DIPLOMA IN SYSTEM AND NETWORKING ADMINISTRATION	
DSNA1 - Basic Electronics	**Semester - 1**
Theory & LAB Syllabus	**Contact Hours: 80**
Total Marks: 100 (Theory 40 + Practical 40 + IA 20)	

UNIT 1 BASICS OF ELECTRICITY AND PASSIVE COMPONENTS

1.1 Atom

1.2 Bohr Atomic Model

1.3 Energy Bands or Band Model

- 1.3.1 Valence Band
- 1.3.2 Conduction Band
- 1.3.3 Conductors
- 1.3.4 Insulators
- 1.3.5 Semiconductors

1.4 Electric Circuit

1.5 Basic Concepts & Definition

- 1.5.1 Charge
- 1.5.2 Current
- 1.5.3 Voltage
- 1.5.4 Electromotive Force
- 1.5.5 Power & Energy

1.6 Ohm's Law

1.7 Circuit Elements

- 1.7.1 Passive Elements
- 1.7.2 Active Elements

1.8 Resistor

- 1.8.1 Types of Resistors
- 1.8.2 Color Coding of Resistors

2.5 Introduction to Rectifiers

- 2.5.1 Rectifiers Circuits
- 2.5.2 Half wave Rectification
- 2.5.3 Full wave Rectification
- 2.5.4 Ripple factor

2.6 Transistor

- 2.6.1 Unbiased Transistor
- 2.6.2 Biased Transistor
- 2.6.3 Transistor Configuration
- 2.6.4 Common Emitter Characteristics

2.7 Light Emitting Diode

2.8 Photodiode

2.9 Difference between Active & Passive Components

UNIT 3 MEASURING INSTRUMENTS

3.1 Voltmeters

- 3.1.1 Analog Voltmeter
- 3.1.2 Digital Voltmeter

3.2 Ammeter

- 3.2.1 Digital Ammeter
- 3.2.2 Analog Ammeter

3.3 Ohmmeter

3.4 Multimeter

3.5 Galvanometer

UNIT 4 BASICS OF DIGITAL ELECTRONICS

4.1 Number system

4.2 Decimal Number System

4.3 Binary Number System

4.4 Octal Number System

4.5 Hexadecimal Number System

4.6 Logic Gates

4.6.1 NOT Gate

4.6.2 OR Gate

4.6.3 AND Gate

4.7 Universal Logic Gates

4.7.1 NAND Gate

4.7.2 NOR Gate

4.8 Adder Circuit

4.8.1 Half Adder

4.8.2 Full Adder

PRACTICALS:

1. Identification of Electronic Components, Color coding of resistors and capacitors.
2. Verification of Ohm's Law series and parallel combination of resistors.
3. Study the characteristics of semiconducting diode.
4. Resistors – HWR & FWR, calculation of ripple function.
5. Transistors – CE Amplifier.
6. Use of multi meter and verifying VDR & CDR.
7. Construction and verifying of Truth Table of OR, AND & NOT gate using diode / and Transistor.
8. Universality of NAND gate using IC 7400.
9. Universality of NOR gate using IC 7402.
10. Half adder and full adder using Ex-OR gate & AND gate.

Reference Books:

1. Basic Electronics, Solid State. By BL Teraja, S. Chand & Co Ltd Publication 2000
2. Basic Electronics 9th Edition by Bernard Grob, Mitchel E. Schultz, Tata Mc Graw Hill Publication 2003.
3. Basic Electronics by B. Somanathan Nair, S.R. Deepa. IK International Publishing House Pvt. Ltd. 2009

DIPLOMA IN SYSTEM AND NETWORKING ADMINISTRATION	
DSNA3 – Computer Hardware	**Semester - 1**
Theory & LAB Syllabus	**Contact Hours: 80**
Total Marks: 100 (Theory 40 + Practical 40 + IA 20)	

UNIT 1 INTRODUCTION TO COMPUTER HARDWARE

1.1 Introduction

1.2 Hardware, Software & Firmware

1.3 Input devices, Output devices, Processing devices, Storage devices

1.4 Main Board, CPU, Hard Disk, RAM, Processor, SMPS and other Internal Devices

1.5 Printers, Modem and other External Devices

UNIT 2 MICROPROCESSOR

2.1 Introduction

2.2 Primary Functions of a CPU

2.3 Internal Elements of the CPU

- 2.3.1 CU
- 2.3.2 ALU
- 2.3.3 Decoder
- 2.3.4 Registers
- 2.3.5 FSB
  - 2.3.5.1 Internal Bus
  - 2.3.5.2 External Bus
- 2.3.6 BSB
- 2.3.7 FPU

2.4 Important Processor Manufacturers

- 2.4.1 4-bit Processors
- 2.4.2 8-bit Processors
- 2.4.3 16-bit Processors
- 2.4.4 32-bit Processors
- 2.4.5 64-bit Processors

2.5 Multicore technology

2.6 Microprocessor Architecture

2.7 CPU socket and slot information

- 2.7.1 LIF
- 2.7.2 ZIF
- 2.7.3 LGA

2.8 Processor Packages

UNIT 3 MEMORY

3.1 Introduction

3.2 Types of Memory

3.3 Characteristics of Main and Secondary Memory

3.4 Difference between RAM & ROM

3.5 Types of DRAM

3.6 Cache Memory

3.7 Virtual Memory

3.8 Shared Memory

3.9 VRAM

UNIT 4 MOTHERBOARD

4.1 Introduction

4.2 Data Exchange in the motherboard

4.3 Components of Motherboard

- 4.3.1 CPU Socket
- 4.3.2 CHIPS
- 4.3.3 Plugs, connectors, Slots & Ports
- 4.3.4 PS/2
- 4.3.5 North bridge
- 4.3.6 South bridge
- 4.3.7 Ram slots

