

**SCHEME OF EXAMINATION FOR B.Sc. COMPUTER APPLICATIONS (VOCATIONAL)
SEMESTER SYSTEM (w.e.f. 2015-16)**

Semester V

Sr. No.	Paper	Paper	Internal Assessment		Exam Duration
			Internal Assessment	External Marks	
1	Paper-I	Desktop Publishing	10	40	3 hrs.
2	Paper-II	Programming using C++	10	40	3 hrs.

Semester-VI

3	Paper-I	Multimedia Tools	10	40	3 hrs.
4	Paper-II	Advanced Programming using C++	10	40	3 hrs.
5	Paper-III	Practical Morning Session: (DTP) Evening Session: (Programming in C++)	----	100	6 hrs.(Two Sessions) Morning and Evening
Total(Semester I & II)			40	260	

Internal assessment will be based on the following criteria:

1. Two Handwritten Assignments : 5 marks
2. (Ist Assignment after one month & IInd Assignment after two months)
3. One Class Test : 2.5 marks (one period duration)
4. Attendance : 2.5 marks

NOTE: 1. Practical exam will be conducted annually in two sessions. However the workload will be distributed in both the semesters according to the relevant papers.

SEMESTER – V

PAPER – I Desktop Publishing

Maximum Marks: 50

Time: 3 hours

External: 40

Internal: 10

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

UNIT – I

Desktop Publishing: Concept, Need and Applications; Hardware and Software requirements for DTP, An Overview and comparison between DTP packages, Common features of DTP. Introduction to Page Maker: Features, System Requirements, Components of Page Maker Window, Introduction to Menu and Toolbars, PageMaker Preferences

UNIT – II

Creating of Publications: Starting PageMaker, Setting Page size, Placing the text Formatting the text: Character Specification Paragraph setting: Paragraph Specification, Paragraph Rules, Spacing, Indents/Tabs, Define Styles, Hyphenation, Header & Footer, Page Numbering, Saving and Closing publication

UNIT – III

Editing Publication: Open a publication ,Story editor, Find and change the text, Change character and Paragraph attributes ,spell checking ,Selecting text, Cut, Copy, Paste, Paste multiple, Working with columns, Control palette: Manipulating objects, formatting the text, Book, Table of Contents, Creating Index, Index entry, Show Index, Print Working with Graphics: Insert Objects, Paste Special, Linking the graphics, Link the option, Link Information, editing original ,Text wrap, Bring to Front, Send to Back, Reversing the Text.

UNIT – IV

Working with Frame: Introduction, Creating Frames, editing, Frame options, Dialog Box, Text Frame Working with colors: Introduction, Applying colors, Replacing &removing colours, Editing a color Working with Table: Setting &creating a new table, Close table, Selecting text, Cell rows & columns Typing, Editing & Formatting text in table, Cutting, Copying & Pasting Information Setting up Master Pages: Design a Grid, Guiding the Grid, Understanding Master Pages, Rulers options.

TEXT BOOKS:

- R. Shamms, Mortier &Rick Wallacl ,“PageMaker-Complete” ,Techmedia
- Ramesh Bangia,“Learning PageMaker 7” , Khanna Book Publishing Co Pvt Ltd

REFERENCE BOOKS:

- Dehe Mcclelland, “Photoshop CS2 Bible”, Oreilly Media

Paper II Programming Using C++

Maximum Marks: 50

Time: 3 hours

External: 40

Internal: 10

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

UNIT – I

Object oriented Programming: Object-Oriented programming features and benefits. Object-Oriented features of C++, Class and Objects, Data Hiding & Encapsulation, Structures, Data members and Member functions, Scope resolution operator and its significance, Static Data Members, Static member functions, Nested and Local Class, Accessing Members of Class and Structure.

UNIT – II

Constructor, Initialization using constructor, types of constructor– Default, Parameterized & Copy Constructors, Constructor Overloading, Default Values to Parameters, Destructors, Console I/O: Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations.

UNIT – III

Manipulators, Friend Function, Friend Class, Arrays, Array of Objects, Passing and Returning Objects to Functions, String Handling in C++, Dynamic Memory Management: Pointers, new and delete Operator, Array of Pointers to Objects, this Pointer, Passing Parameters to Functions by Reference & pointers.

UNIT – IV

Polymorphism: Operators in C++, Precedence and Associativity Rules, Operator Overloading, Unary & Binary Operators Overloading, Function Overloading, Inline Functions

TEXT BOOKS:

- Herbert Schildt, “C++, The Complete Reference”, Tata McGraw-Hill
- Robert Lafore, “Object Oriented Programming in C++”

REFERENCE BOOKS:

- Bjarne Stroustrup, “The C++ Programming Language”, Pearson
- Balaguruswami, E., “Object Oriented Programming In C++”, Tata McGraw-Hill.

