewing transformation, Clipping. Generalized clipping IN 2D.

SECTION -B

Interaction
Hardware Input device handling algorithms. Event handling Echoing, Interactive Techniques

Hidden line and surfaces
Back-face Removal Algorithms, Hidden line methods

Rendering and Illumination
Introduction to curve generation, Bezier, Hermite and B-spline algorithms and their Comparisons

Transformation
2 D Transformation, An introduction to 3 D transformation,Projections

Light, color and shading
Introduction ,Diffusion illumination, Point source illumination, Specular Reflections, color models

NOTE: There shall be total Eight Questions of 20 marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section.

SUGGESTED TEXT BOOKS & REFERENCES

· Rogers, "Procedural Elements of Computer Graphics", McGraw Hill.
· Newman & Sproulle, "Principles of Interactive Computer Graphics", McGraw Hill 1987
· Harringtons, S. "Computer Graphics A programming Approach" Second Edition McGraw Hill 1987.
· Rogers & Adams, "Mathematical Elements of Computer Graphics", Second Edition McGraw Hill.
· Henary Baper, "Computer Graphics".

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	L	T	P	MARKS

	3	1	-	THEORY	SESSIONAL
CLASS- BE.6TH SEMESTER				**100**	**50**

BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE- SIMULATION AND MODELLING
COURSE CODE: IT-604
DURATION OF EXAM – 3HRS

SECTION – A

Simulation Concepts
Concept of system, Continuous and discrete system, System Modelling process and its types, Steps of simulation, Monte-carlo method, Comparison of simulation with analytical methods, Discrete and continuous simulation procedures
Simulation of Continuous Systems
Introduction, Differential equations, Pure Pursuit Problem, Simulation of Chemical Reaction, Autopilot Simulation and Simulation of other Continuous systems
Probability Concepts in Simulation
Stochastic variables, Random numbers, its generation and its testing, discrete and continuous
random variables, density and distributive functions. Study of few distributions such as Poisson, Normal.

SECTION – B

Simulation of Discrete Systems
Arrival patterns and service times, Simulation of Queuing System - Elementary idea about networks of Queuing with particular emphasis to computer system environment.
Verification & Validation
Design of simulation experiments and validation of simulation experiments comparing model data units and real system data.
Simulation Language
A brief introduction to important discrete and continuous languages such as GPSS (Study & use of the language).
Use of data base & AI techniques in the area of modeling and simulation.

NOTE: There shall be total Eight Questions of 20 marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section. Use of calculator is allowed

SUGGESTED TEXT BOOKS & REFERENCES
· Deo, Narsing “System Simulation with Digital Computers”
· Gorden G, “System Simulation”, Prentice Hall (Two books above can be used as text books).
· Shridhar Bhai Trivedi, Kishore “Probability & Statistics with reliability Queuing, Computer Science
Applications”.
· Payer, T.A., “Introduction to System Simulation”, McGraw Hill.
· Reitman, J, “Computer Simulation Application”, Wiley.
· Barnes B, “Modelling and Performance Measurement of Computer System”.

· Spriet, WIA., “Computer Aided Modelling and Simulation (Academic Press).

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	L	T	P	MARKS	
	3	1	-	THEORY	SESSIONAL
CLASS- BE.6TH SEMESTER				100	50

BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE- SOFTWARE ENGINEERING
COURSE CODE: COM-606
DURATION OF EXAM – 3HRS

Section A

Introduction to Software Engineering:- Software Considerations: Software characteristics Software crisis Software myths, Software Engineering paradigms**.**
System and software Planning :- Planning phase of system definition, system analysis, Modeling the system architecture, system specification, Software planning objectives, Software scope ,Software project estimation, Decomposition techniques, Empirical estimation models ,Automated estimation models, Software project scheduling , Software acquisition, Software re-engineering.
Software requirement analysis :- Requirement analysis, Analysis principles, specifications requirement analysis tools, Data flow diagrams**.**
Software Design Fundamentals :- The design process, Design fundamentals ,Effective modular design, Data design, Architectural design, procedural design, Design documentation.

Section B

Data flow oriented design : Design and information flow, design process considerations, transform analysis, transaction analysis, Design post processing ,
Design optimization. Design process considerations. Jackson System development**.**
Software Quality Assurance:- Software quality and software quality assurance, Software reviews, software quality metrics, software reliability, complexity measures, storage and processing time analysis.
Software testing and maintenance:- Software Testing Fundamentals, Whitebox Testing, Basic Path Testing , Control Structure Testing , Black Box Testing **.** Software Testing Strategies, Unit Testing Integration Testing , Validation Testing , System Testing .
Software maintenance: Definition , Maintenance characteristics, Maintainability, Maintenance Tasks, Maintenance Side Effects, Reverse Engineering and Re-engineering**.**

Reference books:-

1. **Software Engineering, A practitioner's approach: R.S. Pressman.**
2. **Integrated approach to Software Engineering : Pankaj Jalote**
3. **Software Engineering : M.L. Shooman.**

Note :- There shall be eight questions of 20 marks each, four from each section. Five questions have to be attempted selecting atleast two questions from each section. Use of Calculator is allowed

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FOR EXAMINATION TO BE HELD IN JUNE 2011 ONWARDS

