# NAVY AT(O) – AVIATION ELECTRONICS TECHNICIAN (ORDINANCE) SECOND CLASS ADVANCEMENT PRACTICE EXAM (SAMPLE)

## STUDY GUIDE



## SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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# 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!

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# Questions

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**1. What is the major method for testing shorts in transformers, motor windings, and capacitors?**

A. Using a multimeter for voltage measurement

B. Taking resistance measurements and comparing them with schematics

C. Performing thermal analysis

D. Conducting visual inspections

**2. What are the four major types of instructions in the control section?**

A. Transfer, Load, Store, Execute

B. Transfer, Arithmetic, Logic, Control

C. Compute, Store, Transmit, Receive

D. Parallel, Serial, Control, Input

**3. Which statement best describes the main concern regarding pollution produced by the Navy?**

A. It is mostly benign and easily managed

B. It has significant consequences for both marine and human life

C. It is primarily a logistical problem for shipping

D. It affects only ships and not onshore facilities

**4. Sonobuoys that transmit an acoustic pulse and detect a resulting echo are classified as what type of sonobuoy?**

A. Passive sonobuoys

B. Active sonobuoys

C. Telemetry sonobuoys

D. Reconnaissance sonobuoys

**5. What is an example of nonvolatile memory?**

A. Dynamic RAM

B. Magnetic core storage

C. Static RAM

D. Cache memory

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**6. What factors must be considered when substituting a resistor?**

A. Resistance value only

B. Ohmic value, wattage rating, tolerance, physical dimensions, and type of construction

C. The color of the resistor

D. Length of the resistor leads

**7. Bubble memory consists of what?**

A. A layered structure of magnetic disks

B. A very thin crystal made of semiconductor material

C. Liquid-based storage media

D. Optical discs with embedded lasers

**8. What does the acronym IFF stand for?**

A. Identification Friend or Foe

B. Intelligence Flight Forecast

C. Interference Frequency Filter

D. Integrated Field Function

**9. Which method of producing voltage involves the movement of friction?**

A. Chemical action

B. Light

C. Friction

D. Heat

**10. A semiconductor memory consists of what?**

A. Solid-state drives containing magnetic disks

B. Hundreds of thousands of tiny electronic circuits etched on a silicon chip

C. Optical storage media

D. Long magnetic tapes

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# Answers

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

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# Explanations

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## 1. What is the major method for testing shorts in transformers, motor windings, and capacitors?

A. Using a multimeter for voltage measurement

B. Taking resistance measurements and comparing them with schematics

C. Performing thermal analysis

D. Conducting visual inspections

*Taking resistance measurements and comparing them with schematics is the major method for testing shorts in transformers, motor windings, and capacitors because it allows for an accurate assessment of the electrical characteristics of these components. By measuring the resistance in various windings and comparing it to the expected values provided in the schematics, technicians can identify low resistance areas that may indicate a short circuit. This approach relies on the principle that shorts typically present with significantly lower resistance than normal operation, and such discrepancies can help diagnose issues effectively. In addition, this method enables the technician to assess not just the presence of a short, but also the condition of the components in relation to their design specifications. This is critical for ensuring that the components are functioning properly and safely within the intended parameters. Other methods, while important for general maintenance and troubleshooting, do not specifically focus on detecting shorts in the same precise manner. For instance, using a multimeter for voltage measurement may provide insights into operational status, but it does not offer direct information regarding short circuits. Performing thermal analysis can identify overheating components due to resistance issues but doesn't pinpoint shorts specifically. Visual inspections can help in noticing physical damage but are not conclusive for electrical testing. Thus, measuring resistance against schematics remains the authoritative method for*