4.3.8 AGP slots

4.3.9 IDE & SATA connectors

4.3.10 BIOS

4.3.11 CMOS Battery

4.4 Motherboard form factors

4.5 Types of Motherboard

4.6 Identifying types of Motherboards

UNIT 5 HARD DISK DRIVE

5.1 Introduction

5.2 Internal components of a Hard drive

5.2.1 Disk platter

5.2.1 Spindle

5.2.2 Actuator

5.2.3 Read /write arm

5.2.4 Ribbon cable

5.3 Working of HDD

5.4 Physical components of HDD

5.4.1 Substrate material

5.4.2 Media layer

5.4.3 Protective later

5.4.4 Platter divisions

5.4.4.1 Tracks

5.4.4.2 Sectors

5.4.4.3 Clusters

5.4.5 Hard disk logic board

5.5 Disk partitioning

5.5.1 Primary Partitions

5.5.2 Extended Partitions

5.5.3 Logical Partitions

5.6 Master/slave settings

UNIT 6 STORAGE DEVICES

6.1 CD

6.2 CD- ROM

6.2.1 Working of CD

6.3 CD-R

6.3.1 Working of CD-R

6.4 CD-RW

6.5 DVD

6.6 Difference between Different types of DVD

6.7 Parts of DVD Drive

6.7.1 Disc drive mechanism

6.7.2 Optical system

6.7.3 Printed circuit board

6.8 Working & Assembling of DVD Player

6.9 PEN & ZIP drive

UNIT 7 COMPUTER INPUT DEVICES

7.1 Introduction

7.2 Keyboard

7.2.1 Layout

7.2.1 KEY Types

7.3 Types of Computer Keyboard

7.4 Working of keyboard

7.5 Mouse

7.6 Types of mouse

7.7 Working of Mouse

7.8 Joystick

7.9 Light Pen

7.10 Track Ball

7.11 Scanner

7.12 Digitizer

7.13 Microphone

7.14 OCR

7.15 Bar code readers

7.16 OMR

UNIT 8 MONITOR

8.1 Monitor

8.2 Video graphics card

8.3 Graphic card Memory

8.4 CRT

8.5 LCD

8.6 LED

8.7 Care and maintenance tips for your computer monitor

8.8 Monitor settings

UNIT 9 PRINTER

9.1 Introduction

9.2 Dot matrix Printer

9.3 INKJET Printer

9.4 Laser Printer

9.5 Working of Laser Printer

9.6 Thermal Printer

9.7 LED Printer

UNIT 10 SCANNER

10.1 Introduction

10.2 Types of Scanners

10.2.1 Flatbed Scanners

10.2.2 Sheet-fed Scanners

10.2.3 Drum Scanners

10.2.4 Portable Scanners

10.2.5 Working of Scanners

UNIT 11 SMPS

11.1 Introduction

11.2 Types of SMPS

11.3 Working of SMPS

11.4 Block Diagram of SMPS

11.5 Advantages of SMPS

UNIT 12 BIOS

12.1 Introduction

12.2 Functions of BIOS

12.3 Common things you can do on Bios Systems

12.4 Bios Manufacturers

- 12.4.1 AMI BIOS
- 12.4.2 AST Research BIOS
- 12.4.3 AST Enhanced BIOS
- 12.4.4 AST Phoenix BIOS
- 12.4.5 WIN BIOS
- 12.4.6 Award BIOS
- 12.4.7 IBM BIOS
- 12.4.8 MACINTOSH Startup Tones
- 12.4.9 Phoenix Bios

12.5 Chipset Drivers

UNIT 13 PORTABLE COMPUTER

13.1 Introduction

13.2 Types of Portables

13.2.1 Laptop Computers

13.2.2 Notebook Computers

13.2.3 Palmtop Computers

13.3 Portable Computer Hardware

UNIT 14 ASSEMBLING SYSTEM

14.1 Chassis

14.2 Types of Computer Cases

14.3 Parts of Computer System

14.4 Assembling the computer system

14.5 Tools and equipments

14.6 Safety precautions and Connections

Reference Book:

1. Modern Computer Hardware Course, by Manahar Lotia, Pradeep Nair, Payal Lotia, BPB Publication 2006.
2. Comdex Hardware & Networking course kit, by Vikas Guptha, Dreamtech Publication 2011.
3. PC Hardware by Balvir Singh, Firewall Media Publication 2011.

DIPLOMA IN SYSTEM AND NETWORKING ADMINISTRATION

DSNA4 – Linux Essentials Part-1 **Semester - 1**

Theory & LAB Syllabus **Contact Hours: 80**

Total Marks: 100 (Theory 40 + Practical 40 + IA 20)

UNIT 1 LINUX IDEAS AND HISTORY

1.1 Open source

1.2 Linux origins

1.3 Linux distributions

1.4 Linux advantages and advantages

1.5 File System Hierarchy Standard

1.6 Introduction to Redhat Linux

1.7 Installing Redhat Linux

1.8 Installing Linux with dual boot method

UNIT 2 LINUX USAGE BASICS

2.1 Linux Terminals

- 2.1.1 Switching between terminals
- 2.1.2 Virtual Console & Graphical Environment

