CSSR & SRRM Degree & PG College

AUTONOMOUS

Re-Accredited with 'A' Grade by NAAC(Cycle-II)

Permanently Affiliated to Yogi Vemana University- Kadapa

13/521 Reddy Colony, Kamalapuram, YSR District -516289

BOARD OF STUDIES

DEPARTMENT
OF
COMPUTER SCIENCE & APPLICATIONS

2024-2025

SEMESTER - I

Meeting-I

Dated:31-07-2024

CONTENTS

CSSR & SRRM DEGREE & PG COLLEGE
AUTONOMOUS
Re-Accredited by NAAC with A Grade
Permanently Affiliated to Yogi Vemana University
Recognized Under 2(f) & 12(B) of UGC Act 1956
13/521, Reddy Colony, Kamalapuram-516 289, Kadapa Dist. A.P.
ISO 9001:2015

Date:25-07-2024

PROCEEDINGS OF THE PRINCIPAL

Present: Dr.G. Vinod Kumar M.Sc., Ph.D., Principal

The Board of Studies for Department of Computer Science & Applications has been constituted by the Principal of CSSR & SRRM Degree & PG College (A), Kamalapuram as per UGC autonomous 2023 regulations of BoS for the period of three years i.e., 2024-2025 to 2026-2027 with the following members.

Sl. No.	Category	Name	Designation	Position in BoS
1	In charge of the Department	K. Sreenivas Reddy	Head	Chairperson
2	Faculty Member	I.Sreevani	Lecturer	Member
3	Faculty Member	P. Pradeep Kumar Reddy	Lecturer	Member
4	Faculty Member	G. Raj Kumar	Lecturer	Member
5	Two experts from Outside the Parent University nominated by Academic Council	Dr. Ratna Kumari Assistant Professor RGUKT-Andhra Pradesh Ph: 9441603196 Email: ratnamala3784@gmail.com	Assistant Professor	Subject Expert
6		N. Lavanya Department of Computer Science Sri Venkateswara Degree & PG College, Ananthapuram Ph: 9494931009	Lecturer	Subject Expert
7	One Expert Nominated by Vice Chancellor	Dr.B. Reddiah Department of Computer Science & Technology Yogi Vemana University, Kadapa Ph:9000601602 Email: b.reddaiah@yvu.edu.in	Associate Professor	Subject Expert
8	One representative from Industry/ Corporate allied areas nominated by the Principal	G. Vinay Kumar, Jyothi & Company, Mandy Complex, Proddatur, YSR Ph:9246942311	Industrialist	Member
9	Alumni nominated by the Principal	Y.C. Lokeswara Reddy, M.Sc. (Computer Science) Ph:9652262519	Alumni	Member

G. Vinod 29/7/24

PRINCIPAL
CSSR & SRRM Degree & PG College
Autonomous
Kamalapuram, YSR (Dist), A.P.

1992

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ISO 9001:2015

Dr G Vinod Kumar, M.Sc., Ph.D.
Principal
Ph: 9014064906

Date: 29-07-2024

To
The Members BoS
Department of Computer Science & Applications

Respected Sir/Madam,

Sub: CSSR & SRRM Degree & PG College (A), Kamalapuram- Department of Computer Science & Applications -**Board of Studies – Ist** Meeting for the academic year 2024-2025.

The Board of Studies Ist Meeting, Department of Computer Science & Applications is scheduled to be held on **31st July, 2024** in the department of Computer Science & Applications. Hence all the members are requested to attend the meeting without fail.

Enclosed Copies:
Principal Proceedings

G. Vinod 29/7/24
PRINCIPAL
CSSR & SRRM Degree & PG College
Autonomous
Kamalapuram, YSR (Dist), A.P.

Department of Computer Science & Applications

Agenda & Minutes of Meeting

The Board of studies meeting - I for the academic year 2024-2025 for the Department of Computer Science & Applications was held on 31/7/2024 at 10.00 A.M.in the Department of Computer Science & Applications CSSR & SRRM Degree & PG College (A), Kamalapuram.

Agenda:

1.To approve the syllabus for the Ist semester of B. Sc Honours Computer Science
2.To approve & discuss the CIA & SEE pattern.
3.To approve & discuss the blue print & model question for the following courses
4.To approve the list of Question paper Setters & Examiners.
5.To discuss about departmental & research activities
6. Any other matter with the permission of Chair.

Resolutions

1.The members of BoS framed and approved the curriculum & syllabus for the B. Sc Honours Computer Science for I semester and changed the syllabus where it is necessity.
2.The members of the BoS approved the pattern of CIA and SEE for 100 marks 30 for CIA and 70 for SEE for UG Course.
3.The members of BoS approved the blue print and model question papers for the courses.
4.The members approved the list question paper setters and examiners.
5.The members of BoS decide to organise departmental activities and to enhance the research activities.

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B.Sc., Honours in Computer Science (Major)

W.e.f A. Y- 2024-25

COURSE STRUCTURE

Year	Semester	Paper Code	Title of the Course	No. of Hrs/Week	No. of Credits
I	I	CS101	Essentials and applications of Mathematical, Physical and Chemical Sciences	5	4
		CS102	Advances in Mathematical, Physical and Chemical Sciences	5	4

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B. Sc Honours Computer Science

SEMESTER-I

ESSENTIALS AND APPLICATIONS OF MATHEMATICAL, PHYSICALAND CHEMICAL SCIENCES

Hours: 5hrs/Week **Credits: 4**

Course Objective:

The objective of this course is to provide students with a comprehensive understanding of the essential concepts and applications of mathematical, physical, and chemical sciences. The course aims to develop students' critical thinking, problem-solving, and analytical skills in these areas, enabling them to apply scientific principles to real-world situations.

Learning outcomes:

CO 1: Apply critical thinking skills to solve complex problems involving complex numbers, trigonometric ratios, vectors, and statistical measures.

CO 2: To Explain the basic principles and concepts underlying a broad range of fundamental areas of physics and to Connect their knowledge of physics to everyday situations

CO 3: To Explain the basic principles and concepts underlying a broad range of fundamental areas of chemistry and to Connect their knowledge of chemistry to daily life.

CO 4: Understand the interplay and connections between mathematics, physics, and chemistry in various applications. Recognize how mathematical models and physical and chemical

CO 5: Principles can be used to explain and predict phenomena in different contexts.

CO 6: To explore the history and evolution of the Internet and to gain an understanding ofnetwork security concepts, including threats, vulnerabilities, and countermeasures.

UNIT I: ESSENTIALS OF MATHEMATICS: 9hrs

Complex Numbers: Introduction of the new symbol i – General form of a complex number – Modulus-Amplitude form and conversions

Trigonometric Ratios: Trigonometric Ratios and their relations – Problems on calculation of angles Vectors: Definition of vector addition – Cartesian form – Scalar and vector product and problems Statistical Measures: Mean, Median, Mode of a data and problems

UNIT II: ESSENTIALS OF PHYSICS: 9hrs

Definition and Scope of Physics- Measurements and Units - Motion of objects: Newtonian Mechanics and relativistic mechanics perspective - Laws of Thermodynamics and Significance- Acoustic waves and electromagnetic waves- Electric and Magnetic fields and their interactions- Behaviour of atomic and nuclear particles- Wave-particle duality, the uncertainty principle-Theories and understanding of universe.

UNIT III: ESSENTIALS OF CHEMISTRY: 9hrs

Definition and Scope of Chemistry- Importance of Chemistry in daily life -Branches of chemistry and significance- Periodic Table- Electronic Configuration, chemical changes, classification of matter, Biomolecules-carbohydrates, proteins, fats and vitamins.

UNIT IV: APPLICATIONS OF MATHEMATICS, PHYSICS & CHEMISTRY: 9hrs

Applications of Mathematics in Physics & Chemistry: Calculus, Differential Equations & Complex Analysis

Application of Physics in Industry and Technology: Electronics and Semiconductor Industry, Robotics and Automation, Automotive and Aerospace Industries, Quality Control and Instrumentation, Environmental Monitoring and Sustainable Technologies.

Application of Chemistry in Industry and Technology: Chemical Manufacturing, Pharmaceuticals and Drug Discovery, Materials Science, Food and Beverage Industry.

UNIT V: ESSENTIALS OF COMPUTER SCIENCE: 9hrs

Introduction to computer and programming: Introduction, Basic block diagram and functions of various components of computer, Concepts of Hardware and software, Types of software, Compiler and interpreter, Concepts of Machine level, Assembly level and high-level programming, Flowcharts and Algorithms.
Milestones of computer evolution - Internet, history, Internet Service Providers, Types of Networks, IP, Domain Name Services, applications.

