SYLLABUS – SEMESTER V

Module I Data Communication, Networking and Internet (18 L)
- (a) Data Communication Component, Data representation, Distributed processing. (Concepts only)
- (b) Network Basics and Infrastructure
    - i) Definition, Types (LAN, MAN, WAN) Advantages.
    - ii) Network Structures – Server Based, Client server, Peer to Peer.
    - iii) Topologies – Star, Bus, Ring.
    - iv) Network Media, Wired-Twisted Pair, Co-axial, Fiber Optic and Wireless – Radio and Infrared.
    - v) Network Hardware: Hubs, Bridges, Switches, Routers.
    - vi) Network Protocols – TCP/IP, OSI Model.
- (c) Internet
    - i) Definition, Types of connections, sharing internet connection, Hot Spots.
    - ii) Services on net- WWW, Email-Blogs.
    - iii) IP addresses, Domain names, URLs, Hyperlinks, Web Browsers
    - iv) Searching Directories, Search engines, Boolean search (AND, OR, NOT),
    - v) Advanced search, Meta Search Engines. Email – POP/SMTP accounts in Email, Different parts of an Email address.
      Receiving and sending emails with attachments by scanning attachments for viruses.
    - vi) Cyber Crime, Hacking, Sniffing, Spoofing

Module II Database and MySQL (9 Lectures)
- a) **Introduction :** To Databases, Relational and Non-relational database system MySQL as a Non-procedural Language. View of data.
- b) **MySQL Basics :** Statements (Schema Statements, Data statements, Transaction statements), names (table & column names), data types (Char, Varchar, Text, Mediumtext, Longtext, Smallint, Bigint, Boolean, Decimal, Float, Double, Date, Date Time, Timestamp, Year, Time), Creating Database, inserting data, Updating data, Deleting data, expressions, Built-in-functions- lower, upper, reverse, length, ltrim, rtrim, trim, left, right, mid, concat, now, time, date, curdate, day, month, year, dayname, monthname, abs, pow, mod, round, sqrt Missing data(NULL and NOT NULL DEFAULT values) CREATE,USE, ALTER (Add, Remove, Change columns), RENAME, SHOW, DESCRIBE (CREATE TABLE, COLUMNS, STATUS and DATABASES only) and DROP (TABLE, COLUMN, DATABASES statements), PRIMARY KEY FOREIGN KEY (One and more columns) Simple Validity checking using CONSTRAINTS.

Module III Database and MySQL (9 Lectures)
- a) **MySQL Simple queries:** The SELECT statement (From, Where, Group By, Having, Order By, Distinct), Filtering Data by using conditions. Simple and complex conditions using logical, arithmetic and relational operators (=, !,=, <, <> AND, OR, NOT, LIKE) Aggregate Functions- count, sum, avg, max, min.
- b) **Multi-table queries:** Simple joins (INNER JOIN), SQL considerations for multi table queries (table aliases, qualified column names, all column selections self joins).

c) **Nested Queries (Only upto two levels) :** Using sub queries, sub query search conditions, sub queries & joins, nested sub queries, correlated sub queries, sub queries in the HAVING clause.
Simple Transaction illustrating START, COMMIT, and ROLLBACK.

ModuleIVMS-Excel (9 Lectures)
    a) Creating and Navigating worksheets and adding information to worksheets
    i) Types of data, entering different types of data such as texts, numbers, dates, functions.
    ii) Quick way to add data Auto complete, Autocorrect, Auto fill, Auto fit. Undo and Redo.
    iii) Moving data, contiguous and non contiguous selections, Selecting with keyboard.
    Cut-Copy, Paste. Adding and moving columns or rows. Inserting columns and rows.
    iv) Find and replace values. Spell check.
    v) Formatting cells, Numbers, Date, Times, Font, Colors, Borders, Fills.
    b) Multiple Spreadsheets
    i) Adding, removing, hiding and renaming worksheets.
    ii) Add headers/Footers to a Workbook. Page breaks, preview.
    iii) Creating formulas, inserting functions, cell references, Absolute, Relative (within a worksheet, other worksheets and other workbooks).
    c) Functions
    i) Financial functions: FV, PV, PMT, PPMT, IPMT, NPER, RATE
    ii) Mathematical and statistical functions. ROUND, ROUNDDOWN, ROUNDUP,
CEILING, FLOOR, INT, MAX, MIN, MOD, SQRT, ABS,SUM,COUNT, AVERAGE

