NWT Apprenticeship Support Materials

Reading Comprehension * *Comprehension Module*

Math

Science

PARTNERS

SNAP LAKE DIAMOND PROJECT
DE BEERS

Aurora College

Northwest Territories Education, Culture and Employment

SKILLS COMPÉTENCES CANADA
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The following partner organizations have all contributed to the development of these materials:

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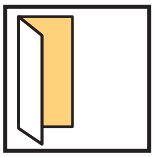
Table of Contents

Table of Contents



Introduction

This curriculum guide is intended to build the skills of individuals who are pursuing apprenticeship trades in the Northwest Territories. It is also designed to prepare people for the Northwest Territories trades entrance examination in reading comprehension. This guide is not the answer for everyone seeking to enter a trade. For some people trades entrance reading comprehension requires only a quick review of what was learned in school. For others, including those who had unsuccessful learning experiences in school, this curriculum will provide an opportunity to learn reading competencies used in trades for the first time.

The reading selections have been chosen to be "self-contained", meaning that content area knowledge is not expected. **On the exam you will answer questions that are based on your ability to read, not on your knowledge of a subject.**

The selections contain everything that a careful reader needs in order to answer the questions. The selections use vocabulary and have a level of difficulty that you will find in textbooks used in apprenticeship programs. Many of the selections are taken from practical trades related materials. This guide, as well as the curriculum guides for math and science, are based on the Alberta list of competencies for trades entrance.

Competency:
An ability that can be demonstrated.

Is Independent Study Right for You?

Independent study, based on a curriculum guide, whether for review or for first time learning-requires discipline, commitment, and motivation as well as good literacy skills. If you have needs that cannot be met by this resource, there are programs at Aurora College, and textbook resources such as the GED preparation workbooks available to help you. See your advisor, career counsellor, or educational institution for assistance. Ask them to guide you to a resource that will help you.

You may decide that the best way for you to work on this curriculum is with a tutor or in a study group. Alternatively, you may decide that your best option is to enrol in a college course in pre-trades reading comprehension. This approach is recommended if you need detailed lessons with practical examples that are supported by learning aids and resources.

Introduction

The Exam has five levels

There are five versions, or levels, for the trades entrance exam. Each version is designed for a specific group of trades. Your choice of trade will determine which version of the exam you should prepare for. This guide will also help you build skills that will be useful throughout your life as you pursue your apprenticeship and/or work in your trade. However, **the same reading comprehension skills are required for all trades,** therefore this reading comprehension curriculum guide will meet the needs of all candidates preparing for a trades entrance examination in the Northwest Territories. Exam candidates will select specific science and math curriculum booklets for the exam level that is required for their trade, but all candidates will be responsible for the same reading comprehension topics.

The exam assesses specific competencies

The trades entrance examination uses a competency based approach to assessment. This means that what you know not how you learned it, will be assessed. It also means that only what you need to know for entrance into a trade will be assessed.[1]

This guide has selected problems and examples that tend to the upper half of difficulty likely to be encountered on the exam, and that will be needed for successful completion of an apprenticeship program. If you can complete the examples in this guide and apply the principles involved, you can be confident as a reader going into an apprenticeship.

Don't Waste Time:
Only learn what you need to know.

The exam tests what you know - not how you learned it.

[1] The competency based approach taken by this curriculum is different than the approach taken in a general course in pre-trades reading comprehension or in the larger subject of English. In a course, a wide range of communication skills for reading, writing, and speaking are covered. This curriculum is not the equivalent of a pre-trades English course, nor of a K-12 education in reading comprehension, it is designed specifically to review the comprehension competencies that are required for an apprenticeship program.

Reading Comprehension for Trades Entrance [2]

Be Prepared

Reading comprehension is more than simply being able to speak the words printed on a page. **Comprehension means the ability to understand and apply what you read.**

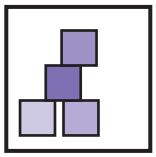
Understanding is a broad term that includes the skills of identifying facts and concepts, comparing ideas, drawing conclusions, applying information to problems, seeing implications, forming judgments and interpreting the writer's purpose.

These skills are also known as **critical thinking skills.**

What Does a Test of Reading Comprehension Look Like ?

On the exam there will be multiple choice answers that may all have some validity based on a reading selection. The reading selections will vary in length and difficulty from single paragraphs to longer pieces with three or four paragraphs. Your job will be to read the selection carefully and pick the best answer from several that may be reasonable. Each choice may be partly right, but your job will be **to pick the best answer from several that may make some sense.** To do this, you must not only read the passage carefully- you must also read the question carefully. Detailed explanations are given for answers to examples in this guide to show you how to succeed at this.

2 Tables, graphs, diagrams, cartoons, and maps are not part of this curriculum. They can be studied in the Math and Science pre-trades curriculum guides. In this curriculum, reading comprehension focuses on understanding text alone.



How to Use This Guide

There are five major competency areas in reading comprehension for trades entrance that are presented in Part One of this guide:

Unit 1 – Literal Comprehension

Identify facts in a written passage.

Unit 2 – Comprehension of Concepts

Identify the concepts in a written passage.

Unit 3 – Application of Concepts

Apply the concepts in a written passage to practical situations.

Unit 4 – Analysis of Concepts

Analyze the concepts contained in a written passage.

Unit 5 – Making Judgements

Make judgements based on information contained in a written passage.

These units, overlap, and on the examination more than one will be tested by using the same reading selection. The first two, Literal Comprehension and Comprehension of Concepts, are the "input" functions of reading. Review them first[3]. Information and concepts must be gathered before concepts can be applied and analyzed in topics three and four. Topics three and four are the "output" functions of reading.

Topic five, Making Judgements, puts everything together, and requires more interpretation by the reader. Making judgements based on reading relies on mastering the competencies that are presented in the first four topics. Topic five has the most challenging questions in the curriculum.

This curriculum is divided into two parts.

Part One will focus, somewhat artificially, on each of these five topics as though it could be studied in isolation from the others.

Part Two will combine all of the competencies presented in **Part One** in sample exam questions with answers that are explained. In practice, all five units will be needed to comprehend the reading selections given on the exam.

[3] See *Application of Concepts - Background* for a discussion on what a concept is. This curriculum is built around an understanding of concepts and their use.

How to Use This Guide

Assess Yourself

This guide is based on a self-directed approach to testing yourself and determining what you need to study. The emphasis in trades is on using what we read in practical situations. Each unit in Part One has three sections:

Background and Theory

Examples and Explanations

Practice Exam Questions with Answers and Explanations

The background for each unit includes a brief overview of what you need to know. Before any examples are given, the main ideas in each topic are explained. You may want to skip the theory and go right to the examples to see how well you do. You can always go back to the theory if you find you need it. When you read the the selections for an example, cover the text below with the card provided with this guide so that you don't see the answer and explanation prematurely.

Key concepts and guidelines for success are placed in text boxes and put in **bold type.** This is "need to know" information. Some text boxes include optional topics or supplementary details. These provide "nice to know" information. They are indicated by borders to help you select what you want to learn.

If you scan the explanations for answers to questions in this document, you will find bold type when a general strategy for getting the right answer is discussed. You can prepare for the exam by looking over these highlights and studying the explanations that reinforce what you need to know for success.

Answers to sample questions are explained to show what makes an answer the best one. Key points in bold type can be reviewed before taking the exam. Some students will only need to read the bold type and text boxes to prepare for the exam.

How to Use This Guide

When you study an example, the right approach is to work slowly:

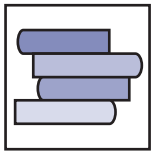
After giving your answer, think carefully through each explanation. If you get this part right, you will be able to solve all of the problems in the practice exam questions. If you only need this curriculum for a quick review, you may want to read the text boxes, skip the longer explanations, and do the practice exam questions.

The explanations given for right answers are very thorough and detailed in order to suggest how you might talk to yourself as you think through the questions. Even when you don't need an explanation, check to see if it describes how you found the best answer. Cover the answers as you read. You will not have to flip pages to find answers in this guide because they are given with all of the examples in both Part One and Part Two.

Pre-Test Yourself

You can do the practice exam questions in Part Two or at the end of each of the five topics in Part One to see how much work you need to do. The Practice Exam Questions are the same kinds of questions that you will find on your trades entrance exam. They are in multiple choice format. If you have difficulty with any of the practice exam questions, you should go back and study the background and examples given for the five competency areas on **Part One**.

Use the card provided to cover the answers and explanations that are given below each question as you work on the examples in this guide.



Develop a Study Plan That Works for You

Adults have busy lives with many responsibilities. Finding study time will be a challenge. Here are a few suggestions to guide you.

Study in Several Short Sessions Rather Than in a Long Period

This will help you remember more and learn faster. Make and use flash cards to test yourself at odd moments during the day. This is a good way to learn formulas, definitions, and new vocabulary.

Vocabulary is something that we build over a lifetime. Vocabulary is a list of the words we understand. Most of us understand more words than we use in our own speech or writing. We have a **passive vocabulary** that is larger than our **active vocabulary**. Reading comprehension relies on a growing vocabulary, particularly in the receptive or passive sense.

Use More Than One Channel and You Will Learn More

Seeing, listening, writing, and speaking are different channels that can help to reinforce what you need to know for the exam. For example, try reading out loud, speaking a term as you write it down, sketching a problem before you solve it. Always write down what you are learning by taking notes, solving practice examples, and recording definitions and formulas. Writing adds to the "channels" you are using when you learn from reading.

Pick the Best Time of Day for Study

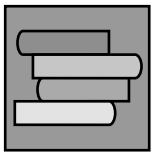
Many people find mornings are best, but you will know best what times are best for yourself.

Find Quiet Times and Places That Are Comfortable

Learning requires undivided and undisturbed time for concentration.

Read Constantly

The more you read the more you expand your knowledge base. Use reading to find words that you can look up in a dictionary. A dictionary is a powerful tool that you should use to develop your reading skills.



Develop a Study Plan That Works for You

Use a dictionary and keep a vocabulary notebook

When you read a word you don't understand, write it down and look it up. This will mean that you use a dictionary or a computer program to find out what a word means. Keep a personal vocabulary builder notebook to prepare for the trades exam. Identify whether the word is a noun, adjective, verb, or adverb. Use new words in sentences to reinforce the context in which they would be used.

Notebook examples:

Ungulate: (noun) hoofed animal

> "The caribou is a northern **ungulate**."

Deliberate: (verb) consider, think about, form judgments

> "He **deliberated** for a long time before deciding to take the job at the mine."

Irate: (adjective) angry, frustrated, resentful

> "People noticed that he became **irate** whenever he didn't get his way at a production meeting."

Torque: (noun) a twisting force measured in foot pounds or Newton metres.

> "Bolts on a head gasket are tightened to a specific **torque**."

Dictionaries can do a lot

1. The most common use of a word comes first.
2. Other uses are listed in order of frequency.
3. Examples of the word in a sentence are given to illustrate the meaning.
4. The roots of a word are often given to show where it comes from and who its nearest relatives are.
5. Technical dictionaries are available for electricians, plumbers, and other trades people.
6. Dictionaries can be found online by using an internet search engine.

Write down your questions

One of the most important things you can do for yourself is identify what you need to know more about. Take your questions to someone who can help you learn how to answer them.

Work with a partner

Find someone to work with on the practice questions. One person may be able to explain something better, or both partners may find they have the same questions or don't understand the same thing. Having a partner can increase motivation and lead to accelerated learning. This will allow you to approach a tutor or instructor for joint help. In a classroom situation, an adult educator may decide to give a lesson on a topic that several people have identified.

Part One:

Five Areas of Reading Comprehension

If you are reading this curriculum, you are literate. The first step in comprehension is being able to decode the symbols on the page. Before we can evaluate what a reading selection means, what a writer is telling us, or what we can do with our understanding, we must first get an accurate understanding of what individual words mean. As you work through the sample passages in this curriculum, prepare for the questions by first making sure that you know the dictionary definition of any unfamiliar words. For example, there may be a few words in this paragraph that you need to look up: “evaluate”, “symbol”, or “literate”.

Unit 1

Literal Comprehension

Objective:

Identify facts in a written passage.

We begin with a summary of what you need to know followed by some practice examples with explanations. This section concludes with some practice exam questions with answers and explanations.

Guidelines for Successful Literal Comprehension

Don't make assumptions when you are asked to look for facts.

Find quotes that support your claims about the facts given in a passage.

Always favor what you can know for certain based on the reading over what you know to be true or likely to be true based on your own experience or what the passage suggests but doesn't state explicitly.

Don't confuse identifying what is given as a fact **with deciding** if the facts given are correct or not.

Read the question about a passage literally and **stay focused on exactly what it asks for.**

Pay close attention to the little logical words: "all", "some", "any", "every", "none", "or", "and" and "not". Notice that even one example allows the use of "some", and even one exception prevents the use of "all", and "every."

Read the entire selection – sometimes facts require us to make connections between different parts of the reading.

Unit 1 – Literal Comprehension

Topic 1 – Background

Literal comprehension refers to what is NOT controversial in a reading selection. Facts are claims, or truths, that can't be argued with. A factual statement is a statement that is believed to be true and that can be tested to see if it is true. Facts describe something that everyone should be able to verify. What makes something count as a fact is the agreement or support that it receives from evidence. To sum up, "no evidence – no facts".

The skills you will need

The exam will test your ability to literally comprehend a passage. The emphasis in literal comprehension is on the meaning of a passage – not on whether you believe it, or on whether you can prove that it says things that are true or not. Literal comprehension gets the facts that are presented so that we are free to investigate them, use them, or challenge them. On the exam, you will have to be careful and choose the answers that are most closely supported by what is presented as fact in the passage. The practice examples for this section have been designed at the upper end of difficulty. If you can get the facts right from these selections, you can be confident that you have mastered the competency.

Stick to the Facts

- Steel melts at a higher temperature than copper
- Residential wiring is done with parallel circuits
- Area is the product of length times width
- Northern game meat shows dangerous amounts of mercury

We can identify these as **statements of fact** in a reading selection because each one can be tested to see if it is true. Some may turn out to be false, but **we can understand what they mean even without knowing if they are true. We can also see that the writer intends to present them as facts.**

Identifying a fact in a reading passage doesn't mean agreeing with it

In order to comprehend literally, you must be able to identify what an author claims is a fact- whether or not you agree.

Facts can be verified with evidence.

Unit 1 – Literal Comprehension

Topic 1 – Background

Important Guideline:

Strive to be 100% sure of what the passage presents as fact

When reading for literal comprehension, always choose what you can be 100% certain of over what you can only say is 90% probably true. It's better to be "safe than sorry". Ask yourself: "What can I use to prove that something is a fact given in a reading selection?"

Literal Comprehension:

requires "seeking to understand before we seek to be understood".

Identifying Meaning

Semantics:
Denotation and Connotation

Semantics is the study of meaning. The meaning of words goes beyond literal comprehension. Literal comprehension relies first of all on what a word refers to most of the time. This is the **denotation, literal, or primary meaning**, of the word. "blond" denotes a yellow range of hair coloring, "stingy" denotes a reluctance to spend money. These are the most literal meanings for these words.

Connotations add to the literal meaning of words. Connotations attach values and judgments that interpret what the word tells us when it is used as a label. For example, "blond" can connote dumb, or slow-witted, "stingy" can connote selfish, mean spirited, or unkind.

Connotations are secondary or associated meanings that can influence how words are used. Some connotations become "slang" when they are only used or accepted by a specific group within a language community. Language changes: what is a connotation at one time, can become a denotation at another time and vice versa.

Topic 1 – Background

Consider the Source

Be aware that incorrect information can be presented as though it is factual. This can happen when someone mistakenly believes something to be true, expresses themselves poorly, or when someone deliberately wants to misinform and mislead others.

For example, you could read somewhere (in a newspaper perhaps) "According to the 2000 census, population in Yellowknife, declined". However, an independent look at the census will show that the population of Yellowknife increased.

If you encountered this quote on a test of reading comprehension, you can see that the author, although wrong, expresses population decline in Yellowknife, as if it is a fact. On the exam you would have to separate your knowledge of the facts from what the author presents as a fact.

Metaphors, similes, and "slang" are usually not meant literally

Don't take me literally when I say,

"It's raining cats and dogs" means: "it's a fact that its raining very hard"

"The early bird catches the worm" means: "It's a fact that people who start early have an advantage"

"He has more money than he can count" means "It's a fact that he has a great deal of money" (but not literally so much that he can't count it)

Intended meanings are more complicated than the literal meaning of our words (and writing)

"She runs like a deer"means: she runs quickly and gracefully (not literally the way a deer runs)

"He was giving me the gears" means "he was giving me a hard time" (not literally grinding gears)

"The customer is always right" means "service to customers is of the greatest importance" (not literally that customers never make mistakes)

Unit 1 – Literal Comprehension

Topic 2 – Examples and Explanations

An Example of Literal Comprehension:

"You can't argue with the facts"

Facts are facts, whether or not we like them or agree with them. For example, think about what is claimed in this statement: "Some people can smoke heavily and live in good health until they are ninety years old". This statement makes a claim that could be true or that could be false – evidence to support it is needed before we can know.

Some readers will find this claim reassuring because they may be smokers who believe that they fall into the category of people who can smoke without fear of harming their health. Others will find it misleading or offensive even if it is true. This group may believe the statement interferes with an accurate assessment of the health risks posed by smoking for most people.

We can argue about the connections between smoking and health, but readers on both sides of the issue will have to admit that this statement, taken literally, is a matter of fact that can be proven true.

