INTRODUCTION TO NETWORKING CONCEPTS PRACTICE TEST (SAMPLE)

STUDY GUIDE

SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://introtonetworkingconcepts.examzify.com

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

SAMPLE

Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

SAMPLE

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

SAMPLE

Questions

SAMPLE

1. **In a switched Ethernet network, which statement about collision domains is correct?**

   A. A collision domain spans multiple switches.

   B. In switched Ethernet, each switch port creates its own collision domain.

   C. Collision domains disappear on all networks.

   D. Routers create collision domains.

2. **Which tool is a protocol analyzer commonly used to capture and inspect network packets?**

   A. tcpdump

   B. tracert

   C. nslookup

   D. arp

3. **Which command shows information about active ports and their state across Windows, macOS, and Linux?**

   A. Arp

   B. Netstat

   C. Route

   D. Whois

4. **In the OSI model, at which layer does a router primarily operate to forward packets between networks?**

   A. Network

   B. Physical

   C. Data Link

   D. Transport

5. **Why is DNS caching important?**

   A. Increases DNS query traffic by forcing remote lookups.

   B. Eliminates the need for DNS servers.

   C. Reduces latency and DNS query traffic by storing recently resolved names locally.

   D. Only caches NXDOMAIN responses.

SAMPLE

6. Which cloud service model provides software as a service that you access over the internet with no installation?

A. IaaS

B. PaaS

C. SaaS

D. DaaS

7. Which tool displays TCP/IP packets and other network packets being transmitted for troubleshooting, acting as a protocol analyzer?

A. tcpdump

B. wireshark

C. nc

D. ssh

8. On Linux systems, which command is commonly used to trace the route to a destination?

A. traceroute

B. ping

C. tracert

D. ipconfig

9. Which OSI layer is associated with devices such as NICs and wireless network adapters for frame delivery?

A. Data Link Layer

B. Physical Layer

C. Network Layer

D. Transport Layer

10. Which network device operates at the network layer to route packets between networks using IP addresses?

A. Hub

B. Switch

C. Bridge

D. Router

SAMPLE

Answers

SAMPLE

1. B
2. A
3. B
4. A
5. C
6. C
7. A
8. A
9. A
10. D

SAMPLE

Explanations

SAMPLE

1. In a switched Ethernet network, which statement about collision domains is correct?

A. A collision domain spans multiple switches.

B. In switched Ethernet, each switch port creates its own collision domain.

C. Collision domains disappear on all networks.

D. Routers create collision domains.

In switched Ethernet the idea of microsegmentation is at work: each switch port creates its own collision domain. That means the link from the switch to a device on one port is isolated from the links on other ports, so collisions cannot occur across different ports. In practice, many modern switches operate in full duplex, which also means no collisions happen on a link, reinforcing that each port acts as its own collision domain. The other statements conflict with how switches partition collision domains: a collision domain does not span multiple switches, collision domains don't disappear on all networks, and while routers do create separate collision domains at their interfaces, the question is specifically describing switched Ethernet behavior, where per-port collision domains is the defining concept.

2. Which tool is a protocol analyzer commonly used to capture and inspect network packets?

A. tcpdump

B. tracert

C. nslookup

D. arp

Capturing and examining the details of network traffic is what a protocol analyzer does. tcpdump is a widely used command-line protocol analyzer that captures packets on a network interface and decodes them into readable headers and payload information. It lets you apply filters to limit what you capture, making it practical for diagnosing issues or understanding traffic flows, and you can save captures for later analysis. Tracert (trace route) shows the path packets take across the network by sending probes and recording each hop; it doesn't capture and display live packet contents. Nslookup queries DNS to resolve domain names to IP addresses or vice versa, not protocol contents. Arp resolves IP addresses to MAC addresses on the local network and does not provide packet capture or inspection. So for capturing and inspecting packets, tcpdump is the best fit.

3. Which command shows information about active ports and their state across Windows, macOS, and Linux?

A. Arp

B. Netstat

C. Route

D. Whois

Netstat is the command that reveals information about active ports and their state across Windows, macOS, and Linux. It lists open sockets, showing local and remote addresses and port numbers, along with the connection state such as LISTENING for ports waiting for connections or ESTABLISHED for active connections. This lets you quickly see which services are listening on which ports and which connections are currently in use, regardless of the operating system. Other commands have different purposes: Arp maps IP addresses to MAC addresses, Route displays the routing table, and Whois looks up domain ownership information, so they don't provide the port-and-state view that Netstat does.

SAMPLE

4. In the OSI model, at which layer does a router primarily operate to forward packets between networks?

A. Network

B. Physical

C. Data Link

D. Transport

Routers operate at the Network layer, where the key job is moving data between different networks. They inspect the destination IP address in each packet and use routing tables to decide the next hop toward the destination. This layer provides logical addressing and path selection, which is exactly what a router does when connecting multiple networks—finding the best route and forwarding the packet along that path. The other layers don't handle inter-network routing: the Physical layer is about the actual transmission of raw bits over a medium; the Data Link layer (which includes switches) forwards frames within a single local network using MAC addresses; the Transport layer deals with end-to-end data delivery, reliability, and port numbers, not routing decisions.