    d) Data Analysis
    i)   Sorting, Subtotal.
    ii) Pivot Tables- Building Pivot Tables, Pivot Table regions, Rearranging Pivot Table.

SYLLABUS – SEMESTER VI

Module I E - Commerce (18 Lectures)
    (a) Definition of E-commerce
    (b) Features of E-commerce
    (c) Types of E-commerce (B2C, B2B, C2C, P2P)
    (d) Business Models in E-commerce (Advertising, Subscription, Transaction Fee, Sales Revenue, Affiliate Revenue)
    (e) Major B2C models (Portal, E-tailer, Content Provider, Transaction Broker, Market Creator, Service Provider, Community Provider).
    (f) E-Commerce Security: Integrity, Non repudiation, Authenticity, Confidentiality, Privacy, Availability.
    (g) Encryption: Definition, Digital Signatures, SSL.
    (h) Payment Systems: Digital Cash, Online stored value, Digital accumulating balance payment, Digital credit accounts, digital checking.
    (i) How an Online credit card transaction works. SET protocol.
    (j) Limitation of E-commerce.
    (k) M-commerce (Definition and Features).
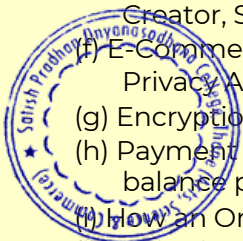
Module II Advanced MS-Excel (9 Lectures)

a) Multiple Spreadsheets

i) Creating and using templates, Using predefined templates, Adding protection option.

ii) Creating and Linking Multiple Spreadsheets.

iii) Using formulas and logical operators.

iv) Creating and using named ranges.

v) Creating Formulas that use reference to cells in different worksheets.

b) Functions

i)   Database Functions LOOKUP, VLOOKUP, HLOOKUP

ii) Conditional Logic functions IF, Nested IF, COUNTIF, SUMIF, AVERAGEIF

iii) String functions LEFT, RIGHT, MID, LEN, UPPER, LOWER, PROPER, TRIM, FIXED

Module III Advanced MS-Excel (9 Lectures)

a) Functions

i) Date functions TODAY, NOW, DATE, TIME, DAY, MONTH, YEAR, WEEKDAY, DAYS360

ii) Statistical Functions COUNTA, COUNTBLANK, CORREL, LARGE, SMALL

b) Data Analysis

i) Filter with customized condition.

ii) The Graphical representation of data Column, Line, Pie and Bar charts.

iii) Using Scenarios, creating and managing a scenario.

iv) Using Goal Seek

v) Using Solver

vi) Understanding Macros, Creating, Recording and Running Simple Macros. Editing a Macro(concept only)

Module IV Visual Basic (9 Lectures)

a) Introduction to Visual Basic, Introduction Graphical User Interface (GUI).

Programming Language (Procedural, Object Oriented, Event Driven), Writing VB Projects. The Visual Basic Environment

b) Introduction to VB Controls

Text boxes, Frames, Check boxes, Option button, Designing the User Interface, Default & Cancel property, tab order, Coding for controls using Text, Caption, Value property and Set Focus method

c) Variables, Constants, and Calculations

Variable and Constant, Data Type (String, Integer, Currency, Single, Double, Date), Naming rules/conventions, Constants (Named & Intrinsic), Declaring variables, Val Function, Arithmetic Operations, Formatting Data.

