

**KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)**  
**Department Of Computer Science & Applications**

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
B.Voc [Web Technology & Software Development] & B.Voc[IT&ITeS]	I	Computer Fundamentals& MS Office	R20WSCSC101 / R20ITCSC101	2020-21

### Syllabus

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
	Theory	Practical		CIA	SEE	
60 Hours	4	3	3 Hours	25	75	5

**Course Objectives:** The objective of the course is how to use MS Office applications to carry out office work such as creating professional-quality documents; store, organize and analyze information; arithmetic operations and functions; and create dynamic slide presentations with animation, narration, images, videos, and much more, digitally and effectively.

**Course Outcomes:**

- ❖ **Microsoft Word 2010:**
  - ✓ Creating and managing documents, Format Text, Paragraphs
  - ✓ Creating Tables-it's operations,
  - ✓ Apply Links, Insert and Format objects,
  - ✓ To know the views of the document and Macros,
- ❖ **Microsoft PowerPoint 2010:**
  - ✓ To Creating and Managing Presentations
  - ✓ To Inserting and Formatting Shapes and Slideshows
  - ✓ Creating Slide content
  - ✓ To Apply Transitions and Animations
  - ✓ Managing multiple presentations
- ❖ **Microsoft Excel 2010:**
  - ✓ Creating Workbooks and worksheets
  - ✓ Creating Cells and Ranges
  - ✓ Creating Tables, Formatting
  - ✓ Apply Formula and Functions
  - ✓ Creating Charts and Objects
  - ✓ To understand the pivot table creation, what-if Analysis
- ❖ **Microsoft Access**
  - ✓ To understand database creation
  - ✓ Objects creation and data maintenance
  - ✓ Establish relationships between table

## **UNIT-I:**

**(10hr's)**

**Word Basics:** Creating a new document, Opening preexisting document, Parts of a word window, Undo, Redo, Repeat, Inserting text, Editing text, Formatting text, Cut, Copy, Paste – Printing, Finding and Replacing

**Formatting Your Text and Documents:** Auto format, Line spacing, Margins, Borders and Shading.

**Working with Headers and Footers:** Definition of headers and footers, creating basic headers and footers, creating different headers and footers for odd and even pages.

**Tables:** Creating a simple table, Creating a table using the table menu, Entering and editing text in a table, selecting in table, adding rows, changing row heights, Deleting rows, Inserting columns, changing column width, Deleting columns.

**Graphics:** Importing graphics, Clipart, Insert picture, Clip Art Gallery, using word's drawing features, drawing objects.

## **Unit II:**

**(8hr's)**

**Charts:** Chart parts and terminology ; Creating charts, Editing charts, Printing charts, Deleting charts; Types of Charts.

**Links:** Bookmark, Hyperlink, Cross-reference

**Mail Merge:** Mail Merge concept, Main document, data sources, merging data source and main document.

**Document views:** Print Layout, Full Screen Reading, Web Layout, Outline, Draft

**Macros:** Macro, Recording macros, editing macros, running a macro.

## **Unit III: MS Power Point**

**(8hr's)**

Introduction, Building a presentation, Creating the text and chart slides, Formatting charts, Customizing presentation, creating slide shows.

**Creating Presentations:** Creating a Blank presentation, Adding slides, Deleting a slide, Importing Images from the outside world, Transition and build effects, Deleting a slide, Numbering a Slide, Saving presentation, Closing presentation, Printing presentation elements.

## **Unit IV: MS Excel**

**(12hr's)**

Excel Features, Creating New worksheet, entering and editing Formulas, Referencing cells, Moving cells, Copying Cells, Sorting cells, Data inserting rows, Inserting columns, Inserting cells, Deleting parts of worksheet, clearing parts of worksheet, Number formatting, Conditional formatting, cell referencing techniques.

**Formatting:** Page set-up, changing Column widths and Row heights, auto format, changing font sizes and attributes, centering text across columns, using border buttons and Commands, changing colors and shading, hiding rows and columns.