	L	T	P	MARKS	
	3	1	-	THEORY	SESSIONAL
CLASS- BE.6TH SEMESTER				**100**	**50**

BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE- OPERATING SYSTEM-II
COURSE CODE: IT-606
DURATION OF EXAM – 3HRS

Section 1

Configuration of Hardware-I/O Devices, Device Controller, Device Driver, Disk Hardware, Clock.
Setting up of serial Hardware
File Systems
Understanding NFS,AFS,FAT,FAT32,NTFS
The Network Information System :- Getting Acquainted with NIS, NIS Versus NIS+ , The Client Side of NIS, Running an NIS Server, NIS Server Security.
Configuring the TCP/IP Networking :-automatic, dynamic and static addressing, Assigning IP addresses, Creating Subnets, Interface Configuration for IP, ipconfig, netstat
Services and their configurations- Name service and Resolve Configuration, DHCP,DNS,WINS,

Section 2

Introduction to Unix and file system-Understanding Kernel, Partitions, Swap space, Device files, Raw and Block files, File systems, Superblock, I-nodes, Mounting file systems
Managing Processes: Process status, Killing processes, process priority. Starting up and Shut down
Managing User Accounts:- Principles, password file, Password security, Shadow file, Groups and the group file, Shells, restricted shells, user management commands, homes and permissions, default files, profiles, locking accounts, setting passwords,
System Backup & Recovery: Log files for system and applications; Backup schedules and methods (manual and automated).

Text Books:
1.Modern OS- Tannenbaum
2. Computer Networks- Frouzan
3. Kirch – " Linux network Administrator's guide (2nd Ed.)" – O'Rielly
4. Maxwell – "Unix system administration" - TMH
5. Limoncelli –"The Practice of System & Network Administration"-Pearson
6. Wells, LINUX Installation & Administration, Vikas
Reference Books:
1. W. R. Stevens – "TCP/IP illustrated, vol. 1" – PHI/Pearson Education
2. Comer – "Internetworking with TCP/IP, vol. 1(4th Ed.)" – Pearson Education/PHI

NOTE: There shall be total Eight Questions of 20 marks each, Four questions from each Section, students have to attempt Five Questions selecting at least two from each Section.

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FOR EXAMINATION TO BE HELD IN JUNE 2011 ONWARDS

L	T	P	MARKS
-	-	3	PRACTICAL

CLASS- BE.6TH SEMESTER **50**
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE- OPERATING SYSTEM LAB
COURSE CODE: IT-607
DURATION OF EXAM – 3 HOURS

1. Installation of Network OS
   a) Software Installation
   b) Services Installation
   c) Protocol Installation
   d) (Server)

i. (Information Server)/ Web

ii. (Backup Server)

iii. (Standalone Server)

iv. (Member Server)

   e) Workstation

i) Win NT

ii) Win 95

2. Administration

   i) User Management

   ii) File Management

   iii) Device Management

3. Fault Tolerance

   i) Mirrioring

   ii) RAID

4. Back Up

   Installation of CTD

   a) Administration

5. Groupware

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FOR EXAMINATION TO BE HELD IN JUNE 2011 ONWARDS

L	T	P	MARKS
-	-	3	PRACTICAL

CLASS- BE.6TH SEMESTER **50**
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE- COMPUTER GRAPHICS LAB
COURSE CODE: IT-608
DURATION OF EXAM – 3 HOURS

Software Requirement C or C++ Complier

Hardware Requirement: P-IV with complete Multimedia

1. WAP to generate a Line
2. WAP to generate Circle
3. WAP to generate Square
4. WAP to generate Rectangle
5. WAP to generate Triangle
6. WAP to generate Ellipse
7. WAP to generate Bar-Chart
8. WAP to animate a Square
9. WAP to animate a Marker
10. WAP to generate Pie-Chart
11. WAP to fill a Line
12. WAP to generate Multiple figures
13. WAP for menu Driven Options

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L	T	P	MARKS
-	-	3	PRACTICAL

CLASS- BE.6TH SEMESTER **50**
BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE- SIMULATION AND MODELLING LAB
COURSE CODE: IT-609
DURATION OF EXAM – 3 HOURS

1. Demonstration of Simulation and Modelling (Demo Version of PSM++) on
   i) Ecology
   ii) Elevator
   iii) Market model
   iv) Multi Server Model
2. W.A.P. to model a DEMULTIPLEXER
3. Simulation of HOT PURSUIT problem using C a a simulation language
4. Simulation of Market price stability problem with COB-WEB Model using C as a simulation
   language.
5. Simulation of Random Number Generation function
6. Simulation of a Chemical Reactor using C as a simulation language
7. Simulation of a Single Server System for studying the queuing Problem using C as a simulation
   language
8. Simulation of a Two Server System for studying the queuing Problem using C as a simulation
   language
9. Study of GPSS
   a) Block Symbols
      i) GENERATE
      ii) TERMINATE
      iii) ADVANCE
      iv) SEIZE
      v) RELEASE
      vi) ENTER
      vii) LEAVE
      viii) QUEUE
      ix) DEPART
      x) ASSIGN
      xi) SAVE VALUE
      xii) TRANSFER
      xiii) TEST
      xiv) TABULATE

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	L	T	P	MARKS
	-	-	3	PRACTICAL
CLASS- BE.6TH SEMESTER				**50**

BRANCH –INFORMATION TECHNOLOGY
COURSE TITLE- SOFTWARE ENGINEERING LAB
COURSE CODE: COM-610
DURATION OF EXAM – 3 HOURS

Practicals will be based on Theory Course of Software Engineering.