d) Decision and Condition

Condition, Comparing numeric variables and constants, Comparing Strings, Comparing Text Property of text box, Compound Conditions (And, Or, Not). If Statement, if then-else Statement, LCase and Ucase function, Using If statements with Option Buttons & Check Boxes. Msgbox (Message box) statement Input Validation : Is Numeric function.
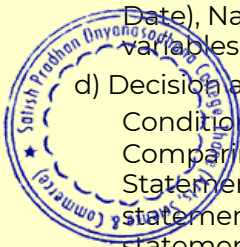
e) Sub-procedures and Sub-functions, Using common dialog box, Creating a new sub–procedure, Writing a Function procedure. Simple loops using For Next statements and Do while statement and display output using MsgBox Statement.

Note :
a) Theory 3 lectures per week.
b) Practical batch size 20-25, 1 practical = 3 theory lectures per week.
c) 10 Practical's are to be completed in each semester.

SEMESTER V

Topic	Number of Practical's
Word processing	1
MS-Excel	3
MySQL	6

Minimum 6 practical'sare to be recorded in the journal in the Semester V [Minimum 4 on MySQL, 2 on MS-Excel)

Suggested list of Practical's for Semester V
1. Creating and formatting a word document.
2. Simple and Compound Interest/Depreciation calculations using MS-Excel.
3. Sorting and Subtotals using MS-Excel.
4. Preparing Pivot table report using MS-Excel.
5. Creating, renaming and deleting a database in MySQL.
6. Creating and modifying a table in MySQL.
7. Entering data in a table and updating data in MySQL.
8. Simple queries in MySQL.
9. Multi-table queries in MySQL.
10. Sub-queries in MySQL.

SEMESTER VI

Topic	Number of Practical's
Presentation skills	1
Advanced MS-Excel	6
Introduction to Visual Basic	3

Minimum 6 practical's are to be recorded in the journal in the Semester VI [Minimum 2 on VB, 4on Advanced MS-Excel)

Suggested list of Practical's for Semester VI
1. Preparing a PowerPoint presentation on an E-Commerce website.
2. Calculation of DA, HRA, PF, Gross Salary and Net Salary using MS-Excel.
3. Calculation of Income Tax using MS-Excel.
4. Filtering data and Graphical representation of data using MS-Excel.
5. Using VLOOKUP and HLOOKUP using MS-Excel.
6. Creating and managing a scenario using MS-Excel.
7. Use of Goal Seek and Solver using MS-Excel.
8. Write a project in VB to design a suitable form to add two numbers and display their sum.
9. Write a project in VB to design a suitable form to enter sales and calculate and display the bonus which is 10% of sales.
10. Write a project in VB to design a suitable form to enter salary and calculate and display the DA which is 90% of salary.
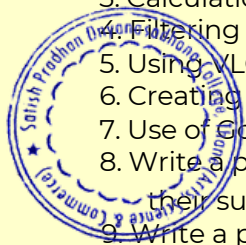
d) Scheme of Examination

Type	Marks	Duration
Theory	75	2½ hours
Practical	20	1 hour per batch of 10
Active Participation and Class conduct	5	

THEORY EXAMINATION PATTERN FOR SEMESTER V AND VI

All questions compulsory

Question No.	Module No.	Marks	Marks with Internal Option
Q.1.	Objective type based on I, (II,III) and IV	11+2+2	23
Q.2.	I	15	30
Q.3.	II	15	30
Q.4.	III	15	30
Q.5.	IV	15	30

PRACTICAL EXAMINATION PATTERN
SEMESTER V

No.	Topic	Marks
1.	MySQL	7
2.	MS-Excel	3
3.	Journal	5
4.	Viva	5

SEMESTER VI

No.	Topic	Marks
1.	Advanced MS-Excel	7
2.	Introduction VB Programing	3
3.	Journal	5
4.	Viva	5

e) Practical examination to be conducted 2 to 3weeks before the theory examination.Marks out of 25 to be submitted to the University before commencement of theory examination.