However, if "some" were changed to "many", or "all" then the statement would no longer state a fact. However, anyone would have to agree that some cases, i.e. at least one, can be found where someone smokes heavily throughout a long and healthy lifetime. This much is literally true.

For literal comprehension, simply record the facts in a passage as they are given. Think of literal comprehension as the work of recording information that is based on the simplest and most direct reading of what is before you. A fact leaves no room for interpretation or imagination.

Identifying facts in a reading selection really means identifying **what is presented as factual** in the selection.

- Don't take everything literally unless it is meant that way.
- Rely on accepted usage and meaning unless there is a reason not to.

Topic 2 – Examples and Explanations

Example A: Rotational Work Schedules

Rotational work schedules are a fact of life for mining employees, but some people in the communities of the Northwest Territories need to be persuaded that working on a rotating schedule is a good idea.

Identifying the facts

If a question asked you for a list of facts given by this passage you could produce the following list proven by supporting quotes:

a) Mining employees work on rotational schedules.

"Rotational work schedules are a fact of life…"

b) Some people in communities do not think rotating schedules are a good idea.

c) Some people in communities do think rotating schedules are a good idea.

d) The writer thinks that people in communities need to be persuaded that rotational work is a good idea.

Facts b, c and d are supported by

"…some people in the communities of the Northwest Territories need to be persuaded…"

Discussion

Facts can be implied, or hidden, in statements. This reading selection implies that some (but not all) northern people living in communities should be persuaded or will be persuaded (i.e. "…need to be persuaded") that rotational work is a good idea. Whether or not you agree with this – **a literal reading of the statement supports these implications as facts in the mind of the writer.** Notice that the word "some" is the key to extracting facts b, c and d. The next example will ask you to identify the facts that are given in it.

Topic 2 – Examples and Explanations

Example B:
Fall Comes Early in the North

A few warm days may linger toward the end of August but there is a chill in the air at night. The skies are clear blue, frost-tipped leaves touch the tundra with scarlet and gold, and blueberries and red cranberries cover the bushes. The clouds of biting insects are gone, the birds have finished their frenzy of raising families, and for a short time the North seems to rest.

Question B-1:

Which of the following statements is NOT a fact given in this passage?

a) Biting insects leave when fall begins in the North.

b) Birds are finished raising families when fall comes to the North.

c) Skies are clear blue in late August in the North.

d) Blueberries and red cranberries are found in the fall in the North.

Answer: a

Explanation

This question asks you to decide what is most certainly presented as a fact, then you can identify the choice that has the least support in the passage. All four choices are possible because they are either stated or implied by the passage. **In order to answer this question, you have to pick the choice that is given the least direct support as a fact.**

Choice a) makes an assumption that the absence of biting insects in late August means that they leave when fall starts, "The clouds of biting insects are gone". However, the absence of these insects in late August does not necessarily mean that they left at the end of August. From this passage we know for a fact that they are gone, but we don't know for a fact when they left. They could have left in early August. Knowing the fact that they are gone doesn't tell us clearly about when they left – although it is natural to assume (and likely true) that biting insects depart when the colder weather of autumn begins.

> Literal comprehension is all about looking for guaranteed facts in favor of assumptions, no matter how much your own knowledge apart from the reading might support an assumption as a true one.

The other choices are facts that are given explicitly by the passage. For choice b) we have, "the birds have finished their frenzy of raising families", for choice c) we have, "toward the end of August …The skies are clear blue", and for choice d we have, "Fall comes early in the North…toward the end of August… and blueberries and red cranberries cover the bushes." **Look for quotes to support your claims about facts given in a passage.**

Question B-2:

Which statement best describes what this passage tells us about the onset of fall in the north?

a) Fall comes early, it is chilly at night, and insects are no longer a problem.

b) Fall comes in late August, there are no more warm days, and insects leave the area.

c) Fall comes early, the skies are clear blue, and the birds have finished raising their families.

d) Fall comes early and frost-tipped leaves are on the blueberry and red cranberry bushes.

Answer: c

Explanation

A process of elimination will work here. We need to verify each fact that is claimed in each choice. Choice a) fails because the passage does not tell us that insects are no longer a problem, only that clouds of them are gone. Choice b) fails because we are told that, "A few warm days may linger toward the end of August", and this fact makes b) false.

Choice d fails because we are only given the fact that, "frost-tipped leaves touch the tundra with scarlet and gold, and blueberries and red cranberries cover the bushes." We might assume that the leaves on these bushes are frost covered, and we might be right- **but a literal reading does not support this conclusion as 100% certain.** Choice c) is 100% certain because we can verify each of the three facts in choice c) explicitly in the passage, "Fall comes early in the North…, ", and, "The skies are clear blue…", and, "the birds have finished their frenzy of raising families".

Read as though you are listening

Gathering facts from a reading selection is similar to listening carefully to another person. When we listen we also try to pick up intended meanings. We listen to how a word is being used in addition to what it literally means. "Listen, don't react, record, don't judge" is the main idea behind literal comprehension.

In practice, identifying facts from reading may not be simple and straightforward. Facts are not always black and white announcements that advertise themselves. Listening skills can be compared to reading skills, but without the advantage of being able to ask questions about intended meaning.

Unit 1 – Literal Comprehension

Topic 3 – Practice Exam Questions

Objective: Identify facts in a written passage

Reading A: Growth Rings

Tree growth- the result of reproductive activity in the cambium just under the bark- continues as long as the tree is alive to the extent that environmental conditions and tree vigor permit. In the forests of the Deh Cho, for example, we can find evidence of an annual growth cycle that has two parts: a growth season and a dormant season.

When a tree grows it produces visible growth layers, or growth rings. These increments are called annual rings when they form as a result of annual growth. The size of the rings will not only vary with the species, but also according to the favorable or unfavorable conditions during the growing season. Some growth rings are very obvious, while others are almost invisible. Variations in the growing environment of a particular species can have a pronounced effect upon the appearance of growth rings.[ii]

Vocabulary

Cambium: layer of cells underneath the bark of a tree. These cells reproduce and make the tree grow.

Dormant: sleeping, inactive, quiet

Increments: small increases

Pronounced: marked, significant, important, noticeable

Topic 3 – Practice Exam Questions

Question A-1

According to this passage, what has a significant effect on the visibility of a growth ring?

a) The species of the tree.

b) The geography of the forest the tree is growing in.

c) The favorable or unfavorable conditions of the growing environment.

d) Tree vigor.

Answer: c

Explanation
The question focuses on the visibility of growth rings. We are being asked to use the passage to find the facts about the ability to see growth rings. The visibility of a growth ring is also its appearance. You have to be able to see the ring for it to be visible. The question also uses the word "significant" to focus on what will have a major or important effect on growth ring visibility. Our choice of c) is supported by, "Variations in the growing environment of a particular species can have a pronounced effect upon the appearance of growth rings." Appearance and visibility have similar meanings, and this allows us to use this quote to provide the fact that answers the question. The other choices, although connected to growth ring size in the passage, do not focus precisely on the visibility (i.e. appearance) of growth rings.

Question A-2

What fact is given about trees growing in the Deh Cho in this passage?

a) They are vigorous.

b) They have visible growth rings.

c) They display reproductive activity in their cambium layer.

d) They complete an annual growth cycle.

Answer: d

Explanation
Choice b) is the only one we can rule out right away because, "Some growth rings are very obvious, while others are almost invisible." From the fact that some growth rings can be almost invisible, we can't be certain that Deh Cho trees have visible rings, and this rules b) out.

Choices a), c), and d) record facts that are given in the passage about all trees, and therefore also apply to trees in the Deh Cho. This situation is typical for exam questions that look for facts. **Our task is not only to separate true from false, but also to select the best choice for the question.**

The question focuses on trees in the Deh Cho forests, and we read, "In the forests of the Deh Cho, for example, we can find evidence of an annual growth cycle that has two parts: a growth season and a dormant season." This quote supports choice d) as the best choice because it is 100% certain that this fact was singled out and applied to the Deh Cho trees referred to in the question.

Choices a) and c) may also be true, but they are not linked specifically to the Deh Cho trees in the passage the way that choice d) is and this is what makes d the best choice.

Reading B: Northern Estimates Cost More

In the Northwest Territories everything costs more to import, transport, and store than in the southern provinces. Furthermore, the weather limits the construction season, and labour costs include significant overhead related to accommodation, food, and travel.

Northern construction companies rely on accurate estimates of costs for planning and profit. Every job will have its own requirements for materials, equipment, and labour.

Accurate material estimation will allow a company to order what is needed to complete a job on time and within budget. One approach to estimating the cost of materials needed for construction in the NT is to add 30% to the cost that would apply to the same materials if they were purchased in Alberta. This rule of thumb approach can save a lot of unnecessary time spent in figuring out the cost details for construction materials used in the Northwest Territories.

Question B-1

According to this passage, what is the best way to estimate the cost of materials needed for construction in the NT?

a) Add a Northern surcharge for transportation and labour.

b) Know the requirements for the job.

c) A rule of thumb approach based on 130% of costs in Alberta.

d) Estimate the cost of required materials accurately.

Answer: c

Explanation
The facts given in this passage may not agree with the reality of the construction industry in the Northwest Territories, or with the reader's experience. However, the writing recommends a rule of thumb approach based on a surcharge of 30% over the Alberta cost for estimated materials. This is equivalent to 130% of the Alberta cost. **The other choices, even though true or reasonable, do not answer the question.**

Topic 3 – Practice Exam Questions

Question B-2

From this selection we know that:

a) northern weather limits the construction season.

b) profits depend mainly on accurate estimates.

c) Alberta costs are fair.

d) a rule of thumb approach will always work best.

Answer: a

Explanation
We read that "The weather limits construction season…" This is a statement of a fact according to the writer. **The other choices all involve assumptions that are not given as facts.** Choice b) goes beyond the facts that are given by adding "mainly" to interpret the statement "…rely on accurate estimations for planning and profit". While we have the fact that accurate estimations are critical, we do not know from a literal reading of this passage that they are the only, or most important, factor determining profits. Other factors, for example new technology, could be equally important.

Choice c) is easiest to eliminate, because the selection says nothing about the fairness of costs in Alberta. Finally, choice d also goes beyond the selection by assuming that a rule of thumb approach to estimation will always be best. The selection only gives us the fact that the author recommends this approach- based on a 30% markup over Alberta costs. **We cannot conclude (from a literal reading of the selection) that a rule of thumb approach to estimation will always be best.**

Question B-3

Which of the following is NOT a fact given in the passage?

a) Northern construction costs are higher than in the southern provinces.

b) The construction season in the Northwest Territories is limited by weather.

c) Overhead costs for labour include accommodation, transportation, and food.

d) Accurate Northern construction estimates are difficult to make.

Answer: d

Explanation
Choices a), b), and c) can be verified explicitly by quotes in the first few lines of the passage, but choice d is, at most, only implied by the passage.

With respect to choice d), the passage only says, "This rule of thumb approach can save a lot of unnecessary time spent in figuring out the cost details for construction materials used in the Northwest Territories." We cannot tell from this statement that construction estimates are difficult, only that they will be time consuming unless a rule of thumb approach is used. It may be natural to equate "time consuming" with "difficult"- but this requires more of an assumption on our part than the other three choices do. **Therefore choice d) has the least explicit support from the passage and is the best answer to this question.**

Reading C: Northern Pipelines Need Protection

In the oil and gas industry, it is well known that care is being taken to protect the environment of the NT along present and proposed pipeline routes. Less well known, is the care being taken to protect the metal out of which the pipeline itself is made. Corrosion occurs in nature and involves the oxidation of metal atoms. Corrosion weakens the binding energy between the molecules in a metal. A corroded pipeline can fail, leak, and cause environmental damage.

Metal corrosion is really an electric circuit. In metal pipeline corrosion there is a flow of current between negatively charged and positively charged sites on the metal. The positively charged areas are called anodes (they donate electrons) and the negatively charged sites are called cathodes (they receive electrons). Part of the corrosion circuit is the pipe itself; the rest of the circuit exists between the pipe and the external material that it contacts and that can conduct electricity. Moist soil can conduct electricity. A solution that conducts electricity is called an electrolyte. The electrolyte must be in contact with the metal for corrosion to occur.

For example, rain on metal provides the electrolyte that increases the flow of electrons from one place to another. In the case of acid rain, sulphuric acid is dissolved in the rainwater making it a better electrolyte. This makes acid rain more corrosive than pure water. Engineers have designed solutions for the protection of pipelines that are based on our understanding of the electro-chemical principles of corrosion.

Topic 3 – Practice Exam Questions

Question C-1

Which statement is NOT supported by the facts given in this passage?

a) Pipeline corrosion is an environmental problem that requires protection.

b) Electrolytes are responsible for the ability of anodes and cathodes to corrode metal.

c) Engineers have designed solutions for the problems of corrosion on pipelines.

d) Metal corrosion is really an electrical circuit between different sites on the metal and the material it is in contact with.

Answer: b

Explanation
We need the choice with the least factual support. Begin by eliminating the choices for which there is literal support in the passage. Choice a is a fact stated by, "A corroded pipeline can fail, leak, and cause environmental damage." Choice c is given as a fact in, "Engineers have designed several solutions for the protection of pipelines that are based on our understanding of the electro-chemical principles of corrosion."

Choice d) connects two facts given at different places in paragraph two. The first part of choice d), "metal corrosion is really an electrical circuit between different sites on the metal…" is given by, "Metal corrosion is really an electric circuit. In metal pipeline corrosion there is a flow of current between negatively charged and positively charged sites on the metal". The second part of choice d), "…and the material it is in contact with", is given as a fact by "…the rest of the circuit exists between the pipe and the external material that it contacts and that can conduct electricity."

This analysis of choice d) supports our selection of choice b) as the best answer. Choice b) only tells half of the story about corrosion circuits, "electrolytes are responsible for the ability of anodes and cathodes to corrode metal". The passage, however, tells us that electrolytes contribute to the flow of electrons, but even in the absence of a surrounding electrolyte, there is a corrosive circuit in the metal of the pipeline itself.

The complete fact is given in paragraph two by, "Part of the corrosion circuit is the pipe itself; the rest of the circuit exists between the pipe and the external material that it contacts and that can conduct electricity." **Choice b) is not a fact given in the passage, because it gives an incomplete picture of the two ways corrosive circuits can work as described in the passage. This is what makes b the best answer for the question. Notice that you don't need to understand what an electron is, or what the molecular theory of matter involves in order to answer this question correctly.**

Analysis:
Taking something apart in order to understand it better.

Topic 3 – Practice Exam Questions

Question C-2
A solution that conducts electricity is:

a) An anode.

b) A cathode.

c) An electrolyte.

d) An oxidizing agent.

Answer: c

Explanation
This question asks the reader to check for the definition of an electrolyte in the passage. The answer is found in paragraph two,"A solution that conducts electricity is called an electrolyte." **Literal comprehension includes finding the definition of terms in a reading selection.**

Question C-3
What is corrosion?

a) Corrosion is really an electrical circuit in the metal of a pipeline.

b) Corrosion weakens the binding energy between the molecules in a metal.

c) A corroded pipeline can fail, leak, and cause environmental damage.

d) Pipeline corrosion is an environmental threat.

Answer: a

Explanation
Choice a)is the best answer because it is the most literal and complete definition given in paragraph two of the passage. Choice b), while true, doesn't tell us what corrosion is. Choice b) describes how corrosion works by describing its effects. Choice c), while true, doesn't tell us what corrosion is- only what it can cause to happen in a pipeline. Finally, choice d), while true, doesn't tell what corrosion is- it tells us about the significance of pipeline corrosion on the environment. **Stay focused on the question in order to get the right answer. The best answer has to do more than simply be true.**

Topic 3 – Practice Exam Questions

Question C-4
Which of the following best describes how pipeline corrosion works?

a) Acid rain causes a corrosive circuit that weakens the metal.

b) Oxidation causes the metal to fail.

c) The electrolytes in the ground make the metal corrode.

d) A combination of two corrosive circuits, one between sites on the metal, and one between the metal and the material it touches, weakens the binding energy between the molecules in a metal.

Answer: d

Explanation
Choices a), b), and c) are each partly correct given the facts in the passage but they are not as complete as choice d). Choice d) can be verified in every detail from the reading, and d) answers the question by giving the best explanation because it is the most complete.

Question C-5
What can be said about pure water based on this passage?

a) Pure water is highly corrosive when it contacts a metal pipe.

b) Pure water is more corrosive when it becomes an electrolyte.

c) Pure water is less corrosive than acid rainwater.

d) Pure water will be unable to conduct electricity when it forms a corrosive circuit.

Answer: c

Explanation
Here you are asked to draw a conclusion based on facts given in the selection. Choice c) is supported by, "In the case of acid rain, sulphuric acid is dissolved in the rainwater making it a better electrolyte. This makes acid rain more corrosive than pure water." Although pure water is not explicitly referred to in the passage, rainwater is described as water that can have acid dissolved in it. This implies that rainwater is less pure after something is dissolved in it. Choice a fails because the term "highly corrosive" doesn't apply to pure water, only to acid water.

Choice b) receives weak support from the facts given, in that water can conduct electricity and become an electrolyte- but we are also told that acidified water is a better electrolyte. Pure water has the same potential to conduct electricity whether or not it contacts a metal pipe. Choice d) draws a conclusion that contradicts this fact, "…rain on metal provides the electrolyte that increases the flow of electrons from one place to another."

Unit 2

Comprehension of Concepts

Objective:
Identify the Concepts in a Written Passage

Guidelines for successful Comprehension of Concepts

Stay focused on the question. The best choice will answer the question better than the alternatives.

List any words in the passage that name a concept that is being explained or applied to a situation.