Recommended Books:

1. Functions of one complex variable by John.B.Conway, Springer- Verlag.
2. Elementary Trigonometry by H.S.Hall and S.R.Knight
3. Vector Algebra by A.R.Vasishtha, Krishna Prakashan Media(P)Ltd. 4.Basic Statistics byB.L.Agarwal, New age international Publishers
4. University Physics with Modern Physics by Hugh D. Young and Roger A. Freedman
5. Fundamentals of Physics by David Halliday, Robert Resnick, and Jearl Walker
6. Physics for Scientists and Engineers with Modern Physics" by Raymond A. Serway and John W. Jewett Jr.
7. Physics for Technology and Engineering" by John Bird
8. Chemistry in daily life by Kirpal Singh
9. Chemistry of bio molecules by S. P. Bhutan
10. Fundamentals of Computers by V. Raja Raman
11. Cyber Security Essentials by James Graham, Richard Howard, Ryan Olson

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B. Sc Honours (Computer Science)

SEMESTER- I

ADVANCES IN MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES

Hours: 5 hrs/week **Credits: 4**

Course Objective:

The objective of this course is to provide students with an in-depth understanding of the recent advances and cutting-edge research in mathematical, physical, and chemical sciences. The course aims to broaden students' knowledge beyond the foundational concepts and expose them to the latest developments in these disciplines, fostering critical thinking, research skills, and the ability to contribute to scientific advancements.

Learning outcomes:

CO 1: Explore the applications of mathematics in various fields of physics and chemistry, to understand howmathematical concepts are used to model and solve real-world problems.

CO 2: To Explain the basic principles and concepts underlying a broad range of fundamental areas of physics and to Connect their knowledge of physics to everyday situations.

CO 3: Understand the different sources of renewable energy and their generation processes and advances in nanomaterials and their properties, with a focus on quantum dots. To study the emerging field of quantum communication and its potential applications. To gain an understanding of the principles of biophysics in studying biological systems. Explore the properties and applications of shape memory materials.

CO 4: Understand the principles and techniques used in computer-aided drug design and drug delivery systems, to understand the fabrication techniques and working principles of nanosensors. Explore the effects of chemical pollutants on ecosystems and human health.

CO 5: Understand the interplay and connections between mathematics, physics, and chemistry in various advanced applications. Recognize how mathematical models and physical and chemical principles can be used to explainand predict phenomena in different contexts.

CO 6: Understand and convert between different number systems, such as binary, octal, decimal, and hexadecimal. Differentiate between analog and digital signals and understand their characteristics. Gain knowledge of different types of transmission media, such as wired (e.g., copper cables, fiber optics) and wireless (e.g., radio waves, microwave, satellite)..

UNIT I: ADVANCES IN BASICS MATHEMATICS : 9hrs

Straight Lines: Different forms – Reduction of general equation into various forms –Point of intersection of two straight lines

Limits and Differentiation: Standard limits – Derivative of a function –Problems on product rule and quotient rule

Integration: Integration as a reverse process of differentiation – Basic methods of integration

Matrices: Types of matrices – Scalar multiple of a matrix – Multiplication of matrices – Transpose of a matrix and determinants

UNIT II: ADVANCES IN PHYSICS: 9hrs

Renewable energy: Generation, energy storage, and energy-efficient materials and devices. Recent advances in the field of nanotechnology: Quantum dots, Quantum Communication- recent advances in biophysics- recent advances in medical physics- Shape Memory Materials.

UNIT III: ADVANCES IN CHEMISTRY: 9hrs

Computer aided drug design and delivery, nano sensors, Chemical Biology, impact of chemical pollutants on ecosystems and human health, Dye removal - Catalysis method

UNIT IV: ADVANCED APPLICATIONS OF MATHEMATICS, PHYSICS & CHEMISTRY: 9hrs

Mathematical Modelling applications in physics and chemistry Application of Renewable energy: Grid Integration and Smart Grids, Application of nanotechnology: Nanomedicine,

Application of biophysics: Biophysical Imaging, Biomechanics, Neurophysics, Application of medical

physics: Radiation Therapy, Nuclear medicine

Solid waste management, Environmental remediation- Green Technology, Water treatment.

UNIT V: ADVANCED APPLICATIONS OF COMPUTER SCIENCE: 9hrs

Number System-Binary, Octal, decimal, and Hexadecimal, Signals-Analog, Digital, Modem, Codec, Multiplexing, Transmission media, error detection and correction- Parity check and CRC, Networking devices-Repeater, hub, bridge, switch, router, gateway.

Recommended books:

1. Coordinate Geometry by S.L.Lony, Arihant Publications
2. Calculus by Thomas and Finny, Pearson Publications
3. Matrices by A.R.Vasishtha and A.K.Vasishtha, Krishna Prakashan Media(P)Ltd.
4. "Renewable Energy: Power for a Sustainable Future" by Godfrey Boyle
5. "Energy Storage: A Nontechnical Guide" by Richard Baxter
6. "Nanotechnology: Principles and Applications" by Sulabha K. Kulkarni and Raghvendra A. Bohara
7. "Biophysics: An Introduction" by Rodney Cotterill

8. "Medical Physics: Imaging" by James G. Webster
9. "Shape Memory Alloys: Properties and Applications" by Dimitris C. Lagoudas
10. Nano materials and applications by M.N.Borah
11. Environmental Chemistry by Anil.K.D.E.
12. Digital Logic Design by Morris Mano
13. Data Communication & Networking by Bahrouz Forouzan.

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Syllabus changed and approved by BoS for UG Honours Courses for B.Sc (Computer Science)

The members suggested following changes in the syllabus of I[st] Year UG Programme

S. No	Semester & Group	Title of the Paper	UNIT	Existing Topic	Revised /Changed Topic	Justification
1	I B.Sc. Computer Science	Essentials And Applications of Mathematical, Physicaland Chemical Sciences	V	Ethical and social implications: Network and security concepts- Information Assurance Fundamentals, Cryptography- Symmetric and Asymmetric, Malware, Firewalls, Fraud Techniques- Privacy and Data Protection	**Introduction to computer and programming:** Introduction, Basic block diagram and functions of various components of computer, Concepts of Hardware and software, Types of software, Compiler and interpreter, Concepts of Machine level, Assembly level and high-level programming, Flowcharts and Algorithms.	Students should learn the basics of Computers along with basic concepts of Programming Language which helps students

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Blue Print
I B. Sc Computer Science -Semester I

CS101: Essentials and applications of Mathematical, Physical and Chemical Sciences
CS102: Advances in Mathematical, Physical and Chemical Sciences

Time: 2 Hours **Max Marks: 70**

Topics	No of Multiple-Choice Questions	Marks
Unit-I	6	6
Unit-II	6	6
Unit-III	6	6
Unit-IV	6	6
Unit-V	6	6
Total		**30**

Topics	No of Fill in the Blanks	Marks
Unit-I	2	2
Unit-II	2	2
Unit-III	2	2
Unit-IV	2	2
Unit-V	2	2
Total		**10**

Topics	No of Very short answer questions.	Marks
Unit-I	2	2
Unit-II	2	2
Unit-III	2	2
Unit-IV	2	2
Unit-V	2	2
Total		**10**

Topics	No of Matching	Marks
Unit-I	2	2
Unit-II	2	2
Unit-III	2	2
Unit-IV	2	2
Unit-V	2	2
Total		**10**

Topics	No of True or False	Marks
Unit-I	2	2
Unit-II	2	2
Unit-III	2	2
Unit-IV	2	2
Unit-V	2	2
Total		**10**

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MODEL QUESTION PAPER
I YEAR I SEMESTER
ESSENTIALS AND APPLICATIONS OF MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES

Time: 2 Hours Max Marks: 70

Section-A

Answer all Multiple Choice Questions. Each Question Carries 1 Mark 30x1=30 M

1.Find the Conjugate of a complex number -3+4i [ ]
a)3+4i b) 3+3i c) -3-4i d) -3+4i

2.Angle 128^0 represent which angle [ ]
a) Acute b) Obtuse c) Right Angle d) None

3.Find the dot Product of the two vectors A = 2i + 3j and B = 3i - 4j? [ ]
a)2 b) -2 c) -1 d) 0

4.The Median of the Un Grouped Data -2, 5, 15, -22, 8, -3, 0 is [ ]
a)0 b) -22 c) 15 d) 5

5.The Value of $Cosec\ 30^0 + Tan60^0$ is [ ]
a)$2-\sqrt{3}$ b) $-2-\sqrt{3}$ c) $2+\sqrt{3}$ d) $-2+\sqrt{3}$

6. Evaluate cos 30° sin 60° + cos 60° sin 30°.[ ]
a) 2 b) 0 c) 1 d) ∞

7. Electron volt is a unit of [ ]
a) Luminosity b) Frequency c) Force d) Energy

8. Passengers are pushed back when a bus starts abruptly. Which of the following is an example of this? [ ]
a) The first law of Newton b) The second law of Newton
c) The third law of Newton d) None of Newton's laws apply to you.