2.2 Logging in and logging out

2.3 Root User

2.4 Standard Users

2.5 Command line Short cuts and Tab Key

2.6 Introduction to Nautilus

2.7 Basic Configuration in Graphical mode

UNIT 3 RUNNING BASIC COMMANDS

3.1 Running simple commands

3.2 Working with files and directories

- 3.2.1 cat

3.2.1 rm

3.2.2 mkdir

3.2.3 cd

3.2.4 rmdir

3.3 copy and move files/ directories

3.4 Using vi editors

3.5 Using Aliases

3.6 Creating empty files using touch Command

3.7 Using Tab key for auto completion and checking possibilities

3.8 Control keys

3.9 Editing files in gnome terminal

3.10 Navigating Man and Info pages

3.11 Using whatis command

UNIT 4 BROWSING THE FILE SYSTEM

4.1 Important Directories

4.1.1 root

4.1.2 home

4.1.3 swap

4.1.4 bin

4.1.5 sbin

4.1.6 dev

4.1.7 etc

4.1.8 proc

4.1.9 var

4.1.10 boot

4.1.11 tmp

4.1.12 usr

4.1.13 lib

4.1.14 mnt

4.2 Files and File names

4.3 Moving and copying in Nautilus

4.4 Renaming files and directories

4.5 Running – help command in Nautilus

4.6 Present Working Directory (PWD)

4.7 Seven fundamental file types

4.8 Compressing a file

UNIT 5 USERS, GROUPS AND PERMISSIONS

5.1 Creating users and groups

5.2 Default groups and custom groups

5.3 Permission types

5.4 Default permissions

5.5 Assigning permissions

5.6 Examining permissions

5.7 Interpreting the permission

5.8 Changing file ownership

5.9 Changing permissions using symbolic method

5.10 Changing permissions using numerical method

5.11 User and Group ID

UNIT 6 *vim* - AN ADVANCED TEXT EDITOR

6.1 Introduction to *vim* Editor

6.2 Using command mode

6.3 Using insert mode

6.4 Using last line mode

6.5 Move around the text file

6.6 Save and save as commands

6.7 Manipulating text

6.8 Undoing and redoing

6.9 Graphical mode

UNIT 7 FILE EXTRACTS

7.1 Grep

7.2 Comparing files

7.3 Listing Process

a. Finding Process

b. Scheduling Priority

7.4 Process ID

7.5 Kill the Process

7.6 Change the priority of Process

7.7 Managing Services

UNIT 8 REMOVABLE MEDIA

8.1 Mounting CD/DVD

8.2 Writing CD /DVD

8.3 USB Media

8.4 Moving Data between USB and System

UNIT 9 NETWORK CONFIGURATION

8.1 Change Network Interface Settings

8.2 Network Diagnostic tools

8.2.1 ping

8.2.2 traceroute

8.2.3 host

8.2.4 dig

8.2.5 netstat

Suggested Practical:

1. Install RHEL OS
2. Dual boot Installation
3. Check the important directories
4. Login and log out
5. Log in as root user
6. Log in as standard user
7. Use Shortcut keys to navigate
8. Use Nautilus
9. Run basic commands in Graphical mode
10. Creating, editing files and directories
11. Copy and move files and directories
12. Use vi editor
13. Create Aliase
14. Using touch command
15. Using tab keys
16. Using Control keys
17. Editing in Gnome
18. Using man and info pages
19. Using whatis command
20. Moving , copying and renaming files and directories in Nautilus
21. Running help in Nautilus
22. PWD
23. Verifying the seven fundamental file types
24. Creating Users
25. Creating Groups
26. Verify the default permissions
27. Assign Permissions using symbol and numeric method
28. Change permissions
29. Change file ownership
30. Verify UID and GID
31. Working with vim editor
32. Using grep
33. File comparision
34. List the process
35. Kill the process
36. Change the priority
37. Managing services
38. Mounting CD /DVD
39. Configure Network
40. Using network diagnostic tools

Reference Books:

1. RHCE Study Guide by Michael Jang, Tata Mc Graw Hill Education Pvt. Ltd. 2011
2. Linux Administration, A Beginner's Guide, by Wale Soyinka, Tata Mc Graw Hill Publication 2010.
3. Redhat Linux Networking and System Administration, by Terry Collings and Kurt Wall. Wiley India Publication 2011.
4. RHEL 6 administration by Sander Van Vugt
5. Red Hat Certified System Administrator & Engineer by Asghar gori

DSNA 7 – Linux Essentials - Part 2	**Semester - 2**
Theory & LAB Syllabus	**Contact Hours: 80**
Total Marks: 100 (Theory 40 + Practical 40 + IA 20)	

UNIT 1 INTRODUCTION TO LINUX NETWORKING

1.1 Introduction to Linux networking

1.2 Network Interface

1.3 IP addressing

1.4 IP V-4 and IP V-6

1.5 Configuring the hostname

1.6 Communicating with network systems

UNIT 2 BOOT SEQUENCE & PACKAGE MANAGEMENT WITH RPM

2.1 Boot Loader

2.2 GRUB

2.3 MBR

2.4 Introduction to rpm and using rpm command to install packages

2.5 Updating packages

2.6 Uninstalling packages

2.7 Querying for the installed packages

2.8 RPM Verifications

UNIT 3 DISK PARTITIONS AND FILE SYSTEMS

3.1 Creating new disk partitions

3.2 Managing Partitions

3.3 Creating file systems

3.4 Mounting file system

3.5 Gnome-mount

3.6 Exploring Devices

3.7 Managing /dev

3.8 Software RAID

3.9 LVM

UNIT 4 PRINTERS

4.1 Installing Printers

4.2 CUPS

4.3 Configuring Printers

4.4 Using IPP

UNIT 5 INTRODUCTION TO LINUX SERVERS

5.1 Server and client architecture

5.2 Introduction to Linux servers

a. DNS Server - BIND
b. Samba Server
c. DHCP Server
d. Sendmail Server

5.3 Configuring DHCP Server and assigning IP address dynamically

5.4 Configuring samba server

UNIT 6 LINUX SECURITY

6.1 SELinux Management

6.2 ACL

6.3 Configuring Quota

6.4 The Firewall – packet filtering

UNIT 7 A LOOK AT ANDROID OS

7.1 Introduction to Android OS

7.1.1 Features of Android OS

7.1.2 Advantages and Disadvantages of Android OS

Suggested Practical:

1. Configuring IP address
2. Configure Host name
3. Installing RPM Packages
4. Updating RPM Packages
5. Uninstalling RPM Packages
6. Create Partition
7. Mount filesystem
8. Gnome – mount
9. Checking /dev
10. Install Printers
11. CUPS
12. Configure DNS
13. Configure DHCP
14. Configure SAMBA
15. Configure Quota
16. ACL
17. Configure Firewall
18. Packet Filtering

