

# Information Systems Technician First Class (IT1) Advancement Practice Exam (Sample)

## Study Guide



**Everything you need from our exam experts!**

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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. What year was the GMDSS implemented?**
  - A. 1995**
  - B. 1998**
  - C. 1999**
  - D. 2000**
  
- 2. What type of network connects each component directly to a central computer or network server?**
  - A. Star**
  - B. Bus**
  - C. Mesh**
  - D. Tree**
  
- 3. How does implementing EMCON practices benefit military forces?**
  - A. By increasing their operational speed**
  - B. By masking their presence from enemies**
  - C. By boosting morale among troops**
  - D. By enhancing their logistical capabilities**
  
- 4. What does attenuation refer to in optical fiber communication?**
  - A. The speed of light in an optical medium**
  - B. The ability to capture light**
  - C. The loss of power from transmitter to receiver**
  - D. The layer surrounding the core of the fiber**
  
- 5. Which of the following is NOT a characteristic of tactical communications?**
  - A. Self-contained nature**
  - B. Global communication capacity**
  - C. Operation at a command level**
  - D. Mission-specific functionality**

- 6. What is the range of frequencies classifying radio waves?**
- A. 0.1 Hz - 20 kHz**
  - B. 3 kHz - 300 GHz**
  - C. 300 GHz - 3 THz**
  - D. 200 Hz - 1 MHz**
- 7. Which type of communication system allows operational missions to be conducted effectively at the command level?**
- A. Global communication systems**
  - B. Tactical communication systems**
  - C. Email communication services**
  - D. Cloud-based systems**
- 8. What is the purpose of Digital Selective Calling (DSC)?**
- A. To automate the initial call for distress and safety alerts**
  - B. To communicate weather conditions at sea**
  - C. To transmit routine btraffic information**
  - D. To allow for voice calls only**
- 9. What technology does GMDSS employ for distress signaling?**
- A. Only radio waves**
  - B. Satellite and digital selective calling**
  - C. Fiber optics**
  - D. Ground-based systems exclusively**
- 10. Which code is most commonly used in modern printing telegraphy?**
- A. ASCII Code**
  - B. ETX Code**
  - C. Baudot Code**
  - D. Morse Code**

## Answers

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

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## **Explanations**

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**1. What year was the GMDSS implemented?**

- A. 1995
- B. 1998
- C. 1999**
- D. 2000

The Global Maritime Distress and Safety System (GMDSS) was implemented in 1999. This system was established as part of the International Maritime Organization (IMO) regulations to enhance the safety of life at sea by ensuring that ships at sea can communicate distress signals effectively. The GMDSS allows for a wide range of communication methods, including distress alerts via satellite and terrestrial radio systems, to ensure that ships in distress can receive assistance quickly and efficiently. The implementation of GMDSS in 1999 marked a significant modernization of maritime safety communication, replacing older systems that were less reliable. This improvement represented a vital step in ensuring that ships, regardless of their location, could receive timely help in emergencies, ultimately saving lives at sea.

**2. What type of network connects each component directly to a central computer or network server?**

- A. Star**
- B. Bus
- C. Mesh
- D. Tree

The correct answer is a star network. In a star network topology, all devices are connected to a central hub or switch, which serves as a point of communication for the network. Each peripheral device communicates with the central device, which facilitates data transfer and enables easier management of the network. The central device is responsible for controlling the flow of information, which helps isolate potential issues—if one connection fails, it does not affect the rest of the network. In contrast, a bus topology connects all devices to a single communication line, meaning that if that line fails, the entire network is disrupted. A mesh topology involves each device connecting to multiple other devices, providing redundancy and improved reliability, but it is more complex and costly to set up. A tree topology, often considered a hybrid of star and bus topologies, is structured with groups of star-configured networks plugged into a linear bus backbone but does not define direct connections to a single central hub like in a true star configuration. Thus, the star topology is clearly characterized by direct connections to a central component, making it the correct answer.