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COURSE SCHEME
FOR B.E 7TH SEMESTER INFORMATION TECHNOLOGY ENGINEERING
FOR EXAMINATION TO BE HELD IN DECEMBER, 2011 ONWARDS

Course No.	Name of the Course	Hours Per Week			Marks			
		L	T	P	Theory	Sessional	Practical	Total
IT-701	Web Technology	3	2	--	100	50	--	150
IT-703	Data Base Application and Design	3	2	--	100	50	--	150
Elective-I IT-704	A) Soft ware Project Management B)Distributed Computing	3	2	--	100	50	--	150
Elective-II IT-705	A)Java Programming B) Artificial Intelligence and Applications	3	2	--	100	50	--	150
IT-706	Web Technology Lab	0	0	3	--	--	50	50
IT-707	Data Base Application and Design Lab	0	0	3	--	--	50	50
IT-708	C) Java Programming Lab D) Artificial Intelligence Lab	0	0	3	--	--	50	50
IT-709	Project	--	--	3	--	--	100	100
IT-710	Seminar	--	--	3	--	--	100	100
IT-711	Industrial Training	--	--	--	--	--	50	50
Total		**12**	**8**	**15**	**400**	**200**	**400**	**1000**

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FOR EXAMINATION TO BE HELD IN DECEMBER, 2011 ONWARD

CLASS: BE 7TH SEMESTER
BRANCH: I.T. ENGINEERING
COURSE NO: IT-701
COURSE TITLE: WEB TECHNOLOGY
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

Section A

History of the Internet and World Wide Web, Protocols – HTTP, SMTP, POP3, MIME, IMAP, Three Tier Web Based Architecture

HTML
Introduction, HTML Documents, Structural elements of HTML documents, Formatting HTML Documents, tags, managing images, tables in HTML documents, Hypertext and Links, Creating web documents

DYNAMIC HTML
Introduction – Object refers, Collectors and Children. Dynamic style, Dynamic position, frames, navigator. Event Model – On check, On load . Creating Images – Adding shadows. Creating Gradients. Creating Motion with Blur.
Introduction to JAVA Scripts – Object Based , Scripting for the web.

Section B

MULTIMEDIA
Audio and video speech synthesis and recognition . Electronic Commerce – E-Business Model , E-Marketing ,Online Payments and Security . HTTP request types. Client Side Scripting and Server side Scripting. Web Servers - Accessing Webservers, IIS, Apache web server.

DATABASE - ASP
ASP – Working of ASP, Objects , File System Objects . Session tracking and cookies.
ADO – Access a Database from ASP . Server side Active-X Components. Web Resources

SERVLETS AND JSP
Servlet Overview Architecture. Handling HTTP Request – Get and post request, redirecting request , multi-tier applications .

JSP – Overview, Objects , Scripting

TEXT BOOK
1. Deitel & Deitel, Goldberg, “Internet and World Wide Web – How to Program”, Pearson Education Asia, 2001.

REFERENCES
1. Eric Ladd, Jim O’ Donnel, “Using HTML 4, XML and JAVA”, Prentice Hall of India – QUE, 1999.
2. Aferganatel, “Web Programming: Desktop Management”, PHI, 2004.
3. Rajkamal, “Web Technology”, Tata McGraw-Hill, 2001.

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

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FOR EXAMINATION TO BE HELD IN DECEMBER, 2011 ONWARD

CLASS: BE 7TH SEMESTER
BRANCH: I.T. ENGINEERING
COURSE NO: IT-703
COURSE TITLE: DATABASE APPLICATIONS AND DESIGN
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

Section – A

Design Theory for Relational database
Functional Dependencies, Decomposition of Relation schemes. Normal for Relations Schemes, Normal forms of Relations Scheme, Multi-valued and other kinds of Dependencies.

Query Optimization and Advanced SQL
Evaluation of Query Expressions, Query Optimization and strategies, Measure of Query Cost. Algebraic Manipulation, Joins: Nested Loop Join, Merge Join, Hash Join, Complex Join.
Overview of Embedded SQL and Dynamic SQL.

Database Protection
Database Integrity, Integrity constraints in SQL, Security in SQL, Security in Statistical Database.

Section – B

Concurrent Operations in the Database
Basic concepts, a simple transaction model, a model with read and Write only model, intent locking, protection against crashes, optimistic concurrency control.

Object Oriented Databases
Need for Object Oriented Databases, Object Definition Language, Object Query Language, Object Relational databases, Introduction to Spatial, Multimedia, Deductive Databases and Mobile Databases

Distributed Database System
Concepts, Parallel versus Distributed, Advantages, Data Fragmentation, Data Replication, Data allocation, Types of Distributed Databases systems, Query Processing in Distributed Databases, Concurrency Control and Recovery in Distributed Databases, 3- Tier Client/Server Architecture

Books Recommended:

- Ullman, J.O., "Principles of Database Systems", Gagotia Publications.
- Database Management System by Korth and Silberschaz,3rd/4th edition Tata McGraw Hill.
- Database Management System, 7th edition 2003, C.J. Date, Addison Wesley.