9. Mass–energy equivalence is given by the formula _____.[ ]
a) $E=m+c^2$ b) $E=m-c^2$ c) $^{E}=2+m\ c^2$ d) $^{E}=mc^2$

10. The path length travelled by a body in a given time interval is known as _____.[ ]
a) distance b) Velocity c) Acceleration d) Moment

11. Velocity is defined as _____ per time. [ ]
a) Distance b) Displacement c) Distance &Power d) ^{Power}

12. Which among the following laws is the basis of the first law of thermodynamics? [ ]
a) Law of conservation of mass b) Law of conservation of energy
c) Law of conservation of work d) Law of conservation of momentum

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13. Which of the following cationic detergents? [ ]
a) Sodium lauryl sulphate. b) Cetyl trimethyl ammonium bromide.
c)Sodium dodecylbenzene sulphonate. d)Glyceryl oleate

14.The only material that can be 100 percent recycled [ ]
a) Polythene bag b) Glass c) Bakelite d)Cement

15. Select a thermoplastic material from the following [ ]
a) Handles Pressure cooker b) Switches c) Insulators d) Polythene bag

16.A properly proportioned mixture of sand, cement, gravel, and water is named [ ]
a) Concert b) Asbestos c) Mica d) Thermite mixture

17.The class of medicinal products used to treat stress is? [ ]
a) Analgesics b) Antiseptics c) Antihistamines d) Tranquilizers

18. The Atoms of solid Ar are held together by [ ]
a) Van der Waals forces b) Hydrogen bonds c) Ionic bonds d) Hydrophobic forces

19. What will be the range of the function $f(x) = 2x^3 - 9x^2 - 24x + 5$ which decreases with x? [ ]
a) $-1 < x < 4$ b) $1 < x < 4$ c) $-1 \leq x < 4$ d) $-1 < x \leq 4$

20. what is the value of i^2 [ ]
a)1 b)-1 c)0 d)2

21. What type of energy is stored in a rechargeable battery? [ ]
a) Mechanical b) Chemical c) Nuclear d) Electrical

22. Which renewable energy source relies on capturing energy from the sun's rays? [ ]
a) Geothermal b) Wind c) Hydropower d) Solar

23. Which of the following has the weakest bond? [ ]
a) Ice b) Diamond c) KCl d) Neon

24. Which of the following is the weakest bond? [ ]
a) Ionic bonds b) Metallic bonds c) Covalent bonds d) Van der Waals forces

25. How many layers are there in the ISO OSI reference model? [ ]
a) 7 b) 5 c) 4 d) 6

26. Which of the following layers does the HTTP protocol work on? [ ]
a) Physical layer b) Data-link layer c) Application layer d) None of the these

27. Who is the father of Computers? [ ]
a) James Gosling b) Charles Babbage c) Dennis Ritchie d) Bjarne Stroustrup

28. Which of the following language does the computer understand? [ ]
a) C Language b) Assembly Language c) Binary Language d) BASIC

29. When an algorithm is written in the form of a programming language, it becomes a [ ]
a) Flowchart b) Program c) Pseudo code d) Syntax

30. Which of the following is the smallest unit of data in a computer? ( )
a) GB b) KB c)Bit d) Byte

Section-B

Answer all fill in the blanks questions. Each Question Carries 1 Mark 10x1=10 M

31.Find the Modulus of the complex number 3+4i .....

32.Find the Value of $sec^2\theta - tan^2\theta$= .....

33.Electromagnetic waves are a form of ..... that travel though the universe.

34.Sound waves do not travel through .....

35.Greenchemistry have..... principles

36.Corbons involving branch is.....

37.The weak bond is.....

38. The word Robot is derived from the Czech word "Robota" meaning .....

39.LAN Stands for.....

40.To transmit data for sharing on a network, it has to be divided into smaller chunks called.....

Section-C

Answer all Very short answer questions. Each Question Carries 1 Mark 10x1=10 M

41. What are the parts of Complex number?

42. Find the Relation between Mean, Median and Mode

43.Define Wavelength

44.Define Electric fields?

45.What are polymers?

46.Proteins have how many amino acids?

47.How many types of lipids?

48.What is semiconductor?

49. What is an internet?

50. Write any two input devices

Section-D

Answer all Matching questions. Each Question Carries 1 Mark 10x1=10 M

Group-A		Group-B
51. Mode of 2,0,-1,5,-2,2,0,2,	( )	a) It is output device
52. Mean of -1,3,0,4,-2,5	( )	b) Carbon-containing compounds
53. Isotopes	( )	c) Living things
54. Isotones	( )	d) Structure and composition of matter.
55. Organic chemistry	( )	e) Atoms with same number of neutrons but different atomic numbers.
56. Inorganic chemistry	( )	f) 1.5
57. Physical chemistry	( )	g) Atoms having same atomic number but different mass numbers
58. Fusibility	( )	h) It is a communications for delivering data and messages through networks.
59. TCP	( )	i) The property of being liquefied due to heat
60. Monitor	( )	j) 2

Section-E

Answer all True or False questions. Each Question Carries 1 Mark 10x1=10 M

61. Some complex number have complex conjugate [ ]
62. Scalar product of two vectors is also a vector [ ]
63. Electron has wave nature as well as particle nature [ ]
64. When the universe first formed, it was smaller than an atom [ ]
65. Glucose is one of the amino acid [ ]
66. Hydrogen bond is strong bond [ ]
67. Green chemistry have 13 principles [ ]
68. Elon Musk coined the word "Robotics" [ ]
69. ISP stands for Internet service printer [ ]
70. 1 kb=1024 mb

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2) [illegible]
3) [illegible]
4) [illegible]
5) [illegible]
6) [illegible]
7) [illegible]
8) Vinay
9) [illegible]

MODEL QUESTION PAPER
I SEMESTER
ADVANCES IN MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES

Time: 2 Hours | Max Marks: 70

Section-A

Answer all Multiple Choice Questions. Each Question Carries 1 Mark 30x1=30 M

1.Find the correct form of straight line equation [ ]

a)$2x - 3y + 4 = 0$ b) $2x^2 - 4x + 6 = 0$ c) $-4x + 5y + 2z$ d) $ax + by - 4y^2 = 2$

2.Find the Point of Intersection of lines $3x + 4y - 1 = 0$ and $2x + 2y - 2 = 0$ [ ]
a) (3,2) b) (-3,2) c) (3, -2) d) (-3, -2)

3.Find the limit of the value $\log_{x\to 0} \frac{sinx}{x}$ [ ]
a)0 b) 1 c) -1 d) None

4.Find the derivative of the function $3x + 4x^2$ [ ]
a)3+8x b) 3-8x c) 3+x d) 6-4x

5.Determinant of the Identity Matrix is [ ]
a)-1 b) 0 c) 1 d) None

6. if Matrix A is of order X*Y and Matrix B is of order M*N, then what is the order of the Matrix A*B given that Y=M? [ ]
a) Y*N b) X*M c) X*N d) Y*M

7.Which of the following is the most prospective Renewable source of Energy in India [ ]
a) Solar Energy b) Small Hydro-electric energy c) Biological energy d) More than one of the above

8.Which one of the following is the largest source of natural energy to humans [ ]
a) Earth b) Plants c) Sun d) Animals

9.The ____ technique is a way of producing power from sunlight. [ ]
a) Inverter b) Net metering c) Photovoltaic d) Array

10.PV cells are made up of ____. [ ]
a) Conductors b) Insulators c) Semiconductors d) All of the above

11.The majority of charge carriers in an N-type semiconductor are ____. [ ]
a) Proton b) Electron c) Photons d) Neutrons

12. Which one of the following is not basic component of Materials Science? [ ]
a) Cost b) Properties c) Structure d) Performance

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13. Which one of the following organization dedicated to protecting human health from environmental harms? [ ]
a) Environment and Human Health b) Environmental and Scientific Science
c) Ecological Protection Organization d) Ecological Science and Solutions

14. Which one of the following cause harm to human health? [ ]
a) Organic farming b) Using of pesticides c) Using solar vehicles d) Protecting forests

15. How many types of health hazards are there? [ ]
a) One b) Two c) Three d) Four

16. Human body can be divided into [ ]
a) Internal parts b) External parts c) both a & b d) None of the above

17.What is called the term which refers to an unhealthful intake of dietary nutrients? [ ]
a) Healthy food b) Foul food c) Malnutrition d) Nutritious food

18.Which of the following pollutants is known to cause acid rain? [ ]
a) Carbon dioxide b) Sulfur dioxide c) Methane d) Ozone

19. Medical Physics is a specialized branch of physics that focuses on the application of physics principles to which field? [ ]
a) Astrophysics b) Medicine and healthcare c) Engineering d) Nanotechnology

20. What is the primary focus of biophysics? [ ]
a) Study of plant physiology
b) Examination of animal behavior
c) Investigation of biological processes using physical principles
d) Exploration of geological formations in living organisms

21. Paper chromatography separates molecules based on which property? [ ]
a) Polarity b) Molecular weight c) Shape d) Viscosity.