### 3. How does implementing EMCON practices benefit military forces?

- A. By increasing their operational speed
- B. By masking their presence from enemies**
- C. By boosting morale among troops
- D. By enhancing their logistical capabilities

Implementing Emission Control (EMCON) practices benefits military forces primarily by masking their presence from enemies. EMCON involves the deliberate management and control of electronic emissions from equipment and personnel to minimize detection by enemy forces. By limiting the use of radar, radio communications, and other electronic transmissions, military units can operate more stealthily and reduce their electronic signature, making it harder for adversaries to locate and target them. This is particularly crucial in combat scenarios, where being "invisible" to enemy detection systems can provide a significant tactical advantage. By concealing their electronic activities, military forces can conduct operations with a lower risk of engagement or detection, leading to more successful mission outcomes while also ensuring the safety of personnel and equipment. The other options, while they may reflect aspects of military operations, do not directly relate to the fundamental purpose of EMCON practices. Enhancing operational speed, boosting troop morale, and improving logistical capabilities involve different strategies and considerations that are not the primary focus of EMCON's intention to obscure electronic signals from adversaries.

### 4. What does attenuation refer to in optical fiber communication?

- A. The speed of light in an optical medium
- B. The ability to capture light
- C. The loss of power from transmitter to receiver**
- D. The layer surrounding the core of the fiber

Attenuation in optical fiber communication refers to the loss of signal strength as the light travels through the fiber. This loss can occur due to various factors, including scattering of light within the fiber material and absorption by the fiber itself. Over long distances, attenuation can significantly affect the performance of the optical communication system, leading to a weaker signal at the receiver end. Therefore, understanding and measuring attenuation is crucial for designing effective communication systems, ensuring that the transmitted signal maintains sufficient strength to be properly interpreted by the receiver. The other options, while related to optical fiber communication, do not correctly define attenuation. The speed of light in an optical medium pertains to the propagation speed within the fiber, capturing light refers to the fiber's ability to gather light from various sources, and the layer surrounding the core describes the structure of the fiber, specifically the cladding, but these aspects do not directly address the concept of signal power loss during transmission.

**5. Which of the following is NOT a characteristic of tactical communications?**

- A. Self-contained nature**
- B. Global communication capacity**
- C. Operation at a command level**
- D. Mission-specific functionality**

The correct answer is the characteristic that represents global communication capacity. Tactical communications are typically designed for specific operations and engagements rather than broad-spectrum or global coverage. These communications often emphasize localized, self-contained networks that can function in the field, tailored towards immediate operational needs and providing mission-specific functionalities. Tactical communication systems are generally focused on enabling communication among forces at a command level, ensuring that teams can coordinate and execute their objectives effectively within a designated area. The emphasis is on efficient, reliable, and secure communication tailored to the mission's requirements rather than on a global scale. This makes tactical systems distinct from strategic communication systems, which are designed to support international or global operations.

**6. What is the range of frequencies classifying radio waves?**

- A. 0.1 Hz - 20 kHz**
- B. 3 kHz - 300 GHz**
- C. 300 GHz - 3 THz**
- D. 200 Hz - 1 MHz**

Radio waves are classified within a certain range of frequencies that fall between 3 kHz and 300 GHz. This range encompasses various types of communication technologies, including AM and FM radio, television broadcasts, and mobile communications. The classification is based on the electromagnetic spectrum, where radio waves occupy the lower frequency end, making them suitable for transmission over long distances. The range specified in the correct choice is significant because it outlines the frequencies that facilitate different forms of wireless communication. For instance, frequencies below 30 MHz are typically used for AM radio broadcasts, while frequencies in the range of 100 MHz to 2.5 GHz are used for FM radio and television broadcasts. Frequencies above 2.5 GHz are used for various modern communication technologies including microwave communication and satellite transmissions. Understanding the characteristics and applications of this frequency range is crucial for professionals in the field of information systems. It enables the design, implementation, and troubleshooting of communication systems that utilize radio wave technologies.