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

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CLASS: BE 7TH SEMESTER
BRANCH: I.T. ENGINEERING
COURSE NO: IT-704(A) ELECTIVE-I
COURSE TITLE: SOFTWARE PROJECT MANAGEMENT
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

SECTION A

The software Engineering Problem
The software engineering problem and software products, All of the software engineering activities, The concept of software product like cycle model

Software evolution
The concept of a software like cycle, The various forms of a software product form initial conception through development and operation to retirement, Controlling activities and disciplines to support evolution, Planned and unplanned events that affect software evolution, The role changing technology.

Technical Communication
Fundamentals of technical communication Oral and Written communications, preparing oral presentation and supporting material, Software project documentation of all kinds, ISO/Other, e.g. IEEE .

Software Configuration management
Concept of configuration management, Its role in controlling software evolution, Maintaining Product integrity, Changing control and version control, Organization structure for configuration

Software Quality Assurance
Software quality assurance as a controlling discipline, Organizational structures for quality assurance, Independent verification and validation teams, Test and evaluation teams , Software technical reviews , Software quality assurance plans : ISO 9000, ANSI/IEEE

SECTION B

Standards
Introduction to standards - ISO 9002 and ISO 9003 - Quality system development, SO 9000 standard for software, Understanding ISO 900-3 clauses, SEI model - capability Maturity model - Five levels Bootstrap method, Implementing ISO 9000, Analysis the Quality system, Documenting & Auditing quality system, ISO 9000 registration process & Accreditation System, Total Quality Management

Software Project organizational and management issues
Staffing - development, organizations, quality assurance teams , project planning - choice of process model, project scheduling and milestones, resource allocation

Software project economics
Cost estimation, risk analysis for software projects, factors that affect cost.

Books Recommended:
1. Software Engineering - Somerville (Addison Wesley) .
2. Software Engineering-Pressmen.
3. Software Engineering -Jalota

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

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FOR EXAMINATION TO BE HELD IN DECEMBER, 2011 ONWARD

CLASS: BE 7TH SEMESTER
BRANCH: I.T. ENGINEERING
COURSE NO: IT-704(B) ELECTIVE-I
COURSE TITLE: DISTRIBUTED COMPUTING
DURATION OF EXAM: 3 HOURS.

L	T	P	MARKS THEORY	SESSIONAL
3	2	0	100	50

SECTION-A

Characterization of Distributed Systems: Introduction, Examples of distributed Systems, Resource sharing and the Web Challenges. Architectural models, Fundamental Models.
Theoretical Foundation for Distributed System: Limitation of Distributed system, absence of global clock, shared memory, Logical clocks, Lamport's & vectors logical clocks.
Concepts in Message Passing Systems: causal order, total order, total causal order, Techniques for Message Ordering, Causal ordering of messages, global state, termination detection.
Distributed Mutual Exclusion: Classification of distributed mutual exclusion, requirement of mutual exclusion theorem, Token based and non token based algorithms, performance metric for distributed mutual exclusion algorithms.
Distributed Deadlock Detection: system model, resource Vs communication deadlocks, deadlock prevention, avoidance, detection & resolution, centralized dead lock detection, distributed dead lock detection, path pushing algorithms, edge chasing algorithms.
Agreement Protocols: Introduction, System models, classification of Agreement Problem, Byzantine agreement problem, Consensus problem, Interactive consistency Problem, Solution to Byzantine Agreement problem, Application of Agreement problem, Atomic Commit in Distributed Database system.
Distributed Resource Management: Issues in distributed File Systems, Mechanism for building distributed file systems, Design issues in Distributed Shared Memory, Algorithm for Implementation of Distributed Shared Memory**.**

SECTION-B

Failure Recovery in Distributed Systems: Concepts in Backward and Forward recovery, Recovery in Concurrent systems, Obtaining consistent Checkpoints, Recovery in Distributed Database Systems.
Fault Tolerance: Issues in Fault Tolerance, Commit Protocols, Voting protocols, Dynamic voting protocols.
Transactions and Concurrency Control: Transactions, Nested transactions, Locks, Optimistic Concurrency control, Timestamp ordering, Comparison of methods for concurrency control.
Distributed Transactions: Flat and nested distributed transactions, Atomic Commit protocols, Concurrency control in distributed transactions, Distributed deadlocks, Transaction recovery.
Replication: System model and group communication, Fault - tolerant services, highly available services, Transactions with replicated data.
Books Recommended:
1. Singhal & Shivaratri, "Advanced Concept in Operating Systems", McGraw Hill
2. Ramakrishna,Gehrke," Database Management Systems", Mc Grawhill
3. Coulouris, Dollimore, Kindberg, "Distributed System: Concepts and Design", Pearson Education
4.Tannenbaum, Steen," Distributed Systems", PHI

5. Gerald Tel, "Distributed Algorithms", Cambridge University Press

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

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CLASS: BE 7TH SEMESTER
BRANCH: I.T. ENGINEERING
COURSE NO: IT-705(A) ELECTIVE-II
COURSE TITLE: JAVA PROGRAMING
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

SECTION-A

An introduction to OOPS, datastructure, constructors, inheritance, polymorphism. Brief history of Java, java architecture, how java works and java features.

Java language keywords, identifiers, literals, constants, what is a variable, datatypes, type casting. Arrays, accessing arrays element. Multi-dimensional arrays and flow control statement, vectors.