Reference Books:

1. RHCE Study Guide by Michael Jang, Tata Mc Graw Hill Education Pvt. Ltd. 2011.
2. Linux Administration, A Beginner's Guide, by Wale Soyinka, Tata Mc Graw Hill Publication 2010.
3. Redhat Linux Networking and System Administration, by Terry Collings and Kurt Wall. Wiley India Publication 2011.
4. RHEL 6 administration by Sander Van Vugt
5. Red Hat Certified System Administrator & Engineer by Asghar gori

DIPLOMA IN SYSTEM AND NETWORKING ADMINISTRATION

DSNA 6 – Network Plus **Semester - 2**

Theory & LAB Syllabus **Contact Hours: 80**

Total Marks: 100 (Theory 40 + Practical 40 + IA 20)

UNIT 1 AN INTRODUCTION TO NETWORKING

1.1 Definition of network and networking

1.2 ARPANET

1.3 Types of Computer Networks

- 1.3.1 LAN
  - 1.3.1.1 Ethernet
  - 1.3.1.2 Token Ring
  - 1.3.1.3 Token Bus
  - 1.3.1.4 FDDI
- 1.3.2 CAN
- 1.3.3 MAN
- 1.3.4 WAN

1.4 OSI Model

1.5 IEEE Standards

1.6 Data Transmission

- 1.6.1 CSMA/CD
- 1.6.2 CSMA /CA

UNIT 2 NETWORK TOPOLOGY

2.1 Introduction to Network Topology

2.2 Bus topology

2.3 Star topology

2.4 Ring topology

2.5 Mesh topology

2.6 Hybrid topology

2.7 Tree Topology

2.8 Single Node Topology

UNIT 3 MEDIA

3.1 Characteristics of Cables

3.2 Copper Media
- 3.2.1 Co-Axial
- 3.2.2 Twisted Pair
- 3.2.3 Crimping

3.3 Optical Media
- 3.3.1 SMF
- 3.3.2 MMF

3.4 Cables in Advanced Ethernet

3.5 5-4-3 Rule

3.6 Signaling
- 3.6.1 Baseband
- 3.6.2 Broadband

3.7 Types of NIC
- 3.7.1 MAC address
- 3.7.2 Status LED on NIC

3.8 Structured Cabling

UNIT 4 NETWORK PROTOCOLS

4.1 NETBIOS

- 4.1.1 NetBIOS Name Service
- 4.1.2 LMHOSTS file

4.2 The TCP / IP Protocol Suite
- 4.2.1 Physical Layer
- 4.2.2 Datalink layer
- 4.2.3 Network layer
- 4.2.4 Transport layer
- 4.2.5 Session layer
- 4.2.6 Presentation layer
- 4.2.7 Application layer

4.3 IPX/SPX Protocol Suite

UNIT 5 IP ADDRESSING

5.1 Introduction

5.2 IP Versions

5.3 IPv4 Classes

5.4 Static and Dynamic IP Address

5.5 Subnet

5.6 Ping, Path Ping and Tracert

UNIT 6 NETWORKING DEVICES

6.1 What are Networking Devices

6.2 Repeaters

6.3 HUBS

- 6.3.1 Characteristics of HUB
- 6.3.2 HUB Configuration

6.4 Switches

- 6.4.1 Characteristics of Switches
- 6.4.2 Types of Switches

6.5 Bridges

6.6 Routers

- 6.6.1 Routing Protocols
- 6.6.2 RIP
- 6.6.3 IGRP
- 6.6.4 EIGRP
- 6.6.5 IS-IS
- 6.6.6 OSPF
- 6.6.7 BGP

6.7 Brouters

6,8 L3 Switches

6.9 Patch Panels

UNIT 7 TCP/IP SERVICES AND APPLICATIONS

7.1 SMTP

7.2 HTTP

7.3 URL

7.4 FTP

7.5 TFTP

7.6 NNTP

7.8 SNMP

7.9 POP

7.10 IMAP

7.11 E-Mail

7.12 DHCP

7.13 TELNET

7. 14 WWW

7.15 Port Numbers

UNIT 8 TYPES OF SERVERS

8.1 File server

8.2 Print server

8.3 Web server

8.4 Mail server

8.5 Database server

8.6 FTP Server

8.7 DNS Server

8.8 DHCP Server

UNIT 9 INTERNET

9.1 NAT

Suggested Practical:

1. Recognizing different Topologies
2. Recognizing different Cables and Connectors
3. Crimping
4. Check MAC address
5. Subnet Calculation
6. Static IP Addressing
7. Dynamic IP Addressing
8. Use Ping, Path Ping and Tracert
9. Connecting systems to the Switches
10. Checking Status LED on Switches
11. Checking Patch Panel
12. Verifying Digital Signature
13. Check authentication protocols
14. Check Kerberos

Reference Book :

1. Networking, All-in-one desk reference – by Doug Lowe – Wiley India Publication 2009
2. Data Communication and Computer Networking, by Brijendra Singh, PHI Learning Publication 2009.
3. Comdex Hardware & Networking course kit, by Vikas Guptha, Dreamtech Publication 2011.
4. Network + Study Guide by Todd Lamle
5. CompTIA Network+ Certification Guide by Michael Meyers

DIPLOMA IN SYSTEM AND NETWORKING ADMINISTRATION

DSNA2 – Operating Systems	**Semester - 1**
Theory & LAB Syllabus	**Contact Hours: 80**
Total Marks: 100 (Theory 40 + Practical 40 + IA 20)	