Identify the writer's perspective: What is being said about a concept? How is a concept being explained or being used to explain something?

Look for signals that an explanation is being given or named in the passage: x happened **because of** y, x **explains how** y works, x is the **reason y happened**, etc.

Unit 2 – Reading Comprehension

Topic 1 – Background

A concept is an idea that helps us understand something better. A powerful concept is one that helps us solve problems and do work more easily. The concept of volume, for example, helps us understand how much fuel can be contained in a three dimensional object like a gasoline tank. The concept of buoyancy helps us predict whether an object will float or not float in water, oil or other liquids.[4] Concepts are tools for thinking and acting. For example, the concept of friction helps us understand why we need lubrication in machinery.

Concepts are ideas that explain something …and they are used everyday

The concept of culture

The concept of energy

The concept of weight

The concept of time

The concept of money

The concept of efficiency

The concept of action and reaction

The concept of_____

Concepts are ideas that help us understand cause and effect and many other relationships. For example, the legal concepts of guilt and innocence can help us understand how a verdict was reached in a trial. Concepts are man-made ideas that we use to understand the world and solve problems.

In a reading passage, concepts (just as we saw with facts) do not always announce themselves. **On the exam you must read carefully for clues that an explanatory idea is being presented.** A description of an idea that helps to explain something will also describe a concept.

Where are the concepts?

In order to identify a concept in a written passage **look for signals that are closely associated with explanatory ideas. When a name is given to an idea that explains what is happening, why it is happening, what something means, or how something came to be – we can expect that a concept is involved.** The broad idea of a concept is that it explains something. Related terms that include concepts are theories, explanations, ideals, models, and principles.

Concepts don't grow on trees, people create them.

[4] The concept of buoyancy is reviewed in the trades entrance science curriculum guide, and the concept of volume is reviewed in the trades entrance Mathematics curriculum.

Topic 2 – Examples and Explanations

Example A: The Price of Eggs

When a lot of people want something that is scarce, for example eggs in Dawson City, Yukon, during the gold rush- the price of eggs will go up. Even though it didn't happen, we can imagine that too many eggs being available to the people of that time and place would make the price of eggs go down. This is explained by the law of supply and demand in economics.

Question A-1:

What concept is used to explain the price of eggs in this passage?

a) Economics.

b) Demand.

c) The gold rush.

d) The relationship between supply and demand.

Answer: d

Explanation
The law of supply and demand is given in the passage as a name for the relationship between the number of eggs (supply) and the price people are willing to pay for them (demand). The other choices do have a bearing on the price of eggs, **but they do not give us a general explanatory idea, i.e. they do not present a concept.**

Topic 2 – Examples and Explanations

Example B: Drainage Fields[iii]

To determine the condition of your soil you can perform a "percolation" test. Dig about six small holes to the depth of the proposed drainage trenches, over the area where the drain lines will be placed. Then fill the holes with water. After about 24 hours, add or remove water from the holes so you have about a 6 inch depth. At this point you must determine how long it takes the water level to drop 1 inch. Based on this percolation test, you can consult charts in local codes to determine the number of square feet of absorption area that a building requires.

Question B-1:

What concept is explained in this passage?

a) Absorption area.

b) Soil condition.

c) Percolation.

d) Local codes.

Answer: c

Explanation
The explanatory idea in this passage is percolation. A test of percolation is used to discover how quickly water disperses through pre-soaked soil. The other choices identify related concepts, but these are not explained as thoroughly as percolation is. Absorption area is referred to but is not explained. Soil condition is linked to percolation when the passage indicates that percolation will tell us about soil condition. In this selection, soil condition is a "downstream concept" in that it depends on first understanding percolation, "To determine the condition of your soil you can perform a "percolation" test." Local codes are referred to but not explained. The percolation test is explained step by step as well as the reasons for performing it. **By staying focused on the question you can see that the concept with the greatest amount of explanation in the passage will be the best choice.**

Topic 3 – Practice Exam Questions

Objective: Identify the Concepts in a Written Passage

The questions following these reading selections will ask you to identify concepts in the passage.

Reading A: Interdependence: Good or Bad?

Technology has connected Northern people to the rest of the world through communications, commerce and travel. As the world becomes more interconnected, questions are being asked in new ways about the risks and benefits of increasing global interdependence for Northern society. More connection through technology means more forms of exchange, and this means more opportunities for groups to depend on each other for specific goods and services.

Today, in the North we have growing evidence that we can be both negatively and positively affected by what happens far away. Airborne pollution has been found in Northern lands that comes from other continents, satellite television has brought the world's media into remote settlements, and air travel has opened up new economies and opportunities for cultural exchange. The jury is still out as to whether the benefits of interdependence outweigh the risks for Northern communities.

Topic 3 – Practice Exam Questions

Questions A-1:

According to this passage, how can interdependence be judged?

a) By looking at technology.

b) By becoming more interconnected.

c) By weighing risks and benefits.

d) By looking for spiritual connections.

Answer: c

Explanation
In this passage, interdependence is a concept that is used to describe the mixed effects of increased connections to other parts of the world. Some effects are good and some are bad. The passage tells us that interdependence is not all bad and not all good. "The jury is still out as to whether the benefits of interdependence outweigh the risks. "

The opening sentence, "As the world becomes more interconnected, questions are being asked in new ways about the risks and benefits of interdependence," also supports choice c).

Choice c) is the best answer, but the other answers also have some validity. However, the other choices do not tell how interdependence can be judged. Choices a),b) and d), tell us about related ideas that shape the writer's perspective towards interdependence. **These choices do not tell us how to evaluate interdependence, which is what the question asks.**

Question A-2:

Based on this passage, which of the following gives the best example of the concept of interdependence?

a) Traditional communities.

b) Technology that connects people.

c) Satellite television.

d) Opportunities to rely on others for goods and services.

Answer: d

Explanation
Each choice can be used to illustrate interdependence, however, the passage does not mention traditional communities (choice a), and satellite television (choice c) is only one of several technologies that connect people (choice b) without necessarily making anyone more interdependent. **Notice that interdependence is not the same concept as interconnection.**

Interdependence is a consequence of interconnection according to this passage: "More connection through technology means more forms of exchange, and this means more opportunities for groups to depend on each other for specific goods and services." Choice d) is the best choice because it illustrates the concept of interdependence as a form of exchange leading to dependence by one group on another.

Topic 3 – Practice Exam Questions

Question A-3:

Based on this passage, which of the following is most unlike the concept of interdependence?

a) Conservation.

b) Supply and demand.

c) Independence.

d) Cooperation.

Answer: c

Explanation
The idea of interdependence explained in the passage emphasizes the dependence that can occur when people have more connections to each other around the world. Independence includes the idea of taking care of oneself, of being independently able to meet all of one's own needs. This idea is the one most opposed to interdependence.

The other choices are not inconsistent with, or opposed to interdependence, in fact they share features with interdependence. For example, both conservation and interdependence can support protecting a shared environment. Supply and demand describe the basis for exchange when people are connected, and cooperation is part of what makes interdependence possible.

Topic 3 – Practice Exam Questions

Reading B: The Events of 1921

In 1921 oil was discovered by Imperial Oil at Norman Wells. A stampede ensued as prospectors came up the Mackenzie River to make their fortune. Scenes reminiscent of the Yukon gold rush days were common as every boat in the river was pressed into service.

This was the first oil discovery in western Canada and Arctic sovereignty took on a new significance. Canada had not signed a treaty with Indian people north of Great Slave Lake. If commercial activity was close at hand it was necessary to come to an agreement with the Aboriginal people; it was also necessary to reinforce the rule of Canadian law. This had been done in earlier days in the Klondike so that, unlike the California gold rush, developments would be orderly and peaceful.[iv]

Vocabulary

Reminiscent of: calling to mind, reminding of, similar to.

Ensued: following on, coming after, resulting from.

Sovereignty: royal power to govern, sole or ultimate source of political authority claimed by a nation or state.

Pressed into service: required or compelled to be used for a project.

Question B-1:

According to this passage, what was the purpose of coming to an agreement with the Aboriginal people north of Great Slave Lake?

a) To avoid the problems of the Yukon gold rush.

b) To prevent a stampede by prospectors.

c) To develop oil fields near Tulita.

d) To make developments orderly and peaceful.

Answer: d

Explanation
Choice a) can be rejected because no problems are reported about the Yukon, only that all boats were pressed into service during the gold rush there. Furthermore, at the conclusion of the passage the Klondike gold rush is referred to as an example of orderly and peaceful development. Choice b) can be rejected because the stampede had already occurred before an agreement was reached, "A stampede ensued as prospectors came up the Mackenzie River to make their fortune."

Choice c) can be rejected because Tulita (Fort Norman) is not mentioned specifically, although Northern readers will know that this community was affected. **Choice d) is the best answer because it explains why** an agreement with Natives was desired. The concept of orderly development can be identified in the conclusion of the passage:

"This (i.e. to come to an agreement with the Aboriginal people) had been done in earlier days in the Klondike so that, unlike the California gold rush, developments would be orderly and peaceful."

Topic 3 – Practice Exam Questions

Question B-2:

Which statement best describes the concept of sovereignty that is given in this passage?

a) Sovereignty is based on treaties.

b) Commercial activity requires Canadian law.

c) Sovereignty becomes more significant when economic development is close at hand.

d) Sovereignty explains how government works in Canada.

Answer: c

Explanation
Choice c) is supported by, "This was the first oil discovery in western Canada and Arctic sovereignty took on a new significance… If commercial activity was close at hand it was necessary to come to an agreement with the Natives; it was also necessary to reinforce the rule of Canadian law." The other choices are only partly related to the question. Choice a) makes a generalization about sovereignty that goes beyond what is given in the passage. Choice b) is a generalization about commercial activity that is not supported by the passage, and choice d) doesn't describe the concept of sovereignty, but uses the idea of sovereignty to explain government in Canada.

Question B-3:

What concept is used in this passage to explain why prospectors stampeded to Norman Wells in 1921?

a) The discovery of oil.

b) The desire to make one's fortune.

c) The need for a treaty.

d) The number of boats available on the river.

Answer: b

Explanation
Choices a) and d) state facts- and neither fact explains why prospectors came in great numbers. Choice c), while it explains why the government of Canada acted, does not explain the stampede. **Choice b) is the best choice because it provides an explanation, i.e. a motive, for the prospectors' actions.**

Topic 3 – Practice Exam Questions

Reading C: The Value of Money

Was there money before people? The obvious answer is no, and this leads us to ask how money was invented. Money is understood today as a useful tool for economic exchange. In traditional times, Northern trappers and hunters would exchange goods with each other. Trading came before money, and trappers and hunters didn't need money even though they were businessmen.

The magic of money comes from an agreement between people to allow something to stand in place of real goods. Without an agreement, "money isn't worth the paper it's printed on". Whether it is paper, beaver hides, metal stamped into coins, beads, tobacco, or some other portable commodity- trading came to include these substitutes for the real goods that people need for life. The advantages of money are obvious- but the disadvantages are less so. The disadvantages can include inflation, deflation, and other changes to the value that money represents.

Question C-1:

According to this passage, how important was money to Northern businessmen in traditional times?

a) Very important.

b) Not important.

c) Depended on how much trading they did.

d) Important because it was lighter to carry than trade goods.

Answer: b

Explanation
Choice b) is supported by these sentences, "In traditional times, Northern trappers and hunters would exchange goods with each other. Trading came before money, and trappers and hunters didn't need money even though they were businessmen." However, from the passage it is unclear what period is meant by "traditional times", and so it is possible that choices a), b) and d) could have some validity.

The passage deals with the concept of money, and gives an account of the idea of money as a means of exchange that developed after trading practices were already in place. Northern businessmen in traditional times are described as traders who didn't rely on money for exchange.

Topic 3 – Practice Exam Questions

Question C-2:

Which idea best explains why money works?

a) Money is easier to carry than trade goods.

b) People agree on what money can be exchanged for.

c) Money can be stored indefinitely.

d) Money makes business easier.

Answer: b

Explanation
Choice a) is a true statement, but it doesn't answer the question. Being lighter is one advantage of money over trade goods, but more is needed to explain how it can be used between people as a means for exchange. Choice b gives the best explanation and is supported by, "The magic of money comes from an agreement between people to allow something to stand in place of real goods. Without an agreement, "money isn't worth the paper its printed on". Choice c) describes an advantage of money that is not mentioned in the passage. Choice d), like choice a), describes one of the advantages of money but it does not answer the question. **In this passage, the concept of an agreement explains best why money works.**

Question C-3:

According to the passage, which of the following is a possible disadvantage that can take away from the value of money?

a) Disagreements about what money is worth.

b) Choosing a heavy material to use as currency.

c) Inflation.

d) Making too much depend on money instead of on real goods.

Answer: c

Explanation
Each choice has some bearing on the concept of money that is given in this passage. However, **only choice c) has explicit support,** "The disadvantages can include inflation, deflation, and other changes to the value that money represents." From this we can be 100% sure that inflation is a possible disadvantage. Choice a) is a possible implication of the passage but disagreements by themselves are not discussed as a disadvantage in the passage. Choice b) may be a disadvantage, but it wouldn't necessarily affect the value of money. Choice d) is also a possible implication that is not as strongly supported as choice c).

Topic 3 – Practice Exam Questions

Reading D: Fair Salaries

When you apply for a job you deserve a fair salary. How can you tell if a salary is fair? In order to be fair, a salary should match what other workers with the same skills and experience are getting for similar work across the Northwest Territories. This approach is called the method of fair comparison.

When labour is in short supply, employers face the challenge of developing salary standards that are both fair and competitive. Fair salaries are the result of comparisons across an industry. Employees will generally accept the employment that gives them the best compensation for their skills and experience.

Compensation includes more than a salary. Employers are finding that benefits and working conditions- including opportunities for advancement- play a large role in hiring successfully in the North as well as elsewhere. Human resource departments in the private and public sectors actively recruit workers by designing compensation packages that will attract skilled workers and make their organization stand out as the employer of choice.

Question D-1:

According to this passage, what best explains why a skilled worker will choose a Northern employer?

a) Earning a fair salary.

b) Opportunities for advancement.

c) A fair and competitive compensation package.

d) Matching what others are getting from their employer of choice.

Answer: c

Explanation
The second paragraph supports choice c. Choices a), b) and d) are all referred to as parts of a successful compensation package. The concept of a fair and competitive compensation package is the main topic developed in the passage. **The concept of compensation includes more than salary.**

Topic 3 – Practice Exam Questions

Question D-2:

When labour is in short supply, what best describes the impact this will have on employers?

a) Employers will find cheaper labour.

b) Employers will offer fair salaries.

c) Employers will offer fair and competitive compensation packages.

d) Employers will match the salaries of their competitors.

Answer: c

Explanation
Choice a) may be what employers would like to do, but short supply will not allow this option to succeed. If you choose a), you are assuming that employers will be able to find cheaper labour, but the passage does not support this assumption. The passage supports choices b) and d), but these only tell part of the story on the impact for employers of short labour supply. The passage makes the point that matching salaries is not as effective as a comprehensive package of salary plus benefits, working conditions, and opportunities for advancement. **Choice c) is best because it summarizes the full impact** on employers of the concept of short labour supply.

Question D-3:

What can be said about the concept of fair comparison based on this selection?

a) A method of fair comparison is being used by Northern employers to determine salaries.

b) Fair comparisons depend on high salaries for equal skill and experience.

c) The method of fair comparison examines what other workers with the same skills and experience are getting.

d) Fair comparison is a way of finding the best people for the job.

Answer: c

Explanation
Choice c) is given direct support by, "In order to be fair, a salary should match what other workers with the same skills and experience are getting for similar work across the Northwest Territories. This approach is called the method of fair comparison." The other choices make assumptions (choice a), or draw conclusions that are not directly support by the passage (choices b and d).

Unit 3

Application of Concepts

Objective:

Apply the concepts in a written passage to practical situations.

In this topic, and in topic four "Analysis of concepts", we take reading comprehension beyond identification and into application and analysis. **Notice that you must first identify a concept before you can apply it.**

Practical situations are the concern of trades people every day. Thinking logically in order to solve problems is the basic pattern that we will explore in this topic. To prepare for this section, review topic two where concepts are identified. A technical manual, an explanatory article, or a bulletin or notice are examples of the practical reading materials that require the application of concepts. Use the following guidelines to answer questions that apply the concepts presented in a reading passage.

Guidelines for success: Applying Concepts

a) **Notice examples** in the reading that show how the concept is used to solve a problem. Find similarities between the problems in the questions and these examples.

b) **Imagine situations** (scenarios, examples) that are similar to the ones in the reading.

c) **Learn the technical or specialized meaning** of the concepts that are introduced. (see below "population" defined in sampling).

d) **Make diagrams** and list steps to illustrate how a concept is used. (see above concept of "earlier than").

e) **Use process of elimination** to find reasons in the passage for rejecting an answer choice.

Topic 1 – Background

Solving Logical Problems

Applying a concept means solving a problem. When based on reading this is also known as solving word problems. You may have worked on these in math and science courses.

A word problem applies the concept of "earlier than"

Example
"At Arctic Expediters we stagger our lunch breaks in order to provide customers with service throughout the noon hour. Bill eats his lunch before Jim, and Jim eats his lunch before Abe."

Question
If Bruce eats with Bill, which of the following is true?

a) Bruce eats after Jim.

b) Bruce eats after Abe.

c) Abe and Jim eat after Bruce and Bill.

d) Abe eats before Jim starts his lunch.

