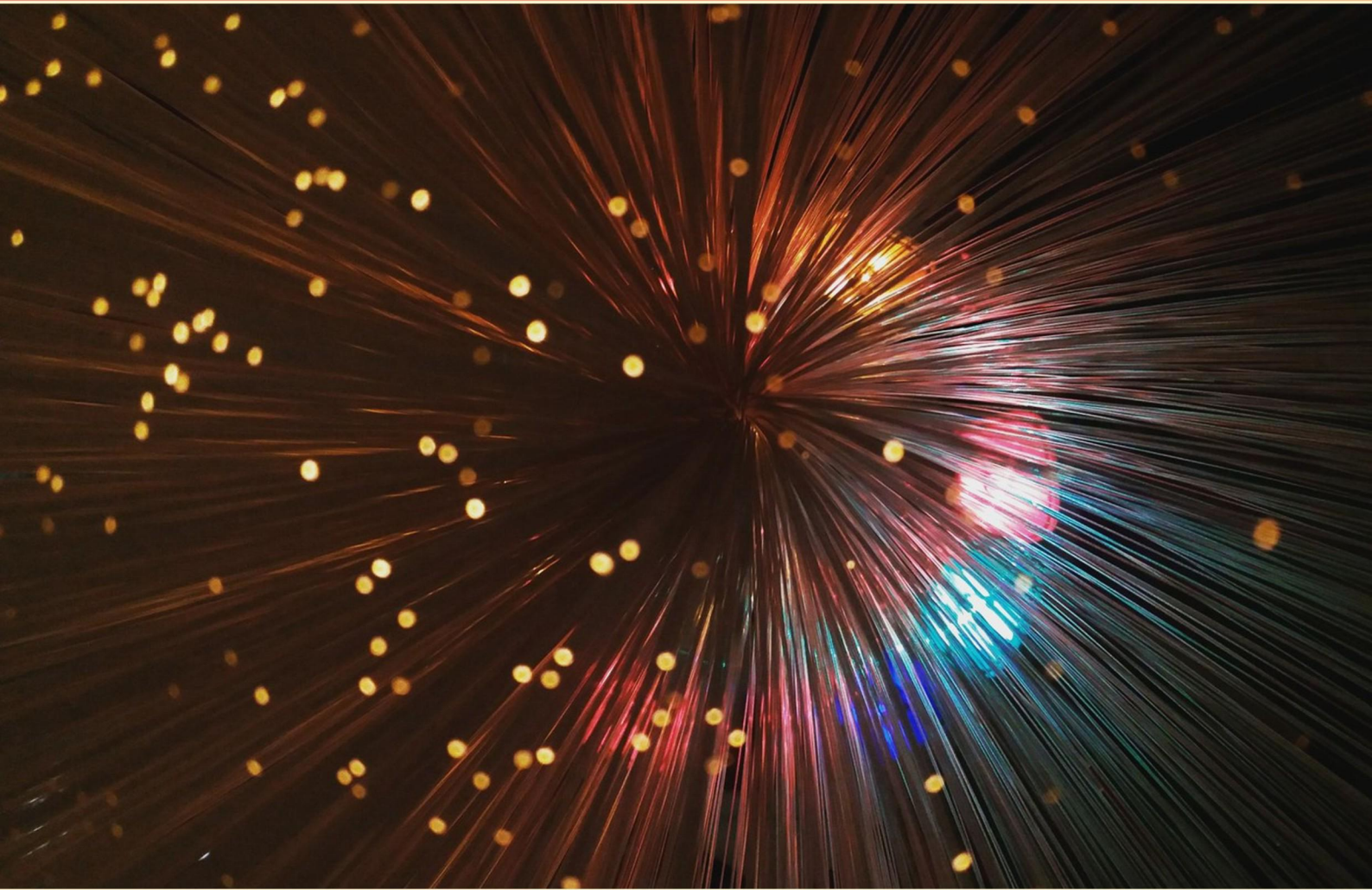


TELECOM AND NETWORKING TEST 1 PRACTICE (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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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.

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!

Questions

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- 1. Which term describes non-information bits that help manage framing and synchronization?**
 - A. Overhead Bits
 - B. Information Bits
 - C. Control Bits
 - D. Synchronization Bits

- 2. What is the size of the TCP sequence number field?**
 - A. 32 bits
 - B. 16 bits
 - C. 64 bits
 - D. 128 bits

- 3. Which IoT protocol uses RESTful semantics over UDP and supports resource-constrained devices?**
 - A. MQTT
 - B. AMQP
 - C. HTTP
 - D. CoAP

- 4. What does STUN do in NAT traversal for VoIP and video conferencing?**
 - A. It coordinates candidates for connectivity using ICE.
 - B. It relays media when direct paths fail.
 - C. It discovers public endpoints.
 - D. It encrypts media streams.