## 2. What are the four major types of instructions in the control section?

A. Transfer, Load, Store, Execute

B. Transfer, Arithmetic, Logic, Control

C. Compute, Store, Transmit, Receive

D. Parallel, Serial, Control, Input

*The four major types of instructions in the control section are categorized as Transfer, Arithmetic, Logic, and Control. This classification is essential in understanding how a computer processes data and performs operations. Transfer instructions are responsible for moving data from one location to another, whether between registers or between memory locations. These are fundamental for ensuring that the system can access the necessary data for processing. Arithmetic instructions perform mathematical operations, such as addition, subtraction, multiplication, and division. They are crucial for executing calculations that are often required in various applications. Logic instructions handle logical operations, such as AND, OR, NOT, and XOR, which are important for decision-making processes within the computer. These instructions allow for conditional operations based on the results of previous computations. Control instructions manage the flow of the program, including branching and looping. They are vital for implementing conditional processing and ensuring the program follows a specific sequence. Understanding these categories helps in comprehending how processors operate and how instructions are executed in computing systems, making option B the correct choice.*

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**3. Which statement best describes the main concern regarding pollution produced by the Navy?**

A. It is mostly benign and easily managed

B. It has significant consequences for both marine and human life

C. It is primarily a logistical problem for shipping

D. It affects only ships and not onshore facilities

*The statement that pollution produced by the Navy has significant consequences for both marine and human life is accurate and reflects the critical nature of environmental responsibilities. This concern encompasses various pollutants, such as oil, hazardous materials, and chemicals that can adversely affect aquatic ecosystems, contributing to the decline of marine species and disrupting habitats. Additionally, human health can be impacted through the consumption of contaminated seafood and the degradation of coastal environments that communities rely on for recreation and economic activities. Recognizing the far-reaching effects of naval pollution underscores the importance of sustainable practices and environmental stewardship within Navy operations. It highlights the need for continuous monitoring, prevention strategies, and compliance with environmental regulations to protect ecosystems and public health. The impact extends beyond immediate operational logistics or concerns about ships, focusing on long-term ecological and societal effects.*

**4. Sonobuoys that transmit an acoustic pulse and detect a resulting echo are classified as what type of sonobuoy?**

A. Passive sonobuoys

B. Active sonobuoys

C. Telemetry sonobuoys

D. Reconnaissance sonobuoys

*The classification of sonobuoys that transmit an acoustic pulse and detect the resulting echo falls under active sonobuoys. Active sonobuoys work by emitting a sound signal into the water and then listening for any echoes that return after interacting with underwater objects, such as submarines or other marine life. This method allows for the detection and identification of objects based on the return time and characteristics of the echoes, thus providing critical information for anti-submarine warfare and other naval operations. In contrast, passive sonobuoys do not transmit sound; instead, they only listen for sounds produced by submarines or other underwater sources without generating their own signals. Telemetry sonobuoys are designed to transmit data regarding their status or environmental conditions rather than engage in echolocation. Reconnaissance sonobuoys serve a different function as well, often focused on surveillance over acoustic gathering. Therefore, the defining characteristic of transmitting a pulse and detecting echoes categorizes the sonobuoys as active.*

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## 5. What is an example of nonvolatile memory?

A. Dynamic RAM

B. Magnetic core storage

C. Static RAM

D. Cache memory

*Nonvolatile memory retains its data even when the power is turned off, making it ideal for scenarios where data integrity and persistence are critical. Magnetic core storage exemplifies nonvolatile memory because it uses magnetic materials to store bits of information. This technology, which was widely used before the advent of modern semiconductor memory, allows the information to remain stored regardless of power supply conditions. In contrast, the other types of memory listed, such as Dynamic RAM, Static RAM, and Cache memory, are all types of volatile memory. These types require a constant power supply to retain the data being processed or stored. Once power is lost, the data within them is erased, demonstrating a fundamental difference between volatile and nonvolatile memory.*

## 6. What factors must be considered when substituting a resistor?

A. Resistance value only

B. Ohmic value, wattage rating, tolerance, physical dimensions, and type of construction

C. The color of the resistor

D. Length of the resistor leads

*When substituting a resistor, it is crucial to consider multiple factors to ensure proper function and safety within the circuit. The correct answer identifies important aspects such as the ohmic value, which indicates the resistance and is essential for maintaining the circuit's intended operation. The wattage rating is also vital because it determines the maximum power the resistor can dissipate without overheating, preventing potential failure or damage. Tolerance indicates how much the resistance can vary from its stated value, which can impact the performance and reliability of the circuit. The physical dimensions are significant as they need to fit within the designated space in circuit design, and the type of construction helps determine the resistor's reliability, thermal characteristics, and suitability for specific applications. By taking all these factors into account, one can ensure that the substituted resistor will perform adequately within the existing circuit design. Simply focusing on just the resistance value or other isolated parameters could lead to improper circuit functionality or safety hazards.*

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## 7. Bubble memory consists of what?