22. Bioaccumulation refers to: [ ]
a) The accumulation of substances, such as pesticides, in an organism
b) The breakdown of pollutants in the environment
c) The dispersion of pollutants in the atmosphere
d) The reduction of pollutants through natural processes

23.Photocatalysis involves the use of: [ ]
a) Light to accelerate a chemical reaction b) Heat to accelerate a chemical reaction
c) Pressure to accelerate a chemical reaction d) Sound to accelerate a chemical reaction

24. The world's available fresh water supply is about _____ percent of that total water supply. [ ]
a) 10 b) 4 c) 3 d) 7

25. The value of radix in binary number system is [ ]
a) 2 b) 8 c) 10 d) 1

26. The binary equivalent of the decimal number 10 is [ ]
a) 0010 b) 10 c) 1010 d) 010

27. A nanosecond is _____ as long as a microsecond [ ]
a) 0.1 b) 0.01 c) 0.001 d) 0.0001

28.A device which is used to boost the signal between two cable segments or wireless access points is [ ]
a) Booster b) Repeater c) Switch d) Router

29. A device that connects networks with different protocols [ ]
a) Switch b) Hub c) Gateway d) Proxy Server

30. A device that is used to connect a number of LANs is [ ]
a) Router b) Repeater c) Bridge d) Switch

Section-B

Answer all fill in the blanks questions. Each Question Carries 1 Mark 10x1=10 M

31.Integration is also known as .....

32. Number of Rows and Columns in a Square Matrix are .....

33.Nanoscience is the study of Phenomena on the scale of .....

34.The properties like melting point, solubility, color, etc. changes on varying the .....

35..... percentage of water approximately present in human body?

36.....can cause breast cancer in women?

37.....is a result of high exposure of radiation

38. The process of destroying cancer cells with the help of radiation is .....

39. The ..... device forwards packets between networks by processing the routing information included in the packet.

40. The sine wave is an example of ..... Signal.

Section-C

Answer all Very short answer questions. Each Question Carries 1 Mark 10x1=10 M

41. Find Transpose of matrix $\begin{pmatrix} 1 & -1 & 0 \\ -1 & 11 & 2 \\ 0 & 02 & 03 \end{pmatrix}$

42.Find the Intercept form of the straight line $4x - 6y = 2$

43.Define Quantum dots?

44. Application of Quantum dots.

45. What is computer aided drug?

46.What is chemical pollution?

47.What is vitamins?

48.Define Neurophysics.

49.What is number system?

50.What is Modem?

1)

2)

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Section-D

Answer all Matching questions. Each Question Carries 1 Mark 10x1=10 M

Group-A	Group-B
51.Trace of the Null Matrix	( ) a) CADD
52.Find the slope 2x+4=y	( ) b) Network Layers
53.Quantum efficiency is a function of	( ) c) Air pollution
54. Planck constant	( ) d) Pesticides
55. Computer aided drug design and delivery	( ) e) Concept of linear algebra
56.chemical pollutants	( ) f) Joule seconds
57.industries	( ) g) Energy
58. Cadmium	( ) h) Decimal number 15
59. F	( ) i) Nuclear Reactor
60.Routers	( ) j) 2

Section-E

Answer all True or False questions. Each Question Carries 1 Mark 10x1=10 M

61.Every Matrix has Determinant [ ]

62.Two Straight Lines are always Intersect [ ]

63.Biophysics is the study of physical phenomena [ ]

64.Medical Physics is the application of physics to medicine [ ]

65. Nanoparticles are commonly used as catalysts in the dye removal process. [ ]

66.The catalytic method for dye removal produces more toxic by-products compared to other methods. [ ]

67. Catalysis can be used to remove both organic and inorganic dyes from wastewater. [ ]

68. MRI is Magnetic Remote Imaging [ ]

69. A bit in a computer terminology means either 0 or 1 [ ]

70. Ten thousand milliseconds equal to one second [ ]

1)

2)

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CIA & SEE

The Continuous Internal Assessment & Semester End Examinations

For the I[st] semester Foundations Courses 100 marks is allotted and the marks is divided into 30 Marks for Continuous Internal Examinations and 70 marks for semester End Examinations as per **APSCHE Guidelines.**

Question Paper Taxonomy										
Level of Bloom's Taxonomy	**Types of Questions and Marks Assigned**									
	MCQs		**FIB**		**VAQ**		**MC**		**T/F**	
	CIA	**SEE**	**CIA**	**SEE**	**CIA**	**SEE**	**CIA**	**SEE**	**CIA**	**SEE**
Remembering	**3 m**	**10 m**								
Understanding	**3 m**	**10 m**								
Applying	**4 m**	**10 m**								
Analysing					**5 m**	**10 m**				
Evaluating							**5 m**	**10 m**	**5 m**	**10 m**
Creating			**5 m**	**10 m**						

1)

2)

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List of Question Paper Setters

S. No	Name of the Faculty	Mobile	Email-id
1.	Shaik Shafiuddin, Lecturer Government Degree College,Vempalli	9052311737	shafiuddin111@gmail.com
2.	P.Arifoon, Lecturer Nagarjuna Degree College for Women, Kadapa	9059884770	arifa.far@gmail.com
3.	Y.Anitha,Lecturer, Lecturer SKR & SKR Govt. Degree College for Women, Kadapa	8919992326	anithayarava@gcmkadapa.ac.in
4.	O.Ahmed Shareef, Lecturer Sri Kamisetty Subba Rao Chennamma Degree College(SKSC),Proddatur	9110740550	ahammed.srf@gmail.com
5.	M Lakshmi Devi, Lecturer Sri Rachapudy Nagabhushanam Degree and PG College, Badvel	8297160304	madakalalakshmidevi@gmail.com
6.	D.Adinarayana Reddy, Lecturer Lepakshi Degree College,Proddatur,	9573068866	anreddy.d@gmail.com
7.	J.V.Sumanth, Lecturer Sri BVR Degree College, Badvel	9160202046	juturu.sumanth@gmail.com
8.	C.Sreenuvasa Reddy, Lecturer Sri BVR Degree College, Badvel	7893574673	sri999111@gmail.com

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List of Examiners & Valuers

S. No	Name of the Faculty	Mobile	Email-id
1.	Manoj Prabhakar Darsi,Lecturer DK Govt College For Women(A),Nellore	9492441242	manoj07573@gmail.com
2.	Shaik Abjal Jeelani Basha , Lecturer Government Degree College,Rayachoty.	9866446086	sajeelanibasha@gmail.com
3.	B.Renuka Devi , Lecturer SKR & SKR Government Degree College for Women, Kadapa	8121121962	renukareddy.msc@gmail.com
4.	D.Satyanarayana Murthy, Lecturer Nagarjuna Degree College for Women, Kadapa	9908046162	satya.d6 @gmail.com
5.	M. Ramana Reddy, Lecturer Loyola Degree College, Pulivendula	9985024734	ramanareddymca05@gmail.com
6.	M.Hari, Lecturer Sri Kamisetty Subba Rao Chennamma Degree College,Proddatur	8317639653	mudigoti.1986@gmail.com
7.	S Karunakar Raju, Lecturer Vidyasadhana Degree College, Kadapa	9849023439	skrajakdp3@gmail.com
8.	P Hari Sankar Reddy, Lecturer Sri Rachapudy Nagabhushanam Degree and PG College, Badvel	9912428941	hari.palakolanu@gmail.com

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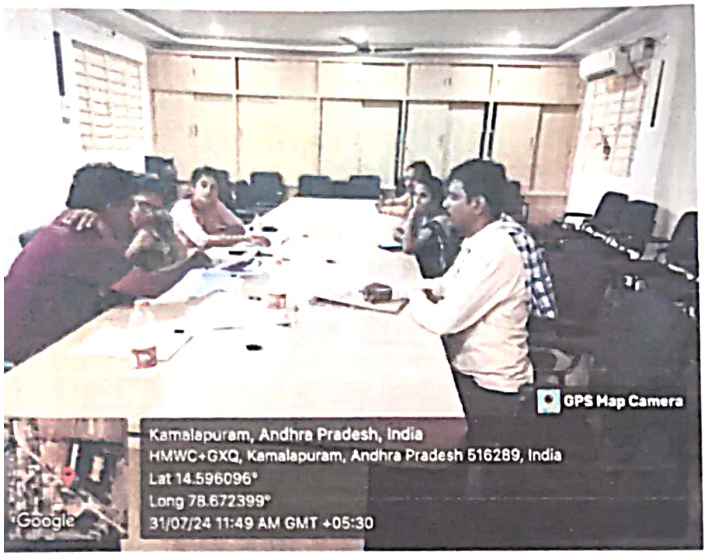
Board of Studies Meeting -I 2024-2025 Pics date 31/07/2024



1992

CSSR & SRRM DEGREE & PG COLLEGE

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13/521, Reddy Colony, Kamalapuram-516 289, Kadapa Dist. A.P.