Answer: C

Explanation
Sometimes a diagram can show how a concept works. For this problem you could use a logical formula: "B then J then A". Since Bruce eats with Bill, statement c) is the only one that is true. The other choices contradict the reading:

a) J then B, (false).

b) A then B (false).

c) B and B then A and J (true).

d) A then J (false).

Many logical concepts can be applied to situations. For example the concept of "earlier than".

This example points the way to a number of strategies that will help you to apply concepts and solve problems based on what you read. The ability to think logically is a big part of applying concepts successfully. **Logic is concerned with what must be true once we accept a set of assumptions, principles, and facts. Work in the trades involves reading instructions and procedures that must be followed in the right order.**

Begin with the Facts

When you are given a problem to solve based on a reading, begin by identifying the facts and concepts that you will apply to find the solution. Note what information is given, including any formulas.

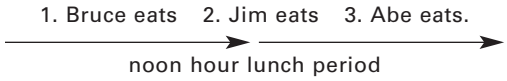
Sketch diagrams that help you see the sequence of events, causes and effects, or the description of a shape, location, area, or measurement. Identify the main problem and then any sub problems that must be solved first. Give a name to the concepts that you will apply. When a procedure or method is described, list the steps in the correct order. Test the procedure on examples of your own choosing. This technique is illustrated below in example b) titled "all averages are not equal".

Topic 1 – Background

Identify the Concepts You Need to Apply

a) Picture in your mind what the application of a concept involves. In the above example, represent the men taking their lunch breaks on a horizontal or vertical timeline. A timeline can help you see cause and effect relationships as well as sequences.

Bill eats with Bruce and:



b) In another example you might imagine what happens if you continue to divide a number in half. It will get smaller and smaller and closer and closer to zero. The concept you need is repeated division. A diagram will reveal this:

Pick a number, say 10, and divide repeatedly by 2:

10/2 = 5, 5/2 = 2.5, 2.5/2 = 1.25, 1.25/2 = .725… and so on…

getting closer and closer to 0.

C) In another passage you may be asked how much shoreline will be lost if Great Slave Lake rises 1 foot. The concept you need is the relationship between volume and area in the lake. The relationship may be complex, but you can anticipate that some formula will relate volume increase to dry land area decrease and answer the question.

D) Use thought experiments to imagine "what if" or hypothetical situations. If you are reading a passage on geology, you may find it helpful to speed up or slow down a process, erosion for example, to see how a landscape will look in the future.
Hypothetical thinking also leads to accurate predictions. Hypothetical statements are also called conditional statements and take the form of "if_____ then_____".

For example, you may be given the formula for compound interest and asked to predict what a deposit will be worth in two years. Then you may be asked to make accurate predictions if the interest rate is changed. This problem could be expressed as a conditional statement (or hypothesis): "If you deposit $1000 at 6% per year, (then) how much will your deposit equal in 3 years?" Look for conditional statements in the exam questions. What follows "if" will be the facts you are given, and what follows "then" will be the results of applying a concept to the facts. For example, if we know that our money will earn 5% annually, then we can predict that $1000 will grow to $1112.50 after two years.

"If" is the biggest word in the dictionary: everything depends on it.

Topic 2 – Examples and Explanations

Example A: Drainage Fields[vi]

To determine the condition of your soil you can perform a "percolation" test. Dig about six small holes to the depth of the proposed drainage trenches, over the area where the drain lines will be placed. Then fill the holes with water. After about 24 hours, add or remove water from the holes so you have about a 6 inch depth. At this point you must determine how long it takes the water level to drop 1 inch. Based on this percolation test, you can consult charts in local codes to determine the number of square feet of absorption area that a building requires.

Question A-1:

If you performed a percolation test and saw that the water in each hole dropped 2 inches in one hour, what could you look up in the charts that are mentioned in this passage?

a) The number of square feet of absorption area that a building requires.

b) The soil condition for the drainage trenches that you will need.

c) The size of the drainage field that will give this absorption rate.

d) The number of trenches that a building will require for drainage based on this percolation rate.

Answer: a

Explanation
The concept of percolation rate is applied by consulting, "…charts in local codes to determine the number of square feet of absorption area that a building requires." This supports choice a). In the question we are given a percolation rate and we could then use the code to relate this rate to the drainage area required for a building. For example, such a chart might tell us that a 2000 square foot building needs a 500 square foot drainage area when the percolation rate is 2 inches per hour, but a 1000 square foot drainage area when the rate is 1 inch per hour. Choices b), c) and d) do not apply the concept of a percolation rate to the building code described in the passage.

Example B: All Averages are Not Equal

When we are asked to calculate an average, we are really calculating a mean. A mean is the number that results from adding a list of values and then dividing the total by the number of values in the list.

Another important way of looking for an average is to calculate a median. A median is also a kind of average. In order to have a better understanding of the concept of an average, think about the difference between a mean and a median.

For example, if you earn $250 on Monday, $300 on Tuesday, $100 on Wednesday, and nothing on Thursday and Friday- your mean wage over the five day period will be $100 + $300 + $250 + 0 + 0 = $650 divided by 5, which equals $130. You can say that you earned $130, on average, each day that week even though you earned nothing on Thursday and Friday. This kind of average is the one commonly understood by the word "average".

A median value, however, is another kind of "average". A median is the midpoint in a range of values that are ordered by size. In order to find the median in a list of values, arrange the values in the list from smallest to largest. If the number of values in the list is odd, the median value will be in the middle of the list. If the number of values is even, the median will be the mean between the two values in the centre of the list. You can see that the median salary for the example given above is $100 because we have five values and $100 is in the middle when they are ordered from smallest to largest. Unless someone asks specifically for the median, we assume that they are interested in the mean when they ask for an average.

Topic 2 – Examples and Explanations

Question B-1:

If there are 12 values in a list, how can we calculate the median according to this passage?

a) Find the middle value in the list.

b) Divide the list into two parts and take the cut off number.

c) Order the list from smallest to largest value and find the mean value of items six and seven in the list.

d) Add the values and divide by 12.

Answer: c

Explanation
In this question we must apply the concept of a median to a list with 12 values. 12 is an even number. The passage tells us what to do when the list of values is even: "If the number of values is even, the median will be the mean between the two values in the centre of the list." A diagram will show that items 6 and 7 "surround" the middle of the list. The median is found by adding these items and dividing the result by two. This gives us the mean for items 6 and 7.

The other choices can be ruled out because they contradict information given in the passage. Choice a) fails because there is no middle number in an even number of items. Choice b) fails because there is no cut off number in an even numbered list divided into two parts- other than in the sense that each half of the list will have a smallest and largest value. Choice d fails because it describes how to find the mean, and the question asks for the median.

Question B-2:

When someone asks for an average value from a list of numbers, what is the best question you can ask before you give an answer?

a) Is the average a mean or a median?

b) Is the value a midpoint in a even or an odd list of numbers?

c) How many numbers are in the average?

d) What are the largest and smallest numbers in the list?

Answer: a

Explanation
The passage explains that the concept of an average can have two meanings. The best question is one that explores which meaning of "average" is intended by the person asking for an average value. The other choices can be ruled out because they are either not helpful (d), or they have only a partial bearing on how to calculate an average (c) and (b).

Question B-3:

What can you conclude if you are told that the median salary for an odd number of workers on a drilling rig is $2500 every two weeks?

a) Every worker earns $2500 every two weeks.

b) An odd number of workers earn $2500 every two weeks.

c) An equal number of workers earn more than $2500 every two weeks as earn less.

d) The average wage is more than $2500 every two weeks.

Answer: c

Explanation
When the concept of a median is applied to a range of values, we know by its definition that the median is the midpoint in an odd numbered list. This means there will be as many values above the median as below it, "A median is the midpoint in a range of values that are ordered by size." The other choices can be ruled out by applying the concept of a median.

Choice a) assumes without evidence that all salaries in the list are equal. Choice b) assumes that the median salary of $2500 is earned by an odd number of workers, but there is no evidence for this. We only know there is an odd number of workers- we don't know that they all receive the same salary.

Choice d) is unclear (ambiguous) because we don't know which average is meant (mean or median). However, using the guideline in the passage, "Unless someone asks specifically for the median, we assume that they are interested in the mean when they ask for an average.", we can assume that the mean is meant. Even with this assumption, it doesn't follow necessarily that a median wage of $2500 implies that the mean wage is greater than the median i.e. that "The average wage is more than $2500 every two weeks." We need more information about the size of the salaries in the list to know if d is true, the median by itself doesn't tell us this.

Try your own experiment

To work on this question it is a good idea to write up different scenarios that capture the facts that are given in the question. For example, a median salary of $2500 will result from the following two lists of 7 salaries (an odd number of workers) :

1) $1500, $1700, $1750, $2500, $2600, $3000, $3500

2) $600, $780, $800, $2500, $3000, $3100, $3200

This experiment, designed by the reader, shows that the same median value can appear in lists that have the same number of items, but that have two different means, or average salaries. In scenario 1) the mean salary = $2364.28, in scenario 2) the mean salary = $1997.14

Example C:
Poverty is Relative

How poor is someone who lives on $450 a month? The answer:" It depends on what their cost of living is, and that depends on where they live." The definition of poverty will vary around the world because basic standards of living are judged differently in wealthy countries such as Canada than in, for example, poorer countries such as Bangladesh or Afghanistan. A poor person in Afghanistan might think themselves rich if they could have the standard of living available to a person living on $450 a month in Canada. A relative definition of poverty will only apply to some people in some places.

An absolute definition of poverty would settle on one definition of poverty that could be applied to anyone anywhere in the world. However, many people believe that a minimum global standard of living necessary for basic health, shelter and food could have the effect of drastically lowering what currently counts as the poverty line in Canada.

Topic 2 – Examples and Explanations

Question C-1:

According to this passage, if a definition of absolute poverty were applied to Canada what might change?

a) People would lose jobs.

b) People would have to give more to the poor.

c) The poverty line in Canada would be lowered.

d) A basic standard of living would cost more.

Answer: c

Explanation
This passage gives information about the relative way that poverty is defined by comparing a person's income with a minimum standard of living in a particular country. The question asks what the passage says about the effect of applying the concept of absolute poverty to Canada. Choice c) is supported by, "However, many people believe that a minimum global standard of living necessary for basic health, shelter and food would have the effect of drastically lowering what currently counts as the poverty line in Canada." This is a reasonable application of the concept of absolute poverty based on the facts given in the passage:

1) An absolute definition of poverty would be a minimum global standard of living necessary for basic health, shelter and food that would apply to anyone anywhere.

2) Countries around the world have different minimum standards of living.

3) Canada is a wealthy country with a higher standard of living than poorer countries.

Based on these facts, choice c) is a result of applying the concept of absolute poverty to Canada. The remaining choices do not answer the question and are not supported by the passage.

Topic 2 – Examples and Explanations

Question C-2:

Based on this passage, what determines how poor someone is?

a) Whether their income is enough for a basic standard of living.

b) Whether they are in Canada.

c) Whether they fit a global definition of poverty.

d) Whether they have saved enough money for emergencies.

Answer: a

Explanation
Only choice a refers to the definition of poverty used in the passage: "How poor is someone who lives on $450 a month? The answer:" it depends on what their cost of living is, and that depends on where they live." The definition of poverty will vary around the world…". We know from the passage that a basic standard will vary around the world, therefore, how poor someone is depends on whether they can afford a basic standard of living where they live. This eliminates choices b and c. Choice d is not supported by anything in the passage.

Question C-3:

Based on this passage, which of the following best applies the concept of relative poverty?

a) Measurements of individual need.

b) Comparisons between the average standard of living and an individual's standard of living.

c) Comparisons of average income between the poorest nations and the wealthiest nations.

d) Determining how much income most people live on in Yellowknife.

Answer: b

Explanation
Relative poverty is explained in the passage as a comparison between an individual's income and what is required for a basic standard of living. The reading also indicates that this can vary from country to country. Choice b applies this concept by comparing an average standard of living to an individual standard of living.

Choice a doesn't compare (relate) individual need to anything and therefore doesn't apply the concept of a relative measure of poverty. Choice c compares average incomes between nations but does not apply the concept of individual incomes to a poverty line or to a minimum basic standard of living. Choice d only describes an average income level, there is no comparison to a basic standard of living in Yellowknife to establish a relative level of poverty.

Topic 2 – Examples and Explanations

Example D: Heat and Temperature are Different

The concepts of heat and temperature are often confused with each other. What is the difference? The difference between heat and temperature can be understood by thinking about a fire that is used to heat a pot of water for tea. As the water gets warmer the temperature goes up until the water starts to boil.

Heat is the energy transferred from the fire to the water in the pot. This transfer of energy causes the molecules of water to move more quickly. Energy based on motion is called kinetic energy. Heat is a form of kinetic energy. The heat energy supplied to the water would be given back if the pot of water is set aside to cool and the water molecules allowed to slow down as they transfer their kinetic energy to the cooler surroundings. When heat is allowed to transfer between objects in a closed system they will come to have the same temperature.

Temperature is a measurement that compares the amount of molecular motion in a substance to a standard. As heat transfer causes more molecular motion in the water that is coming to a boil, the temperature goes up. Temperature is a measurement of the average kinetic energy in a substance. A thermometer in the pot of boiling water will read 100 degrees Celsius, or 212 degrees Fahrenheit, but it will climb no higher even though the fire keeps burning beneath the pot. Heat energy continues to be added, but the temperature doesn't change once the boiling point is reached and water starts to change into water vapour, and "boil off".

Question D-1:

Which conclusion is supported by this passage?

a) The concepts of heat and temperature aren't really that different.

b) The difference between heat and temperature is one of degree.

c) The amount of heat in a substance is the same as its temperature.

d) The temperature of a substance measures the average kinetic energy of its molecules.

Answer: d

Explanation
Choice d) is supported by a direct quote: "Temperature is a measurement of the average kinetic energy in a substance." Choice c) is refuted by the passage whose whole purpose is to explain the difference between heat and temperature. Choice a) is likewise in opposition to the point of the passage and is not supported by similarities between heat and temperature. Choice b) is false, taken literally, only temperature is measured in degrees. Units of heat (joules or calories) are not discussed in the passage. Taken connotively, b is also false because heat and temperature do not differ by having something in common to different extents.

Topic 2 – Examples and Explanations

Question D-2:

According to this passage, why does the temperature of the water in the pot increase?

a) The temperature goes up.

b) Heat energy is transferred from the fire to the water.

c) The average molecular speed of the water is decreasing.

d) The boiling point is reached.

Answer: b

Explanation
The concept of heat is needed to explain why temperature increases. We know from the passage that the average molecular speed of the water is increasing when the temperature rises, therefore choice c) is wrong and can be eliminated from consideration. Choice a) is true, but this fact does not explain why the temperature goes up. Choice d) also does not explain temperature increase.

Choice b) applies the concept of heat to the situation in the question and is supported by direct quotes from the passage, "Heat is the energy transferred from the fire to the water in the pot. This transfer of energy causes the molecules of water to move more quickly." From paragraph two we find a direct quote that completes the explanation, "As heat transfer causes more molecular motion in the water, the temperature goes up."

Question D-3:

From this passage what can you conclude about heating and cooling?

a) Heating and cooling are based on opposite principles.

b) Heating is really a form of cooling.

c) Cooling transfers kinetic energy from a substance to its surroundings.

d) Heating withdraws kinetic energy.

Answer: c

Explanation
Heating and cooling are based on the same concept of kinetic energy transfer with an increase called heating and a decrease called cooling. This eliminates choice a). Choice b) is false because the passage indicates that heating is an increase in kinetic energy and cooling is a decrease. Choice d) is false because the passage indicates that heating involves an increase, not a decrease, of kinetic energy.

Question D-4:

The difference between heat and temperature is correctly applied in which of the following statements:

a) Temperature only tells how hot something is, not how cold it is.

b) Heat transfer only happens when there is a difference in temperature between two substances.

c) The more heat that is transferred to a pot of boiling water, the more its temperature will go up.

d) The temperature of boiling water depends on how much heat is supplied.

Answer: b

Explanation
The passage supports choice b: "The heat energy supplied to the water would be given back if the pot of water is set aside to cool and the water molecules allowed to slow down as they transfer their kinetic energy to the cooler surroundings. When heat is allowed to transfer between objects in a closed system they will come to have the same temperature." This implies that a difference in temperature will disappear when heat is allowed to transfer. Consequently, if there is no difference in temperature there will be no difference in kinetic energy and nothing to transfer between substances. The other choices can be ruled out by applying the concepts of heat and temperature.

Choice a) fails because temperature is described as a comparison between a standard and the average kinetic energy in a substance. Hot and cold are both relative to a standard, and temperature can be used to make judgments about hot and cold. Choice c) fails because "A thermometer in the pot of boiling water will read 100 degrees Celsius, or 212 degrees Fahrenheit, but it will climb no higher even though the fire keeps burning beneath the pot. Heat energy continues to be added, but the temperature doesn't change once the boiling point is reached and water starts to change into water vapour, and "boil off". We can conclude that adding heat only raises temperature until the boiling point is reached. Choice d) fails because water only boils at 100 degrees Celsius. This fact won't change no matter how much heat is or is not supplied.

Also notice that while the passage doesn't explain the phrase "closed system", we can still know enough from the selection to conclude that heat transfer can cause temperature change. This is an example where reading comprehension skills are needed independently from knowledge of content.

Topic 3 – Practice Exam Questions

Objective: Apply the concepts in a written passage to practical situations.

Reading A: Sampling

The GNWT Department of Statistics wants to know what percent of the workforce is unemployed. An engineer wants to know what percentage of ore at a mine near Lac De Gras contains diamonds, and the GNWT Department of Transportation wants to know how many people support stricter legislation against drunk driving.

