

M. Phil. Regulation 2017 Computer Science First Semester Syllabus

S. No.	Subject Code	Subject Name	Examination Scheme	
			Theory	Internal Assessment
1	MPCS-01	Research Methodology & Computer Applications	70	30
2	MPCS-02	Data Warehousing & Data Mining	70	30
3	MPCS-03	Web Technology & Services	70	30

Paper 1 (MPCS-01): Research Methodology & Computer Applications:
Answer any 4 questions out of 10 questions selecting at least two from each group.
Course Content:

Group-A

UNIT - I (2 questions)

Research – Definition – Importance and Meaning of research – Characteristics of research – Types of Research – Steps in research – Identification, Selection and formulation of research problem – Research questions – Research design – Formulation of Hypothesis – Review of Literature.

UNIT – II (2 questions)

Sampling techniques sampling theory – types of sampling – Steps in sampling – Sampling and Non-sampling error – Sample size – Advantages and limitations of sampling. Collection of Data : Primary Data – Meaning – Data Collection methods – Secondary data – Meaning – Relevances, limitations and cautions.

UNIT – III (2 questions)

Statistics in Research – Measure of Central tendency – Dispersion – Skewness and Kurtosis in research. Hypothesis – Fundamentals of Hypothesis testing – Standard Error – Point and Interval estimates – Important Non-Parametric tests : Sign, Run, Kruskal – Wallis tests and Mann-Whitney test.

Group-B

UNIT – IV (2 questions)

Fundamental Component of a Computer, Benefits and limitations of Computer, MS Windows Operating System, Concept of Files, Folders, Desktop, Control Panel, Shutting Down Computer

UNIT – V (2 questions)

Introduction to MS Word, MS Excel and MS Power Point. Type, edit, format, save a document. Spell check, page setup, paragraph setup, table, chart, formula in excel. Creating new presentation, adding new slide, inserting pictures, slide show, Internet, Search Engine, Email.

REFERENCE:

1. Statistical Methods - S.P. Gupta
2. Research Methodology Methods and Techniques - C.R. Kothari
3. Statistics (Theory and Practice) - B.N. Gupta
4. Research Methodology Methods and Statistical Techniques - Santosh Gupta
5. Computer Fundamentals – BPB Publications – P. K. Sinha and Priti Sinha

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6. Learning Computer Fund, MS Office and Internet & Web Technology - Laxmi Publications - Dinesh Maidasani

Paper 2 (MPCS- 02): Data Warehousing and Data Mining

Answer any 4 questions out of 10 questions selecting at least two from each group.

Course Content:

Group-A

UNIT - I : Fundamentals of data mining: (2 questions)

Data mining Functionalities, Classification of Data Mining Systems, Major issues in Data Mining, Data Warehouse and OLAP Technology for Data mining Data Warehouse, Multidimensional Data Model, Data Warehouse Architecture, Data Warehouse implementation, Development of Data Cube Technology.

UNIT – II: Data Preprocessing, Data Mining Primitives, Languages, and System Architectures: (2 questions)

Needs Preprocessing the Data, Data Cleaning, Data Integration and Transformation, Data Reduction, Discretization and Concept Hierarchy Generation. Data Mining Primitives, Data Mining Query Languages, Designing Graphical User Interfaces Based on Data Mining Query Language Architectures of Data Mining Systems.

UNIT – III: Concepts Description and Mining Association Rules: (2 questions)

Characterization and Comparison, Data Generation and Summarization, Bases characterization, Analytical Characterization: Mining Class Comparisons, Association Rule Mining, Rules from Relational Databases and Data Warehouses.

Group-B

UNIT – IV: Classification, Prediction and Cluster Analysis Introduction: (2 questions)

Issues Regarding Classification and Prediction, Classification by Decision Tree , Classification by Back propagation, Classification Based on Concepts from Association Rule Mining , Types of Data in Cluster Analysis, A Categorization of Major Clustering Methods, Partitioning Methods, Density , Based Methods, Grid Based Methods, Model – Based Clustering Methods, outlier analysis, Multidimensional Analysis and Descriptive

UNIT – V: Mining Complex Types of Data: (2 questions)

Mining of Complex, Data Objects, Mining Spatial Databases, Mining Multimedia Databases, Mining Time – Series and Sequence Data, Mining Text Databases, Mining the World Wide Web.

REFERENCE:

1. Data Mining - Concepts and Techniques - Jiaweihan & Micheline Kamber Morgan Kaufmann publishers.
2. Data Ming Techniques – Arjun K Pujari, Universities Press.
3. Data warehousing in the Real world Sam Anahory & Dennis Murray. Pearson Edn Asia.

Arjun
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Paper 3 (MPCS- 03): Web Technologies and Services

Answer any 4 questions out of 10 questions selecting at least two from each group.

Course Content:

Group-A

UNIT – I HTML, DHTML and Scripting Language: (2 questions)

Common tags – HTML Tables and formatting internal, linking – Complex HTML forms, Java Scripts – Control structures, DHTML – CSS – event model – filters & transitions.

UNIT – II Applets and AWT Programming: (2 questions)

Review of Applets, Class, Event Handling, AWT Programming, Introduction to Swing: Japplet, Handling Swing Controls, Tables, Differences between AWT Controls & Swing Controls, Developing a Home page using Applets & Swing, Multi-Threading and RMI.

UNIT – III Java Beans and Servlets: (2 questions)

Introduction and Advantages of Java Beans, BDk, Introspection, Using Bound properties, Bean Info Interface, Constrained properties, persistence, Customizers, Java Beans API, Life Cycle of a Servlet, JSDK, The Servlet API, The javax.servlet Package, Reading Servlet parameters, Reading Initialization Parameters, The javax.servlet HTTP package, Handling, Http Request & responses, Using Cookies – Sessions Tracking, Security Issues.

Group-B

UNIT – IV JSP: (2 questions)

Introduction to JSP: The Problem with Servlets, The Anatomy of a JSP Page, JSP Processing, JSP Application Design with MVC. Tomcat Server & Testing Tomcat, JSP Application Deployment.

UNIT – V JDBC: (2 questions)

Database Access, Database Programming using JDBC, Studying javax.sql.* package, Accessing a Database from a JSP Page.

REFERENCE:

1. Internet and World Wide Web – How to program by Dietel, and Nieto Pearson Education Asia. (Chapters: 3,4,8,9,10,11,12-18).
2. The Complete Reference Java 2 third Edition by Patrick Naughton and Herbert Schildt. (Chapters: 19,20,,21,22,25,27).
3. Java Server Pages by Hans Bergstan. (Chapters: 1-9).

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