Department of Computer Science & Applications

2024-2025

embers Present for the Board of Stuides:

Sl. No.	Name	Designation	Position in BoS	Signature
1	K. Sreenivas Reddy	Head	Chairperson	
2	I.Sreevani	Lecturer	Member	
3	P. Pradeep Kumar Reddy	Lecturer	Member	
4	G. Raj Kumar	Lecturer	Member	
5	Dr. Ratna Kumari Assistant Professor RGUKT-Andhra Pradesh Ph: 9441603196 Email: ratnamala3784@gmail.com	Assistant Professor	Subject Expert RGUKT	
6	N. Lavanya Department of Computer Science Sri Venkateswara Degree & PG College, Ananthapuram Ph: 9494931009	Lecturer	Subject Expert S.K. University	
7	Dr.B. Reddiah Department of Computer Science & Technology Yogi Vemana University, Kadapa Ph:9000601602 Email: b.reddaiah@yvu.edu.in	Associate Professor	Subject Expert University Nominee	
8	G. Vinay Kumar, Jyothi & Company, Mandy Complex, Proddatur, YSR Ph:9246942311	Industrialist	Member	
9	Y.C. Lokeswara Reddy, M.Sc. (Computer Science) Ph:9652262519	Alumni	Member	

CSSR & SRRM DEGREE & PG COLLEGE

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Kamalapuram-516289.

BOARD OF STUDIES
MEETING -I

M.Sc.-Computer Science

DEPARTEMNT OF COMPUTER SCIENCE & APPLICATIONS

Date:31/7/2024

CSSR & SRRM DEGREE & PG COLLEGE
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13/521, Reddy Colony, Kamalapuram-516 289, Kadapa Dist. A.P.

Date:25-07-2024

PROCEEDINGS OF THE PRINCIPAL

Present: Dr.G. Vinod Kumar M.Sc., Ph.D., Principal

The Board of Studies for Department of Computer Science & Applications has been constituted by the Principal of CSSR & SRRM Degree & PG College (A), Kamalapuram as per UGC autonomous 2023 regulations of BoS for the period of three years i.e., 2024-2025 to 2026-2027 with the following members.

Sl. No.	Category	Name	Designation	Position in BoS
1	In charge of the Department	K. Sreenivas Reddy	Head	Chairperson
2	Faculty Member	I.Sreevani	Lecturer	Member
3	Faculty Member	P. Pradeep Kumar Reddy	Lecturer	Member
4	Faculty Member	G. Raj Kumar	Lecturer	Member
5	Two experts from Outside the Parent University nominated by Academic Council	Dr. Ratna Kumari Assistant Professor RGUKT-Andhra Pradesh Ph: 9441603196 Email: ratnamala3784@gmail.com	Assistant Professor	Subject Expert
6		N. Lavanya Department of Computer Science Sri Venkateswara Degree & PG College, Ananthapuram Ph: 9494931009	Lecturer	Subject Expert
7	One Expert Nominated by Vice Chancellor	Dr.B. Reddiah Department of Computer Science & Technology Yogi Vemana University, Kadapa Ph:9000601602 Email: b.reddaiah@yvu.edu.in	Associate Professor	Subject Expert
8	One representative from Industry/ Corporate allied areas nominated by the Principal	G. Vinay Kumar, Jyothi & Company, Mandy Complex, Proddatur, YSR Ph:9246942311	Industrialist	Member
9	Alumni nominated by the Principal	Y.C. Lokeswara Reddy, M.Sc. (Computer Science) Ph:9652262519	Alumni	Member

G. Vinod 29/7/24
PRINCIPAL
CSSR & SRRM Degree & PG College
Autonomous
Kamalapuram, YSR (Dist), A.P.

'D : 1992

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ISO 9001:2015

Dr G Vinod Kumar, M.Sc., Ph.D.
Principal
Ph: 9014064906

Date: 29-07-2024

To
The Members BoS
Department of Computer Science & Applications

Respected Sir/Madam,

Sub: CSSR & SRRM Degree & PG College (A), Kamalapuram- Department of Computer Science & Applications -**Board of Studies – Ist** Meeting for the academic year 2024-2025.

The Board of Studies Ist Meeting, Department of Computer Science & Applications is scheduled to be held on **31st July, 2024** in the department of Computer Science & Applications. Hence all the members are requested to attend the meeting without fail.

Enclosed Copies:
Principal Proceedings

G. Vinod 29/7/24
PRINCIPAL
CSSR & SRRM Degree & PG College
Autonomous
Kamalapuram, YSR (Dist), A.P.

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

TWO YEAR (4-SEMESTER) - MASTER OF COMPUTER SCIENCE

To come into effect from the academic Year 2024-25

COURSE STRUCTURE AND DETAILED SYLLABI

Course Code	Title of the Course	No. of Credits	Credit Hours/Week		Maximum Marks		
			Theory	Practical/ Project	Internal Marks	Semester end exams Marks	Total
FIRSTSEMESTER							
MSC101	Unix and Network Programming	04	04		25	75	100
MSC102	Database Management System	04	04		25	75	100
MSC103	Operating System	04	04		25	75	100
Internal Elective							
MSC104A	Web Design using PHP	04	04		25	75	100
MSC105A	E-Commerce	04	04		25	75	100
MSC106A	Theory of computation	04	04		25	75	100
MSC101P	Unix and Network Programming Practical	04	--	16(8x2=16)	--	100	100
MSC102P	Database Management System and PHP Practical	04	--	16(8x2=16)	--	100	100
	Tutorials and Seminars	--	04	--	--	--	--
Total		**24**	**28**	**32**	**100**	**500**	**600**

- All core papers are mandatory.
- Internal Elective (IE) – Choose one paper each.

PG Course
Department of Computer Science & Applications

Agenda & Minutes of Meeting I 2024-2025

The Board of studies meeting - I for the academic year 2024-2025 for the Department of Computer Science & Applications for PG Course MSc Computer Science was held on 31/7/2024 at 10.00 am in the Department of CSSR & SRRM Degree & PG College (A), Kamalapuram.

Agenda:

1.To ratify the course structure and curriculum for the Ist semester of M. Sc Computer Science.
2.To approve the syllabus for the Ist semester of M. Sc Computer Science.
3.To approve & discuss the CIA & SEE Pattern and Practical's
4.To approve & discuss the Blue Print & Model Question for the Courses
5.To approve the list of Question Paper Setters, Valuers & Examiners
6.To discuss about departmental & research activities
7.Any other matter with the permission of Chair.

Resolutions

1.The members of board discussed and approved the course structure for PG course Ist semester of M. Sc Computer Science as fallows

MSc (Computer Science) Semester – I

Sl. No.	Title of the Paper	No of Hrs Per Week	No of Credits	CIA	SEE
1	Unix and Network Programming	4	4	25	75
2	Database Management System	4	4	25	75
3	Operating System	4	4	25	75
4	E-Commerce	(IE) 4	4	25	75
5	Unix and Network Programming Practical	4	4	-	100
6	Database Management System and PHP Practical	4	4	-	100

Note IE-Internal Elective

2.The members of BoS framed and approved the curriculum & syllabus for the MSc Computer Science for I[st semester].
3.The members of the BoS approved the pattern of CIA & SEE for 100 marks 25 for CIA and 75 for SEE for PG Course as follows:

CIA & SEE

The Continuous Internal Assessment & Semester End Examinations

For the I[st] semester 100 marks is allotted and the marks is divided into 25 Marks for Continuous Internal Examinations and 75 marks for Semester End Examinations.

Duration of CIA & SEE

CIA- 1 Hour

SEE- 3 Hours

CIA	**Internal I**	**Internal II**
Mid Examination	25 M	25 M
Grand Total	**25 M**	**25 M**

For Theory (Major):

The semester end examination is for 75 marks with the time duration of 3 Hours.

For Practical:

The semester end examination is for 100 marks with the time duration of 3 hours is described as below:

For Record Writing & Submission: 20 Marks

For Program Writing & Execution: 60 Marks

For Viva-Voce : 20 Marks

Total : 100 Marks

3.The members of BoS approved the Blue Print and Model Question Papers for the courses.
4.The members approved the list of Question Paper Setters , Valuers and Examiners.
5.The members of BoS decided to organize departmental activities.
6. Suggestions by the BoS:
i.To enhance research activities
ii.To focus on skill orientation classes
iii.To focus on programming classes.

CSSR & SRRM DEGREE & PG COLLEGE (A)

UNIX AND NETWORK PROGRAMMING

COURSE OBJECTIVES:

- To Identify practice different Unix utilities and commands and working with Bourne shell and commands, shell script.
- To Identify and practice utilities to create and manage simple file processing operations, organize directories.
- To understand concepts of Unix process, threads and signals.
- To study about the Interprocess communication and other concepts related to it.

