

(2½ Hours)

[Total Marks: 75]

- N. B.: (1) **All** questions are **compulsory**.  
 (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.  
 (3) Answers to the **same question** must be **written together**.  
 (4) Numbers to the **right** indicate **marks**.  
 (5) Draw **neat labeled diagrams** wherever **necessary**.  
 (6) Use of **Non-programmable** calculators is **allowed**.

**1. Attempt any three of the following: 15**

- What are the different Linux distributions? Explain any five in brief.
- What are different shells available in RHEL 6.x? Explain the following commands: cat, tac, tail and head.
- How are the jobs scheduled and started automatically in RHEL 6.x? Explain.
- State and explain the duties of the Linux system administrator.
- Explain the following terms for installing and managing software: tarball, redhat package manager, software dependency, RHN, querying with rpm.
- How is software installed using yum? Explain yum in detail.

**2. Attempt any three of the following: 15**

- What is Logical Volume Manager? What are the different types of partitions that are created in Linux?
- State and explain the different types of file systems.
- What is SSH? How is ssh server enabled? Explain.
- How is the network troubleshooting done on RHEL 6.x? Explain the different things that are checked while troubleshooting.
- Explain useradd, usermod, userdel commands. Explain the following options of passwd command: -l, -u, -S, -e, -n min, -c warn, -i intact.
- What are Pluggable Authentication Modules? What are its two parts? Explain.

**3. Attempt any three of the following: 15**

- What is IP masquerading? How is it enabled? How is port forwarding used in combination with IP masquerading?
- What is iptables, tables, chains, rules? How is rule composed? Explain.
- How is self signed certificate created with openssl?
- What is GPG? How is it used to create and transfer keys? How are files encrypted with GPG?
- What is NFS? What are the improvements in NFS4 over its previous versions? How is NFS4 setup? Explain.
- What is Samba Server? How is it setup? Explain.

**4. Attempt any three of the following: 15**

- What are the different types of DNS servers? With the help of an example, explain the DNS lookup process.
- What is DHCP? How is DHCP server setup?
- Explain: Message Transfer Agent, Mail Delivery Agent, Mail User Agent with examples.
- How is postfix setup as SMTP server? How is mail server opened for external mail?
- Explain the httpd.conf file in detail.
- How is SELinux configured for Apache? Explain.

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**5. Attempt any three of the following:**

**15**

- a. What is a shell script? What are the elements of a good shell script? How is a script executed?
  - b. What is pattern matching? Write a shell script that isolates the directory name from a complete file name.
  - c. What is high availability? State and explain the requirements of high availability.
  - d. What is GFS2? Explain. How is it created?
  - e. How is network server configured as an installation server? Enumerate the steps for the same.
  - f. How are TFTP Server configured for PXE boot? Explain.
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