Introducing classes, a simple class declaring object, introducing methods, constructors. the THIS keyword, overloading methods, overloading constructors. Understanding static and super. Using command line argument. An introduction to packages and interfaces.

SECTION-B

Using applets, simple applets, putting applets on the web parsing parameters to applets AWT tool kit. Windows fundamentals, working with graphics, working with colors, how to add components in a frame and applets ,layouts.

Exception handling fundamentals, exception types, uncatch exceptions, using try and catch, multiple catch clauses, nested try statement. The java thread model, the main thread, creating a thread, creating multiple threads, using isAlive() and join(), thread priorities. Synchronization.

Event delegation model, mouse event, event classes, sources of events, an introduction to input-output files in java.

Books Recommended:

1. E Balagurusamy “Programming with JAVA”, Tata McGraw Hill.
2. Herbert Schildt “The Complete Reference Java”, Tata McGraw Hill.
3. G.S. Baluja, G.K. Baluja “Java & Web Technology”, Dhanpat rai & Co.

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

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CLASS: BE 7TH SEMESTER
BRANCH: I.T. ENGINEERING
COURSE NO: IT-705(B) ELECTIVE-II
COURSE TITLE: ARTIFICIAL INTELLIGENCE AND APPLICATIONS
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

Section – A

Introduction to AI
AI problem,assumption of AI,AI technique,level of the model,criteria of success.Problem,Problem space and search
Define the problem by using as a state space search, production system, production system and problem characteristics,issues in the design of search problem, additional problem.

Heuristic Search Technique
Generate and test,hill climbing-simple hill climbing,steepest hill climbing,Best-first search-or graphs,A* algorithums,agendas,constraint satisfaction,means end analysis

Section – B

Knowledge Representation
Representation and mapping,Approaches to knowledge representation,the frame problem

Using Predicate logic
Representing simple facts in logic,representing instance and isa relationship,computable functions and predicates resolution,computable fns and predicates resolution

Represting Knowledge using rules
Procedural versus declarative knowledge,forwared versus backward resoning,matching,control knowledge.

Books Recommended:

1. Elain Rich and Kevin Knight, "Artificial Intelligence ", Tata McGraw Hill, Second Edition, 1993.
2.Dan W.Patterson, "Introduction to Artificial Intelligence and Expert System ".
3.Pankaj Sharma , "Artificial Intelligence"
4.Munish Chandra Trivedi,Dr. N.N Jani,Dr.S.S Sarangdevot," A Classical Approach To Artificial Intelligence"
5.Nils J.Nilsson, "Artificial Intelligence A New Synthesis".
6.Ben Coppin, "Artificial Intelligence Illuminated".

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

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CLASS: BE 7TH SEMESTER
BRANCH: IT ENGINEERING
COURSE NO: IT-706
COURSE TITLE: WEB TECHNOLOGY LAB
DURATION OF EXAM: 3 HOURS.

L	T	P	MARKS
0	0	3	50

NOTE: THERE SHALL BE 6 TO 8 PRACTICALS BASED UPON THE THEORY COURSE.

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CLASS: BE 7TH SEMESTER
BRANCH: IT ENGINEERING
COURSE NO: IT-707
COURSE TITLE: DATABASE APPLICATIONS AND DESIGN LAB
DURATION OF EXAM: 3 HOURS.

L	T	P	MARKS
0	0	3	50

List of Practical's

List of Practical to be covered in Lab

- PL/SQL programs for interacting with Relational Databases
- Cursors

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CLASS: BE 7TH SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE NO: IT-708
COURSE TITLE: (A) JAVA PROGRAMING LAB
(B) ARTIFICIAL INTELLIGENCE LAB
DURATION OF EXAM: 3 HOURS.

L	T	P	MARKS
0	0	3	50

NOTE: THERE SHALL BE 6 TO 8 PRACTICALS BASED UPON THE THEORY COURSE.

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CLASS: BE 7TH SEMESTER
BRANCH: IT ENGINEERING
COURSE NO: IT-709
COURSE TITLE: MINOR PROJECT

L	T	P	MARKS
0	0	3	100

The project will be assigned to the students towards the end of 6th semester and will start working on those projects at the commencement of their 7th semester. The topic of the project will be decided as per the developments taking place in the field of I.T. Engineering.

This may require complete literature survey, design, fabrication, simulation of some models and/or some preliminary laboratory experiments etc. The same project shall be extended to 8th semester.

Distribution of Marks as per University statues:

Total Marks for End semester Evaluation	= 100 marks		
1) Presentation/ Demonstration	= 30 marks	30%	
2) Viva-voce	= 30 marks	30%	
3) Actual work done	= 40marks		40%

Award of Marks

- Marks under (1) and (2) will be awarded by the Departmental committee constituted comprises of convener and atleast two members.
- Marks under (3) will be awarded by the Project Guide/supervisor concern.

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CLASS: BE 7TH SEMESTER
BRANCH: IT ENGINEERING
COURSE NO: IT-710
COURSE TITLE: SEMINAR

L	T	P	MARKS
0	0	3	100

This will involve a detailed study of a topic of interest reproduced in the candidate's own style. For this, a student has to prepare a seminar by doing proper survey of literature, compilation of information so gathered and then presentation of the same followed by question-answer session. The report of which has to be submitted by the student well before the conduct of seminar. The handout submitted by the student will be in accordance with the standards of technical papers.