It is too expensive and time consuming to look at every individual worker, inspect every ton of ore, or ask every citizen in every community-especially if we can gather information from part of a group and still draw accurate conclusions about the whole. This can be done by sampling. In sampling, the entire group of items (workers, tons of ore, citizens) is called the population. Individuals in a population are the elements that make up the whole group. Individuals can be workers, tons of ore, or any other elements that make up a whole that we want to sample. A sample is a part of the population that is used to gather information.

When the population is homogeneous, it is easy to draw accurate conclusions about the whole on the basis of a sample because there are no differences between the individuals in the population. For example, if the ore in the mine was of the same quality everywhere, it wouldn't matter where a sample was taken for analysis. However, when the population is large, and varied, it is more difficult to choose a representative sample. Two steps must be completed to start sampling. First, the population must be carefully described, secondly what we want to measure must be defined exactly.

Topic 3 – Practice Exam Questions

Question A-1:

If the concept of sampling is applied to a population, what would NOT be a result?

a) Every individual in the population will be contacted or examined.

b) Some individuals in the population will be contacted or examined.

c) A representative sample will be contacted or examined.

d) The population will be described carefully.

Answer: a

Explanation
Sampling is one of the concepts explained in this passage: "A sample is a part of the population that is used to gather information." Choice a) is false given this definition. The remaining choices are all applications that result from sampling a population. Choice b) is implied by the fact that not all members will be contacted. Choice c) is supported by, "However, when the population is large, and varied, it is more difficult to choose a representative sample." This implies that a representative sample may be difficult to find, but that it is the goal of a sampling approach to large and varied populations. Choice d) is a result of sampling that is supported by, "Two steps must be completed to start sampling. First, the population must be carefully described…" Only choice a) is not a result of adopting a sampling approach.

Question A-2:

Which of the following populations is homogeneous so that the whole can be judged by examining any sample we choose?

a) Bannock from three camps.

b) Diamonds from a mine.

c) Wages paid by an employer.

d) A glass of coca cola.

Answer: d

Explanation
Only the coca cola would allow any sample to give an accurate picture of the whole glass because the contents are the same (homogeneous) in all parts of the glass. This is not the case for the other choices.

Topic 3 – Practice Exam Questions

Question A-3:

The GNWT wants to know how many people want stricter legislation for drunk driving. Which of the following gives the best reasons for sampling the population in order to find out?

a) Sampling is cheaper.

b) Sampling is quicker.

c) Sampling can be just as accurate as contacting everyone in the NT.

d) All of the above.

Answer: d

Explanation
Choice d) is supported by, "It is too expensive and time consuming to look at every individual worker, inspect every ton of ore, or ask every citizen in every community- especially if we can gather information from part of a group and still draw accurate conclusions about the whole. This can be done by sampling."

Question A-4:

How would a mining engineer apply the concepts in this passage to learn how many diamonds to expect from a ton of ore in a mine?

a) Design a filter for each ton to go through.

b) Count the diamonds produced by each ton.

c) Examine a representative sample of ore taken from various places in the mine.

d) Go by past experience.

Answer: c

Explanation
The passage recommends representative sampling for large and varied populations. Unless we know that the mine is homogeneous the representative sampling method must be used. Choices a), b) and d), could provide information on the ore quality, but none of these choices apply the concepts (sampling) that are discussed in the reading.

Topic 3 – Practice Exam Questions

Question A-5:

What best describes the concept of a population in this passage?

a) A sample of people.

b) The whole group of individuals, including things, people, or other items in a whole.

c) The individuals that represent a whole group.

d) The most homogeneous sample.

Answer: b

Explanation
Choice b) is supported by, "In sampling, the entire group of items (workers, tons of ore, citizens) is called the population. Individuals in a population are the items that make up the whole group. Individuals can be workers, tons or ore, or any other elements that make up a whole that we want to sample." Choice a) is only part of a population, choice c) is also a description of a part of a population, namely the representative sample selected from it. Choice d) also describes a kind of sample based on similarity rather than on being representative.

Topic 3 – Practice Exam Questions

Reading B: Viscosity

Viscosity refers to the thickness of a fluid (liquid or gas) at a given temperature. Viscosity is internal friction. How fast a liquid pours is an indication of its viscosity. Viscosity determines the rate of flow for a fluid.

Higher viscosity means slower flowing. Thicker fluids have more internal friction to overcome before they will flow. Oils are graded according to their viscosity with a number or "weight" of the oil. Viscosity is determined at a given temperature and standard pressure.

Viscosity is one of the important factors that determine what a lubricant will do. Viscosity is measured by viscometers. A Seybolt viscometer is a standard instrument that measures the time for oil to flow into a receiving flask under standardized conditions. The higher the temperature of a liquid the less the viscosity. As syrup heats up it pours more quickly and becomes "thinner". With gases, the reverse is true. A gas will flow more slowly when heated.

The Society of Automotive Engineers (SAE) created a numbering system for oils based on Seybolt universal seconds of flow time. Thick oils flow slowly and have higher numbers. For example 30 weight oil will flow more slowly than 20 weight oil at the same temperature and pressure. In industrial applications, the weight of the oil used in machinery is chosen for the flow rate desired at a certain temperature and pressure. "W" after the SAE number means "winter". These oils are used in colder conditions.

Question B-1:

What does a Seybolt viscometer measure?

a) The temperature of oil.

b) The pressure of oil.

c) The friction in oil.

d) The flow rate of oil.

Answer: d

Explanation
Choice d) is supported by "A Seybolt viscometer is a standard instrument that measures the time for oil to flow into a receiving flask under standardized conditions." Choices a) and b) can be ruled out as false. Only choice c) offers a possible alternative because viscosity is defined in terms of internal fluid friction. While friction will affect viscosity, the meter measures an effect of friction not friction itself, namely the flow rate of the oil. The best answer is d) because it answers the question more precisely.

Topic 3 – Practice Exam Questions

Question B-2:

The SAE number can be used for all of the following purposes except:

a) To decide on a suitable lubricant for a desired flow rate.

b) To determine the cost of oil lubrication.

c) To choose a winter oil.

d) To decide which of two oils will pour more slowly under the same conditions of temperature and pressure.

Answer: b

Explanation
Only choice b) has no connection to the concept of SAE numbers. Cost is not related to viscosity number, although it could turn out that heavier oils cost less because they are simpler to refine and produce- but this is not supported by anything in the passage. The other choices are all supported by the passage.

Question B-3:

What concept is used to best explain why warm syrup pours more quickly than cold syrup?

a) Friction is lower.

b) Higher temperature lowers viscosity.

c) Viscosity determines temperature of pouring.

d) Syrup has a lower SAE number when it is warm.

Answer: b

Explanation
Each choice has some basis in the passage, but b) gives the best explanation by applying the concept of temperature (increasing it lowers viscosity). Choice a) is true of the internal friction in warm syrup, but it does not spell out, i.e. explain, why the friction is lower and what it's effects are. Choice c) introduces a concept, "temperature of pouring" that is not used in the passage and that doesn't answer the question. Choice d) is false because SAE numbers are assigned based on standard conditions of temperature and pressure- the number doesn't change when pressure or temperature change.

Topic 3 – Practice Exam Questions

Question B-4:

If you apply the concepts given in this passage, which statement is true?

a) Gases flow more slowly when they are heated because they are fluids just like oil.

b) SAE numbers for oil are not reliable.

c) As temperature increases, oils flow more quickly and gases flow more slowly.

d) Lubrication should always be measured in flow rate per second.

Answer: c

Explanation
This question asks the reader to connect different parts of the passage. Choice c) is supported by, "The higher the temperature of a liquid the less the viscosity. As syrup heats up it pours more quickly and becomes "thinner". With gases, the reverse is true. A gas will flow more slowly when heated". Choice a) fails because the reason given for gas flow is false. Choice b) has no support from the passage. Choice d) makes an assumption that may not be true.

Topic 3 – Practice Exam Questions

Reading C: Employment Contracts

An employment contract is just like any other legal contract in that it must satisfy the conditions of fair offer and acceptance. Contracts are binding agreements that create obligations on both sides of the bargain. A contract is an exchange of promises, with penalties attached to non-performance.

In an employment contract, the parties agree to an exchange of services for money and other forms of compensation. In order for a contract to be legally binding, i.e. valid, it must be free from any conditions of coercion or ignorance. This means that both parties have the right to know what they are signing (no ignorance) and both are under no threats or pressure (coercion) to act against their will.

Question C-1:

According to this passage what would be an example of coercion?

a) Telling an employee they are free to accept or reject an offer of employment.

b) Telling an employer that they must hire someone or face the consequences.

c) Telling an employee that they can apply for advancement after successfully completing a probationary period.

d) Telling an employer that they are getting the best person for the job.

Answer: b

Explanation
The passage concludes with a brief reference to the concept of coercion: "…and both are under no threats or pressure (coercion) to act against their will." Choice b) is a threat that could cause an employer to hire against their will, therefore it counts as an example of coercion. The other choices do not interfere with the ability to act without interference.

Topic 3 – Practice Exam Questions

Question C-2:

An example of offer and acceptance would be:

a) Asking someone for a date.

b) Having a personal cheque accepted at the Coop.

c) Offering to clean a fish for $1.50.

d) Being invited to take a test for a promotion.

Answer: b

Explanation
Only choice b) applies the concept of a contract (offer and acceptance) fully by including both an offer and an acceptance. The other choices only involve making an offer, acceptance is not included – therefore no contract results.

Question C-3:

What is not true of an employment contract?

a) A bargain is struck that both sides agree to.

b) A contract has to be in writing.

c) A fair contract is free from coercion and ignorance.

d) An exchange of money for services is involved.

Answer: b

Explanation
The passage does not say that contracts must be in writing. Although this may be common practice, there is no indication in the passage to support this claim. The other choices are all supported by the passage.

Topic 3 – Practice Exam Questions

Question C-4:

According to the passage, what could count as a reason for deciding that an employment contract was invalid?

a) The parties didn't know each other beforehand.

b) The parties didn't like each other.

c) One side didn't know what they were agreeing to.

d) One side decided to stop doing what they agreed to do.

Answer: c

Explanation

The passage only tells us that coercion and ignorance could count as reasons for deciding that contract was invalid: "In order for a contract to be legally binding, i.e. valid, it must be free from any conditions of coercion or ignorance. "The other choices may be reasons for changing a contract (a and b), or seeking damages for the failure to perform according to a contract (d), but they do not make it invalid.

Unit 4

Analysis of Concepts

Objective:

Analyze the concepts contained in a written passage.

You have seen in earlier sections how to identify and apply concepts. In this section we extend these skills by looking more closely at comprehension skills that are included under the heading of “analysis”.

Unit 4 – Analysis of Concepts

Topic 1 – Background

Analyze concepts in order to understand them better

To analyze concepts look for the conclusions that you can draw from them. Conclusions include implications, predictions, inconsistencies, and contradictions that follow from information that is accepted as correct, useful, or possible.

Example

1. Analyze the concept that the earth is round by drawing conclusions:

   Infer, predict and conclude:

   - That if the earth is round we will arrive where we start if we travel in one direction
   - That if the earth is round it can't also be flat
   - That if the earth is round all directions from the north pole are south
   - That if the earth is round it must have a centre

If you accept the premise, that the earth is round, then these and many other conclusions must follow.

Analysis has the root meaning of taking something apart. Analysis is disassembly in order to understand. The purpose of analysis is to gain more knowledge. There are many ways to analyze something. Analysis has many meanings, including: reduce to simplest parts, understand the causes of something, reveal the truth or assumption behind a claim or belief, explain what something means, expose the most important features of something.

In reading comprehension what we are taking apart are ideas, claims, and concepts- rather than physical objects. In the last section we discussed conditional statements (hypotheses). We can analyze a passage by testing conditional statements. Analysis often benefits from using this form to test the implications of statements that are used as premises to try and prove something. A premise can be a statement of fact, an assumption, or a principle.

For example, the premise that the early migration of caribou indicates a long winter can be used to predict the length of the coming winter. In a conditional form: "If caribou migrate early, then the winter will be long".

When you read, see how many true conditional statements you can make based on the premises you are given in a reading selection. **Remember, it may turn out that a premise is not true, but you may be asked to draw conclusions that follow when you assume it is true.**

Unit 4 – Analysis of Concepts

Topic 1 – Background

The following strategies will help you analyze the concepts presented in reading selections on the exam.

Contradictions and Inconsistencies

Watch for contradictions. A contradiction results from saying something and then the opposite. For example, "Everyone who studies will learn, and everyone who studies won't learn". In a reading selection, two contradictory statements may be in the passage, but at different places. Also you may be asked to select an answer that contradicts something that is given in the passage.

Contradictory:

"He thinks everyone should be able to sleep all day and not sleep during the day."

Inconsistent:

"He thinks everyone should be able to sleep all day but get up with the sun."

An inconsistency is similar to a contradiction. When two or more statements can't all be true they are inconsistent with each other. For example, "Parents should treat their children equally, there should be one set of rules for girls and one set of rules for boys". The statement as a whole is inconsistent because you can't have equality when there are two sets of rules.

The difference between a contradiction and an inconsistency lies in the fact that a contradiction is the explicit negation of a statement, while an inconsistency is the impossibility of two or more statements being true at the same time even when one statement does not explicitly negate another one.

Analyze cause and effect
In a reading selection, notice causes and their effects. In practical situations things have to be done in the correct order and the laws of nature cannot be ignored. For example, because we know that water expands when it freezes, pipes will burst when they are allowed to freeze. Plumbers have to insulate or heat pipes as a result. As you read, pay attention to cause and effect as well as to the correct order in which something must be done.

Example:

39% of all teenagers will try drinking and driving, but only 5% of these will be caught by the police. It's impossible to stop a teenager from drinking and driving when the chances of being caught are so remote.

Question:

Which of the following contradicts one of the claims made in this selection?

a) More teenagers will try drinking and driving when they know they are unlikely to be caught.

b) Some teenagers are afraid of being caught drinking and driving

c) None of the 39% who drink and drive will be caught by police.

d) Every time a teenager is caught drinking and driving the percentage of those drinking and driving also goes up.

Answer: c

Explanation
Choice c) contradicts the statement that, "39% of all teenagers will try drinking and driving, but only 5% of these will be caught by the police." If this is true, then choice c) is false because some drinking and driving teenagers will be caught among the 39% who drink and drive. Choice d) doesn't follow from anything, choice a) is suggested by the passage and doesn't contradict anything. Choice b) could be true, and is consistent with what is said, choice b) doesn't contradict anything that is said.

Implications

Implications are true statements that can be derived from what is said or written. For example, from the statement "He always shows up late for work" we can infer (i.e. conclude) that he is likely to be late for work tomorrow. From the statement, "The GNWT supports local community government" we can conclude that the GNWT wants to help community governments. From the statements "heavier oils pour more slowly, and bunker oil is heavier than 20 weight motor oil", we can conclude that 20 weight oil pours more quickly than bunker oil at the same temperature. Each of these statements implies the conclusions that are implied if they are true statements. Drawing conclusions can be a direct one-step process, or the outcome of a more complicated chain of reasoning.

Concepts in math and science often involve chains of reasoning that combine several facts and conclusions. For example, several conclusions can be drawn from the facts in the following examples. When these conclusions are combined, additional conclusions can be drawn.

Topic 2 – Examples and Explanations

Reading A: To Maintain or to Replace – That is the Question

The proper maintenance of machinery combines procedures that keep old equipment running with replacement procedures for worn out parts. Preventive maintenance looks ahead to possible problems and replaces parts before they fail. In some situations it may not be clear whether it is better to replace or to continue to maintain a piece of equipment. Cost effectiveness requires that the greatest benefits are achieved at the least cost without compromising safety.

What is the most cost effective approach to maintenance for an electric motor that has bearings that are guaranteed to last for 2000 hours before they need to be replaced at a cost of $100.00?

The answer is influenced by the fact that the same bearings can be repacked with grease at the 1000 hour mark and used for an additional 1500 hours before they must be replaced. The cost of repacking with grease is $75.00. What is the most cost effective thing to do? Should the bearings be replaced after 2000 hours or maintained by repacking the bearings?

Topic 2 – Examples and Explanations

Question A-1:

Based on this selection, what is the most cost effective approach to servicing the bearings in this motor?

a) Replace the bearings every 2000 hours.

b) Repack the bearings after 1000 hours.

c) Repack the bearings after 2500 hours.

d) Keep a large number of new bearings in stock.

Answer: a

Explanation

This passage gives us a word problem to solve. The facts must be listed before we can analyze a concept that uses them. In this selection, the concept of cost effectiveness can be applied to decide which answer the facts support.

The Facts

1. The bearings on an electric motor will wear out and need replacing every 2000 hours.
2. The cost of new bearings is $100.00.
3. Bearings can be repacked with grease after 1000 hours.
4. Repacked bearings will last for 1500 more hours of operation.
5. The cost of repacking is $75.00

Concept: Cost Effectiveness

A cost effective plan will be one that keeps bearings going safely for the longest period with the least cost.

Conclusions

1. If bearings are allowed to wear out, $100 will be spent every 2000 hours for replacement. (follows from facts 1 and 2).
2. If bearings are repacked after 1000 hours the cost will be $75.00. (follows from facts 3 and 5).
3. Bearings that are repacked will run an additional 1500 hours before they must be replaced at a cost of $100. (follows from facts 2 and four).

Solution

This question not only asks us to analyze the concept of cost effectiveness, but also to apply it to a problem situation about bearings in a motor. By analyzing the concept we are most of the way to a solution. The cost per hour using a replacement approach can be compared to the cost per hour of a repacking and then replacing approach. This comparison will show that the least expensive route is the best one.