**Introduction to Functions:** Parts of Functions, Functions requiring Add-ins, Function Wizard – Functions by category: Date and time functions, Engineering functions, Math and Trig functions, Statistical functions, Text functions.

Data Validations, subtotals, Pivot table, What if Analysis, solver.

## Unit V: MS Access

(10hr's)

**Creating a Simple Database and Tables:** Creating Database Tables: Table option, Table design, Field Names, Data Types and Properties, Adding, deleting, renaming the fields in a table.

**Forms:** Form, Form wizard, Blank Form, Form Design, Saving Forms, Modifying Forms.

**Entering and Editing Data:** Adding Records, Duplicating previous entries without Retyping, Undo, Correcting Entries, Global Replacements, Moving from Record to Record in a table.

**Finding, Sorting and Displaying Data:** Queries and Dynasets, Creating and using select queries, Returning to the Query Design, Multilevel Sorts, Showing all Records after a Query, Saving Queries, Crosstab Queries.

**Reports:** Introduction to Reports, Creating a report: using Report, Report Design, Blank Report, Report Wizard, printing mailing labels.

**Relational Databases:** Flat vs. Relational, Types of Relationships, Viewing Relationships, Creating and Deleting Relationships.

### **Text books:**

1. Baja K K , Office Automation , MacMillan India Ltd, 1996.
2. Steve Sagman, Microsoft Office XP for Windows, Pearson Education Asia, 2002.
3. Jennifer Fulton, Microsoft Office 2000, Prentice-Hall of India, 1999.
4. Reema Thareja , Fundamentals Of Computers, Oxford University Press

### **Reference books:**

1. Windows XP Home Edition Complete, BPB Publications, 2001.
2. Raghav Bahl , Exploring Microsoft Office XP, Cyber Tech, 2001 .
3. Sanjay Saxena , MS Office 2000 for Everyone, Vikas Publishing , 2001.

## MODEL PAPER

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
<b>B.Voc [Web Technology &amp; Software Development] &amp; B.Voc[IT&amp;ITeS]</b>	<b>I</b>	Computer Fundamentals& MS Office	<b>R20WSCSC101 /R20ITCSC101</b>	<b>2020-21</b>

### SECTION-A

Answer any *five* of the following questions

5x5=25M

1. Explain Find and Replace options in MS-Word.
2. Explain Macros in MS-Word
3. Write the steps to set slide number.
4. Explain auto fill options in MS-Excel.
5. Explain about function wizard.
6. Explain different date/time functions in MS-Excel.
7. Write procedure to create data base in MS-Access.
8. What is a form, how can we create a form in MS-Access.

### SECTION-B (Essay Questions)

Answer **ALL** of the following questions

5x10=50M

9. A) Explain Graphics in MS-Word.  
(OR)  
B) Write the procedure to insert table and its operations.
10. A) Write the procedure to create presentation in power point  
(OR)  
B) Explain graphics in power point.
11. A) Explain the features of excel.  
(OR)  
B) Write the procedure to insert charts in MS-Excel.
12. A) Explain different types of Charts in MS-Excel.  
(OR)  
B) Explain any 15 functions available in Excel
13. A) Explain different relationships in Access.  
(OR)  
B) Explain Report design view components.

**KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)**  
**Department Of Computer Science & Applications**

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
B.Voc [Web Technology & Software Development] & B.Voc[IT&ITeS]	I	Computer Organization	R20WSCO101 /R20ITCO101	2020-21

**Syllabus**

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
	Theory	Practical		CIA	SEE	
60 Hours	5	0	3 Hours	25	75	5

**Course Objectives:** This course will introduce students to the fundamental concepts underlying modern computer organization and architecture. Main objective of the course is to familiarize students about hardware design including logic design, basic structure and behavior of the various functional modules of the computer and how they interact to provide the processing needs of the user.