Guidelines and evaluation of Seminar in 7th semester:
The topic of the Seminar is to be finalized and approved by the departmental committee by the end of 6th Semester. The committee shall have a convener and atleast two members.

Distribution of Marks:
Total Marks for Seminar Evaluation = 100 marks
1) Project Report = 30 marks
2) Presentation = 50 marks
3) Attendance = 20 marks.

Award of Marks:
- Marks Under (1) will be awarded by the Seminar Incharge.
- Marks Under (2) and (3) will be awarded by the Departmental committee constituted for the purpose.

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CLASS: BE 7TH SEMESTER
BRANCH: IT ENGINEERING
COURSE NO: IT-706
COURSE TITLE: INDUSTRIAL TRAINING

L	T	P	MARKS
0	0	0	50

Students are required to undertake 4 to 6 weeks Practical Training during the summer vacations in the field of I.T. Engineering in Govt./Semi-Govt./Private sector. Thereafter, each student shall be required to submit a report on the practical training to the concern HOD for evaluation.

Guidelines for evaluation of Practical Training:
The evaluation shall be done by the departmental committee by the end of 7th semester. The committee shall have a convener and atleast two member.

Distribution of Marks as per the University statues:
Total Marks for Evaluation = 50 marks

i)	Report	= 20	40%
ii)	Viva-Voce	= 15	30%
iii)	Miscellaneous Marks	= 15	30%

Due weightage will be given to those who have opted Industrial Training outside the State as well as keeping in view the profile of that Industry.

Award of the Marks:
Marks under (i), (ii) & (iii) will be awarded by the departmental committee constituted for the purpose.

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COURSE SCHEME
FOR B.E 8TH SEMESTER INFORMATION TECHNOLOGY ENGINEERING
FOR EXAMINATION TO BE HELD IN JUNE, 2012 ONWARDS

Course No.	Name of the Course	Hours Per Week			Marks			
		L	T	P	Theory	Sessional	Practical	Total
IT- 801	Network Security	3	2	--	100	50	--	150
IT-802	Visual Programming	3	2	--	100	50	--	150
Elective-III IT-803	(A) Data warehousing and mining (B) E- Commerce	3	2	--	100	50	--	150
Elective-IV IT-804	(A) Client Server Architecture (B) Mobile Computing	3	2	--	100	50	--	150
IT-805	Major Project	--	--	12	--	--	400	400
Total		**12**	**8**	**12**	**400**	**200**	**400**	**1000**

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FOR EXAMINATION TO BE HELD IN JUNE, 2012 ONWARDS

CLASS: BE 8TH SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE NO: IT-801
COURSE TITLE: NETWORK SECURITY
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

Section – A

Introduction
OSI security architecture- Classical Encryption techniques- Cipher Principles – Data Encryption standard – Block Cipher Design Principles and Modes of Operation – Evaluation Criteria for AES – AES Cipher – Triple DES – Placement of Encryption Functions – Traffic Confidentiality

Public Key Cryptography
Key Management – Diffie Hellman Key Exchange – Elliptic Curve Architecture and Cryptography – Introduction to Number Theory – Confidentiality using Symmetric Encryption – Public Key Cryptography and RSA.

Authentication and Hash Function
Authentication requirement – Authentication functions – Message Authentication Codes – Hash Functions _ Security of Hash Function and MACs –MD5 Message Digest Algorithm – Secure Hash Algorithm – RIPEMD – HMAC Digital Signatures – Authentication protocols – Digital Signature Standard

Section –B

Network Security
Authentication Application: Kerberos – X,509 Authentication Service – Electronic mail Security – PGP – S/MIME – IP Security – Web Security.

System Level Security
Intrusion detection – password management – Viruses and Related Threats – Virus counter measures – Firewall Design Principles – Trusted Systems.

Books Recommended:
1.William Stallings,"Cryptography and Network Security – Principles and Practices", Prentice Hall of India, third Edition,2003

References:

1.Atul Kahate,"Cryptography and Network Security",Tata Mc Graw Hill,2003.
2.Bruce SChneier," Applied Cryptography", John Wiley & Sons Inc,2001.
3.Charles B. Pfleeger,Shari Lawrence Pfleeger, "Security in Computing", Third Edition, Pearson Education,2003

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

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CLASS: BE 8TH SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE NO: IT-802
COURSE TITLE: VISUAL PROGRAMMING
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

SECTION-A

Window Programming
Windows environment - a Simple Window program -window and message -creating the window -displaying the window -message loop – the window procedure- message processing-text output-painting and repainting-introduction to GDI – device context- basic drawing –child window controls.

Visual C++ programming-Introduction
Application Frame work-MFC library-Visual C++ Components-Events Handling-Mapping modes-colors-fonts-model and modeless dialog- window common control- bitmaps.

The Document and View Architecture
Menus-Keyboards accelerator-rich edit control-toolbars-status bars-reading and writing SDI and MDI document- spliter window and multiple view- creating DLLs – dialog based applications.

SECTION-B

Active X controls, Com and OLE
Active X controls Vs Ordinary windows Controls – Installing Active X controls-calendar control-Active X control container programming-create Active X control at run time-Components ObjectsModel (Com)-containment and aggregation Vs inheritance-OLE drag and drop.