Calculate the cost per hour by drawing some more conclusions from the facts that are given.

1. The cost per hour using a replacement approach is found by dividing $100 by 2000 hours. This is equal to 5 cents per hour, or $.05. (follows from conclusion 1).

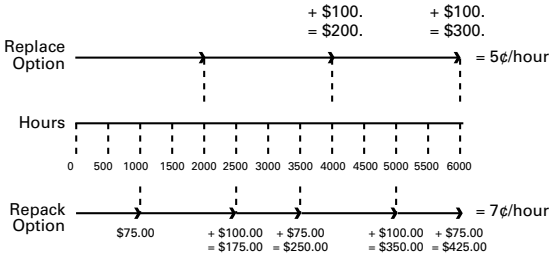
2. The cost per hour using a repacking approach is found by dividing the total cost of repacking at 1000 hours for $75.00, and then replacing 1500 hours later for $100.00. The total cost will be $75.00 plus $100.00 = $175.00 for a total of 2500 hours of service. The cost per hour is found by dividing $175.00 by 2500, which equals $.07 or seven cents per hour. (this follows from conclusions 2 and 3).

3. It is more cost effective to replace bearings every 2000 hours than to repack them and then replace them at the 2500 hour mark. This conclusion answers the question and follows from a comparison of two approaches. Replacing is $.02 cheaper per hour than repacking and replacing at the 2500 hour mark. This makes choice a the correct answer.

Notice also that choices c) and d) can be eliminated at the outset because "…repacked with grease at the 1000 hour mark and used for an additional 1500 hours before they must be replaced. ", contradicts choice c) and d) does not answer the question by showing which approach is more cost effective based on the reading selection.

Alternate Solution: Use a Diagram

The two approaches can be compared on a timeline diagram.



If you repack the bearings, you get 2500 hours from them, but at a cost of $175.

If you replace the bearing every 2000 hours, this costs you $100.

This may help you to see how the costs per hour of service can be compared. Replacing costs $.05 per hour, and repacking costs $.07 per hour for each service cycle.

Reading B: Drainage Fields[vii]

To determine the condition of your soil you can perform a "percolation" test. Dig about six small holes to the depth of the proposed drainage trenches, over the area where the drain lines will be placed. Then fill the holes with water. After about 24 hours, add or remove water from the holes so you have about a 6 inch depth. At this point you must determine how long it takes the water level to drop 1 inch. Based on this percolation test, you can consult charts in local codes to determine the number of square feet of absorption area that a building requires.

Question B-1:

Why does a percolation test require that you wait for 24 hours after filling the test holes with water?

a) It takes a day for the water to disperse.

b) The test needs a control.

c) The test holes will absorb more water when they are dry than when they are wet.

d) We want to know how fast water will disperse when the drainage field is wet.

Answer: d

Explanation
The concept of percolation is applied in a test that will tell us how to plan a drainage field that works. The point of the test is to see how much water will disperse after the soil has absorbed water, i.e. when the ground is saturated. This is the limiting case, or situation that could cause the most trouble for a septic system. **The question asks "why?" and this word signals that a reason or explanation is sought.** Choice a) may be a true fact, but it doesn't answer the question. Also we can infer from the passage, that in clay soils, no water may leave a hole that is filled-even after a day.

Choice b) is closer to offering a reason, but the test is not presented as an experiment in the passage. Also, no control is needed for this test because we aren't testing a hypothesis- we are only gathering information about how fast water percolates through a proposed drainage field. Choice c) states a fact that could be true, but it also doesn't answer the question. In fact, it reinforces the need for a 24 hour soaking period in order to really learn what we are after.

Topic 2 – Examples and Explanations

Reading C: Construction Projects are Like Puzzles

Each piece of the puzzle fits in only one right way. When a building or a home is constructed the foundation is laid first, then the framing, roofing, sheathing, wiring, windows, insulation, drywall and cabinet work-in that order. However, unlike a jigsaw puzzle, this order is important, it describes a critical path that must be followed. If anything is out of order the whole project can fail. If one step is unfinished the next step cannot begin.

This is one reason why the construction industry is a high stress occupational field. Deadlines mean everything, and each trade depends on the others doing their jobs on time and at the right time.

Question C-1:

What would be an example of doing things at the wrong times on a construction job?

a) Wiring before insulating.

b) Roofing before sheathing.

c) Framing before roofing.

d) Drywall before insulation.

Answer: d

Explanation
Insulation goes in the walls before they are covered with drywall according to the passage. The other choices are supported by the passage as correct sequences.

Topic 2 – Examples and Explanations

Question C-2:

What best describes what it is like to work in the construction field according to this selection?

a) Construction is like a puzzle.

b) Many trades are involved in construction.

c) Construction is a high stress occupational field.

d) Following the critical path means everything.

Answer: c

Explanation
The passage tells us that construction is a high stress occupational field, and choice c) answers the question most closely. Choices a), b) and d), say true things about the field that are given as facts but the question focuses on the nature of work in the construction field, **and choice c) gives a summary that, by implication, includes the points made by the other choices.**

Question C-3:

According to this passage, in what way is a construction project unlike a jigsaw puzzle?

a) A construction project has a deadline and puzzle does not.

b) A puzzle can be completed in any order but a construction project has a required order of steps.

c) A construction project has fewer steps than a puzzle has pieces.

d) A puzzle is not stressful and a construction project is.

Answer: b

Explanation

The comparison of a jigsaw puzzle to a construction project has similarities and differences. In the text, the support for choice b) comes from, "However, unlike a jigsaw puzzle, this order is important, it describes a critical path that must be followed." The other choices are not singled out in the selection.

Unit 4 – Analysis of Concepts

Topic 3 – Practice Exam Questions

Objective: Analyze the concepts contained in a written passage.

You have seen in earlier sections how to identify and apply concepts. In this section we extend these skills by looking more closely at comprehension skills that are included under the heading of "analysis".

Reading A:
Fluorescent Lighting

Fluorescent lamps or tubes have several advantages over standard incandescent lamps. Their main advantage is that they can produce light at a much lower cost. Fluorescent tubes produce about four times as much light per watt of power than do incandescent lamps. This makes them much cheaper to operate.[viii]

Topic 3 – Practice Exam Questions

Question A-1:

How can the cost per watt of power determine which form of lighting is cheaper?

a) The cost per watt is a measure of how hot a lamp becomes when it operates.

b) The cost per watt is irrelevant because fluorescent lamps will always use only one fourth as many watts as incandescent lamps do to produce the same amount of light.

c) The cost per watt is lower for fluorescent lights because they give off more light for the same number of watts that incandescent lamps do.

d) The cost per watt determines which lamps use the most power.

Answer: b

Explanation
Choice b) is supported by, "Fluorescent tubes produce about four times as much light per watt of power than do incandescent lamps." A careful reading of this sentence shows that the cost per watt is no different for each lamp. This rules out choices c) and d). What is different is the number of watts needed by each kind of lamp to produce the same amount of light. Choice a) is false because the passage makes no connection between heat of a lamp and the cost of running it.

Question A-2:

From this passage what is not given as an advantage of fluorescent lights?

a) Fluorescent lights are available in tubes as well as bulbs.

b) Fluorescent lights give off four times as much light as incandescent lamps.

c) Fluorescent lights are cheaper to operate.

d) Fluorescent lights are cheaper to buy.

Answer: d

Explanation
We do not know what a fluorescent light costs in comparison to an incandescent lamp from this selection. We are only told that it is cheaper to operate fluorescent lamps, and this supports choice d).

Topic 3 – Practice Exam Questions

Reading B: Fire Control[ix]

In case of an electrical fire the following procedures should be followed:

1. Trigger the nearest alarm to alert all personnel in the workplace as well as the fire department.
2. If possible, disconnect the electrical power source.
3. Use a carbon-dioxide or dry-powder fire extinguisher to put out the fire. Under no circumstances use water, as the stream of water may conduct electricity through your body and give you a severe shock.

Question B-1:

According to the passage, why should water never be used on an electrical fire?

a) Water is not cold enough for electrical fires.

b) Water can conduct electricity.

c) Water makes too much of a mess.

d) Water is not always available.

Answer: b

Explanation
Choice b) is supported by, "…the stream of water may conduct electricity through your body and give you a severe shock." This implies that water is a conductor. The other choices are wrong or irrelevant or both.

Question B-2:

According to the passage what would be an acceptable reason for attempting to disconnect the power source in an electrical fire?

a) No one else would be endangered.

b) No other methods were working.

c) It would stop the fire.

d) It was possible to do so.

Answer: d

Explanation
Choice d) is supported by, "If possible, disconnect the electrical power source."

Unit 5

Making Judgements

Objective:
Make judgements based on information contained in a written passage.

Unit 5 – Making Judgements

Topic 1 – Background

Making judgments completes the work of comprehension. To make a judgment is to take a position and defend it with reasons. After you read something you may be asked to judge what the writer's purpose was, what the main topic is, or how effective a line of argument is.

Judgments involve more interpretation, challenges to assumptions, and ideas about right and wrong, good and bad, effective and ineffective. In order to form defensible judgments based on your reading, following these guidelines.

Taking Positions

Identify the sides of an argument or issue in the reading and decide how you would handle the challenge of picking a side. Look for indications about how the writer would choose. Use the text to justify your choice. As the next example shows, you will judge the reasonableness of one side over another based on the reading.

The key to making judgments based on reading is learning to **pay attention to the reasons you can give for your judgment**. The examples will show how the correct answer must be backed up by reasons that other readers of the same passage would also support.

Topic 2 – Examples and Explanations

Reading A: Closing the Gap

Non governmental organizations, for example the World Wildlife Fund, promote conservation in the Northwest Territories, while businesses can oppose conservation measures in favor of economic development. In this environment, Northern citizens can find themselves torn between a desire for conservation and a need for economic development.

The Protected Area Strategy for the Northwest Territories is one attempt to give communities the ability to close the gap between these two competing desires. Critics have argued that the strategy will have the effect of closing Northern land to any kind of mineral exploration. Proponents argue that the strategy is the best tool for striking a needed balance between preservation- especially of traditional aboriginal areas of cultural significance- and economic development. Northern economic development today is heavily influenced by mining and oil and gas interests. Without a protection policy there would be no controls to limit potential environmental damage caused by mineral exploration.

Question A-1:

What concern of the writer's will the Protected Area Strategy address?

a) Striking a balance between preservation and development.

b) Preventing the closing of Northern land to mineral exploration.

c) Creating a tool for the protection of aboriginal areas of cultural significance.

d) Controlling mineral exploration.

Answer: d

Explanation
To answer this question you must use your judgment based on several clues given in the passage. **Each choice must be evaluated to see if it reveals a concern of the writer that is supported by the text.** Support for choice d) is given by, "Northern economic development today is heavily influenced by mining and oil and gas interests. Without a protection policy there would be no controls to limit potential environmental damage caused by mineral exploration." This expresses the concern that without controls there will be no limits to damage.

The other choices describe points made in the passage by proponents and critics of the strategy, but they do not focus on the writer's concern. In particular, the author takes no position on how effective the Protected Area Strategy will be, we only read that this strategy is one attempt to strike a balance, and that it has both critics and supporters. In addition, the passage gives no details on what the strategy consists of.

Topic 2 – Examples and Explanations

Question A-2:

Based on this passage, what would be an unbalanced position?

a) The creation of special places off limits to exploration.

b) The opening of mines in the NT.

c) The banning of all mineral exploration.

d) The creation of national parks.

Answer: c

Explanation
Only choice c) fails to respect the description of balance given by, "…the best tool for striking a needed balance between preservation- especially of traditional aboriginal areas of cultural significance- and economic development." The passage implies that some mining, some preservation, and some parks are consistent with a balanced approach.

Question A-3:

What is the main idea expressed in this passage?

a) Preservation of the environment has both critics and proponents.

b) The Protected Area Strategy will close the gap between the need for economic development and the desire for conservation.

c) Some kind of protection is needed for the environment in the NT in order to close the gap between the desire for economic development and for conservation.

d) The preservation of aboriginal cultural sites is the most important consideration for striking a balance.

Answer: c

Explanation
Choice a) states a fact given in the passage rather than a main idea that drives the whole discussion. Choice b) is not supported by the passage. The Protected Area Strategy is not presented as the solution that will close the gap. Choice d) refers to one of the important goals of preservation but the passage does not focus only on this issue. Choice c) is best because it combines the conclusion of the passage for some kind of protection with the opening statement of the problem faced by Northern communities, namely how to combine a desire for economic development with a desire for preserving the environment.

Unit 5 – Making Judgements

Topic 3 – Practice Exam Questions

Objective:
Make judgements based on information contained in a written passage.

Reading A:
Expediters Fly with the Wind

Transportation is a big part of the costs of running a business in the Northwest Territories. Mines and oil and gas rigs depend on air transportation for much of their supplies as well as for travel by workers.

When a plane has a tailwind the wind is blowing in the same direction that the plane is travelling. When a plane has a headwind, the reverse is true, and the wind is opposed to the direction that the plane is traveling in.

The result is that it takes more fuel to fly against a headwind than with a tailwind. A diagram can show the direct effects of wind. If a plane flies at 220 mph against a headwind of 40 mph, the net speed of the aircraft over the ground will be 220 – 40 = 180 mph. If the same plane had a tailwind of 40 mph, the ground speed would be 220 + 40 = 260mph. You can sketch these situations with arrows that show the addition and subtraction. Expediters who can schedule flights at times of day that have no wind or that have a tailwind, can save money as a result of lowering fuel costs because their flights will be completed more quickly at higher speeds than when they fight against a headwind.

Topic 3 – Practice Exam Questions

Question A-1:

Based on the information given in this passage, which scheduling choice would reduce fuel costs the most ?

a) Fly whenever necessary to fill an order.

b) Be flexible and fly when there is no headwind.

c) Fly only when there is a tailwind.

d) Be flexible and fly whenever it pays because income exceeds expenses.

Answer: c

Explanation
This passage does not address questions about how realistic it is to schedule flights only when winds are favourable. According to the passage flying with a tailwind will result in the lowest costs for fuel. Choice c) receives the greatest amount of support from the reading. Choices a) and d) might be reasonable ways to run an expediting business, but the passage does not recommend these ideas and it also doesn't deal with the topic of how to run the business.

Choice b) is a reasonable compromise for an expediter, because it reduces fuel costs due to fighting headwinds while leaving two possibilities open for flight: no wind and a tailwind. However, the question asks for the option that produces the lowest fuel costs and this decides in favor of choice c).

Question A-2:

If one plane is flying with a groundspeed of 190 mph, and a second identical plane with the same load is flying with a groundspeed of 220 mph, what might explain the difference in speeds based on the reading?

a) The planes are dealing with different wind speeds.

b) The second plane has more fuel.

c) the planes are dealing with different ground speeds.

d) one pilot is more experienced than the other.

Answer: a

Explanation
The difference in ground speeds cannot be explained by differences in amounts of fuel because this won't affect how fast the plane travels, only how long it can travel (choice b). Choice c) restates a fact given in the question, it doesn't answer the question. Choice d) could explain the difference, but this requires an assumption and departs from the main topic in the reading. Choice a) is supported by the discussion on the effects of headwind and tailwind on groundspeed.

Topic 3 – Practice Exam Questions

Question A-3:

If a plane with the same load leaves Ekati everyday but takes 1 hour to reach Yellowknife on Monday, when there was no wind, and 1 hour and 15 minutes on Tuesday, what can be said about the direction of the wind?

a) The wind is unpredictable.

b) On Tuesday the wind direction was toward Ekati and away from Yellowknife.

c) Tailwinds outnumber headwinds.

d) The plane had a tailwind on Tuesday.

Answer: b

Explanation
You need to make a judgment about wind direction given the information about flying time. The clue you need is in the fact that on Monday there was no wind. This means that longer or shorter flying times will be due to a headwind or a tailwind. On Tuesday the trip was longer than on the windless Monday, therefore a headwind can explain the longer flying time. Since you know the plane is heading toward Yellowknife, the headwind had to come from Yellowknife and toward Ekati.

Reading B:
The Berger Inquiry[x]

A galvanizing force for these Dene and Metis leaders was an inquiry into a proposal to run a gas pipeline down the Mackenzie Valley in the mid-1970's. The federal government appointed Mr. Justice Thomas Berger in 1974 to review the proposal and, government officials hoped, give quick approval to the project, which would unalterably change the lives of Dene and Metis. Meetings were held informally in community halls and schools with elders given a chance, often for the first time, to express their views on the actions of the government directly to its representative. To the surprise of many, Berger recommended a moratorium on a pipeline through the Mackenzie Valley for ten years until the Dene and Metis had a chance to settle their land claims.

Topic 3 – Practice Exam Questions

Question B-1:

According to this passage, if the pipeline was approved the lives of Dene and Metis would change:

a) Unalterably.

b) For a long time.

c) After the inquiry ended.

d) When the pipeline was approved.

Answer: a

Explanation
Choice a) is supported by a direct quote, "…government officials hoped, give quick approval to the project, which would unalterably change the lives of Dene and Metis." The other choices are implied by the selection, but they do not answer the question as precisely by using the reading selection.

Question B-2:

Why does the author think the Berger inquiry was a galvanizing force for the Dene and Metis leaders?

a) The leaders would have to protect their land.

b) The leaders wanted to consult with their communities.

c) The leaders had a pressing reason to work together on a common issue.

d) The leaders were shocked into action by the approval process.

