Use the Textbook Pages 353 - 409 to help answer the questions
Energy, Power & Transportation Technology

Why You Learn So Well in Tech & Engineering Classes

Average Retention Rate after 24 Hours
- Lecture: 5%
- Reading: 10%
- Audio-Visual: 20%
- Demonstration: 30%
- Discussion Group: 50%
- Practice by Doing: 75%
- Teach Others/Immediate Use of Learning: 90%
1. The roads in the U.S. could extend to the moon & back ____ times. The railroad tracks in the U.S. could circle the earth ____ times. Our pipelines could wrap around the earth _____ times.
2. A transportation system includes __________, processes, ____________, and ____________, used together to move people and goods (cargo) from one location to another.
3. Land transportation is accomplished in vehicles while water transportation is done by ___________.

Options:
- Vessels
- Vehicles
- Ventures

(Pg. 355)
4. Air transportation is done by either ____________-than-air or by ____________-than-air vehicles.
5. **Space transportation** is moving people or cargo within ________ space and into ________ space.
6. ____________ transportation uses more than one environment or mode.
7. There are many *production processes* in a transportation system. List six of them below:

   R) RECEIVING  H) HOLDING  L) LOADING
   M) MOVING   U) UNLOADING   S & D) STORING & DELIVERING
8. ____________ processes in transportation systems include planning, organizing, & controlling.
9. Specific vehicular systems allow _______ & __________ movement through an environment.
10. Examples of six separate vehicular systems are:

- P) PROPULSION
- G) GUIDANCE
- C) CONTROL
- S) SUSPENSION
- S) STRUCTURAL
- S) SUPPORT
11. The number of changes in direction a vehicle can make is called its ________ of ______________.
12. Generally speaking, all land transportation vehicles travel on a __________, whether road, rail, or pipeline; above grade, on-grade, or below-grade.
13. *Pathways* can be either: NF) **non-fixed**, F) **fixed**, or S) **stationary**.
14. A ______________ truck has one frame that connects front & rear axles. _________ or 18 wheelers have a tractor that pulls the trailer.
15. A __________ is a heavy-rail train that runs below-grade. 
An ______________ train is called an *El*.
16. Pipelines are stationary as products move through them in either __________, __________, or slurry form.

Liquid, Gas
Solid, Gas
Liquid, Solid
17. *Small-scale* transportation *in buildings or on properties* is called __________ transportation.
18. _______________ transportation is used for fun and exercise.
### Important Concepts, Definitions & Terms to Know

#### TOP CRISS 2 Column Notes

<table>
<thead>
<tr>
<th>Main Ideas</th>
<th>Supporting Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Highlight your study guides before tests.

Go through your notes and highlight important information you will want to read again later.
Energy, Power & Transportation Technology

Important Concepts, Definitions & Terms to Know

TOP CRISS    Read 3 Times

Class Notes & Priority Items to Know for Tests
# Important Concepts, Definitions & Terms to Know

## TOP CRISS    Ask Yourself These Questions

<table>
<thead>
<tr>
<th>K</th>
<th>W</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>What I know</td>
<td>What I want to know</td>
<td>What I've learned</td>
</tr>
</tbody>
</table>

## Class Notes & Priority Items to Know for Tests
Energy, Power & Transportation Technology

- **Transportation systems** have inputs, processes, outputs, and feedback

- **Intermodal Transportation** uses more than one mode or environment of transportation to accomplish output

- Fixed Pathway: Road or Railroad Track

- Non-Fixed Pathway: Air or Water

- Stationary Pathway: Pipeline
• **On-Site Transportation**: within buildings or on properties

• **Pipelines Transport**: Liquid, Gases, Slurry

• **Straight Trucks vs. Semi Trucks** (tractor-trailer)

• **Degree of Freedom**: the number of changes in direction that a vehicle can make
Energy, Power & Transportation Technology

Diagram showing the relationship between inputs, processes, outputs, and feedback in the context of energy, power, and transportation technology.
Production Processes in a Transportation System

- Receiving
- Holding
- Loading
- Moving
- Unloading
- Storing & Delivering
The roads in the U.S. alone could extend to the moon & back 8 x!

What is “Intermodal” about this picture?
The railroad tracks in the U. S. alone could circle the earth 7 x!
Energy, Power & Transportation Technology

The pipelines in the U.S. alone could wrap around the earth 55 x!
Major Refined Products Pipelines
Energy, Power & Transportation Technology

There’s a lot to Manage
Management Processes in a Transportation System

Planning
Organizing
Controlling

Photo Credit: University of Denver, ITI
Energy, Power & Transportation Technology

- Vehicular Systems
  - Propulsion
  - Guidance & Navigation
  - Control (Steering & Braking)
  - Suspension
  - Structural (Framework & Body)
  - Support
The Variations in Land Vehicles are Wide-Ranging
Energy, Power & Transportation Technology

Top left: A stretcher with a child on it.
Top right: A tractor labeled FLATOUT TRUCKING.
Bottom left: A small blue car.
Bottom right: A scooter with a blue cooler.
Energy, Power & Transportation Technology
Energy, Power & Transportation Technology
Energy, Power & Transportation Technology

On-Site Transportation
Airport Baggage Handling
Energy, Power & Transportation Technology

On-Site Transportation
Elevators & Escalators
Energy, Power & Transportation Technology

On-Site Transportation
Moving Walkways
Energy, Power & Transportation Technology

Commercial Transportation
For-Hire
Taxi Service

Queen Latifah
Jimmy Fallon

He's armed, but she's dangerous.
Energy, Power & Transportation Technology

Concept Cars
Energy, Power & Transportation Technology
We feature bodies from Dynamic Towing and Jerr-Dan
Energy, Power & Transportation Technology
Energy, Power & Transportation Technology
Energy, Power & Transportation Technology
Energy, Power & Transportation Technology
Energy, Power & Transportation Technology