Database Management Concept
Database Management with Microsoft ODBC –Structured Query Language-MFC ODBC classes-sample database applications –filter and sort string-DAO concepts –displaying database record in scrolling view-Threading.

Books Recommended:

1. Charles Petzold", Windows Programming", Microsoft press 1996(Topic 1from chapter 9)
2. David J.Kruglinski,George shepherd and Scot Wingo Wiley Dreamtech India Pvt Ltd 1999 (for Topics 2 to 5)
3. Steve Holtzner," Visual C++ Programming", Wiley Dramtech India Pvt Ltd 2003

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

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CLASS: BE 8TH SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE NO: IT-803(A) ELECTIVE-III
COURSE TITLE: DATA WAREHOUSING & MINING
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

SECTION-A

Overview, Motivation(for Data Mining),Data Mining-Definition & Functionalities, Data Processing, Form of Data Preprocessing, Data Cleaning: Missing Values, Noisy Data,(Binning, Clustering, Regression, Computer and Human inspection),Inconsistent Data, Data Integration and Transformation. Data Reduction:- Data Cube Aggregation, Dimensionality reduction, Data Compression, Numerosity Reduction, Clustering, Discretization and Concept hierarchy generation.

Concept Description:- Definition, Data Generalization, Analytical Characterization, Analysis of attribute relevance, Mining Class comparisions, Statistical measures in large Databases. Measuring Central Tendency, Measuring Dispersion of Data, Graph Displays of Basic Statistical class Description, Mining Association Rules in Large Databases, Association rule mining, mining Single-Dimensional Boolean Association rules from Transactional Databases– Apriori Algorithm, Mining Multilevel Association rules from Transaction Databases and Mining Multi- Dimensional Association rules from Relational Databases.

SECTION-B

Classification and Predictions: What is Classification & Prediction, Issues regarding Classification and prediction, Decision tree, Bayesian Classification, Classification by Back propagation, Multilayer feed-forward Neural Network, Back propagation Algorithm, Classification methods K-nearest neighbour classifiers, Genetic Algorithm.

Data Warehousing: Overview,Definition, Delivery Process, Difference between Database System and Data Warehouse, Multi Dimensional Data Model, Data Cubes, Stars, Snow Flakes, Fact Constellations, Concept hierarchy, Process Architecture, 3 Tier Architecture, Data Marting.

Aggregation, Historical information, Query Facility, OLAP function and Tools. OLAP Servers, ROLAP, MOLAP, HOLAP, Data Mining interface, Security, Backup and Recovery, Tuning Data Warehouse, Testing Data Warehouse.

Books Recommended:

1. M.H.Dunham,"Data Mining:Introductory and Advanced Topics" Pearson Education
2. Jiawei Han, Micheline Kamber, "Data Mining Concepts & Techniques" Elsevier
3. Sam Anahory, Dennis Murray, "Data Warehousing in the Real World : A Practical Guide for Building Decision Support Systems, Pearson Education
4. Mallach,"Data Warehousing System",McGraw –Hill

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

UNIVERSITY OF JAMMU, JAMMU
FOR EXAMINATION TO BE HELD IN JUNE, 2012 ONWARDS

CLASS: BE 8TH SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE NO: IT-803(B) ELECTIVE-III
COURSE TITLE: E- COMMERCE
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

SECTION-A

Introduction:
Definition of Electronic Commerce, E-Commerce: technology and prospects, incentives for engaging in electronic commerce, needs of E-Commerce, advantages and disadvantages, framework, Impact of E-commerce on business, E-Commerce Models.

Network Infrastructure for E- Commerce:
Internet and Intranet based E-commerce- Issues, problems and prospects, Network Infrastructure, Network Access Equipments, Broadband telecommunication (ATM, ISDN, FRAME RELAY). Mobile Commerce: Introduction, Wireless Application Protocol, WAP technology, Mobile Information device.

Web Security:
Security Issues on web, Importance of Firewall, components of Firewall, Transaction security, Emerging client server, Security Threats, Network Security, Factors to
consider in Firewall design, Limitation of Firewalls.

SECTION-B

Encryption:
Encryption techniques, Symmetric Encryption: Keys and data encryption standard, Triple encryption, Secret key encryption; Asymmetric encryption: public and private pair key encryption, Digital Signatures, Virtual Private Network.

Electronic Payments:
Overview, The SET protocol, Payment Gateway, certificate, digital Tokens, Smart card, credit card, magnetic strip card, E-Checks, Credit/Debit card based EPS,
online Banking.EDI Application in business, E- Commerce Law, Forms of Agreement, Govt. policies and Agenda.

Books Recommended:
1. Ravi Kalakota, Andrew Winston, “Frontiers of Electronic Commerce”, Addison- Wesley.