Answer: c

Explanation
This question asks you to use judgment to identify the author's reasons for connecting the Berger inquiry with the development of Dene and Metis leadership. Choice c) captures the main idea of unifying the leadership around a common purpose. Use your judgment to see that the inquiry changed the situation- we read that now there was an opportunity to meet with a representative of the government directly and include community consultations, often for the first time.

Choice a) makes an assumption that goes beyond the text. The selection does not refer explicitly to land and the possibility of losing it. Choice b) may be true, but it doesn't answer the question about why the leaders began to act together on the issue of the pipeline. Choice d) is true but there is less information to explain why they were shocked into action than is given in choice c). Choice c) is the best answer to the question.

Topic 3 – Practice Exam Questions

Question B-3:

According to this passage, what was the moratorium meant to accomplish?

a) A cooling off period.

b) Protection of aboriginal lands.

c) Prevent government officials from getting a quick approval.

d) To provide an opportunity to settle land claims.

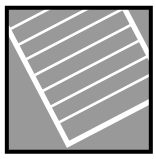
Answer: d

Explanation
Choice d) is supported by, "…Berger recommended a moratorium on a pipeline through the Mackenzie Valley for ten years until the Dene and Metis had a chance to settle their land claims." The other choices are possible, but they receive less direct support from the text.

Part Two:

Sample Questions with Explanations

All five competency areas are combined in the following practice questions. Remember that the test is designed to assess your reading ability, not your knowledge about any subject. You may use **Part Two** as a pre test to see what you need to review in **Part One**. You may also use it as a post test after completing **Part One.**



Part 2

Practice Exam Questions

Reading A:
Accurate Estimates of Materials Can Save Time and Money

An electrician needs to estimate how many feet of wire he needs, a mechanic needs to estimate how much oil he will need to change, and a carpenter will want to know how much lumber to order. In every case having a little more rather than a little less of what is required will be desirable in the long run. Err on the side of overestimating in order to avoid delays from running out of material- but don't err too much or it will cost you money if not time.

Question A-1:

According to this passage, why should trades people err on the side of overestimating materials for a job?

a) It saves money in the short run.

b) It avoids delays if materials run out.

c) It might cost money in the long run.

d) Its always better to have a lot of extra material.

Answer: b

Explanation
Choice b) has direct support from, "Err on the side of overestimating to avoid delays…" Choice) is contradicted by the passage, because reasonable overestimations are supposed to save time and money in the long run. Choice a) is not supported by the passage, and goes against the main point: namely that some extra costs spent on extra material will provide insurance against running out of material on a project. Choice d) doesn't answer: the question as to why more material is desirable when estimating, and it also contradicts the recommendation that overestimation not be excessive, "…but don't err too much…"

Part 2

Practice Exam Questions

Question A-2:

What would count as an example of overestimating- but not too much?

a) Ordering twice as much material as the job requires.

b) Adding 10% extra to all materials estimated for the job.

c) Finding a way to be accurate.

d) Hiring a consultant to do the estimating.

Answer: b

Explanation
Only choice b) answers the question by describing a small increase over an estimation. Choice a) overestimates too much, and this would cost money. Choice c) is not an example of overestimating, and choice d) is not supported by the passage

Reading B: Small Measurements

A mechanic has to make measurements on piston rings and valves that are accurate to within one thousandth of an inch. This can be done by using thin blades of metal on a feeler gauge. Decimal places are used to indicate how accurate a measurement is .002 inches is accurate to plus or minus one thousandth of one inch, the measurement cannot be out by as much as one thousandth of an inch. If this measurement is accurate, a feeler blade of .003 won't fit in the gap, and one measuring .001 will be too loose.

Question B-1:

How far off is a measurement allowed to be when a mechanic uses a feeler gauge?

a) 1 inch.

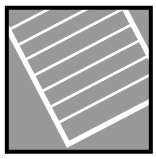
b) .01 inch.

c) One thousandth of one inch.

d) Two decimal places.

Answer: c

Explanation
Direct support is given by, "… the measurement cannot be out by as much as one thousandth of an inch." The other choices are wrong.



Part 2

Practice Exam Questions

Question B-2:

A feeler gauge is used to:

a) Measure thousandths of inches.

b) Measure small gaps.

c) Measure distances between pistons.

d) Measure small distances.

Answer: b

Explanation
The feeler gauge is described as a set of thin blades that can be inserted in small gaps. Even if you have never seen one, this is all you need to understand. Choice b) is the best answer because the other choices are either wrong or only partly right. Choices a) and d) are partly right, but the gauge is not used as ruler to measure distances. Choice c) is wrong, and distances between pistons are not discussed in the passage.

Question B-3:

If a feeler gauge blade is too loose, what can we conclude from this passage?

a) A blade twice as thick is needed.

b) The gap being measured is larger than the blade's thickness.

c) The gap being measured is smaller than the blade's thickness.

d) The blade was not inserted properly.

Answer: b

Explanation
Choice a) makes an assumption, a thicker blade will be needed, but not necessarily one that is twice as thick. Choice b) is correct because we are told that the blade fits in the gap too loosely. Choices c) and d) don't fit the facts.

Part 2

Practice Exam Questions

Reading C: Boom and Bust

The Cadillac Mine in the Mackenzie Mountains west of Fort Simpson opened during the last silver boom. A boom happens when the price for a commodity like silver goes significantly higher without warning. A bust can follow a boom just as quickly.

When the mine was ready to operate world prices for silver fell drastically. The mine was forced to close down before it had really started. This is one of the problems Northern mining industries face when they depend on world markets to sell their product. The bad news from the market can catch up with a development after a great deal has been invested. Historically, the world diamond market offers a remarkably stable price for gem quality stones. This fact has helped propel enormous investments in diamond mining in the Northwest Territories in recent years.

Question C-1:

The Cadillac mine was forced to close because:

a) There was not enough silver to sell.

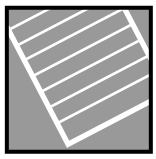
b) No one wanted to buy the silver produced by the mine.

c) No one thought the price of silver would fall so steeply.

d) The price offered for silver fell so low that the mine could not profit.

Answer: d

Explanation
Choice d) is **the only choice with direct support that does not involve making assumptions:** "When the mine was ready to operate world prices for silver fell drastically. "



Part 2

Practice Exam Questions

Question C-2:

Based on this passage, what can be said about boom and bust?

a) A boom makes everyone rich who gets in early.

b) A bust is bound to follow a boom.

c) A bust can happen just as quickly as a boom.

d) Boom and bust cycles are part of every mining industry.

Answer: c

Explanation
Choice c) has direct support in, "A bust can follow a boom just as quickly." Choices a) and b) are based on assumptions that are not supported in the text. Choice d) is contradicted by the comment that the diamond mining industry has historically enjoyed stable world prices.

Question C-3:

According to the passage, what has helped motivate investment in the diamond mining industry in the Northwest Territories?

a) The existence of diamonds in the ground.

b) The opportunity to sell to a world market.

c) The relative stability of prices offered for diamonds.

d) The recent boom environment for diamonds.

Answer: c

Explanation
The best choice is c) because it has direct support from the conclusion of the text in, "Historically, the world diamond market offers a remarkably stable price for gem quality stones. This fact has helped propel enormous investments in diamond mining in the Northwest Territories in recent years." Choices a) and b) are implied by the facts that are given but they are not connected in the passage to the investment of capital in diamond mining. Choice d) has no support from the text although it certainly may be a contributing factor.

Part 2

Practice Exam Questions

Reading D: Proper Electrical Connections[xi]

Almost all electrical installations and repairs consist of connecting wires to terminals or to other wires. Cutting, splicing and connecting electrical wires must be done well or problems will result. A poorly made electrical connection will have a much higher than normal resistance. This results in an excessive amount of heat being produced at the connection when normal current flows through the connection. A poor electrical connection will also reduce the total energy normally available for the load. This is due to the fact that a portion of the energy supplied is used to produce unwanted heat at the faulty connection point.

Question D-1:

Which statement best summarizes the consequences of a faulty electrical connection?

a) The wires are loose and can corrode to the point that they overheat.

b) The connection will cause problems including shorts and sparks.

c) The connection will produce unwanted heat and reduce the energy that is supplied to a load.

d) The resistance will be higher than normal and wires will heat up.

Answer: c

Explanation
The key word in the questions is "summarizes". Only choice c) combines the two main outcomes of a poor connection: unwanted heat due to higher than normal resistance and current loss. The other choices are either incomplete, choices a) and d) omit to mention current loss, or unsupported by the selection (choice b).

Part 2

Practice Exam Questions

Question D-2:

Which of the following statements is based on information contained in this passage?

a) Unwanted heat at a faulty connection is the result of higher than normal resistance.

b) Energy supplied to a faulty connection is wasted when there is no place for it to go.

c) The resistance in a circuit is increased when the circuit heats up.

d) Cutting and splicing are responsible for faulty connections only when they are done without checking the load.

Answer: a

Explanation
Choice a) is supported by, "A poorly made electrical connection will have a much higher than normal resistance. This results in an excessive amount of heat being produced at the connection when normal current flows through the connection."

Reading E:
Not My Department

Safety in the workplace requires a combination of personal responsibility and teamwork. When a tool is used it must be returned in good condition and never replaced when something is wrong with it. Similarly, when a machine is used, some kind of lock out procedure should be used so that every user knows that the equipment was shut down and serviced properly by the last person who used it. One of the preventable causes of accidents in the workplace is the "not my department" attitude. Even though it may not be your job to correct someone else's mistakes or negligence- it is your job to notice and report problems and to make safety your responsibility.

Part 2

Practice Exam Questions

Question E-1:

Which of the following facts best supports the main point made in this passage?

a) Young workers have the highest rate of accidents suffered in the workplace.

b) Accidents are prevented when lock out procedures are followed.

c) Proper maintenance of equipment will prevent accidents.

d) A combination of safety awareness and good lockout procedures prevents accidents in the workplace.

Answer: d

Explanation
With the exception of choice a), each fact supports the main point in the passage. Choice d) is the most comprehensive fact in support of the conditions that make a workplace safe and less prone to accidents. Notice that choice d) includes choice b) because lockout procedures are based on following maintenance procedures. Choice d) connects the two major themes in the passage: awareness of problems, and procedures that support safe teamwork.

Question E-2:

According to the passage what is wrong with the attitude, "not my department"?

a) This attitude is preventable.

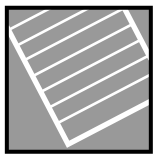
b) This attitude contributes to accidents that could be prevented.

c) Everyone has to do their job.

d) Safety should be everyone's responsibility.

Answer: b

Explanation
The question asks specifically about an attitude. Choice a) is a fact about the attitude that is given in the passage but it does not explain what is wrong about the attitude. Choice b) gives the explanation asked for in the question. Choice c) is true, but does not speak to the question, and actually points away from the main idea in the passage, which is that everyone has a responsibility to put safety first. Choice d) is a claim made in the passage, but it doesn't answer the question.



Part 2

Practice Exam Questions

Reading F: Breakup

Several communities located on the shores of rivers in the Northwest Territories organize bets to see who can predict the day when the frozen river breaks up and starts to flow again after the long winter. Sometimes a flag pole is set up in the middle of the river as an indicator. When the object disappears with the movement of the river, breakup is declared officially. The pole is supposed to move only after breakup starts.

Problems with this way of measuring the start of breakup have troubled some communities. Who was watching when the flag pole disappeared? Was there a storm so that no one could see the flagpole? Did the pole fall over due to local melting before the river really broke up? Even the simplest ways to decide something can still cause problems it seems.

Question F-1:

What would be the best example of an "indicator", based on how this word is used in the passage?

a) A wind sock at an airport.

b) A flagpole at a school.

c) A thermometer.

d) A circuit breaker.

Answer: d

Explanation

Even if the reader does not know exactly what a circuit breaker looks like, the other choices can be eliminated in its favor. Keep in mind that the flagpole set up in the frozen river is meant to function as an indicator of breakup. A wind sock (a) gives a continuous indication of wind direction, it doesn't measure a critical event that happens at a specific time after specific causes – the way the flagpole in the river is supposed to.

Choice b) doesn't respond to anything changing around it. A flagpole in a schoolyard is not used as an indicator the way a flagpole placed in a frozen river is, even though it is a flagpole in both situations that we are talking about. Choice c), a thermometer, measures any temperature and doesn't give an indication of when a specific temperature is reached - although a person watching for a specific temperature could use a thermometer as an indicator if they sat and watched it continuously.

Choice d) resembles the flagpole used as an indicator in the passage most closely. When the demand for electrical current becomes too great, and only then, will the breaker trip, and open the circuit. Like the flagpole placed in the frozen river, the breaker is designed to respond to a specific change and signal that something has happened that it is designed to respond to. **This question assumes that the reader knows what a wind sock, and thermometer are- some questions on the exam will make assumptions about some "general knowledge".**

Part 2

Practice Exam Questions

Question F-2:

Which observation best supports the writer's comment that "Even the simplest ways to decide something can still cause problems it seems." ?

a) People like to find things to argue about.

b) Flagpoles are untrustworthy for the purpose of indicating breakup.

c) Apparently simple ideas can lead to unexpected complications.

d) Nothing is as simple as it looks.

Answer: c

Explanation
The contest here is between choice c) and choice d). Choice a is too general and doesn't focus on the issue that makes up the question namely: "The pole is supposed to move only after breakup starts. Problems with this way of measuring the start of breakup have troubled some communities." Choice b) is a conclusion about flagpoles that blames the flagpole for the difficulties that are described in the passage. This conclusion is not drawn by the writer. In fact, the passage suggests that it is the weather that could be "blamed" if the pole fails to indicate breakup. Choice d), like choice a) is too general. It is close, but not as close as choice c. Choice d) is consistent with the point quoted in the question, **but choice c) specifically expands the idea of simple appearances to include the important detail of unexpected complications. This detail is what the writer focuses on in the description of the problems with the use of a flagpole as a breakup indicator.**

Reading G:
Doing and Thinking

Its time to stop separating academic theory from trades' knowledge. For too long, this division has prevented people from seeing how important both sides of the knowledge coin are. Theory and action belong together- not apart. Take just one example. Someone may know from experience that he or she can only siphon gas from one car to another when the receiving gas tank is lower that the source tank. They may also have learned from experience that if you fill the connecting hose with fuel first, you don't have to suck on the lower end and risk getting a mouthful of gas.

However, if this person is asked to explain why things work this way they may not have an answer. They know something- but they don't understand what they know. This is like having a fish to eat for a day, but not knowing how to fish so you can eat every day. The explanation for siphoning introduces the concepts of atmospheric air pressure (standard pressure), creating a vacuum, and the force of gravity. When these concepts are added to experience, they can be used to solve many practical problems in new situations.

Part 2

Practice Exam Questions

Question G-1:

In this passage what is the writer's main point?

a) Siphoning is a good example of experience that works without theoretical knowledge.

b) When concepts are added to experience we have two sides of the same coin.

c) Theory and action belong together.

d) It's better to know how to fish so you can eat everyday.

Answer: c

Explanation
Choice c) is based on the second sentence, "Theory and action belong together – not apart." This topic is developed throughout the passage. It is the theme throughout. The other choices refer to supporting details, (a), or comparisons that illustrate the main idea, e.g. a coin in choice b) and fishing in choice d).

Question G-2:

What does the author mean by, "They know something- but they don't understand what they know"?

a) People can do things without academics.

b) People can know how to do something, but can't explain why it works.

c) People can siphon gas but not know why it works.

d) Trades people know a lot based on experience.

Answer: b

Explanation
The quote in the question is based on the example of siphoning which appears as choice c). Choice b) is a better choice than c) because it makes a more general claim about two kinds of knowledge that uses the example of siphoning gas to make a point. Choice a) is true, but it misses the author's point that there are practical advantages to being able to understand why something works the way it does. To realize these advantages, know-how must be combined with explanation, academics with experience. Choice d), like a), is also true but doesn't answer the question so much as restate the meaning of the quote used in the question.

Part 2

Practice Exam Questions

Question G-3:

Which statement is supported by the ideas in this passage?

a) People need to stop trying to get an explanation for everything they can do.

b) Siphoning gas should be taught in science classes.

c) Concepts added to experience can be used to solve practical problems.

d) Trades education and academics should be separated.

Answer: c

Explanation
This choice is supported by the conclusion, "…concepts are added to experience, they can be used to solve many practical problems in new situations." Choices a) and d) contradict what is given in the passage, and choice b) is not an implication that can be drawn with confidence from the text.

Question G-4:

Which statement is opposed to the main idea presented in this passage?

a) Academic training is useful for trades.

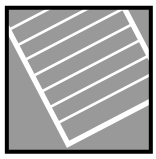
b) Knowing what works should include explaining why it works.

c) People can do things correctly without knowing why it works.

d) The division between academic theory and trades' knowledge is a good idea.

Answer: d

Explanation
All of the other choices are supported by the passage. Only choice d) opposes it. The text argues that knowing what works and knowing how something works are both valuable. Choices a) and b) support this claim. Choice c) states a) fact given in the passage that, while not supporting the main idea directly, also does not contradict it.



Part 2

Practice Exam Questions

Question G-5:

What would be the best way to prevent getting a mouthful of gas when siphoning between two cars?

a) Sucking gently at first.

b) Increasing the vertical distance between the two gas tanks.

c) Putting pressure on the gas.

d) filling the hose with gas and then using it to connect the tanks.

Answer: d

Explanation
Choice d) is described in the passage. The other choices involve risks, (a) or are ineffective without further information, (b) and (c). The passage implies that solution (d) might not occur to someone who didn't understand the relationship between atmospheric pressure and gravity.