- 5. Which statement correctly identifies the role of RTP in VoIP?**
 - A. SIP signaling protocols are used for media transport.
 - B. RTP carries control information for the call.
 - C. RTP carries audio/video data.
 - D. TCP provides the primary transport for media streams.

- 6. Which of the following is a private IPv4 address range defined by RFC 1918?**
- A. 172.15.0.0/16
 - B. 192.0.2.0/24
 - C. 198.51.100.0/24
 - D. 10.0.0.0/8
- 7. In the TCP/IP model, which layer corresponds to the OSI Session and Presentation layers?**
- A. Application layer.
 - B. Transport layer.
 - C. Network layer.
 - D. Data Link layer.
- 8. In shared networks, computers wait for the circuit to be free and may collide if two transmit simultaneously. This is known as what?**
- A. Contention
 - B. Token Passing
 - C. Scheduling
 - D. Arbitration
- 9. Non-information bits like start and end indicators for characters and packets are collectively called what?**
- A. Overhead Bits
 - B. Information Bits
 - C. Status Bits
 - D. Parity Bits
- 10. What does the acronym HTTP stand for?**
- A. Hypertext Transfer Protocol
 - B. Hyperlink Transfer Protocol
 - C. Hypertext Transmission Protocol
 - D. Hypertext Transfer Process

Answers

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

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Explanations

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1. Which term describes non-information bits that help manage framing and synchronization?

- A. Overhead Bits**
- B. Information Bits
- C. Control Bits
- D. Synchronization Bits

In digital transmission, payload is the user data, while the rest of the bits are overhead. Overhead bits exist to support the structure and timing of the transmission: they mark frame boundaries, carry headers and trailers, and help the receiver stay synchronized with the sender's clock. Preambles, frame delimiters, and related control fields are all overhead that enables framing and synchronization without carrying actual user information. While synchronization bits and control bits are specific kinds of overhead, the broad term that describes all non-information bits used to manage framing and timing is overhead bits.

2. What is the size of the TCP sequence number field?

- A. 32 bits**
- B. 16 bits
- C. 64 bits
- D. 128 bits

TCP uses a 32-bit sequence number field to label the position of each byte in the data stream. That means the sequence space runs from 0 up to 2^{32} minus 1, allowing roughly 4 billion bytes per connection before the numbers wrap around. When the maximum is reached, the numbers wrap to zero and TCP comparisons are done using modular arithmetic to keep the ordering correct. This size strikes a practical balance: it provides a large enough range for typical connections while keeping the header compact. A 16-bit field would cap at about 64 KB, which would severely limit long-lived connections, while 64- or 128-bit fields would be unnecessarily large and waste header space.

3. Which IoT protocol uses RESTful semantics over UDP and supports resource-constrained devices?

- A. MQTT
- B. AMQP
- C. HTTP
- D. CoAP**

A protocol designed for constrained devices that brings REST-like interactions to tiny networks and runs over UDP. That description points to CoAP, the Constrained Application Protocol. CoAP mirrors REST by using resources identified by URIs and standard methods such as GET, POST, PUT, and DELETE to interact with those resources, enabling a simple, web-like model for IoT devices. Running over UDP keeps header overhead small and avoids the heavyweight connection setup of TCP, which is crucial when devices have limited power and memory. CoAP also adds lightweight reliability through confirmable and non-confirmable messages and supports multicast, making it efficient for group communication in IoT scenarios. In contrast, MQTT relies on a publish/subscribe model over TCP, which is great for scalable messaging but not RESTful and not UDP-based. AMQP is a feature-rich brokered protocol over TCP with more overhead. HTTP follows REST semantics but operates over TCP, not UDP, and is less suited to constrained environments. Hence, CoAP is the best fit for RESTful semantics over UDP on resource-constrained devices.

4. What does STUN do in NAT traversal for VoIP and video conferencing?

- A. It coordinates candidates for connectivity using ICE.
- B. It relays media when direct paths fail.
- C. It discovers public endpoints.**
- D. It encrypts media streams.

In NAT traversal for VoIP and video conferencing, STUN's main job is to reveal how your device appears to the outside world. When you're behind a NAT, your device uses a private IP address, so the remote party still needs to know the public address and port through which you can be reached. A STUN client sends a binding request to a public STUN server, and the server replies with the mapped public IP address and port that it observes for your traffic. That information lets signaling and peers know how to reach you, enabling the setup of a direct path when possible. It's not about coordinating candidate gathering (that's ICE's job), nor about relaying media (that would be TURN or a media relay), nor about encrypting the media (encryption is separate).