COURSE OUTCOME:

CO 1: Ability to learn and implement Unix commands and shell script.
CO 2: Ability to learn and implement Unix file structure commands.
CO 3: Understand concepts like Unix process, threads and signals
CO 4: Understand the importance of Interprocess communication with respect to Unix operating system

UNIT-I

Unix Utilities-Introduction to Unix file system, vi editor, file handling utilities, security by file permissions, process utilities, disk utilities, networking commands, cp, mv, ln, rm, unlink, mkdir, rmdir, du, df, mount, umount, find, unmask, ulimit, ps, who, w, finger, arp, ftp, telnet, rlogin, text processing utilities and backup utilities, detailed commands to be covered are cat, tail, head, sort, nl, uniq, grep, egrep, fgrep, cut, paste, join, tee, pg, comm, cmp, diff, tr, awk, tar, cpio.
Problem solving approaches in Unix: Using single commands, using compound Commands, shell scripts, C programs, building own command library of programs. Working with the Bourne shell: what is a shell, shell responsibilities, pipes and input Redirection, output redirection, here documents, the shell as a programming language, shell meta characters, shell variables, shell commands, the environment, control structures, shell script examples.

UNIT-II

Unix Files: Unix file structure, directories, files and devices, System calls, library functions, low level file access, usage of open, creat, read, write, close, lseek, stat, fstat, octl, umask, dup, dup2. the standard i/o (fopen, fclose, fflush, fseek, fgetc, getc, getchar, fputc, putc, putchar,fgets, gets), formatted I/O, stream errors, streams and file descriptors, file and directory maintenance (chmod, chown, unlink, link, symlink, mkdir, rmdir, chdir, getcwd), Directory handling system calls (opendir, readdir, closedir,rewinddir, seekdir, telldir)

UNIT-III

Unix Process, Threads and Signals: What is process, process structure, starting new process, waiting for a process, zombie process, process control, process identifiers, system call interface for process management-fork, vfork, exit, wait, waitpid, exec, system,
Threads-Thread creation, waiting for a thread to terminate, thread synchronization, condition variables, cancelling a thread, threads vs. processes, Signals- Signal functions, unreliable signals, interrupted system calls, kill and raise functions, alarm, pause functions, abort, sleep functions.

UNIT-1V

Interprocess Communication Overview: Introduction to IPC, IPC between processes on a single computer system, IPC between processes on different systems, file and record locking, other Unix locking techniques, pipes, FIFOs, streams and messages, namespaces, introduction to three types of IPC (system-V)-message queues, semaphores and shared memory.
Message Queues-Unix system-V messages, Unix kernel support for messages, Unix APIs for messages, client/server example.

Semaphores-Unix system-V semaphores, Unix kernel support for semaphores, Unix APIs for semaphores, file locking with semaphores.

Text Books:

1. Unix Network Programming, W.R.Stevens Pearson/PHI.
2. Unix Concepts and Applications, 3rd Edition, Sumitabha Das, TMH.
3. Advanced Unix Programming, 2nd Edition, M.J.Rochkind, Pearson Education.

Reference Books:

1. Unix system programming using C++, T.Chan, PHI.
2. Unix programming environment, Kernighan and Pike, PHI. / Pearson Education
3. Unix for programmers and users, 3rd Edition, Graham Glass, King Ables, Pearson Education
4. Unix and Shell programming, B.A.Forouzan and R.F.Gilberg, Thomson

I M.Sc. Computer Science
Semester-I

UNIX AND NETWORK PROGRAMMING
BLUE PRINT

Time: 3 Hours Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks. (5 X 3= 15 M)

Question	Topics	No of Questions	Marks
1	Unit-I	1	3
2	Unit-I	1	3
3	Unit-II	1	3
4	Unit-II	1	3
5	Unit-III	1	3
6	Unit-III	1	3
7	Unit-IV	1	3
8	Unit-IV	1	3

Section-B

Answer All question. Each Question Carries 15 Marks. (4 X 15= 60 M)

Question	Topics	No of Questions	Marks
9 & 10	Unit-I	2	15
11 & 12	Unit-II	2	15
13 & 14	Unit-III	2	15
15 & 16	Unit-IV	2	15

I M.Sc. Computer Science
Semester-I

UNIX AND NETWORK PROGRAMMING
MODEL QUESTION PAPER

Time: 3 Hours Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks (5X 3= 15M)

1. Define Shell Script with example.
2. Brief about the commands used in the vi editor.
3. Describe about UNIX file permissions.
4. List out the file commands in Linux
5. How to create the threads in UNIX.
6. Differentiate threads and processes.
7. Write a short note on Semaphores.
8. Define UNIX Kernel

Section-B

Answer All questions. Each Question Carries 15 Marks (4X 15= 60M)

9. Explain UNIX control structures with example.

(OR)

10. What is a vi editor? With the neat diagram explain the models of it.

11. Explain structure of UNIX operating system along with directory system.

(OR)

12. What is UNIX file system? List important directories in the file system.

13. Explain process states and life cycle with neat diagram

(OR)

14. What is difference a process and a program? Explain various stages of a process.

15. Explain three types of IPC(System-V)message queues

(OR)

16. Explain the concept of semaphore and shared memory.

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CSSR & SRRM DEGREE & PG COLLEGE (A)

DATA BASE MANAGEMENT SYSTEM

COURSE OBJECTIVES:

- To understand the fundamentals of data models and conceptualize and depict a database system usingER diagram.
- To make a study of SQL and relational database design.
- To know about data storage techniques an query processing.
- To impart knowledge in transaction processing, concurrency control techniques and recovery procedures.

COURSE OUTCOME:

CO 1: Understand basic concepts of database and data models
CO 2: Learn to design database using ER diagrams and map ER into relations and normalize relations.
CO 3: Acquire knowledge on query writing and evaluation.
CO 4: Acquire knowledge about different kinds of database.

UNIT I

Database System Concepts and Architecture: Database Systems vs. File Systems- -Data Models, Schemas, and Instances; Three-Schema Architecture and Data Independence;Database Languages and Interfaces; Centralized and Client/Server Architectures for DBMS.

Data Modeling: Entity-Relationship Diagram, Relational Model - Constraints, Languages, Design, and Programming, Relational Database Schemas, Update Operations and Dealingwith Constraint Violations;

UNIT II

SQL: Data Definition and Data Types; Constraints, Queries, Insert, Delete, and Update Statements; Clauses, Views, Stored Procedures and Functions; Database Triggers, SQL Injection.
Normalization for Relational Databases: Relational Algebra and Relational Calculus; Codd Rules: Functional Dependencies and Normalization; Algorithms for Query Processing and Optimization;

UNIT III

Transaction Management: Transaction Processing, Concurrency Control Techniques, Database Recovery Techniques, Object and Object-Relational Databases; Database Security and Authorization.

UNIT IV

Enhanced Data Models: Temporal Database Concepts, Multimedia Databases, Deductive Databases, XML and Internet Databases; Mobile Databases, Geographic Information Systems, Genome Data Management, Distributed Databases and Client-Server Architectures.

TEXT BOOKS

1. Abraham Silberschatz, HentryF.Korth and S.Sudharssan,"Database System Concepts", 4th Edition, Tata McGraw Hill, 2002.
2. Raghu Ramakrishnan&Johannesgerhrke, "Data Base Management Systems", Mc Graw Hill International Edition, 2000.

I M.Sc. Computer Science
<u>Semester-I</u>

DATABASE MANAGEMENT SYSTEM
BLUE PRINT

Time: 3 Hours   Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks.   (5 X 3= 15 M)

Question	Topics	No of Questions	Marks
1	Unit-I	1	3
2	Unit-I	1	3
3	Unit-II	1	3
4	Unit-II	1	3
5	Unit-III	1	3
6	Unit-III	1	3
7	Unit-IV	1	3
8	Unit-IV	1	3

Section-B

Answer All question. Each Question Carries 15 Marks.   (4 X 15= 60 M)

Question	Topics	No of Questions	Marks
9 & 10	Unit-I	2	15
11 & 12	Unit-II	2	15
13 & 14	Unit-III	2	15
15 & 16	Unit-IV	2	15

I M.Sc. Computer Science
Semester-I

DATABASE MANAGEMENT SYSTEM
MODEL QUESTION PAPER

Time: 3 Hours Max Marks:75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks. (5 X 3= 15M)

1. What are the advantages of DBMS?
2. Discuss Data Independence.
3. What is Entity? Write different types of Entities.
4. Write a short note on Triggers.
5. Define the term ACID properties.
6. What is recovery management component?
7. Define Multimedia Database.
8. What are the types of Distributed databases?

Section-B

Answer All questions. Each Question Carries 15 Marks (4X 15= 60M)

9. Explain the Client/Server Architecture of DBMS with neat diagram.

(OR)

10. Draw an E-R diagram for the relations Employee and department with relevant relationships.

11. Explain 1NF, 2NF, 3NF and BCNF with suitable example.

(OR)

12. What are the various Data types in SQL? Explain them with example.

13. Explain about Advanced Recovery Techniques

(OR)

14. Explain Concurrency Control Techniques.

15. Explain XML Data model, List the advantages of XML.

(OR)

16. Explain Client/server architecture with neat diagram.

CSSR & SRRM DEGREE & PG COLLEGE (A)

OPERATING SYSTEMS

COURSE OBJECTIVES:

- To know the evolution and fundamental principles of operating system, processes and their communication
- To understand the various operating system components like process management, memory management
- To know about file management and the distributed file system concepts in operating systems

COURSE OUTCOME:

CO 1: Understand the operating system components and its services
CO 2: Implement the algorithms in process management and solving the issues of IPC
CO 3: Understand the concepts of physical memory and virtual memory
CO 4: Understand file handling concepts in OS perspective

UNIT I

Operating System: Basic elements of computers, instruction execution, operating system objectives and functions. Evaluation of operating systems, System components, Operating-System services, System Calls, Virtual Machines.