Reading H: Impaired driving

Alcohol dependency is acknowledged as one of the main barriers in the way of a solution to the problem of impaired driving. Put simply, if people didn't depend on alcohol, they wouldn't drive when they drink. Eliminate dependency, and you eliminate the problem. From a health perspective, impaired drivers need rehabilitation, not punishment. They need to be helped to overcome their dependency through treatment. However, not all impaired drivers are dependent on alcohol in the same way or to the same degree. A rehabilitation program can't simply be "one size fits all".

Part 2

Practice Exam Questions

Question H-1:

Which of the following is not a fact given in this passage?

a) All impaired drivers have the same problem.

b) Rehabilitation is based on a health perspective.

c) Eliminating dependency will eliminate the problem.

d) Punishment is not part of rehabilitation.

Answer: a

Explanation
Choice a) is contradicted by, "However, not all impaired drivers are dependent on alcohol in the same way or to the same degree." The other choices are supported by the passage.

Question H-2:

Why does the writer think that "one size fits all," won't work to rehabilitate impaired drivers?

a) People are different.

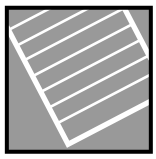
b) Rehabilitation is not for everyone who drinks and drives.

c) Alcohol dependency is not the same for all impaired drivers.

d) A health perspective isn't for everyone.

Answer: c

Explanation
Choice c) is supported by, "However, not all impaired drivers are dependent on alcohol in the same way or to the same degree. A rehabilitation program can't simply be "one size fits all". The other choices make true statements but they do not answer the question exactly and are not supported by the text explicitly.



Part 2

Practice Exam Questions

Reading I: Electromagnets[xii]

Electromagnets can be made much more powerful than permanent magnets. In addition, the strength of the electromagnet can be easily controlled from zero to maximum by controlling the current flowing through the coil. For these reasons electromagnets have many more practical applications than do permanent magnets. Large industrial electromagnets are used with cranes to move scrap iron.

Question I-1:

What can you conclude about the difference between a permanent magnet and an electromagnet from this passage?

a) Permanent magnets last longer

b) Electromagnets don't take as much current

c) Permanent magnets don't go from zero to maximum

d) Electromagnets can't be controlled as easily

Answer: c

Explanation
The passage tells us that electromagnets go from zero to maximum depending on the current flow. Permanent magnets, by implication, do not change their magnetic properties with current. The other choices are based on assumptions and receive no support from the text.

Question I-2:

What is a reason given in the passage for electromagnets to have many more practical applications than permanent magnets?

a) Electromagnets cost less.

b) Electromagnets have the ability to vary their strength.

c) Electromagnets can be used with cranes.

d) Electromagnets are easier to make.

Answer: b

Explanation
One of the reasons given in the text is, "…the strength of the electromagnet can be easily controlled from zero to maximum". The other choices require us to make assumptions except for c). Choice c) states a fact given in the passage, but this fact doesn't answer the question- it only gives an example of one application.

Part 2

Practice Exam Questions

Reading J: Hard Work

Hard work is not always productive. Human beings have a remarkable ability to schedule as much time as is available on a task if they have no competing pressures. The interesting point is that a lot of serious effort can go into doing very little.

For example, a person who has all day to clean their car could actually develop an all day schedule of actions that clean the car. One hour for glass cleaning, one hour for brushing the carpets, then sponging them off, then spraying them etc. The reader gets the idea: where there is time there is the opportunity to make work and spread it out until it fills all the available time. By six p.m. the weary car cleaner could feel that he had done a full day's work-and in one way he would be right- but he would only have succeeded in cleaning a car.

This tendency in human behavior has supported salary plans that reward how much work is done, not how long it takes to do the work. We pay for results, not for rationalizations about how long they take.

Question J-1:

What would be an example of the tendency in human behavior that is described in this passage?

a) Brushing your teeth ten times a day.

b) Insisting on perfection at all times.

c) Making sure you have enough time for a job.

d) Working all day watering houseplants.

Answer: d

Explanation
The passage describes the tendency to use all available time on a job no matter how quickly it could be taken care of. Choice d) is closest to the car cleaning example given in the passage. The other choices are related ideas, but they do not focus on the behavior that is described in the passage.

Part 2

Practice Exam Questions

Question J-2:

Based on this passage, how would you pay to have your car cleaned?

a) By the hour.

b) According to the qualifications of the cleaner.

c) By a fixed rate for cleaning the car to an agreed standard.

d) By amount of effort and care that was taken.

Answer: c

Explanation
Direct support for choice c) is found in, "This tendency in human behavior has supported salary plans that reward how much work is done, not how long it takes to do the work. We pay for results, not for rationalizations about how long they take." The other choices either contradict or are inconsistent with the main points made about how people tend to take too much time to do simple jobs.

Question J-3:

What is the idea that the writer wants the reader to get?

a) All work requires effort.

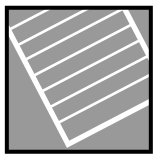
b) People have a tendency to spread work out until it uses all the time available.

c) People always work as hard as they can.

d) Paying for work done by the hour has risks.

Answer: b

Explanation
The question refers to the writer's expression that, "the reader gets the idea, where there is time there is the opportunity to make work and spread it out until it fills all the available time." This quote summarizes what the preceding examples are driving at. The other choices don't answer the question or make assumptions.



Part 2

Practice Exam Questions

Reading K: Wood Shingles[xiii]

Wood shingles have the appeal that all wood has. They are a natural material, are nice to work with, weather to pleasant colors, and are durable. They are taper-sawed from decay-resistant species like cypress, redwood, and cedar, with cedar having the edge because of characteristics that include a low expansion and contraction ratio in relation to moisture content, a nice even grain, and a high impermeability to liquid. Unfortunately wood does not resist fire too well, so wood shingles may be frowned on in some areas unless they have been specially treated with a fire retardant. It's a point to check.

Question K-1:

What would not be a reason in favor of selecting wood shingles?

a) They are natural and weather to pleasant colors.

b) They don't let water through.

c) They need fire retardants in some areas.

d) They are decay resistant.

Answer: c

Explanation
A fire retardant may be a good idea to help resist fire, but the need for this doesn't speak in favor of wood shingles. It would be better if they could resist fire on their own. The other choices are all positive reasons for choosing wood shingles and they are given as facts in the passage.

Question K-2:

What does the author mean by "cedar having the edge"?

a) Cedar is taper sawed to a sharp edge.

b) Cedar has additional advantages.

c) Cedar is straighter than other shingle material.

d) Cedar is more decay resistant.

Answer: b

Explanation
The term "edge" is used to mean "advantage" here. A connotation, rather than the literal meaning of edge, is intended[6]. After being told that cedar is one of several decay resistant species, we read, "…cedar having the edge because of characteristics that include a low expansion and contraction ratio in relation to moisture content, a nice even grain, and a high impermeability to liquid." This supports choice b). Choice a) is a fact that is given but it doesn't give cedar an advantage over other decay resistant woods. Choice c) is not supported by the passage and choice d) is contradicted by the passage. Cedar is included in a list of decay resistant species, this is a property it shares with them rather than a property that gives cedar an edge. **Once again, you do not need subject area knowledge to understand the meaning of each advantage, for example "impermeability to liquid", and "low expansion and contraction ratio" in order to answer this question correctly.**

[6] See optional topic #1 "Identifying Meaning" in Part One: Literal Comprehension.

Part 2

Practice Exam Questions

Reading L: Symptoms and Causes

A symptom is a sign that something is wrong. People who fix things, just like physicians who cure people, must learn to diagnose symptoms and find causes. Often there are several possible explanations for the same symptoms. How can a professional be sure that they have diagnosed the right problem to work on? Ruling out possibilities is a large part of the trouble shooting process.

For example, a vehicle may make noises when the steering wheel is turned and the driver may feel that more force than normal is required to turn the wheel. These symptoms could be caused by any of: a loose fan belt that powers the steering, low power steering fluid, a damaged steering linkage or broken lubrication seals. A skilled mechanic will rule out the most common and easiest to check possibilities first. Usually it's the fan belt or the fluid level. These can be checked first before looking under the vehicle. A final point: more than one cause may be involved.

Question L-1:

What is an example of good troubleshooting skills?

a) Finding the cause of the symptom quickly.

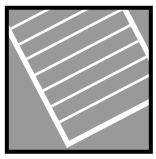
b) Investigating the most obvious and common causes first.

c) Checking all possibilities before making a decision.

d) Overhauling the system that is involved.

Answer: b

Explanation
Choice b) is supported by, "A skilled mechanic will rule out the most common and easiest to check possibilities first." A cause and a possibility have similar meanings in the context of this selection. The other choices are not supported and don't focus on what the passage says about troubleshooting.



Part 2

Practice Exam Questions

Question L-2:

In this passage, what is the most important comparison made between a physician and a mechanic?

a) Mechanics and physicians both solve problems.

b) Mechanics and physicians are highly trained specialists.

c) Mechanics and physicians diagnose symptoms and identify causes.

d) Physicians work in hospitals and mechanics work in garages.

Answer: c

Explanation
This question requires judgment. The passage compares the work of a doctor with the work of a mechanic in the first paragraph. All four choices are supported or implied by the passage but only choice c details the points of comparison that are used by the author to develop a description of troubleshooting that is based on the similarities between diagnosis of people and finding the causes of mechanical problems.

Question L-3:

What is significant about the final point made in the passage?

a) Multiple causes means that the job isn't completed.

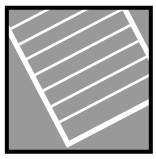
b) There can be more than one cause for a mechanical problem.

c) A mechanic cannot assume that fixing one cause will also fix the problem.

d) Mechanical problems can have several explanations.

Answer: c

Explanation
The final point made is in the last sentence, "A final point: more than one cause may be involved." Choice c) draws out the significance of the last sentence by identifying what a mechanic must know and do after fixing one cause of a problem. For example, a loose fan belt may be tightened, but the steering problem may continue because the fluid level is also low. Choice a) expresses an incomplete thought, it can be rejected because we would need to supply this complete thought, "**The presence of** multiple causes means that the job isn't completed **until all causes have been addressed**", in order to see it as any kind of answer to the question. Choices b) and d) restate the final point made in the passage without telling us anything about its significance.



Part 2

Practice Exam Questions

Question L-4:

In this passage we are told that ruling out possibilities is a large part of the trouble shooting process. What other parts of the process are identified in the passage?

a) Knowing all of the possible causes for a symptom.

b) Knowing the most common causes of a symptom.

c) Thoroughly checking that all symptoms are accounted for by a solution.

d) All of the above.

Answer: d

Explanation
The process of elimination is supplemented by all three choices in this question. Without a knowledge of what could go wrong, its impossible to start a process of elimination. Choices a) and b) support this idea. Choice c) captures the final point made in the passage. After a cause is found and a solution provided, the work of checking the system to see if any symptoms remain is still needed to complete the troubleshooting process.

Reading M:
Computers Give Orders

It is safe to say that all trades use computers for some part of their work. Many business functions are performed by computers including, scheduling, record keeping, accounting, inventory management, communications with suppliers and customers, diagrams and blueprints, and project management.

One of the important benefits of computers is real time inventory management. When an item is taken out of an inventory, a computer program can immediately update all records based on that inventory. For example, if a certain gas fitting is taken from a warehouse several times a day, a manager can have a computer alert him when the supply is down to 500 fittings. The next step, already happening in some companies, is for the computer to automatically generate an order for more parts when the supply reaches a pre-set lower limit.

Part 2

Practice Exam Questions

Question M-1:

In order for the computer to do what this selection describes, what must be true?

a) The manager will need to have Microsoft windows manage the program.

b) The inventory will have to be large enough to need a computer.

c) Each time a fitting is taken the total must be reduced by one in the computer's records.

d) The inventory must never be allowed to reach 500 or a lower limit.

Answer: c

Explanation
The key is in the phrase "must be true" in the question. Choice c has to be true, otherwise the computer would not be able to track changes in the inventory and do what the passage describes. **The other choices do not necessarily have to be true even though they may turn out to be true in a particular situation.**

Question M-2:

According to this passage, what would be an example of real time inventory management?

a) Finding out how many items in an inventory are left at the end of a day.

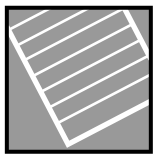
b) Inspecting the inventory every week to see how many replacement items should be ordered.

c) Using a computer to print out reports on the size of inventory.

d) Recording every withdrawal from inventory at the same time that it is made.

Answer: d

Explanation
The phrase "real time" means "without any delay", or "at the same time as". These meanings are implied by the way the expression is explained in the passage. Only choice d) describes an example where instantaneous records accompany a transaction. Choices a) and b) involve delays, and choice c) does not make it clear that the printed reports are accurate in real time.



Part 2

Practice Exam Questions

Question M-3:

According to this selection, when would the computer generate an order for more parts?

a) When more parts are needed.

b) When the lower limit programmed into the computer is reached.

c) When the computer reports that supplies are dangerously low.

d) When the limit to the inventory size is reached.

Answer: b

Explanation
Choice b) is supported by "…automatically generate an order for more parts when the supply reaches a pre-set lower limit." The phrase "pre-set" means that the computer is already instructed (i.e. programmed) to notice the lower limit. Choices a) and d) are true, but too general compared to choice b). The passage is concerned with what can happen automatically when a computer is programmed to manage inventories, and a detailed description is given for automatic re ordering. Choice c) describes a different computer function, namely reporting. It does not refer to re-ordering, which is what the question asks for.

Question M-4:

Based on this passage, which is an example of something a computer doesn't do?

a) Keep track of expenditures and income.

b) Hire employees.

c) Contact customers.

d) Print out reports on inventory.

Answer: b

Explanation
Choices a) and c) are explicitly supported in the selection. Choice d) is implied, or consistent with the other things a computer is described as doing. Only choice b) stands outside the information we are given. Decisions that are complex and that involve dealing with people are not the focus of this selection. While it is possible that a computer could be programmed to make decisions about hiring, this possibility is the one most removed from the computer functions that are discussed in the selection.

Part 2

Answer Key

The following answer key identifies which of the five competencies covered in part one are most involved in finding the correct answer. If you get an item wrong, review the competencies identified in the answer key for that item.

Question	Answer	Units to Study
1. A1	b	1
2. A2	b	3
3. B1	c	3
4. B2	b	1
5. B3	b	3
6. C1	d	1 and 5
7. C2	c	2 and 5
8. C3	c	4 and 5
9. D1	c	1 and 4
10. D2	a	1
11. E1	d	1 and 3
12. E2	b	2 and 5
13. F1	d	2 and 4
14. F2	c	2 and 5
15. G1	c	4 and 5
16. G2	b	2 and 4
17. G3	c	3 and 4
18. G4	d	1 and 5
19. G5	d	3 and 4
20. H1	a	1
21. H2	c	1 and 4 and 5
22. I1	c	1 and 4
23. I2	b	1 and 5

Part 2

Answer Key

Question	Answer	Units to Study
24. J1	d	2 and 3
25. J2	c	2 and 3 and 5
26. J3	b	1 and 2
27. K1	c	2 and 3
28. K2	b	2 and 5
29. L1	b	2 and 3
30. L2	c	2 and 5
31. L3	d	2 and 4
32. M1	c	1 and 4
33. M2	d	4
34. M3	b	3 and 4
35. M4	b	3 and 4

Total correct

= _____

Percentage correct (divide total correct by number of items attempted and multiply by 100)

= _____

Part 2

Endnotes

Additional Resources

1. *Passing the GED,* revised Canadian Edition, Gage Publishing, Canada, 1995 or latest edition. (ISBN# 0-7715-8183-1)
2. *How to Prepare for the GED*, Canadian Edition, Barron's, 3rd or later edition, 1992. (ISBN# 0-7641-0324-5)

Acknowledgements

i Graves, Jonquil, Gunn Anne, "Fauna of the North", p. 93 , *Canada North of Sixty*, Jurgen Boden editor, McClelland & Stewart, Toronto, 1991. (ISBN 0-7710-1581-X)

ii adapted from p.10, *Identifying Wood*, Taunton, 1990. (ISBN 0-942391-04-7)

iii adapted from p.370, *Housebuilding*, by R.J. De Cristoforo, Popular Science, Sterling Publishing 1987. (ISBN 0-8069-6512-6)

iv Lewis, Brian, "Canada's Northwest Territories", p. 14, *Canada North of Sixty*, Jurgen Boden editor, McClelland & Stewart, Toronto, 1991. (ISBN 0-7710-1581-X)

v Lewis, Brian, "Canada's Northwest Territories", p. 14, *Canada North of Sixty*, Jurgen Boden editor, McClelland & Stewart, Toronto, 1991. (ISBN 0-7710-1581-X)

vi adapted from p.370, *Housebuilding*, by R.J. De Cristoforo, Popular Science, Sterling Publishing 1987. (ISBN 0-8069-6512-6)

vii adapted from p.370, *Housebuilding*, by R.J. De Cristoforo, Popular Science, Sterling Publishing 1987. (ISBN 0-8069-6512-6)

viii Adapted from p.108 , Petruzella, Frank, *Introduction to Electricity and Electronics*, vol. 2, McGraw Hill Ryerson, 1986. (ISBN 0-07-548900-7)

ix Adapted from Petruzella, vol. 1, page 6

x p. 153, Blondin, Ethel, "The Dene and Metis" in *Canada North of Sixty*, Jurgen Boden editor, McClelland & Stewart, Toronto, 1991. (ISBN 0-7710-1581-X)

xi Petruzella, p.46, vol. 1

xii Petruzella, p. 156, vol. 1

xiii De Cristoforo, p. 261