f) Software Requirement :
MS-Excel2010, MySQL version 5 or 5.1, VB 6.0

g) Hardware
For a batch of 120 students minimum 10 computers with appropriate hardware and software installed on each computer. During practical hours maximum two student may share one computer.

h) For in house computing facility fee of rupees 750/- be charged for each student per semester in the existing fee structure against head of computer fee/computer practical.
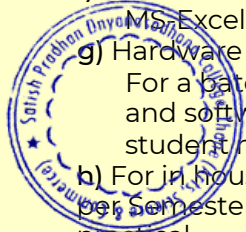
References:

Semester V

Unit I Data Communication, Networking and Internet
1. Data Communication and Networking -Behrouz A Forouzan
2. Introduction to Computers – Peter Norton, Tata McGraw Hill

Unit II MS-Excel
3. Excel-Missing Manual, Mathew McDonald, O Reilly Press
4. Excel 2010 All-In-One for Dummies – Greg Harvey
5. Excel 2010 For Dummies Quick Reference – John Walkenbach
6. Microsoft Excel 2010 Complete – Gary B. Shelly

Unit II Database and SQL
7. Fundamentals of Database Systems - Elmasri Navathe, Somayajulu, Gupta
8. Database Systems and Concepts - Henry F. Korth, Silberschatz, Sudarshan McGraw Hill
9. DBMS - Date
10. The complete reference SQL - Vikram Vaswani TMH
11. The complete reference SQL - James R. Groff & Paul N. Weinberg TMG
12. Learning SQL - Alan Beaulieu O'REILLY.
13. Learning MySQL - Seyed M. M. and Hugh Williams, O'REILLY.
14. SQL a complete reference - Alexis Leon & Mathews Leon TMG.

Semester VI

Unit I E – Commerce
15. E- Commerce - Kenneth Laudon, Carol Traver , Pearson Education
16. Frontiers of Electronic Commerce - Kalakota & Whinston
17. E- Commerce - Rajaraman
18. E- Commerce - Whitley
19. E- Commerce concepts and cases - Rao and Deshpande.

Unit II Advanced MS-Excel
20. Excel-Missing Manual, Mathew McDonald, O Reilly Press
21. Excel in Depth 2010 – Bill Jelen
22. Excel 2010 Formulas and Functions – Paul McFedries
23. Microsoft Excel 2010: Data Analysis and Business Modeling – Wayne L Winston
24. Excel 2010 Bible – John Walkenbach
25. Microsoft Excel 2010 Comprehensive – Shelly, Quasney, Jones

Unit III Visual Basic
26. Programming in VB 6.0 - Julia case Bradley, Anita C. Milspaugh, TMH
27. Visual Basic 6.0 Programming - Content Development Group, TMH
28. The Complete Reference to Visual Basic 6 - Noel Jerke, TMH
29. Visual Basic 6 Programming Black Book - Steven Holzner, Dreamtech Press.
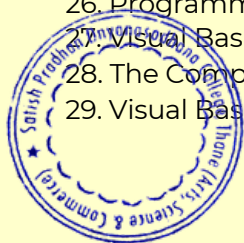
Q 1. A) Attempt any *two*sub-questions from a, b, c in MS-Excel(True/False)(2)

    a) **MS-Excel**

    b) **MS-Excel**

    c) **MS-Excel**

B) Attempt any *two* sub-questions from d, e, f in MySQL (Multiple Choice)(2)

    d) MySQL

    e) MySQL

    f) MySQL

    C) Attempt any *six* sub-questions from g, h, i, j, k, l, m, n, o inData Communication,Networking and Internet (True/False) (6)

g)Data Communication, Networking and Internet

h)Data Communication, Networking and Internet

i)Data Communication, Networking and Internet

j)Data Communication, Networking and Internet

k)Data Communication, Networking and Internet

    l)Data Communication, Networking and Internet

    m)Data Communication, Networking and Internet

    n)Data Communication, Networking and Internet

    o)Data Communication, Networking and Internet

D) Attempt any *five* sub-questions from p, q, r, s, t, u, v, w in Data Communication,Networking and Internet (Multiple Choice)(5)

p)Data Communication, Networking and Internet

q)Data Communication, Networking and Internet

r)Data Communication, Networking and Internet

s)Data Communication, Networking and Internet

t)Data Communication, Networking and Internet

    u)Data Communication, Networking and Internet

    v)Data Communication, Networking and Internet

    w)Data Communication, Networking and Internet

Q 2. A) Attempt any *one* sub-question from a, b (Data Communication, Networking and Internet)

    a) (Long Answer)   (8)

    b) (Long Answer)   (8)