Unit 1 INTRODUCTION TO OPERATING SYSTEM

1.1 Introduction

1.2 Classification of operating system

1.3 Types of operating system

Unit 2 MS DOS

2.1 Introduction

2.2 Features of BIOS

2.3 Boot process in DOS

2.4 Commands used in DOS

Unit 3 INTRODUCTION TO WINDOWS XP

3.1 Introduction

3.2 Versions of XP

3.3 Special features of XP versions

3.4 Installation of XP Operating system

Unit 4 INTRODUCTION TO WINDOWS VISTA

4.1 Introduction

4.2 Features of Windows vista

4.3 Edition of Vista Starter

4.4 Hardware requirements to install Windows Vista

Unit 5 INTRODUCTION TO WINDOWS 7

5.1 Introduction

5.2 Features of windows 7

- 5.2.1 Themes
- 5.2.2 Gadgets
- 5.2.3 Start menu
- 5.2.4 Taskbar
- 5.2.5 Notification area
- 5.2.6 Devices and printers
- 5.2.7 Notification area
- 5.2.8 Devices and Printers
- 5.2.9 Virtual hard disks
- 5.2.10 Bit locker

5.2.11 Windows security center

5.2.12 Biometrics

5.3 Hardware requirements to install windows 7

5.4 Windows Edition

5.4.1 Availability

5.4.2 User interface features

5.4.3 Security features

5.4.4 Performance features

5.4.5 Reliability features

5.4.6 Bundled applications

5.4.7 Digital media and devices

5.4.8 Networking features

5.4.9 Mobility features

5.4.10 Enterprise features

5.5 Installation of XP Operating system

Unit 6 DESKTOP CONFIGURATION

6.1 Introduction

6.2 Personalize your Desktop

6.3 Window color and appearance

6.4 Sound and screen saver

6.5 Folder views, Downloads and Libraries

6.6 Taskbar & Start menu settings

Unit 7 WORKING WITH FILES AND FOLDERS

7.1 Introduction

7.2 Using libraries to access files and folders

7.3 Understanding the parts of a window

7.4 Viewing and arranging files and folders

7.5 Copying and moving files and folders

7.6 Creating and deleting files

Unit 8 USER AND GROUP MANAGEMENT

8.1 Introduction

8.2 Types of user accounts

8.3 Creation of a new account

8.4 Changing an account settings

8.5 Built in groups

- 8.5.1 Default local groups
- 8.5.2 Administrators group
  - 8.5.2.1 Tasks of Administrator group
- 8.5.3 Backup operators group

8.5.4 Cryptographic operators group

8.5.5 Distributed COM users group

8.5.6 Event log readers group

8.5.7 IIS_IUSERS group

8.5.8 Power users group

8.5.9 Remote desktop users group

8.6 Adding a user account to a group

Unit 9 DISK MANAGEMENT

9.1 Introduction

9.2 Comparison between FAT32 and NTFS

9.3 Working on Disk management tool

9.4 Types of formatting

9.4.1 Low level formatting

9.4.2 High level formatting

9.5 RAID

9.5.1 RAID 0

9.5.2 RAID 1

9.5.3 RAID 0+1

9.5.4 RAID 3

9.5.5 RAID 5

9.5.6 RAID 6

Unit 10 FILE MANAGEMENT

10.1 Introduction

10.2 Understanding windows NTFS permissions

10.3 Standard permissions

10.4 Advanced permissions

10.5 Inherited vs explicit permissions

10.6 Allow vs Deny permissions

10.7 Compression

10.8 Quota Management

Unit 11 WINDOWS 7 NETWORK CONFIGURATION

11.1 Introduction

11.2 Characteristics of a computer network

11.3 Network cards

11.3.1 Internal Network cards

11.3.2 External Network cards

11.4 MAC Address

11.5 IP Address

11.6 Peer to Peer Networks

11.7 Client / Server Network

11.8 Comparing Peer to Peer Network with Server client Network

11.9 Advantages and Disadvantages of Peer to Peer Network

11.10 Components required for the Peer to Peer model

11.11 Change TCP/IP settings

Unit 12 RESOURCE SHARING IN WINDOWS 7

12.1 Introduction

12.2 Network and Sharing Centre

12.3 Settings in Home Group

12.4 Setup a network Home group

12.5 Sharing the libraries / folders in home network

12.6 Steps to join a Home group Network

12.7 Steps to share folders and files in windows 7 Network Home group

12.8 Share files and folders over the network

12.9 Steps to share the Printer with the Network

Unit 13 WORKING WITH OFFLINE FILES

13.1 Introduction

13.2 Reasons to use offline files

13.3 Make files or folders available offline

13.4 Work with offline files

13.5 Enable the use of offline files

13.6 Using SYNC center to sync the offline files

Unit 14 WINDOWS EASY TRANSFER

14.1 Introduction

14.2 Versions of windows supporting windows east transfer

14.3 Steps to setup the Windows easy transfer

Unit 15 WINDOWS REMOTE CONNECTION

15.1 Introduction

15.2 Prerequisites for connecting to a PC using Remote connection

15.3 Remote Assistance

15.4 Types of using Remote assistance

- 15.4.1 Advantages
- 15.4.2 Disadvantages

15.5 Configuring remote assistance

- 15.5.1 Request remote assistance

15.5.2 Accept invitation and offer remote assistance

15.5.3 Remote assistance session flow

15.6 Troubleshooting connection problems

15.7 Remote desktop connection

Unit 16 WORKING WITH INTERNET EXPLORER

16.1 Active controls

16.2 Activex filtering

16.3 Settings for Activex

16.4 Installing and using add-ons in the desktop

16.5 Remote add-ons for the PC

16.6 Risks of installing Add-ons

16.7 Introduction on browsing history

16.8 Compatibility View

16.9 In private browsing

16.9.1 Phishing filter

16.9.2 Smart screen filter

16.10 Security Zones

16.10.1 Adding and removing website to a security zone

Unit 17 SECURITY

17.1 Introduction

17.2 Windows defender

17.3 User account controls

17.4 Backup and Restore

17.5 Windows update

- 17.5.1 Configuring windows updates

17.6 Windows Firewall

- 17.6.1 Configuring the Windows Firewall
- 17.6.2 Creating inbound and outbound rule