**7. Which type of communication system allows operational missions to be conducted effectively at the command level?**

- A. Global communication systems**
- B. Tactical communication systems**
- C. Email communication services**
- D. Cloud-based systems**

Tactical communication systems are specifically designed to support operational missions at the command level, enabling real-time communications that are vital for effective decision-making and coordination in dynamic environments. These systems prioritize secure, reliable, and timely exchanges of information among military units, which is essential when executing missions where situational awareness and immediate command responses can impact success. Unlike global communication systems, which may facilitate broader communications but lack the immediacy and agility of tactical systems, the latter focuses on situational needs at a command level. Email communication services, while useful for non-time-sensitive communication, do not provide the necessary immediacy and security needed in operational settings. Similarly, cloud-based systems, though beneficial for data storage and collaboration, may not offer the robust, low-latency requirements that tactical communications entail in mission-critical scenarios. Thus, tactical communication systems are the most appropriate choice for supporting effective mission operations at command levels.

**8. What is the purpose of Digital Selective Calling (DSC)?**

- A. To automate the initial call for distress and safety alerts**
- B. To communicate weather conditions at sea**
- C. To transmit routine traffic information**
- D. To allow for voice calls only**

Digital Selective Calling (DSC) is designed primarily to automate the initial call for distress and safety alerts in maritime communications. Its primary purpose is to enable mariners to send distress signals and safety messages without requiring manual intervention, which can be crucial during emergencies when time is of the essence or when operators may be under stress. DSC utilizes a specialized digital signaling method that simplifies the process of alerting nearby vessels or shore stations, making maritime communication more efficient and reliable. This capability enhances safety at sea by ensuring that alerts can be sent quickly and accurately, allowing for a faster response from rescuers or other vessels. In contrast to this, the other choices do not align with the primary function of DSC; while there are systems for weather communication, transmitting routine traffic information, and voice calls, those do not capture the essence of the automatic distress alerting feature that DSC primarily provides.

**9. What technology does GMDSS employ for distress signaling?**

- A. Only radio waves
- B. Satellite and digital selective calling**
- C. Fiber optics
- D. Ground-based systems exclusively

The correct choice is reflected in the use of advanced communication technologies within the Global Maritime Distress and Safety System (GMDSS). This system is primarily designed for vessel safety and distress signaling at sea, incorporating both satellite communication and digital selective calling (DSC) as its key components. Digital selective calling allows a ship in distress to automatically alert the appropriate rescue services, providing critical information such as the vessel's identity and position. By leveraging satellites, GMDSS can ensure that distress signals are communicated over vast distances and are received even when vessels are beyond the range of traditional land-based radio stations. This combination of satellite technology and digital communication methods enhances the reliability and speed of distress signaling and improves the overall safety of maritime navigation. Other technologies mentioned, such as radio waves, fiber optics, and ground-based systems, do not fully encompass the integrated approach that GMDSS offers. While radio is a traditional signaling method and may play a role in certain GMDSS functions, it does not capture the full capabilities of the system, particularly regarding automation and global reach. Fiber optics and ground-based systems also lack the necessary comprehensive global coverage and specificity required for effective maritime distress signaling.

**10. Which code is most commonly used in modern printing telegraphy?**

- A. ASCII Code
- B. ETX Code
- C. Baudot Code**
- D. Morse Code

The most commonly used code in modern printing telegraphy is the Baudot Code. This code was developed in the late 19th century specifically for telegraphy and has the advantage of allowing the transmission of characters with a limited number of bits, significantly enhancing the efficiency of data communication. Baudot Code operates by using a five-bit code to represent different characters, which allows for the transmission of a variety of textual data. Its design is particularly well-suited for systems where space and bandwidth are limited, making it a preferred option for telegraphic communications, especially in practical applications. In contrast, ASCII (American Standard Code for Information Interchange) is more commonly used in modern computer systems for text encoding, but it is not specifically tailored for telegraphic use. Morse Code, while historically significant in the realm of telegraphy, relies on dots and dashes to convey information and is not as efficient for high-speed printing systems. ETX Code relates more to control signals in data transmission rather than character encoding for telegraphs.

## 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](mailto:hello@examzify.com).**

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

**<https://it1advancement.examzify.com>**

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

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