**Course Outcomes:**

- Understand the basics of computer hardware and how software interacts with computer hardware
- Analyze and evaluate computer performance
- Understand how computers represent and manipulate data
- Understand computer arithmetic and convert between different number systems
- Assemble a simple computer with hardware design including data format, instruction format, instruction set, addressing modes, bus structure, input/output, memory, arithmetic/logic unit, control unit, and data, instruction and address flow
- Use Boolean algebra as related to designing computer logic, through simple combinational and sequential logic circuits
- The course emphasizes performance and cost analysis, memory technology, memory hierarchy, virtual memory management, and i/o systems.

**UNIT –I Data representation:**

**(12 Hours)**

**Number Systems:** Binary Number System, Octal Number System, Decimal Number System, and Hexa-Decimal Number System.

**Conversions:** Decimal Number System to Binary Number System, Decimal Number System to Octal Number System, Decimal Number System to Hexa-Decimal Number System, Binary Number System to

Decimal Number System, Octal Number System to Decimal Number System, Hexa-decimal Number System to Decimal Number System.

**Complements:** (r-1)'s Complement, (r's) Complement

**Fixed point representation:** Integer Representation, Arithmetic addition, Arithmetic subtraction, Float point representation

**UNIT-II**

**(12 Hours)**

**Logic gates:** AND Gate, OR Gate, INVERTER Gate, BUFFER Gate, NAND Gate, NOR Gate, EXCLUSIVE-OR (XOR) Gate, EXCLUSIVE-NOR Gate.

**Boolean algebra, Map simplification**

**UNIT-III (Flip-Flops)**

**(10 Hours)**

**Flip-flops:** SR flip-flop, D flip-flop, JK flip-flop, T flip-flop

**UNIT-IV**

**(12 Hours)**

**Combinational Circuits:** Half adder, full adder

**Digital Components:** Integrated Circuits, decoder, encoder, multiplexers.

**UNIT-V(Memory Organization)**

**(14 Hours)**

Memory hierarchy, main memory: RAM and ROM,

Auxiliary memory, Associative Memory, Cache memory.

**Prescribed Text Book:** Computer System Architecture

Third Edition, Author: M. Morris Mano. PHI publisher

**Reference Book:** Computer Organization and Architecture

Authors: V. Rajaraman, T.Radhakrishnan. PHI publisher

## Model Question Paper

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
B.Voc [Web Technology & Software Development] & B.Voc[IT&ITeS]	I	Computer Organization	R20WSCO101 / R20ITCO101	2020-21

### SECTION-A

**Answer any Five of the following**

**5 X 5=25 M**

1. Write a procedure for converting decimal to binary number system with an example (unit-I)
2. Explain about 1's complement (unit-I)
3. Explain about Arithmetic addition(unit-I)
4. Explain about XOR Gate with Truth Table (unit-II)
5. Explain about T flip-flop (unit-III)
6. Explain about Full Adder (unit-IV)
7. Write the difference between Ram And ROM (unit-V)
8. Explain about Memory hierarchy (unit-V)

### SECTION-B

**Answer All of the following Questions**

**5 X 10=50 M**

9. A) Explain about Number System (unit-I)  
(OR)  
B) Write the following Conversions (unit-I)
  - i)  $(1000)_2 \rightarrow (?)_{10}$
  - ii)  $(128)_8 \rightarrow (?)_{10}$
10. A) Explain AND Gate and OR Gate with truth Table (unit-II)  
(OR)  
B) Explain about Karnaugh Map with an Example. (unit-II)
11. A) Explain about SR Flip-flop (unit-III)  
(OR)  
B) Explain about D Flip-flop (unit-III)
12. A) Briefly Discuss about Decoders (unit-IV)  
(OR)  
B) Explain about 4 X 1 Multiplexer. (unit- IV)
13. A) Explain About Memory Connection for 1024x8 (unit-V)  
(OR)  
B) Explain about Cache Memory (unit-V)