17.7 Adjust the settings in Windows 7

17.8 System recovery

17.9 Driver signing

17.10 Bit locker Drive Encryption

- 17.10.1 Configuring Bit Locker
- 17.10.2 Encrypt a system drive using Bit locker
- 17.10.3 Turning ON/OFF to the Bit locker

17.11 Parental Controls

- 17.11.1 Configuring Parental controls

17.12 Restore previous versions of a File and Folder

17.13 Local security policy

- 17.13.1 Defining an account policy
- 17.13.2 Defining an audit policy

17.13.3 Applying changed settings in local security policy

17.14 Windows performance monitor

Unit 18 TROUBLESHOOTING IN WINDOWS

18.1 Introduction

18.2 Advanced startup options

18.3 Repairing the computer

18.4 Safe mode

18.5 Safe mode with Networking

18.6 Safe mode with Command prompt

18.7 Enabling Boot logging

18.8 Enabling Low resolution Video

18.9 Last known good configuration

18.10 Directory service restore mode

18.11 Debugging mode

18.12 Disable automatic restart on system failure

18.13Troubling network connection problems

Reference Books:

1. Fundamentals of Computers, by E.Balaguruswamy. Mc Graw Hill Publication 2011.
2. Computer Fundamentals, MS Office & Internet by Dinesh Maidasani, Firewall Media Publication 2011.
3. Rapidex Computer Course, by Shirish Chavan and Rohit Guptha. Rapidex Publication 2010.

DIPLOMA IN SYSTEM AND NETWORKING ADMINISTRATION

DSNA 5 – Soft Skills **Semester - 1**
Theory & LAB Syllabus **Contact Hours: 80**
Total marks 100(Theory 40+ Practical 40 + IA 20)

PART A: COMMUNICATION SKILLS

Unit 1: Communication Skills

1.1 Introduction to communication skills

1.2 Importance of Communication Skills

1.3 Sentence and types of sentences

1.4 Statements

1.5 Interrogative / Questions

1.6 Imperatives (requests / orders)

1.7 Exclamations

Unit 2: Parts of Speech & Vocabulary

2.1 Parts of Speech

2.1.1 Noun

2.1.2 Pronoun

2.1.3 Adjectives

2.1.4 Verb

2.1.5 Adverb

2.1.6 Preposition

2.1.7 Conjunction

2.1.8 Interjection

2.2 Vocabulary building

2.3 Vocabulary practice

Unit 3: Writing Sentences

Unit 4: Write Good Paragraphs and Letters

PART B: PERSONALITY DEVELOPMENT PROGRAM

Unit 1: Self Assessment and Career Planning

1.1 Introduction
1.2 Self assessment activities
  1.2.1 Self assessment questionnaire
  1.2.2 Who am I?
  1.2.3 Ranking values
  1.2.4 Skills / abilities / knowledge inventory
  1.2.5 Preferred job outcomes
  1.2.6 Professional goals and expectation
1.3 Career Planning
  1.3.1 Career options
  1.3.2 Career goals
1.4 Action Planning
1.5 Conclusion

Unit 2: Tap your hidden potential

2.1 Introduction

2.2 Physical fitness

2.3 Positive attitude

2.4 Set priorities

2.5 Make commitments

2.6 Be Pragmatic

2.7 Begin and keep going

Unit 3: Time Management

3.1 Analyzing use of time

3.2 Tips for time management

  3.2.1 Plan
  3.2.2 Concentrate
  3.2.3 Take breaks
  3.2.4 Avoid clutter
  3.2.5 Don’t be a perfectionist

3.2.6 Don’t be afraid to say no
3.2.7 Don’t procrastinate
3.2.8 Apply radical surgery
3.2.9 Delegate
3.2.10 Don’t be a workaholic
3.2.11 Don’t get into finish mania
3.2.12 Be pragmatic

3.3 Time Management Schedule

3.4 Assessing your time management ability

Unit 4: Basic aspect of personality development

4.1 Physical appearance

4.2 Communication skills

4.3 Knowledge

4.5 Skills – professional and personal

4.6 Self confidence

4.7 Personal qualities

4.8 Health

4.8 Activities and interests

4.9 Achievement and success

Suggested Practical:

Unit 1 MICROSOFT OFFICE WORD 2007

1. Introduction to Word Processing and MS Word
2. Setting up the Page with Margins and Paper Type
3. Creating new file and saving
4. Formatting the Text
5. Spelling and Grammar Checking
6. Borders and Shading
7. Printing the Document
8. Auto Correction and Auto Formatting
9. Finding and Replacing text
10. Using Mail Merge in Word
11. Page Numbering
12. Header & Footer
13. Editing the Document and Editing Tools
14. Page numbering and Foot notes
15. Splitting Panes
16. Keyboard Shortcut Commands

Unit 2 MICROSOFT OFFICE EXCEL 2007

1. Understanding the Electronic Spread Sheets
2. Rows, Columns, Sheets and Cells
3. Cell Address Navigating around the sheet
4. Creating Marks Card and Chart
5. Applying the formulas
    a. Sum

b. Sum if

c. Average

d. Minimum

e. Maximum

f. Count

g. If conditions

Unit 3 MICROSOFT OFFICE POWER POINT 2007

1. Creating New Presentation
2. Creating Multiple Slides
3. Slide Layout and Slide Designs
4. Formatting Slides
5. Slide Transitions
6. Custom Animation
7. View Presentations / Slide Show
8. Notes, Handouts and Masters
9. Using Action Buttons
10. Packing Presentations to Go

Unit 4 MICROSOFT OFFICE ACCESS 2007

1. Introduction to Database Management System
2. Creating Database File and Saving
3. Creating Tables, Queries, Forms and Reports