    B) Attempt any *one* sub-question from c, d (Data Communication, Networking and Internet)

    c) (Long Answer)   (7)

    d) (Long Answer)   (7)
(8)

Q 3. A) Attempt any *one* sub-question from a, b in MySQL
(8)

    a) MySQL

    b) MySQL

B) **Attempt any *one* sub-question from c, d in MySQL**

    c) **MySQL**   (7)

    d) **MySQL**   (7)

Q 4. A) Attempt any *one* sub-question from a, b in MySQL

    a)   MySQL   (8)

    b) MySQL   (8)

B) Attempt any *one* sub-question from c, d in MySQL

    c) **MySQL**   (7)

    d) **MySQL**   (7)

Q 5. A) Attempt any *one* sub-question from a, b in MS-Excel

    a) MS-Excel   (8)

    b) MS-Excel   (8)

B) Attempt any *one* sub-question from c, d in MS-Excel

    c) MS-Excel   (7)

    d) MS-Excel   (7)

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Paper PatternSemester VI(2014-15 onwards)

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Q 1.A) Attempt any *two* sub-questions from a, b, c in MS-Excel (True/False)(2)

    a) **MS-Excel**

    b) **MS-Excel**

    c) **MS-Excel**

B) Attempt any *two* sub-questions from d, e, f in Visual Basic(Multiple Choice)(2)

    d) **Visual Basic**

    e) **Visual Basic**

    f) **Visual Basic**

    C) Attempt any *six* sub-questions from g, h, i, j, k, l, m, n, o inE-Commerce (True/False)   (6)

g)**E-Commerce**

h)**E-Commerce**

i)**E-Commerce**

j)**E-Commerce**

k)**E-Commerce**

    l)**E-Commerce**

    m)**E-Commerce**

    n)**E-Commerce**

    o)**E-Commerce**

D) Attempt any *five* sub-questions from p, q, r, s, t, u, v, w in E-Commerce (Multiple Choice)   (5)

p)**E-Commerce**

q)**E-Commerce**

r)**E-Commerce**

s)**E-Commerce**

t)**E-Commerce**

    u)**E-Commerce**

    v)**E-Commerce**

w)**E-Commerce**

<div align="center">(x)</div>

Q 2. A) Attempt any *one* sub-question from a, b (E-Commerce)
    a) (Long Answer) (8)
    b) (Long Answer) (8)
B) Attempt any *one* sub-question from c, d (E-Commerce)
    c) (Long Answer) (7)
    d) (Long Answer) (7)
Q 3. A) Attempt any *one* sub-question from a, b in MS-Excel
    (8)
    a) MS-Excel
    b) MS-Excel (8)
B) **Attempt any *one* sub-question from c, d in** MS-Excel
    c) MS-Excel (7)
    d) MS-Excel (7)
Q 4. A) Attempt any *one* sub-question from a, b in MS-Excel
    a) MS-Excel (8)
    b) MS-Excel (8)
B) **Attempt any *one* sub-question from c, d in** MS-Excel
    c) MS-Excel (7)
    d) MS-Excel (7)
Q 5. A) Attempt any *one* sub-question from a, b in Visual Basic
    a) **Visual Basic** (8)
    b) **Visual Basic** (8)
B) **Attempt any *one* sub-question from c, d in Visual Basic**
    c) **Visual Basic** (7)
    d) **Visual Basic** (7)