**KAKARAPARTI BHAVANARAYAN COLLEGE (Autonomous)**  
 Department Of Computer Science & Applications

<b>Class:</b> BVoc[Web Technologies & Software Development]	<b>Semester:</b> I	<b>Title of The Paper:</b> HTML & CSS	<b>Paper Code:</b> R20WSHC101	<b>W.F.F</b> 2019-20	
<b>Total No of Hours for Teaching - Learning</b>	<b>Instructional Hours for Week</b>		<b>Duration of Semester End Examination in Hours</b>  3 Hours	<b>Max Marks</b>	<b>Credits</b>
	<b>Theory</b> 4	<b>Practical</b> 3			

**Unit -I Introduction to HTML**

What is HTML, HTML Documents, Basic structure of an HTML document, creating an HTML document, Mark up Tags, Heading-Paragraphs, Line Breaks, HTML Tags

**Unit-II**

Concept of CSS, Creating Style Sheet, CSS Properties, CSS Styling(Background, Text Format, Controlling Fonts), Working with block elements and objects, Working with Lists and Tables, CSS Id and Class, Box Model(Introduction, Border properties, Padding Properties, Margin properties)

**Unit - III**

CSS Advanced(Grouping, Dimension, Display, Positioning, Floating, Align, Pseudo class, Navigation Bar, Image Sprites, Attribute selector), CSS Color, Creating page Layout and Site Designs.

**Unit-IV**

Introduction to Images for Webpages, Adding Images to Webpages, Resizing an Image, Alternative (ALT) Text, Image Labels, Inserting a Table, Table Borders, Table Headers

**Unit -V**

What is an IFrame?, Inserting Iframes, Setting Height and Width, Using an Iframe for a link target

Forms: About Forms, Text Boxes, Text Areas, Check Boxes, Radio Buttons, Submit and Reset Button

**Reference Book:**

1. Chris Bates, Web Programming Building Internet Application, Second Edition, Wiley (2007)
2. Head First Servlets and JSP 2<sup>nd</sup> Edition, Bryan Basham, Kathy Sierra

*(Handwritten signatures)*



MODEL PAPER

Class:B.VOC(WT&SD)

Code:R20WSHC101P

Paper: HTML & CSS

Semester:II

Time: 3Hrs

Max. Marks: 75

---

SECTION – A

Answer any five of the following question

5 x 5 = 25M

1. 1. What is an HTML?
2. Explain the need of a style sheet?
3. What is a frame?
4. Define a table tag
5. Write any three properties of a font tag?
6. Write an HTML script for H<sub>2</sub>O<sub>2</sub>
7. Why should we use forms in HTML?
8. Write the difference between HTML & CSS

SECTION – B

1. A) Write the structure of an HTML web page with example  
OR  
B) List out all the basic tags used in HTML for web page development
10. A) What are the various CSS style sheets used in web page design? Explain  
OR  
B) Explain how to insert an image to web page and formatting it
11. A) Write about table tag and its properties with an example  
OR  
B) Explain about <BR>, <HR> and <DIV> tags in detail
12. A) Explain about frame tag and its attributes  
OR  
B) Explain about marquee tag with example
13. A) Explain about Form tag and its elements with example  
OR  
B) Write an HTML script to create a Employee form with Employee ID, Employee name, Designation, Address, Specialization as elements of the form

**KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)**  
**Department Of Computer Science & Applications**

<b>Class:</b>	<b>Semester</b>	<b>Title of The Paper:</b>	<b>Paper Code:</b>	<b>W.E.F</b>
B.Voc(Web Technologies & Software Development)	<b>II</b>	<b>ANGULAR-JS</b>	<b>R20WSAJS201</b>	<b>2020-21</b>

**Syllabus**

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
	Theory	Practical		CIA	SEE	
<b>60 Hours</b>	<b>5</b>	<b>3</b>	<b>3 Hours</b>	<b>25</b>	<b>75</b>	

**Course Outcomes:**

1. To create web applications
2. AngularJS to facilitate development of single-page web applications that use the Model-View-Controller (MVC) design pattern.