Reference Books:

1. Soft Skills, by Dr. K. Alex. S. Chand Publishing 2011
2. Soft Skills, by S.R. Singh, APH Publishing Corporation 2011
3. Personality Development Course, by PK Arya, Manoj Publications 2011

DIPLOMA IN SYSTEM AND NETWORKING ADMINISTRATION

DSNA 9 – Windows Server 2008 **Semester - 2**
Theory & LAB Syllabus **Contact Hours: 80**
Total Marks: 100 (Theory 40 + Practical 40 + IA 20)

UNIT 1 SERVER OPERATING SYSTEM

1.1 Installing Windows Server 2008 Operating System

1.2 Initial Configuration

1.3 Basic Network settings

1.4 Configure Firewall

1.5 Configure Roles

1.6 Configure Features

1.7 Install Server Core

UNIT 2 ACTIVE DIRECTORY DOMAIN SERVICE

2.1 Introduction to Server Manager

2.2 Introduction to ADDS

2.3 Installing ADDS

2.4 Configure RODC

2.5 Removing ADDS

2.6 Configuring Child/Member Server

UNIT 3 ACTIVE DIRECTORY ADMINISTRATION

3.1 Create User Accounts

3.2 Understanding Group Accounts

- 3.2.1 Working with Group
- 3.2.2 Group types
- 3.2.3 Group scope
- 3.2.4 Default groups
- 3.2.5 Creating a group
- 3.2.6 Adding member to a group

3.2.7 Creating Users. Computers and Groups

3.2. 8Managing Users, Computers and Groups

3.3 Backup Active Directory

3.4 Restoring Active Directory

UNIT 4 ACTIVE DIRECTORY SITES

4.1 Introduction to Active Directory Sites

4.2 Creating Sites

4.3 Creating a New Subnet

4.4 Configure Inter site Replication

4.5 Configuring a Bridgehead Server

4.6 Selecting Replication Protocol

UNIT 5 SECURITY AND DELEGATION

5.1 Using passwords

5.2 Educating Users about Passwords

5.3 Configuring Strong Passwords

5.4 Introduction to OU

5.4.1 Creating OU

5.4.2 Using OU to Delegate AD Management

5.4.3 Moving Objects Between OU

UNIT 6 USING GROUP POLICY

6.1 Understanding Group Policy

6.2 Using Group Policy Management Console

6.3 Configuring Account Policy

6.4 Configuring Kerberos Policy

6.5 Configuring Local Policy

6.6 Configuring Audit Policy

UNIT 7 DHCP

7.1 Understanding DHCP

7.2 APIPA

7.3 Installing DHCP Server Role

- 7.3.1 Authorize DHCP Server
- 7.3.2 Configure DHCP Scopes
- 7.3.3 Configuring DHCP Reservations

UNIT 8 DNS

8.1 Understanding DNS

8.2 Installing DNS Server Role

8.3 DNS Zones

- 8.3.1 Configuring Forward Lookup Zone
- 8.3.2 Configuring Reverse Lookup Zone
- 8.3.3 Zone Transfers

8.4 DNS Delegation

UNIT 9 FILE SERVER , PRINT SERVER & HYPER – V

9.1 Introduction to File Server

9.2 Installing File Server Role

9.3 Managing Shares

9.4 Creating Quota

9.5 Installing Print Server role

9.6 Installing and Managing the Printers

9.6 Printer Security

9.7 Creating Printer Pool

9.8 Introduction to Hyper-V

- 9.8.1 What is Virtualization
- 9.8.2 Properties of Virtualization

9.8.3 Setting up Hyper-V Server

UNIT 10 SECURE DATA TRANSMISSION

10.1 Configuring IPSec

10.2 IPSec Authentication

10. 3 Configuring Firewall

10. 4 Install ADCS

10.4.1 Configuring Certificate Template

10.4.2 Configuring Network Access Protection (NAP)

Suggested Practical:

1. Installing Windows Server 2008 OS
2. Basic Network Settings
3. Install Server Core
4. Install ADDS
5. Configure RODC
6. Configure Child Server
7. Remove ADDS
8. Create Users and Groups
9. Working with Default and Created Groups
10. Backup Active Directory
11. Restore Active Directory
12. Create Active Directory Sites
13. Create Intersite and Bridge head
14. Create OU
15. Delegating OU
16. Moving Objects between OU
17. Configure Account Policy
18. Configure Local Policy
19. Configure Audit Policy
20. Configure Kerberos Policy
21. Install DHCP Server Role
22. Authorize DHCP
23. Create Scope in DHCP
24. Create Reservation in DHCP
25. Install DNS Server Role
26. Configure Forward and Reverse Lookup Zone
27. DNS Delegation
28. Install File Server Role
29. Managing Shares
30. Creating Hard and Soft Quota
31. Installing Print Server Role
32. Configuring Printer Security
33. Creating Printer Pool
34. Configuring IPSec
35. IPSec Authentication
36. Installing ADCS

37. Configure Certificate template
38. Configuring NAP

Reference Book:

1. Networking All-in-One Desk Reference, by Doug Lowe. Wiley India Publication 2009
2. Mastering Windows Server 2008 R2, by Darril Gibson, Wiley India Publication 2011.
3. Mastering Windows Server 2008, Networking Foundation, by Mark Minasi, Wiley India Publication 2011
4. Windows Server 2008 R2 Secrets by Orin Thomas
5. The Best Damn Windows Server 2008 , Second Edition by Anthony Piltzecker

DIPLOMA IN SYSTEM AND NETWORKING ADMINISTRATION

DSNA 8 – Wireless Networking **Semester - 2**

Theory & LAB Syllabus **Contact Hours: 80**

Total Marks: 100 (Theory 40 + Practical 40 + IA 20)