A. A layered structure of magnetic disks

B. A very thin crystal made of semiconductor material

C. Liquid-based storage media

D. Optical discs with embedded lasers

*Bubble memory is a type of non-volatile memory technology that utilizes a very thin layer of magnetic material. This layer allows the storage of information in the form of tiny magnetic domains, or "bubbles," which can be manipulated and read using semiconductor technology. The semiconductor layer provides the necessary control and processing capabilities for managing the bubbles, making it an integral part of how bubble memory operates. The defining characteristic of bubble memory is its ability to retain data without power, combining the benefits of both magnetic storage (which preserves information) and semiconductor technology (which allows for fast data access and manipulation). This technology was particularly useful during its time for applications where data integrity and power conservation were key considerations. In contrast to bubble memory, the other options represent different forms of data storage technologies that do not align with the characteristics of bubble memory. For example, a layered structure of magnetic disks refers more to traditional hard drives, while liquid-based storage media and optical discs pertain to entirely different mechanisms of data storage unrelated to the bubble memory concept.*

## 8. What does the acronym IFF stand for?

A. Identification Friend or Foe

B. Intelligence Flight Forecast

C. Interference Frequency Filter

D. Integrated Field Function

*The acronym IFF stands for Identification Friend or Foe. This system is crucial in military aviation as it helps in distinguishing between friendly and hostile forces. IFF transponders on aircraft respond to radar signals, sending back an identification code that indicates whether the aircraft is friendly. This capability significantly enhances situational awareness and reduces the risk of friendly fire incidents during complex operations. Understanding the purpose and functionality of IFF is essential for aviation electronics technicians because it impacts the safety and effectiveness of air operations. The other options, while they might seem plausible at first glance, do not relate to this critical identification technology used in military aviation.*

## 9. Which method of producing voltage involves the movement of friction?

A. Chemical action

B. Light

C. Friction

D. Heat

*The method of producing voltage through the movement of friction is known as the triboelectric effect, which is precisely what friction generates. In this process, when two different materials come into contact and are then separated, electrons are transferred from one material to the other due to their differing tendencies to hold onto electrons. This transfer creates a voltage difference between the two materials. This principle is often demonstrated with common materials, such as rubbing a balloon on your hair. The friction causes the balloon to gain electrons, resulting in a negative charge, while your hair loses electrons and becomes positively charged. This is a direct illustration of how mechanical energy from friction is converted into electrical energy in the form of an electric charge. This understanding of voltage generation through friction is crucial in various applications, including electrostatic devices and sensors.*

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## 10. A semiconductor memory consists of what?

A. Solid-state drives containing magnetic disks

B. Hundreds of thousands of tiny electronic circuits etched on a silicon chip

C. Optical storage media

D. Long magnetic tapes

*A semiconductor memory is defined by its use of tiny electronic circuits made from semiconductor materials, primarily silicon, which allow for the storage and retrieval of data. This type of memory is integral to modern computing, as it provides faster access times and lower power consumption compared to traditional mechanical storage methods. The hundreds of thousands of circuits within a silicon chip work together to create memory cells that can hold binary data. Each memory cell is controlled by transistors that can represent a bit of information, enabling efficient and rapid data processing. In contrast, other storage options mentioned, such as solid-state drives with magnetic disks or optical storage media, do not utilize semiconductor memory in the same way. Solid-state drives rely on NAND flash memory, which is a type of semiconductor memory, but they also involve controller technology and complex architectures that go beyond the definition of semiconductor memory as standalone circuits. Optical storage media and long magnetic tapes are entirely different technologies that use physical and magnetic methods for data recording and do not involve the electronic circuits defined in semiconductor memory. Thus, the characterization of semiconductor memory as comprised of tiny electronic circuits on a silicon chip aligns perfectly with its operational principles and physical structure.*

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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:

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

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