**Course Objectives:**

- Understand the design of single-page applications and how AngularJS facilitates their development
- Properly separate the model, view, and controller layers of your application and implement them using AngularJS
- Master AngularJS expressions, filters, and scopes
- Build Angular forms
- Unit test and end-to-end test your AngularJS applications

**UNIT -I**

JavaScript :-Including scripts on a page,Statements,Functions,Parameters and Return Values,Types and Variables,Primitive Types:Boolean,Strings,Numbers,Undefined and Null Java script operators.

**Unit -II**

Working with objects:Creating objects,Reading and modifying objects,Adding Methods to objects,Control Flow:Loops,Conditional Statement,Working with arrays.

**Unit-III**

Angular JS Expressions,Angular JS Modules,Angular JS Filters

**Unit-IV**

**Directives** The Basics of Directives, Using Directives, Built-in Directives, ngBind, ngCloak, ngInclude, ngShow and ngHide, ngRepeat, Event-Handling

**UNIT-V**

**Working with Forms:** HTML Forms Overview, The form Element, The input Element, The textarea Element, The select Element, The label Element, Model Binding, AngularJS Forms, Validating Forms

**Prescribed Text Book: Beginning Angular JS ....ANDRE GRANT**

## MODEL PAPER

<b>Class:</b>	<b>Semester</b>	<b>Title of The Paper:</b>	<b>Paper Code:</b>	<b>W.E.F</b>
B.Voc(Web Technologies & Software Development)	<b>II</b>	<b>ANGULAR-JS</b>	<b>R20WSAJS201</b>	<b>2020-21</b>

**Time: 3Hrs**

**Max.Marks:75**

### SECTION-A

**Answer any five of the following questions**

**5 x 5 = 25M**

1. Explain about primitive types in JavaScript
2. Explain about creating and modifying the objects.
3. Explain about Angular js Expressions.
4. Explain about ng-bind directive
5. Explain about model binding
6. Explain about textarea element.
7. Differentiate Angular js expressions vs Java script expressions.
8. Explain about json

### SECTION-B

**Answer ALL of the following questions**

**5 x 10 = 50M**

9. A) Explain JavaScript functions.  

(OR)

B) Explain JavaScript operators.
10. A) Explain about different types of loops in JavaScript  

(OR)

B) Explain about Arrays in JavaScript
11. A) Explain Angular JS Modules  

(OR)

B) Explain Angular JS Filters
12. A) Explain about Built in Directives  

(OR)

B) Explain about Event Handling
13. A) Explain about Form elements  

(OR)

B) Explain about Validation Forms.

**KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)**  
**Department of Computer Science & Applications**

<b>Class:</b>	<b>Semester</b>	<b>Title of The Paper</b>	<b>Paper Code:</b>	<b>W.E.F</b>
<b>B.VOC [WEB TECHNOLOGY]</b>	<b>II</b>	<b>'C' Programming</b>	<b>R20WSCP201</b>	<b>2020-21</b>

**Syllabus**

Total No of Hours for Teaching – Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
	Theory	Practical		CIA	SEE	
60 Hours	4	3	3 Hours	25	75	4

**Course Objectives:** The objective of the course is to learn programming in 'C'.

**Course Outcomes:**

1. To understand the meaning and basic components of a programming language.
2. To learn about data types and operators.
3. To learn about decision making statements.
4. To Gain knowledge about functions.
5. To learn how to work with arrays.
6. To gain knowledge about strings.
7. To learn about structures.
8. To understand character arrays.
9. To understand the concept of pointers.

**Unit I**

Introduction to Algorithms and Programming Languages. Compiling Programs, Language Interpreters. Compiling your first program. Running your program .understanding your first program, comments, variables, Data types, and Arithmetic Expressions: working with variables. Understanding Data types and constants, working with Arithmetic Expressions. The Assignment operators. The printf function. The scanf function.

**Unit II**

Decision making: The if statement, if else, Nested if statements, else if. The switch statement. The conditional operator program looping: for statement. Relational operators. Nested for loops, while statement, do statement. The break statement. The continue statement.

