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1. Overview

This document is the syllabus for the *Constructing Small- and Medium-Sized Enterprise Networks V7.0* course. It mainly introduces the examination content of the *Constructing Small- and Medium-Sized Enterprise Networks V7.0* course. This document is prepared by New H3C University and is mainly used to guide the candidates who participate in the *Constructing Small- and Medium-Sized Enterprise Networks V7.0* course examination.

2. Examination Item Description

2.1 Examination Introduction

Participants

There are no special requirements for candidates in this examination. Any person who is not specifically prohibited by H3C can register for the examination directly.

Contents

The examination content includes but is not limited to the content covered by the *Constructing Small- and Medium-Sized Enterprise Networks V7.0* course. Most of examination knowledge comes from teaching materials and training, but individual topics may be beyond the scope of the teaching materials and training.

Examination Code

GB0-191

Duration

60 minutes

Number of Questions

50 single/multiple choice questions, judgment questions, and gap filling questions

Pass Score

The total score is 1000 points. A candidate is considered to pass the examination with at least 600 points.

2.2 Registration

This certification examination is conducted by the PROMETRIC Test Platform. If you want to take this certification examination, Visit PROMETRIC's official website (www.prometric.com) to inquire and contact the test center for registration.

3. Knowledge Points Distribution

The following describes the distribution of knowledge points in the GB0-191 examination.

Computer Network Fundamentals

Basic concepts of computer networks: basic concepts of computer networks; main forms and development history of networks; classification and common concepts of networks, including topological types, switching methods, and performance indicators

TCP/IP protocol stack and OSI reference model: definition and characteristics of the OSI reference model and TCP/IP model; division, functions, features, and major protocols of each layer in the two models

LAN Fundamentals: major LAN technologies, development history of Ethernet technologies, major Ethernet technology standards, CSMA/CD, MAC address, Ethernet interfaces and cables, Ethernet equipment and topologies, optical fibers and interface types, and basic principles of the WLAN

Wide Area Network Fundamentals: functions and features of the WAN technologies, major WAN technologies, major connection methods of the WAN and respective connection models, and common WAN interface cables and standards

Basic principles of IP: IP protocol suite, IP functions and features, basic structure of the IP network, IP encapsulation, composition and classification of IP addresses, sending, forwarding, and receiving of IP packets, and working principles of the ARP/RARP/proxy ARP

Basic principles of TCP and UDP: functions and features of TCP and UDP, TCP and UDP encapsulation, TCP connection establishment and disconnection, port number, TCP acknowledgement, retransmission, and window mechanism

Getting Started with H3C Network Devices

H3C routers, switches, and operating systems: functions of routers and switches, basic components of routers and switches, functions and features of the Comware system, and major H3C routers and switches

Command Line Operation Basics: how to access and connect to the CLI, how to get started with the CLI, and commonly used equipment management commands

Network device file management: components of the network device file system, file storage mode, file system operation commands, configuration file and system file management, network device startup and boot process

Basic Network Device Debugging: **ping** and **tracert** commands, and system debugging

LAN Switching

Ethernet Switch Fundamentals: shared and switched Ethernet, and learning, forwarding, and filtering logic of Ethernet switches

Virtual Local Area Network: concepts, functions, and features of VLANs, VLAN allocation modes, 802.1Q tags, and Trunk link

Spanning Tree Protocol: functions, features and relationships of STP/RSTP/MSTP, Ethernet ring generation, STP switch role, port status and BPDU, RSTP port status, RSTP improvements based on STP, MSTP improvements based on RSTP

Port Security for Switches: 802.1x functions, features and system architecture, port access control, port isolation, and port binding

Ethernet Link Aggregation: functions and features of Ethernet link aggregation, static Link Aggregation Group, and dynamic Link Aggregation Group

Advanced TCP/IP

IP Subnetting: necessity of subnet division, method of subnet division, calculation of subnet and subnet mask, VLSM and CIDR

DNS: functions and system components of the DNS, domain name structure, domain name resolution methods and processes

File Transfer Protocol: FTP/TFTP functions, features, and working principles

DHCP: DHCP functions and features, DHCP system components, and DHCP and DHCP relay

IPv6 Basics: features of IPv6, IPv6 addresses and classifications, IPv6 Neighbor Discovery Protocol, IPv6 address resolution, and automatic IPv6 address configuration

IP Routing

Principles of IP routing: routing, routing table, operations of routers to process packets, sources of routes, routing metrics, routing priorities, and routing loops

Direct routes and static routes: direct route, multiple ways of inter-VLAN route, and static route configuration

Overview of routing protocols: routing protocols and routable protocols, common routing protocols, IGP and EGP, distance vectors and link states, and measurement standards for routing protocols

RIP: RIP features, working principles, differences and compatibility between RIPv2 and RIPv1, and RIP defects

OSPF Basics: OSPF features, basic working processes, DR election, LSA and LSDB, and domain-based OSPF

Configuring a Secure Branch Network

ACLBased Packet Filtering: functions, types, and working principle of ACLs, application scenarios of ACLs, and packet filtering on firewalls using ACLs

Network Address Translation (NAT): functions and types of NAT, and working principles of Basic NAT/NAPT/Easy IP/NAT Server/NAT ALG

WAN Access and Interconnection

HDLC: functions and features of HDLC, and Keepalive mechanism

PPP: PPP functions and features, LCP and NCP, PPP session establishment process, PAP and CHAP authentication, PPP MP principles and various configuration methods

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Note:

The information provided in this document is for reference only and H3C reserves the rights to adjust the questions, time, and scores without notifying candidates.

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