SEMESTER – VI

PAPER – I Multimedia Tools

Maximum Marks: 50

Time: 3 hours

External: 40

Internal: 10

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

Unit I

Multimedia Introduction: Definition, Characteristics, Multimedia Classification, Multimedia elements, Multimedia devices: Multimedia Input devices, Output devices, Communication devices, memory devices
Application of multimedia: General Applications, Edutainment, application in interactive television, Multimedia applications in entertainment & performing arts, Multimedia use in museum and galleries
Concept generation of multimedia project; Process and stages of multimedia production; Multimedia production team members

Unit II

Text – Concepts of plain & formatted text, RTF & HTML texts, using common text preparation tools, Conversion to and from of various text formats, using standard software, Object Linking and Embedding concept, Basics of font design, overview of some fonts editing and designing tools, Understanding & using various text effects.

Images – importance of graphics in multimedia, Vector and Raster graphics, image capturing methods – scanner, digital camera etc., Image file formats – BMP, DIB, EPS, CIF, PEX, PIC, JPG, TGA, PNG and TIF format – their features and limitations, graphic file formats conversions, processing images with common software tools such as Photoshop.

Unit III

Sound: Sound and its Attributes, Mono V/s Stereo sound, Sound channels, Sound and its effect in multimedia, Analog V/s Digital sound, Basics of digital sounds-Sampling, Frequency, Sound Depth, Channels, Sound on PC, Sound standards on PC, Capturing and Editing sound on PC, Overview and using some sound recording, editing software. Overview of various sound file formats on PC – WAV, MP3, MP4 etc.

Animation: Basics of animation, Principle and use of animation in multimedia, Effect of resolutions, pixel depth, Images size on quality and storage.

Overview of 2-D and 3-D animation techniques: Cell Animation, Kinematics, Morphing, RotoScoping, Antialiasing

Features of Computer Animation software- animation pro, 3D studio & Paint Shop pro animator.

Animation on the Web – features and limitations, creating simple animations for the Web using GIF Animator and Flash.

Unit IV

Video: Basics of Video – Analog and Digital Video, Introduction to graphics accelerator cards, DirectX Introduction to AV/DV and IEEE1394 cards, Digitization of analog video to digital video, Interlacing and non-interlacing, Various video standards – NTSC, PAL, SECAM, HDTV, Introduction to video capturing Media & instrument – Videodisk, DVCAM, Camcorder, Introduction to digital video compression techniques and file formats – AVI, MPEG, MOV Real Video.

Multimedia on the Web: Bandwidth relationship, broadband technologies, Text in the web – Dynamic and embedded font technology, Audio on the Web – Real Audio and MP3/MP4, Audio support in HTML, Graphics – HTML safe color palate, Interlaced V/s Non interlaced model, Graphics support in HTML, Image Map, Video on the Web – Streaming video, Real Video, MPEG and SMIL, Virtual Reality on the Web.

TEXT BOOKS:

- Ze-Nian Li, Mark S. Drew, “Fundamentals of Multimedia”, Pearson Education.
- Tay Vaughan, “Multimedia Making It Work”, Tata McGraw- Hill.

REFERENCE BOOKS:

- Ramesh Bangia, “Multimedia and Web Technology”, Firewall Media.
- John F. Koegel Buford, “Multimedia Systems”, Addison Wesley, Pearson Education.
- Ana Weston Solomon, “Introduction to Multimedia”, Tata McGraw-Hill.

PAPER II- Advanced Programming Using C++

Maximum Marks: 50

Time: 3 hours

External: 40

Internal: 10

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UNIT – I

Dynamic Polymorphism: Function Overriding, Virtual Function and its Need, Pure Virtual Function, Abstract Class, Virtual Derivation, Virtual Destructor.

UNIT – II

Type Conversion: Basic Type Conversion, Conversion between objects and basic types, Conversion between objects of different classes, Inheritance: Rules of Derivations – Private, Protected and Public Derivations.

UNIT – III

Different Forms of Inheritance – Single, Multiple, Multilevel, Hierarchical and Multipath Inheritance Roles of Constructors and Destructors in Inheritance, Genericity in C++: Templates in C++, Function templates.

UNIT – IV

Class templates in C++, Exception Handling in C++: try, throw and catch, Files I/O in C++: Class Hierarchy for Files I/O, Text versus Binary Files, Opening and Closing Files, File Pointers, Operation on files.

TEXT BOOKS:

- Herbert Schildt, C++, The Complete Reference, Tata McGraw-Hill
- Robert Lafore, Object Oriented Programming in C++

REFERENCE BOOKS:

- Bjarne Stroustrup, The C++ Programming Language, Pearson.
- Balaguruswami, E., Object Oriented Programming In C++, Tata McGraw-Hill