Process and Threads: Process concepts and scheduling, Operation on processes, Cooperating Processes, Threads, and Interposes Communication

UNIT II

Concurrency: principles of concurrency mutual exclusion, The Critical Section Problem, Critical Regions, semaphores, monitors, message passing, Readers/Writers Problems

Deadlocks: System Model, Dead locks Characterization, Methods for Handling Dead locks Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, and Recovery from Deadlock.

UNIT III

Memory Management: Requirements of main memory, Partitioning, Placement Algorithms, Page replacement algorithms, Logical versus Physical Address Space.

Virtual Memory: Real address & Virtual address, Thrashing, Paging, Virtual address, Page table entry, Address translation in paging Swapping, Translation lookaside buffer, Segmentation, Virtual address, Segment table entry, Address translation in segmentation, Combined paging and segmentation. Contiguous Allocation, Paging, Segmentation, Segmentation with Paging. Demand Paging and prepaging.

UNIT IV

I/O management and Disk Scheduling: I/O Devices, Organization of I/O Functions, I/O Buffering, Disk Scheduling, Disk Cache

File System Interface and Implementation: Access methods, Directory Structure, Protection, File System Structure, Allocation methods, Free-space Management, Directory Management, Directory Implementation, Efficiency and Performance.

TEXT BOOKS:

1. Operating System Principles- Abraham Silberchatz, Peter B. Galvin, Greg Gagne 7th Edition, John Wiley.
2. Operating Systems – Internals and Design Principles Stallings, Fifth Edition–2005, Pearson Education/PHI.

Reference books:

1. Operating System A Design Approach-Crowley,TMH.
2. Modern Operating Systems, Andrew S Tanenbaum 2nd edition Pearson/PHI
3. Operating Systems, Dhamdhere, TMH

I M.Sc. Computer Science
Semester-I

OPERATING SYSTEM
BLUE PRINT

Time: 3 Hours Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks. (5 X 3= 15 M)

Question	Topics	No of Questions	Marks
1	Unit-I	1	3
2	Unit-I	1	3
3	Unit-II	1	3
4	Unit-II	1	3
5	Unit-III	1	3
6	Unit-III	1	3
7	Unit-IV	1	3
8	Unit-IV	1	3

Section-B

Answer All questions. Each Question Carries 15 Marks. (4 X 15= 60 M)

Question	Topics	No of Questions	Marks
9 & 10	Unit-I	2	15
11 & 12	Unit-II	2	15
13 & 14	Unit-III	2	15
15 & 16	Unit-IV	2	15

I M.Sc. Computer Science
Semester-I

OPERATING SYSTEM
MODEL QUESTION PAPER

Time: 3 Hours Max Marks:75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks (5 X 3= 15M)

1. What are the objectives of Operating System?
2. What Resources are required to creating Threats?
3. Give difference between job-scheduling and CPU scheduling.
4. Define Message Passing
5. Write a short note on Demand Paging
6. What is Paging and Swapping?
7. What are the various File Operations?
8. What are File Attributes?

Section-B

Answer All questions. Each Question Carries 15 Marks (4X 15= 60M)

9. Explain the various System Calls with example

(OR)

10. Explain various services provided by operating systems.

11. Explain Deadlock Prevention methods.

(OR)

12. What is Deadlock? Explain the necessary conditions for its concurrence
13. Discuss about Page replacement Algorithms with example.

(OR)

14. What is virtual Memory? Discuss the benefits and techniques of virtual Memory.
15. Explain different Disk Scheduling Algorithms with example.

(OR)

16. Explain File Allocation Methods in detail.

CSSR & SRRM DEGREE & PG COLLEGE (A)

WEB DESIGN USING PHP

COURSE OBJECTIVES:

- To understand the concepts and architecture of the World Wide Web.
- To understand and practice markup languages
- To understand concepts of JavaScript and DHTML
- To understand and practice web development using PHP.
- To understand different functions in PHP and forms

COURSE OUTCOME:

CO 1: Create a basic website using HTML and Cascading Style Sheets.
CO 2: Design and implement dynamic web page with validation using JavaScript objects and by applying different event handling mechanisms.
CO 3: Design and implement simple web page in PHP, and to present data in XML format.
CO 4: Design and implement forms using PHP

UNIT I

Introduction to web: Introduction, WWW architecture, Fundamentals of HTML, Text formatting tags, marquee, inserting images, Basic tags
HTML: Basic HTML, Document body, Text, Hyper links, adding more formatting, Lists, Tables using images. More HTML: Multimedia objects, Frames, Forms towards interactive, HTML document heading detail.
Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

UNIT II

Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions. Objects in JavaScript: Data and objectsin JavaScript, regular expressions, exception handling.
DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images.

UNIT III

Building blocks of PHP: Variables, Data Types, Operators and Expressions, Constants.Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output. Working with Functions: Defining Functions, Calling functions, returning the values from User- Defined Functions, Variable Scope, Saving State between Function calls with the Static statement, more about arguments.
Working with Arrays: Arrays, Creating Arrays, Some Array-Related Functions. Working with Objects: Creating Objects, Object Instance.

UNIT IV

PHP functions:PHP functions, PHP form, passing information between pages, Working with Strings, Dates and Time: Formatting Strings with PHP, Investigating Strings with PHP, Manipulating Strings withPHP, Using Date and Time Functions in PHP.
Working with Forms: Creating Forms, Accessing Form - Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, Working with File Uploads

Text Book

1. Learning PHP, MySQL & JavaScript: with jQuery, CSS & HTML5 by Robin Nixon
2. The Joy of PHP: A Beginner's Guide to Programming Interactive web applications with PHP and MySQL by Alan Forbes

I M.Sc. Computer Science
Semester-I

WEB DESIGN USING PHP
BLUE PRINT

Time: 3 Hours Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks. (5 X 3= 15 M)

Question	Topics	No of Questions	Marks
1	Unit-I	1	3
2	Unit-I	1	3
3	Unit-II	1	3
4	Unit-II	1	3
5	Unit-III	1	3
6	Unit-III	1	3
7	Unit-IV	1	3
8	Unit-IV	1	3

Section-B

Answer All question. Each Question Carries 15 Marks. (4 X 15= 60 M)

Question	Topics	No of Questions	Marks
9 & 10	Unit-I	2	15
11 & 12	Unit-II	2	15
13 & 14	Unit-III	2	15
15 & 16	Unit-IV	2	15

I M.Sc. Computer Science
Semester-I

WEB DESIGN USING PHP
MODEL QUESTION PAPER

Time: 3 Hours Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks (5 X 3= 15M)

1. Explain Text formatting tags.
2. Write about Basic Structure of HTML.
3. What is *DHTML?*
4. What is Data validation?
5. Define Variable. Explain about rules for declaring variables in PHP.
6. Write about static keyword in PHP?
7. Explain about Working with Strings.
8. Write about Creating Forms.

Section-B

Answer All questions. Each Question Carries 15 Marks (4X 15= 60M)

9. What is list? Explain about List tags.

(OR)

10. What is Cascading Style Sheet? Explain about properties and values in styles.

11. Write about mathematical functions.

(OR)

12. Explain about messages and confirmations.

13. Explain about Code Blocks and Browser Output.

(OR)

14. Define Array Explain about Creating Arrays in PHP.

15. Write about Manipulating Strings in PHP.

(OR)

16. Explain the process of Sending Mail on Form Submission.

CSSR & SRRM DEGREE & PG COLLEGE (A)

E-COMMERCE

COURSE OBJECTIVES:

- To learn about information systems for business and management.
- To understand organizational and managerial foundations of systems.
- To identity different internet resources for commerce.

COURSE OUTCOME:

CO 1: Understand the basic concepts and technologies used in the field of management information systems
CO 2: Understand different types of management information systems;
CO 3: Understand the processes of developing and implementing information systems;
CO 4: Be aware of the ethical, social, and security issues of information systems

UNIT I

Electronic Commerce Environment and Opportunities: Background, The Electronic Commerce Environment, Electronic Marketplace Technologies. Modes of Electronic Commerce: Electronic Data Interchange, Migration to Open EDI, Electronic Commerce with www/Internet, Commerce Net Advocacy, web Commerce Going Forward. Approaches to Safe Electronic Commerce: Secure Transport Protocols, Secure Transactions, Secure Electronic Payment Protocol (SEPP), Secure Electronic Transaction (SET), Certificates for authentication Security on web Servers and Enterprise Networks.

