



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Tech(CSE)/SEM-6/CS-604/2012  
2012**

**SYSTEM SOFTWARE & ADMINISTRATION**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A**

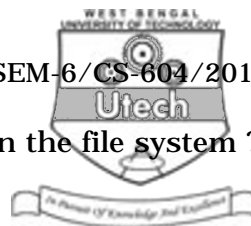
**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following :  
10 × 1 = 10

- i) When you type 'arp' in the shell prompt, what would you see ?
  - a) Port address & IP address
  - b) MAC address & port address
  - c) MAC address & IP address
  - d) Only MAC address.
- ii) What is the full form of RARP ?
  - a) Reverse Asynchronous Resolution Protocol
  - b) Reverse Address Routing Protocol
  - c) Reverse Address Resolution Protocol
  - d) None of these.



- iii) Which loader permits a program to be executed in different parts of the memory ?
  - a) Relocating Loader      b) Absolute Loader
  - c) Direct Linking Loader      d) None of these.
- iv) Which command is used for disk partitioning in Unix/Linux ?
  - a) diskpart      b) partdisk
  - c) diskprt      d) None of these.
- v) What will happen if you type 'init 0' in the root prompt ?
  - a) The machine will turn off
  - b) The machine will hang up
  - c) The login prompt will appear
  - d) None of these.
- vi) Which command will make the machine to reboot immediately ?
  - a) reboot      b) shutdown 0 - R
  - c) both (a) and (b)      d) halt-r.
- vii) Which of the following options from the root prompt will negate the effect of 'kill-STOP-1' from the administrator prompt ?
  - a) kill-CONT-1      b) kill-WINCH-1
  - c) Both (a) and (b)      d) None of these.
- viii) Which of the following commands is used to change password ?
  - a) pswd      b) paswd
  - c) passwd      d) passwrd.
- ix) LILO is basically used for
  - a) loading      b) linking
  - c) executing      d) termination.



- x) What keeps track of all the files within the file system ?  
 a) Superblock                      b) Root  
 c) i-node table                      d) Partition.
- xi) If you ping the IP addresses of the following options which address may show 'Request timed out' or 'General failure message' ?  
 a) 127.0.0.0                      b) 127.254.255.255  
 c) 127.255.255.255                      d) both (a) and (c).
- xii) What is the size of an IPv6 address ?  
 a) 32 bytes                      b) 4 bytes  
 c) 6 bytes                      d) 16 bytes.

#### GROUP - B

##### ( Short Answer Type Questions )

Answer any *three* of the following.  $3 \times 5 = 15$

2. What is the difference between ARP and RARP ?
3. Write a C code to create a parent and a child process, showing the process id of both the parent and child.
4. Write the difference between GRUB and LILO.
5. Discuss the significance of the command ifconfig as well as the command netstat.  $2\frac{1}{2} + 2\frac{1}{2}$
6. Compare IP address with MAC address. What do you mean by MAC spoofing ?  $2\frac{1}{2} + 2\frac{1}{2}$

#### GROUP - C

##### ( Long Answer Type Questions )

Answer any *three* of the following.  $3 \times 15 = 45$

7. a) Explain NAT. 5
- b) Describe the following commands :  
 i) top                      ii) ps  
 iii) uptime                      iv) free.
- c) What do you mean by 'niceness' ? How can you set a new priority of an existing process ? Explain different run level in linux.  $1 + 1 + 4$



8. a) What is Firewall ? Write down the methods of attack in Firewall. 1 + 1
- b) What is IP filtering ? Describe with proper diagram how IP filtering can be implemented in kernel for different types of traffick. 2 + 3
- c) Explain in detail : "ipfwadm" command. 5
- d) Write down working principle of DNS server.
9. Write short notes on any *three* of the following : 3 × 5
  - a) Debugger
  - b) System backup and recovery
  - c) IP accounting
  - d) Cross assembler
  - e) POT and MOT.
10. a) Explain the working principle of macroprocessor. 5
- b) Discuss Shells and Restricted Shells. 4
- c) Discuss the principles for managing user accounts. 3
- d) How can an user account be disabled ? 3
11. a) What is IP Masquerade ? 3
- b) Discuss Side Effects and Fringe Benefits for IP Masquerade. 3
- c) Differentiate between NIS and NIS+. 4
- d) Briefly discuss NIS Server Security. 5
12. a) How has Assembly level language program become useful ? 2
- b) What are the basic Assembler functions ? 3
- c) Discuss 2-pass algorithm of Assembler. Explain with the aid of a neat flowchart and algorithm. 7
- d) What is the difference between a literal and an immediate operand ? 3