**Working with Functions:** Defining a Function-Arguments and Local variables. Returning Function Results. Function calling. Declaring Return Types and Argument types. Top Down programming. Functions and Arrays. The global variables. Automatic and static variables. Recursive Functions.

**Unit III**

Working with Arrays: Defining an array. Initializing Arrays. Character Arrays. Multidimensional arrays-variable length Arrays.

Strings: Creating string variable, string functions.

**Unit – IV**

**Working with structures :**Defining structure . Functions and structures . Initializing structures . Array of structures structures containing structures .structures containing Arrays. Structure variants . Character strings : Array of characters. variable length character strings . Escape characters .character strings, structures and arrays - character operations.

**Pointers:** Defining a pointer variable. Using pointers in Expressions. Pointers and structures (Exclude Linked List). Pointers and Functions. Pointers and Arrays. Operations on pointers. Pointers and Memory address.

## **Unit – V**

Files: file manipulating functions, file opening modes, file creating.

### **TEXT BOOK:**

1. “Computer Fundamentals and Programming in C” by REEMA THAREJA from OXFORD UNIVERSITY PRESS

### **REFERENCE BOOK:**

1. E Balagurusamy: —COMPUTING FUNDAMENTALS & C PROGRAMMING|| – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
2. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.
3. Henry Mullish & Huubert L.Cooper: The Sprit of C, Jaico Pub. House,1996.

**MODEL PAPER**

<b>Class:</b>	<b>Semester</b>	<b>Title of The Paper</b>	<b>Paper Code:</b>	<b>W.E.F</b>
<b>B.VOC [WEB TECHNOLOGY]</b>	<b>II</b>	<b>'C' Programming</b>	<b>R20WSCP201</b>	<b>2020-21</b>

**Time: 3Hrs**

**Max.Marks:75**

**SECTION-A**

*(Instructions to the paper setter: Set minimum ONE question from each unit, max Eight from all.)*

**Answer any five of the following questions**

**5 x 5 = 25M**

1. Explain different programming languages.
2. Explain data types in 'C'.
3. Explain different types of arrays with syntax.
4. Explain difference between while and do-while.
5. Explain I/O Functions.
6. What is recursion? Explain with example.
7. Write a program to swap of two strings.
8. Explain different types of translators.

**SECTION-B**

*(Instructions to the paper setter: Set minimum ONE question from each unit, max Eight from all)*

**Answer ALL of the following questions**

**5x10=50M**

9. A) Explain the structure of C.  
(OR)  
B) Explain different operators available in C
10. A) Explain different decision making statements.  
(OR)  
B) Write the difference between call by value and call by reference with example.
11. A) Write a program for addition of two matrices.  
(OR)  
B) Write different string functions.
12. A) Explain malloc(),calloc() with example.  
(OR)  
B) Explain the difference between structure and union with an example.
13. A) Explain different file handling functions.  
(OR)  
B) Write an example program using fwrite(),fread().

**KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)**  
**Department Of Computer Science & Applications**

<b>Class:</b>	<b>Semester:</b>	<b>Title of The Paper:</b>	<b>Paper Code:</b>	<b>W.E.F</b>
<b>B.VOC [WEB TECHNOLOGY]/IT&amp;ITeS</b>	<b>II</b>	<b>Data Communications</b>	<b>R20WSDC201</b>	<b>2020-21</b>

**Syllabus**

Total No of Hours for Teaching – Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
	Theory	Practical		CIA	SEM	
<b>60 Hours</b>	<b>5</b>	<b>0</b>	<b>3 Hours</b>	<b>25</b>	<b>75</b>	

**Course Objectives:** The objective of the course is to introduce the concepts of data communication.

**Course Outcomes:**

1. Introduce students to the evolution of computer networks and the concepts data communication
2. introduce students the general principles of network design and compare the different network topologies;
3. introduce students to the digital and analogue representations and channels; • describe the mechanism and techniques of encoding;
4. introduce students to the general principles of circuit and packet switching;
5. introduce students to the wireless Local Area Networks;

**UNIT – I**

**INTRODUCTION:** Data Communications: Components, Data Representation, Data Flow, Networks: Distributed Processing, Network Criteria, Physical Structures, Network Models, Categories of Networks. The Internet. Protocols And Standards: Protocols, Standards, Standards Organizations, Internet Standards.