UNIT 1 WIRELESS NETWORK

1.1 Introduction to Wireless Network

1.2 Wireless Media

- 1.2.1 Types of Wireless Media
- 1.2.2 Radio waves
- 1.2.3 Microwaves
- 1.2.4 Bluetooth
- 1.2.5 IR Rays
- 1.2.6 Satellite

1.3 Reviewing some basic radio terms

- 1.3.1 Waves and Frequencies
- 1.3.2 Wavelength and Antennas
- 1.3.3 Spectrums and the Federal Communication Commission (FDD)

1.4 Understanding Wireless Standards

- 1.4.1 802.11a
- 1.4.2 802.11b
- 1.4.3 802.11g
- 1.4.4 802.11n
- 1.4.5 802.11ac
- 1.4.6 802.11i
- 1.4.7 802.16

1.5 Wireless Network Adapters

1.6 Wireless Access Points

1.7 Wireless Extension points

UNIT 2 TYPES OF WIRELESS NETWORK

2.1 Different Types of Wireless Network

- 2.1.1 Wireless LAN
- 2.1.2 Wireless MAN
- 2.1.3 Wireless WAN
- 2.1.4 Wireless PAN
- 2.1.5 Wireless GAN
- 2.1.6 Cellular Network
- 2.1.7 Space Network

2.2 Network Access Point (NAP)

2.3 Ad – hoc Networks

UNIT 3 BASIC CONFIGURATION

3.1 Check device Info

3.2 Basic Access point Configuration

- 3.2.1 Configure SSID
- 3.2.2 Enable / Disable Guest/Virtual Access points

3.3 View Current DHCP Configuration

3.4 Configure DHCP

3.5 Setting Channels

3.6 Set Internet Time

3.7 Configure Windows 7 Wireless Networking

UNIT 4 CONFIGURING ACCESS POINT

4.1 Configure LAN

4.2 Configure IPv4 /IPv6

4.3 Configure Routing (Static/Dynamic)

4.4 Configure Gateway

4.5 Configure DNS

5.5 Accessing Printer

5.6 Accessing Storage device

UNIT 5 SECURING A WIRELESS NETWORK

5.1 Common Wireless Security Threats

5.1.1 Rogue Access Points /Ad-hoc Networks

5.1.2 Denial of Service

5.1.3 Misconfigured Accesspoints

5.1.4 Wireless Phishing

5.1.5 Evesdroppers

5.1.6 Passive Capturing

5.2 Securing Wireless Network

5.2.1 Changing Password

5.2.2 Securing the SSID

5.2.3 Enabling WEP

5.2.4 Using WPA

5.2.5 Using MAC address filtering

5.2.6 IP Filtering

5.2.7 Parental Control

5.3.8 IPSec Configuration

5.3 Configure Encryption Protocols

5.3.1 WEP

5.3.2 Features of WEP

5.3.3 Advantages and Disadvantages of WEP

5.3.4 WAP

5.3.5 Features of WAP

5.3.6 Advantages and Disadvantages of WAP

5.4 Backup router configuration

5.5 Restore Default settings

5.6 Access Control

5.6.1 Create Users and Passwords

5.6.2 Change user Passwords

5.6.3 Change Key

5.6.4 Change Default Password of Admin

5.6.5 Allowing Selected Services

5.7 Update Software

UNIT 6 HOT SPOTTING

6.1 Introduction to hotspot

6.2 Commercial hot spotting

6.3 Software hot spot

6.4 Hotspot 2.0 (HS 2)

6.4 Mobile Hotspot or Tethering

UNIT 7 TROUBLESHOOTING A WIRELESS NETWORK

7.1 Basic Connectivity issues

7.2 IP Conflict

7.3 Changing overlapping channels

7.4 AP Booting Mode

7.5 Resource Conflict

7.6 WEP keys

7.7 Console Connections

7.8 Radio Interference

7.9 Resource Conflict

7.10 Antenna Settings

UNIT 8 WIRELESS NETWORKING WITH BLUETOOTH

8.1 Understanding Bluetooth

8.2 Implementation and Connection

8.3 Features of Bluetooth

8.4 Uses Bluetooth

8.5 Bluetooth Specifications

8.6 Bluetooth Protocol Stack

8.6 Install USB Bluetooth adapter

8.7 Enabling discovery

8.8 Pairing Mechanism

8.9 Security Concern

UNIT 9 INTRODUCTION TO CLOUD COMPUTING

9.1 Introduction to Cloud Computing

9.1.1 Features of Cloud Computing

9.1.2 Advantages and Disadvantages of Cloud Computing

9.2 Introduction to Android OS

9.2.1 Features of Android OS

9.2.2 Advantages and Disadvantages of Android OS

Suggested Practical:

1. Recognizing Wireless Network Adapter
2. Check the Access Points
3. Check the Extension Points
4. Configure Ad-hoc Network
5. View device Info
6. Configure SSID
7. View and set DHCP Settings
8. Set Channels and Internet Time
9. Configure Windows 7 to Communicate in Wireless network
10. Configure IP (Static and Dynamic), Gateway and DNS
11. Configure WEP & WAP
12. Configure IP & MAC Filters
13. Configure routing
14. Backup and Restore Router Configuration
15. Change Default password of admin
16. Create Users and Passwords
17. Configure Tethering
18. Check IP Conflict
19. Check WEP Settings
20. Setup Bluetooth Network
21. Enable Discovery of Bluetooth Devices
22. Pairing of Bluetooth devices
23. Security settings for Bluetooth Devices

Reference Book :

1. Networking, All-in-one desk reference – by Doug Lowe – Wiley India Publication 2009.
2. Wireless & Mobile Networks, by Sunil Kumar S Manvi, Mahaballeshwara S. Kakkasageri, Wiley India Publication 2011.
3. Wireless Sensor Networks, S. Anandamurugan, Satya Prakashan Publish 2011
4. Building Wireless Sensor Networks by Robert Faludi
5. Bluetooth Low Energy by Robin Heydon