5. Why is DNS caching important?

A. Increases DNS query traffic by forcing remote lookups.

B. Eliminates the need for DNS servers.

C. Reduces latency and DNS query traffic by storing recently resolved names locally.

D. Only caches NXDOMAIN responses.

Caching DNS responses stores recently resolved domain names and their IP addresses so future requests can be answered quickly without repeating the full lookup. When a client asks for a domain, the resolver first checks its local cache. If the entry is still valid, the response is returned right away, cutting latency because there's no extra network round-trip to upstream DNS servers. This also lowers overall DNS query traffic since repeated requests for the same domain don't have to reach remote servers each time. Each cached entry has a time-to-live value that governs how long it stays valid; once it expires, a new lookup is performed to refresh the information. While caches may store negative results in some cases, the main benefit is speeding up responses and reducing network load by keeping valid resolutions locally.

6. Which cloud service model provides software as a service that you access over the internet with no installation?

A. IaaS

B. PaaS

C. SaaS

D. DaaS

Software you access over the internet with no local installation is provided as a service in this model. You typically use it through a web browser or a lightweight client, and the provider hosts the application, handles updates, security, and maintenance. Because the software is delivered as a service, there's no need to install or manage it on your device. This contrasts with other models where you manage more of the underlying layers. Infrastructures-as-a-service offers raw computing resources like virtual machines and storage that you configure and maintain. Platform-as-a-service provides a managed environment to develop and run your own applications, while you still manage your code and data. Desktop or data services deliver virtual desktops or data resources rather than a ready-to-use software application.

SAMPLE

7. Which tool displays TCP/IP packets and other network packets being transmitted for troubleshooting, acting as a protocol analyzer?

A. tcpdump

B. wireshark

C. nc

D. ssh

Capturing and displaying network traffic in real time is what a protocol analyzer does to help troubleshoot issues. A practical tool for this role is tcpdump because it runs on the command line, is lightweight, and immediately shows the packets that traverse an interface. It prints concise, real-time summaries of each packet, including the protocol, source and destination addresses and ports, and packet length, which helps you spot misconfigurations, dropped packets, or unexpected traffic right away. You can adjust the level of detail with verbose options and even save the capture to a file (pcap) for later analysis with a GUI tool like Wireshark if deeper inspection is needed. While Wireshark also analyzes packets, its graphical interface makes it more suited to thorough, post-capture analysis rather than quick, on-the-fly diagnostics in a command-line environment. Netcat isn't built for packet inspection, and SSH is for secure remote access rather than traffic analysis.

8. On Linux systems, which command is commonly used to trace the route to a destination?

A. traceroute

B. ping

C. tracert

D. ipconfig

Traceroute is the tool used on Linux to map the path packets take to a destination. It works by sending probe packets with gradually increasing TTL values; as each hop decrements the TTL to zero, the router sends back an ICMP Time Exceeded message, letting traceroute reveal the address of each router along the route and the time to reach it. This shows the route and helps diagnose where delays or failures occur between your machine and the destination. Ping, in contrast, tests reachability and measures round trip time to a single host but doesn't expose the intermediate hops. Tracert is the Windows version of this functionality, not a standard Linux command, and ipconfig displays network configuration rather than route information (Linux uses tools like ifconfig or ip for that).

9. Which OSI layer is associated with devices such as NICs and wireless network adapters for frame delivery?

A. Data Link Layer

B. Physical Layer

C. Network Layer

D. Transport Layer

Frame delivery on a local network is handled by the Data Link Layer. This layer wraps data into frames, uses MAC addresses to identify devices on the same network, and adds error detection to verify frames after transmission. Wireless and wired NICs implement this layer by taking frames from the Data Link Layer, placing them on the physical medium, and delivering incoming frames to the correct device on the local network. The Physical Layer is about the actual signaling on the medium, the Network Layer handles routing across networks, and the Transport Layer deals with end-to-end communication. So, framing, addressing, and local delivery to NICs and wireless adapters belong to the Data Link Layer.

SAMPLE

10. Which network device operates at the network layer to route packets between networks using IP addresses?

A. Hub

B. Switch

C. Bridge

D. Router

Routing between different networks relies on IP addressing, which is handled at the network layer. A router operates at this layer, using destination IP addresses and its routing table to decide the next hop toward the destination network. It can connect multiple networks and forward packets across network boundaries, making decisions about where to send each packet based on the destination IP. A hub just repeats electrical signals at the physical layer, with no addressing or routing. A switch primarily forwards frames within a single local area network using MAC addresses at the data link layer. A bridge also works at the data link layer, segmenting a network and forwarding frames based on MAC addresses, typically within the same network. So, the device that routes packets between networks using IP addresses is the router.

SAMPLE

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://introtonetworkingconcepts.examzify.com

We wish you the very best on your exam journey. You've got this!

SAMPLE