**NETWORK MODELS:** Layered Tasks: Sender, Receiver, and Carrier, Hierarchy.

The OSI Model: Layered Architecture, Peer-to-Peer Processes. TCP/IP Protocol Suite. Addressing.

**UNIT - II**

**Data and Signals:** Analog And Digital: Analog and Digital Data, Analog and Digital Signals, Periodic and Non-periodic Signals, Periodic Analog Signals: Sine Wave, Phase, Wavelength, Time and Frequency Domains, Composite Signals, Bandwidth. Digital signals: Bit Rate, Bit Length, Digital Signal as a Composite Analog Signal, Transmission of Digital Signals. Transmission Impairment. Performance: Bandwidth, Throughput, Latency (Delay), Bandwidth-Delay Product, Jitter.

**UNIT-III**

**DIGITAL TRANSMISSION:** Digital-To-Digital Conversion: Line Coding, Line Coding Schemes, Block Coding. Analog-To-Digital Conversion: Pulse Code Modulation, Delta Modulation. Transmission Modes: Parallel Transmission, Serial Transmission.

#### **UNIT – IV**

**ANALOG TRANSMISSION: DIGITAL-TO-ANALOG CONVERSION:** Aspects of Digital-to-Analog Conversion, Quadrature Amplitude Modulation. Analog-to-analog Conversion.

**BANDWIDTH UTILIZATION: MULTIPLEXING AND SPREADING:** MULTIPLEXING: Frequency-Division Multiplexing, Wavelength-Division Multiplexing, Synchronous Time-Division Multiplexing, Statistical Time-Division Multiplexing, SPREAD SPECTRUM: Frequency Hopping Spread Spectrum (FHSS), Direct Sequence Spread Spectrum.

#### **UNIT – V**

**TRANSMISSION MEDIA:** Guided Media: Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable, Unguided Media: Wireless: Radio Waves, Microwaves, Infrared.

**SWITCHING:** Circuit-Switched Networks: Three Phases, Efficiency, Delay. Datagram networks: Routing Table, Efficiency, Delay, Virtual-Circuit Networks: Addressing, Three Phases, Efficiency, Delay in Virtual-Circuit Networks

**Prescribed Textbook: Data Communications and Networking, Fourth Edition  
by Behrouz A. Forouzan. Chapters: 1-8**



### Model Question Paper

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
B.VOC [WEB TECHNOLOGY]/IT&ITeS	II	Data Communications	R20WSDC201/R20ITDC201	2020-21

Time: 3Hrs

Max.Marks:75

#### Section – A

Answer Any FIVE of following

5 x 5 = 25

1. Explain the terms LAN, WAN. (Unit-I)
2. What is a protocol? Explain different standards in Data communication. (Unit-I)
3. Explain analog versus digital signals? (Unit-II)
4. Explain different kinds of transmission impairments. (Unit-II)
5. Explain about serial transmission mode. (Unit-III)
6. Explain Block coding (Unit-III)
7. Explain TDM and FDM. (Unit-IV)
8. Explain Three Phases of Virtual circuit Network (Unit-V)

#### Section - B

Answer ALL of the following

5 x 10 = 50

9. A) Explain different types of topologies. (Unit-I)  
(OR)  
B) Explain TCP/IP Protocol Suite
10. A) Explain about Analog and Digital Signals? (Unit-II)  
(OR)  
B) Explain Transmission impairment
11. A) Explain Digital to Digital Conversion. (Unit-III)  
(OR)  
B) Explain Transmission modes
12. A) Explain Analog to Analog Conversion (Unit-IV)  
(OR)  
B) Explain about Spread Spectrum
13. A) Explain different types of transmission mediums. (Unit-V)  
(OR)  
B) Explain different types switching techniques.