UNIT II

Electronic Cash and Electronic Payment Schemes: Internet Monetary Payment & Security Requirements. Payment and Purchase Order Process, On-line Electronic cash. Internet/Intranet Security Issues and Solutions: The need for Computer Security, Specific Intruder Approaches, Security Strategies, Security Tools, Encryption, Enterprise Networking and Access to the Internet, Antivirus Programs, Security Teams.

UNIT III

Master Card/Visa Secure Electronic Transaction: Introduction, Business Requirements, Concepts, payment Processing. E-Mail and Secure E-mail Technologies for Electronic Commerce: Introduction, The Means of Distribution, A model for Message Handling, E-mail working, Multipurpose Internet Mail Extensions, Message Object Security Services, Comparisons of Security Methods, MIME and Related Facilities for EDI over the Internet.

UNIT IV

Internet Resources for Commerce: Introduction, Technologies for web Servers, Internet Tools Relevant to Commerce, Internet Applications for Commerce, Internet Charges, Internet Access and Architecture, Searching the Internet. Advertising on Internet: Issues and Technologies. Introduction, Advertising on the Web, Marketing creating web site, Electronic Publishing Issues, Approaches and Technologies: EP and web based EP.

Text Book

Web Commerce Technology Handbook, by Daniel Minoli, Emma Minoli, McGraw-Hill

Reference Books:

E-Commerce – Strategy, Technology and Applications By David Whiteley (McGraw Hill)

I M.Sc. Computer Science
Semester-I

E-Commerce
BLUE PRINT

Time: 3 Hours Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks. (5 X 3= 15 M)

Question	Topics	No of Questions	Marks
1	Unit-I	1	3
2	Unit-I	1	3
3	Unit-II	1	3
4	Unit-II	1	3
5	Unit-III	1	3
6	Unit-III	1	3
7	Unit-IV	1	3
8	Unit-IV	1	3

Section-B

Answer All questions. Each Question Carries 15 Marks (4 X 15= 60 M)

Question	Topics	No of Questions	Marks
9 & 10	Unit-I	2	15
11 & 12	Unit-II	2	15
13 & 14	Unit-III	2	15
15 & 16	Unit-IV	2	15

I M.Sc. Computer Science
Semester-I

E-Commerce
MODEL QUESTION PAPER

Time: 3 Hours Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks (5 X 3= 15M)

1. What is E-Commerce? How does it differs from Traditional Commerce?
2. What are the Applications of E-Commerce?
3. Define Electronic Payment System.
4. Write a short note on E-Cash.
5. What are the Advantages and Dis-advantages of E-Mail?
6. Describe Multipurpose Internet Mail Extensions.
7. Define E-Marketing.
8. What is Web Server?

Section-B

Answer All questions. Each Question Carries 15 Marks (4 X 15= 60 M)

9. What is E-Commerce? Explain different E-Commerce Models.

(OR)

10. What is EDI? Explain the building blocks of EDI System
11. Explain the Security issues in E-Commerce.

(OR)

12. Explain Electronic Payment System and its type
13. How E-Cash does works? List the properties that an e-Cash should have.

(OR)

14. Explain the Security Methods of MIME.
15. Explain different applications of E-Commerce.

(OR)

16. Explain Electronic Publishing issues and Approaches.

CSSR & SRRM DEGREE & PG COLLEGE (A)

THEORY OF COMPUTATION

COURSE OBJECTIVES:

- To understand formal definitions of machine models.
- To classify machines by their power to recognize languages.
- To understanding of formal grammars, analysis.
- To understanding of hierarchical organization of problems depending on their complexity.
- To understanding of the logical limits to computational capacity.

COURSE OUTCOME:

CO 1: Learn basic methods and conclusions of the Theory of Computation.
CO 2: Learn how to apply these methods to problems from different fields
CO 3: Guided by the results in searching for computational solutions to the problems.

UNIT I:

Introduction to Automata-Strings, Alphabet, Language, Operations, Finite state machine, definitions, finite automaton model, acceptance of strings, and languages, deterministic finite automaton and non-deterministic finite automaton, transition diagrams and Language recognizers.

UNIT II:

Finite Automata- NFA with Ɛ-transitions - Significance, acceptance of languages. Conversions and Equivalence: Equivalence between NFA with and without Ɛ transitions, NFA to DFA conversion, minimization of FSM, equivalence between two FSM's, Finite Automata with output- Moore and Mealy machines, Equivalence between Moore and Mealy.

UNIT III:

Regular Languages-Regular sets, regular expressions, identity rules, Constructing finite Automata for a given regular expressions, Conversion of Finite Automata to Regular expressions. Pumping lemma of regular sets, Closure properties of regular sets (Proofs not required).

Grammars-Regular grammars: Right linear and left linear grammars, Equivalence between regular linear grammar and FA, Inter conversion, Context free grammar, derivation trees, and sentential forms. Right most and leftmost derivation of strings

UNIT IV:

Context Free Grammars: Ambiguity in context free grammars. Minimization of Context Free Grammars. Chomsky Normal Form, Greibach Normal Form, Pumping Lemma for Context Free Languages. Enumeration of properties of CFL (Proofs omitted). **Push down automata**, definition, model, acceptance of CFL, Acceptance by final state and acceptance by empty state and its equivalence. Equivalence of CFL and PDA, Inter conversion. (Proofs not required).

Text Books:

Hopcroft, J D Ullman "Introduction to Automata and Language Theory", 3rd Edition, 2006
C. Papadimitrou and C. L. Lewis. Elements of Theory of Computation, Prentice-Hall, 1981.

Reference Books:

John.C.Martin, "Introduction to Languages and the Theory of Computation" McGraw-Hill Education, 01- May-2010.
Kamala Krithivasan, Rama.R, "Introduction to Formal Languages, Automata Theory and Computation", Pearson Education India, 01-Sep-200

I M.Sc. Computer Science
Semester-I

THEORY OF COMPUTATION
BLUE PRINT

Time: 3 Hours Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks. (5 X 3= 15 M)

Question	Topics	No of Questions	Marks
1	Unit-I	1	3
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3	Unit-II	1	3
4	Unit-II	1	3
5	Unit-III	1	3
6	Unit-III	1	3
7	Unit-IV	1	3
8	Unit-IV	1	3

Section-B

Answer All question. Each Question Carries 15 Marks (4 X 15= 60 M)

Question	Topics	No of Questions	Marks
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11 & 12	Unit-II	2	15
13 & 14	Unit-III	2	15
15 & 16	Unit-IV	2	15

I M.Sc. Computer Science
Semester-I

THEORY OF COMPUTATION
MODEL QUESTION PAPER

Time: 3 Hours Max Marks: 75

Section-A

Answer any FIVE questions. Each Question Carries 3 Marks (5 X 3= 15M)

1. Discuss finite state machine.
2. What is finite automaton model?
3. Describe NFA with $\sum$ -transitions.
4. Explain NFA to DFA conversion.
5. Define Regular expressions.
6. Define Derivation Trees.
7. Define Greibach Normal Form.
8. What is inter conversion?

Section-B

Answer All question. Each Question Carries 15 Marks (4X 15= 60M)

9. Explain about deterministic finite automaton and non-deterministic finite automaton.

(OR)

10. Discuss about Transition diagrams and Language recognizers.

11. Write the Equivalence between NFA with and without Ɛ transitions.

(OR)

12. Explain Equivalence between Moore and Mealy.

13. Briefly discuss about Closure properties of regular sets.

(OR)

14. Explain about Right most and leftmost derivation of strings .

15. Explain Pumping Lemma for Context Free Languages.

(OR)

16. Explain Equivalence of CFL and PDA.

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Board of Studies Meeting -I 2024-2025 Pics date 31/07/2024

Department of Computer Science & Applications

2024-2025

Members Present for the Board of Stuides:

Sl. No.	Name	Designation	Position in BoS	Signature
1	K. Sreenivas Reddy	Head	Chairperson	
2	I.Sreevani	Lecturer	Member	
3	P. Pradeep Kumar Reddy	Lecturer	Member	
4	G. Raj Kumar	Lecturer	Member	
5	Dr. Ratna Kumari Assistant Professor RGUKT-Andhra Pradesh Ph: 9441603196 Email: ratnamala3784@gmail.com	Assistant Professor	Subject Expert RGUKT	
6	N. Lavanya Department of Computer Science Sri Venkateswara Degree & PG College, Ananthapuram Ph: 9494931009	Lecturer	Subject Expert S.K. University	
7	Dr.B. Reddiah Department of Computer Science & Technology Yogi Vemana University, Kadapa Ph:9000601602 Email: b.reddaiah@yvu.edu.in	Associate Professor	Subject Expert University Nominee	
8	G. Vinay Kumar, Jyothi & Company, Mandy Complex, Proddatur, YSR Ph:9246942311	Industrialist	Member	
9	Y.C. Lokeswara Reddy, M.Sc. (Computer Science) Ph:9652262519	Alumni	Member	