5. Which statement correctly identifies the role of RTP in VoIP?

- A. SIP signaling protocols are used for media transport.
- B. RTP carries control information for the call.
- C. RTP carries audio/video data.**
- D. TCP provides the primary transport for media streams.

RTP carries the actual audio or video data in real-time for a VoIP call, providing the payload along with timing and sequencing information so playback stays synchronized and smooth. While signaling (to set up and control the call) is handled by other protocols, RTP is focused on delivering the media stream itself. It uses timestamps and sequence numbers to help the receiver reconstruct the timing and order of packets, which is essential for real-time audio/video. Control and quality feedback about the media delivery come from RTCP, which operates alongside RTP but does not carry the media payload. The media traffic is typically carried over UDP to minimize latency; using TCP would introduce delays due to its retransmissions and buffering, hurting real-time playback. So the statement that correctly identifies RTP's role is that it carries audio and video data.

6. Which of the following is a private IPv4 address range defined by RFC 1918?

- A. 172.15.0.0/16
- B. 192.0.2.0/24
- C. 198.51.100.0/24
- D. 10.0.0.0/8**

Private IPv4 addresses, as defined by RFC 1918, are non-routable on the Internet and are meant for internal networks. The three blocks allocated for private use are 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16. Among the options, 10.0.0.0/8 falls exactly within that private range, covering 10.0.0.0 through 10.255.255.255, making it suitable for private addressing. The other choices don't fit: 172.15.0.0/16 sits outside the 172.16.0.0/12 private block, so it's public; 192.0.2.0/24 and 198.51.100.0/24 are designated test/documentation networks, not private address spaces. Therefore, the correct private RFC 1918 range here is 10.0.0.0/8.

7. In the TCP/IP model, which layer corresponds to the OSI Session and Presentation layers?

- A. Application layer.**
- B. Transport layer.
- C. Network layer.
- D. Data Link layer.

In TCP/IP, the Session and Presentation functions aren't separate layers; they're handled within the Application layer. The Application layer covers high-level protocols used by software and includes how data is represented (encoding/formatting) and how sessions or dialogs are managed within those protocols. For instance, application protocols like HTTP, FTP, or DNS perform their own session handling and data representation needs, and security or encryption (like TLS) is implemented at this layer as part of the application's communication. The Transport layer focuses on end-to-end delivery, reliability, and ordering; the Network layer handles routing and addressing; and the Data Link layer manages access to the physical network. So, the OSI Session and Presentation responsibilities map to the Application layer in TCP/IP.

8. In shared networks, computers wait for the circuit to be free and may collide if two transmit simultaneously. This is known as what?

- A. Contention**
- B. Token Passing
- C. Scheduling
- D. Arbitration

Contention is the situation in a shared network where multiple devices try to use the same communication medium at the same time. Because the medium isn't dedicated to a single transmitter, devices wait for it to be free; if two begin transmitting while the channel is still considered idle, their signals collide and the data must be retried. This is exactly what happens in CSMA/CD networks like Ethernet. Token passing, scheduling, and arbitration describe other access methods or conflict-resolution mechanisms, but the scenario of simultaneous transmission leading to collisions is the hallmark of contention.

9. Non-information bits like start and end indicators for characters and packets are collectively called what?

- A. Overhead Bits**
- B. Information Bits
- C. Status Bits
- D. Parity Bits

Bits that don't carry user data but help organize and control the transmission are overhead bits. Start and end indicators for characters and packets fall into this category because they frame the data, tell the receiver where a unit begins and ends, and help maintain synchronization. They don't convey payload, which is why they aren't information bits. Parity bits are specific error-detection bits inside frames, not the general framing helpers, and status bits reflect conditions or states rather than the basic framing function. So the term that best fits these indicators is overhead bits.

10. What does the acronym HTTP stand for?

- A. Hypertext Transfer Protocol
- B. Hyperlink Transfer Protocol
- C. Hypertext Transmission Protocol
- D. Hypertext Transfer Process

HTTP stands for Hypertext Transfer Protocol. The name captures what the web uses to move information: hypertext refers to the linked documents you browse, Transfer means moving that data between your device and a server, and Protocol indicates there's a defined set of rules guiding the communication between client and server. The term Hypertext is the standard one for web documents, whereas Hyperlink would refer to the clickable link inside a document, not the communication rule. Transmission and Process aren't the established terms used for this set of rules, so they don't fit the acronym. (Note: when you see HTTPS, it's the same protocol with encryption added for security.)

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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://telecomandnetworking1.examzify.com>

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

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