2. Pete Lohsin , John Vacca "Electronic Commerce", New Age International
3. Goel, Ritendra "E-commerce", New Age International
4. Laudon, "E-Commerce: Business, Technology, Society", Pearson Education
5. Bajaj and Nag, "E-Commerce the cutting edge of Business", TMH
6. Turban, "Electronic Commerce 2004: A Managerial Perspective", Pearson Education

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UNIVERSITY OF JAMMU, JAMMU
FOR EXAMINATION TO BE HELD IN JUNE, 2012 ONWARDS

CLASS: BE 8TH SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE NO: IT-804(A) ELECTIVE-IV
COURSE TITLE: CLIENT SERVER ARCHITECTURE
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

SECTION – A

Introduction to client server computing: client server model, two tier architecture, three tier architecture with transaction processing monitor, message server, application server, advantages and characteristics of client server computing. Role of DBMS in client server computing

Components of Client Server Environment : Client Component - Components of client / server application – The client – Client service, request for services, RPC, windows services, Fax / print services, Remote boot services, other remote services – Utility embedding – Common request broker architecture (CORBA) ,Server Component: The server - Detailed server functionality – The networking operating system – Novell network

SECTION – B

Client server platforms : workstations in LAN configuration, Server Connectivity – Open systems interconnect (OSI),Inter process communication (IPC) – Communication interface technology – WAN configuration, LAN to host configuration

Client server Hardware & Software : Platform migration and reengineering of existing systems, common interface across platforms, Hardware of Server & workstation, Data storages used, Distributed objects and components – OLE / DCOM

Network Interfaces: NICs, token ring, Ethernet, FDDI

BOOKS RECOMENEDED:

1. "Client Server Computing" ,D.T Dewire,TATA McGraw Hill
2. "Computer Networks" ,Forouzan
3. "Client Server Computing", Munesh C. Trivedi,2nd Edition
4. "Novell's guide to Client Server Applications and Architecture", J.D Schank, BPB Publication

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

UNIVERSITY OF JAMMU, JAMMU
FOR EXAMINATION TO BE HELD IN JUNE, 2012 ONWARDS

CLASS: BE 8TH SEMESTER
BRANCH: INFORMATION TECHNOLOGY
COURSE NO: IT-804(B) ELECTIVE-IV
COURSE TITLE: MOBILE COMPUTING
DURATION OF EXAM: 3 HOURS.

			MARKS	
L	T	P	THEORY	SESSIONAL
3	2	0	100	50

SECTION A

WIRELESS COMMUNICATION FUNDAMENTALS

Introduction – ITU-T, Wireless transmission, Frequencies for radio transmission, Signals, Antennas, Signal Propagation, Multiplexing, Modulations, Spread spectrum, MAC, Space Division Multiple Access (SDMA), Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA), Cellular Wireless Networks.

TELECOMMUNICATION NETWORKS

Telecommunication systems – Global System for Mobile Communication (GSM), General Packet Radio Service (GPRS), Digital Enhanced Cordless Telecommunications (DECT), Universal Mobile Telecommunications System (UMTS), International Mobile Telecommunications 2000 (IMT2000).

WIRLESS LAN

Wireless LAN - IEEE 802.11 Family of Standards, Architecture, Services. HiperLAN. BlueTooth Protocol Stack

SECTION B

MOBILE NETWORK LAYER

Mobile IP, Dynamic Host Configuration Protocol (DHCP), Routing Protocols – Destination Sequenced Distance Vector (DSDV), Dynamic Source Routing (DSR).

TRANSPORT AND APPLICATION LAYERS

TCP in Wireless Mobile Networks – Indirect TCP, Snooping TCP, Mobile TCP, Fast Retransmit/Recovery, Freezing, Selective Retransmission, Wireless Application Protocol (WAP), WAP 2.0, Wireless Transport Layer Security (WTLS)

MOBILE COMMUNICATION ISSUES

Security Issues, Health Issues, Mobile E-Commerce Issues

BOOKS RECOMMENDED:

1. Jochen Schiller, "Mobile Communications", PHI/Pearson Education, Second Edition, 2003.
2. William Stallings, "Wireless Communications and Networks", PHI/Pearson Education, 2002.
3. A. Mehrotra. GSM System Engineering. Artech House, 1997.

4. Charles Perkins. Mobile IP. Addison Wesley, 1999.
5. Charles Perkins (ed.) Adhoc Networks. Addison Wesley, 2000

REFERENCES

1. Kaveh Pahlavan, Prasanth Krishnamoorthy, "Principles of Wireless Networks", PHI/Pearson Education, 2003.
2. Uwe Hansmann, Lothar Merk, Martin S. Nicklons and Thomas Stober, "Principles of Mobile Computing", Springer, New York, 2003.
3. Hazysztof Wesolowshi, "Mobile Communication Systems", John Wiley and Sons Ltd, 2002.

NOTE: There will be eight questions of 20 marks each, four from each section. Students are required to attempt five questions selecting atleast two questions from each section. Use of Calculator is allowed.

UNIVERSITY OF JAMMU, JAMMU
FOR EXAMINATION TO BE HELD IN JUNE, 2012 ONWARDS

CLASS: B.E 8th SEMESTER
BRANCH: INFORMATION TECHNOLOGY
Course No. IT – 805
COURSE TITLE: MAJOR PROJECT

L	T	P	MARKS
0	0	12	400

The student will complete their assigned project work initiated in 7th semester under course No.IT-709 and submit a detailed project report individually to the Head of the department.

Guidelines for evaluation of Project work in 8th semester:
There shall be a mid semester evaluation, followed by a End Semester (Final) Evaluation

Sub-distribution of marks:

- For External Examiner : 100
- For Internal Examiner : 300

Sub-distribution of internal Marks:

- Mark distribution of internal Project work as per the University statues shall be based on:

a.	Viva-Voce	=	90	30%
b.	Presentation	=	90	30%
c.	Report	=	120	40%
	Total	=	300	