

SYSTEM AND NETWORK ADMINISTRATION

Paper Code: ETIT-423

Paper: System and Network Administration

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INSTRUCTIONS TO PAPER SETTERS:

MAXIMUM MARKS: 75

1. Question No. 1 should be compulsory and cover the entire syllabus. This question should have objective or short answer type questions. It should be of 25 marks.
2. Apart from Question No. 1, rest of the paper shall consist of four units as per the syllabus. Every unit should have two questions. However, student may be asked to attempt only 1 question from each unit. Each question should be of 12.5 marks.

Objective: This course is intended for B.Tech students, who wish to improve skills through hands-on experience in System Administration and Network Administration.

System Administration:

UNIT- I

System Hardware: PC and Server Hardware Architecture, Operating System Administration: UNIX, Windows, MAC OS.

Centralization and Decentralization: Centralized Authentication, Active Directories; LDAP;

Storage: RAID, Storage Area Network (SAN), Direct Attached Storage (DAS), Network Attached Storage (NAS); Data Integrity Backup and Recovery.

[T1, T2] [No. of Hours: 11]

UNIT- II

Lab Management: System Configuration, Cloning, Monitoring and Administering them; workstations, server, Data centers Data Center Management: Administering, Surveillance, Access Control,

Special Topics: High Performance Computing, Virtualization and Cloud Computing.

[T1, T2] [No. of Hours: 11]

Network Administration:

UNIT- III

Network administrator (definition and functions), Network Planning, Routine system maintenance

Computer Networks: OSI & TCP/IP Model, clean architecture;

Switching & Routing: Layer 2 & Layer 3 switching; Routing; VLAN; Cisco L2 and L3 Switch Configuration; DHCP Configuration; IPv6, Wireless LAN: 802.11 a/b/g/n/ac WiFi; Access Point and Wireless Router configuration.

[T1, T2] [No. of Hours: 11]

UNIT-IV

Internet Architecture: ISP Architecture; DNS Resolution; Content Mirroring, Internet Applications: DNS, Web, Mail, Proxy, NTP;

Perimeter Security: Firewall, UTM,

Network Security: LAN and WLAN Security issues; IP Spoofing; Dictionary Attack; DoS and DDoS Attack; Rogue/Misconfigured/External APs; Network Troubleshooting: ping, traceroute, nslookup, dig, tcpdump; Network Monitoring: SNMP; MRTG.

[T1, T2] [No. of Hours: 11]

Text Books:

[T1] Thomas A Limoli, Christina J. Hogan, Strata R. Chalup " Theory and Practise of System and Network administration " Addison-Wesley Professional; 2 edition 2007

[T2] Subramaniam Mani, Subramanian " Network Management: Principles And Practice" Pearson Education India, 2006

References Books:

[R1] Evi Nemeth, Garth Snyder, Trent R. Hein, Ben Whaley "UNIX and Linux System Administration Handbook" (4th Edition), 2010

[R2] Craig Hunt, "TCP/IP Network Administration" "O'Reilly Media, Inc.", 2002

[R3] Bill McCarty Learning Red Hat Linux "O'Reilly Media, Inc.", 2003