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S. N O	Main Topics	Sub Topics	Points to be covered	Lab Exercise
1	Basic of RHEL & Installation			
		History	RHEL History	
		Versions	Server & Workstation Versions	
		Pre-Req for Installation of RHEL 5.5	HW / SW Requirement	
		Installation of RHEL 5.5 on VM Machine	i) GUI ii) CLI iii) Network ( Discussed on Later Class)	Installation of RHEL 5.5 on VM Machine
2	System Initialization			
		BIOS Initialization	Brief Explanation Files involved during System Booting	Walkthrough the Files involved during System Booting
		Boot Loader	/etc/rc.d/rc.sysinit	opening Boot logs - dmesg , rc scripts files
		Kernel initialization	/etc/rc.d/rc and /etc/rc.d/rc?.d/	
			/etc/rc.d/rc.local	
			X Display	
3	Device Management			

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		Device Nodes - Char / Block Device	Managing Device with udev	udev - command
4	<b>Process Management</b>			
		Process and Job Control	What is process , Job .	
			Ps/nice/renice/top/nohup/kill/killall/bg/fg/jobs	Ps/nice/renice/top/nohup/kill/killall/bg/fg/jobs
5	<b>System Services</b>			
		NTP - Network Time Protocol	Explaining the Service , Configuration	NTP Server & Client Setup
		System Logging	What is System Log & Why it is used & What is it Purpose.	
		Log Server - Centralized Log Management	How to Create a Log Server	Log Server Setup
		VNC Service	Explaining the Service , Configuration	VNC Server & Client Setup
		SSH Service	Explaining the Service , Configuration	SSH Server & Client Setup
		SCP Service	Explaining the Service	SCP command usage
		CUPS Service	Explaining the Service , Configuration	CUPS service installation & adding printer to it
		xinetd Service - Telnet	Explaining the Service , Configuration , xinetd vs inetd , Telnet	XINETD command usage , Telnet Server & Client Setup
		Service Management - init.d , Chkconfig - Start & stopping Services		Service *** start/stop/restart/status .chkconfig , running with absolute path of service scripts
		Scheduling Service - crontab , anacron	What is Scheduling ? , cron vs anacron vs at	Creating scheduling task using cron , anacron & at
6	<b>Kernel Manage</b>			

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	ment			
		KERNEL IMAGES & Modules	Brief about kernel images & modules	/boot/vmlinuz-*, /lib/modules/\$(uname -r)/
		Building Custom Kernel using CLI and GUI/Kernel Patching		lsmod
				modprobe
				modinfo
				insmod
				rmmod
7	<b>Bash Editing</b>			
		Bash Profile	Brief about Bash profile & its components	Set
			Skel Component	env
				PS1
				PATH
				EDITOR
				HISTFILESIZE
				HOME
				EUID
				ALIAS
8	<b>File System / Disk Management</b>			

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		File system Management	Brief about File system & structure	Walkthrough the File System & its types
		Disk Management	Brief about Partition & types	Partitioning & Labeling
			How to create Partition & mounting Permanent , Temporary	Formatting - ext2,3,4 . Other FS SWAP , MSDOS etc
			Brief about file system Maintenance	Mounting - Permanent , Temporary
			Brief about RAID	Maintenance - fsck , tune2fs , dump2fs
			Diff between HW vs SW RAID	Working on RAID Creation , Maintenance & Deletion
			LVM - Logical Volume Management	Working on LVM Creation , Modification & Deletion
			User Quota - LVM	Working on Quota partition Creation , Modification & Deletion
			LVM Snapshot	Taking LVM Snapshots & Restoring
9	<b>File Management</b>			
		File Operation	File operation such as copy , move . Rename , Delete	Copy , Move ,Delete - cp , mv , rm
		Disk Utilities	Disk viewing on Free space , usage	File & Disk View - df , du
		Links	Brief about links , types & creation & updating the links	Symbolic Link / Hard Link - ln
		Encryption / Archiving	Archiving/Encoding/Compressing/Encrypting File	Archiving/Encoding/Compressing/Encrypting File
		Compression / Decompression of files	Compression / Decompression of files	Compress/Uncompress/tar/bzip2/bunzip2/gzip/gunzip/zip
10	<b>Package Management</b>			
		Package management	What is package , why it is used?	

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			Diff between Package , Source code .	
			Package formats rpm , deb, pkg.tar.xz , rpm , tgz	
		RPM	What is RPM	Installation/updating/removal of rpm GUI & CLI
		YUM - Yellow Update Modifier	What is YUM?	YUM local repository Creation
				Installation/updating/removal of YUM
1 1	<b>User &amp; Group Manage ment</b>			
		User & Group Management	What is user , group ?	useradd/userdel/usermod/groupadd/gr oupmod
			Creation , deletion , modification on user/group	groupdel
			passwd , shadow files	passwd/id/uname/chown/chroot/SUID/ SGID
			Brief about login scripts	
			Sudo User	sudo
1 2	<b>File Permiss ion</b>			
		File permission	Brief about file permission , changing permission , owner , mask	Chmod/chgrp/SetUid/SetGid
			sticky bit umask	StickyBit umask
		ACL - Access Control List for Files & Directory	Brief about ACL & creating , assigning ACL to Files	ACL - Access Control List for Files & Directory
1	<b>Networ</b>			

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3	<b>k</b>			
	<b>Services</b>			
		Network configuration	What is ip address	Assigning IP GUI / CLI / conf File editing
		NW Devices	How to assign ip	
		Virtual NW Adapters	configuration files for assigning IP Address	Creating Virtual NW Adapters
		Routing - Static , Default		Route command
		NW Diagnostics - ping , tracert		Ping Tracert
1 4	<b>Security &amp; Firewall</b>			
		SELINUX Management	What is selinux ?	Work around selinux commands
		TCP Wrappers	What is tcp wrappers & its functionality ?	Work around tcp wrappers
		Iptables	What is ip tables & its functionality ?	Work around Iptables
			TCP Wrappers vs Iptables	
1 5	<b>Backup &amp; Restore</b>			
		Backing up	What is backup & its importance	tar
			Local Backup & remote server Backup	dd
			Types of Backup - incremental , Differential , full	dump
			Remote Server Backup	rsync
		Restoring using backup	How to restore using backup	restore
1	<b>Trouble</b>			

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6	<b>shootin g</b>			
		Root Password Recovery	How to recovery root password when it is forgotten	Recover password in single user mode
		Linux Rescue Mode	Usage of Rescue mode and its importance	chroot /mnt/sysimage
		File System recovery	What is File system recovery & how to perform it ?	fsck after chroot /mnt/sysimage
1 7	<b>Networ k Installat ion</b>			
		Introduction to Network installation	What is network installation & how it is performed	Installation using Kick Start Boot Cd
			Prerequisite for Network installation server	1.FTP 2.NFS 3.HTTP
			Packages Required for server	
		Configuration	Creation of Kick Start Boot Cd	
			Other ways of installing 1.FTP 2.NFS 3.HTTP	
		PXE BOOTING	SYSLINUX	
			Booting the System from PXE Boot ROOM	