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EDU 3630

Prof. Caprio

5/8/19

Final Project

Test Questions

**Unit of Study:** Transportation Systems

**Mark T (true) or F (false) for the following statements:**

1. \_\_\_\_\_Transportation can be defined as, “all acts that relocate humans or their possessions” (T)
2. \_\_\_\_\_ People use six environments or modes for transportation (F)
3. \_\_\_\_\_ Land-transportation systems move people over the water (F)
4. \_\_\_\_\_ Three major components of transportation systems are, Pathways, Vehicles, and Support Structures (T)
5. \_\_\_\_\_ All transportation systems, except for continuous flow systems use vehicles (T)
6. \_\_\_\_\_ Structure systems are essential because this system provides a physical frame and covering (T)
7. \_\_\_\_\_ Since a vehicle must have force to propel from starting point to destination – the Guidance system produces this force (F)
8. \_\_\_\_\_ A Suspension system produces proper support (T)
9. \_\_\_\_\_ Operators need to know their locations, speeds, and directions of travel – the Guidance system provides this information (T)
10. \_\_\_\_\_ Once a vehicle is in motion it is controlled by the Propulsion system (F)

**Circle the best answer for the following questions:**

1. Vehicles are?
   1. Technological systems that carry cargo and moves them from one place to another
   2. Technological systems that improve shipment and transportation
   3. **Technological artifacts designed to carry people and cargo**
   4. Devices used to carry and transport people
2. Transportation systems are designed to move people and cargo from one place to another. This movement provides?
   1. **Place utility**
   2. Cargo utility
   3. Location utility
   4. People utility
3. All vehicles are designed to meet what common goal?
   1. To maintain and run efficiently
   2. **To contain and move people and goods**
   3. To obtain and move goods
   4. Only A and C
4. What are the different environments of transportation?
   1. **Land, water, air, space**
   2. Only water
   3. Only space,
   4. Air and water
5. What are components of transportation systems?
   1. Routes, terminals, and schedule
   2. **Vehicles, Pathways, Support Structures**
   3. People, materials, capital, time, finance
   4. Only B and C
6. Once a vehicle is in motion how will it be controlled?
   1. Depends on environment
   2. The operator uses Propulsion system
   3. The operator uses Guidance system
   4. **The Control system consist of speed control and direction control**
7. How is the weight of vehicle and cargo supported?
   1. Depends on the weight of vehicle and cargo
   2. The Structural system provides support
   3. **The Suspension system produces proper support**
   4. The Control system produces proper support
8. What factors determine the kind of engine to be used?
   1. The change of weather
   2. **The environment, fuel availability, forces to be overcome**
   3. Only forces to be overcome
   4. Only the environment
9. What does speed control consist of?
   1. **Increase speed through acceleration and decrease by braking**
   2. Increase speed through acceleration and decrease by allowing vehicle to slow down on its own
   3. Increase speed through acceleration without decreasing by braking
   4. Increase speed through acceleration and decreasing by turning vehicle engine off
10. What does direction control consist of?
    1. Depends on vehicle size
    2. Depends on fuel cost
    3. **Depends on environment**
    4. Depends on forces to overcome

**Match an item that best represents the following statements (not all items will be used):**

A) Land

B) Water

C) Air

D) Space

E) Transportation

F) Pathways

G) Vehicles

H) Power-generation

I) Power-transmission

J) A passenger unit

K) Suspension

L) Diesel engine

1. \_\_\_\_\_\_\_ can be defined as, “all acts that relocates humans or their possessions” (E)

2. \_\_\_\_\_\_\_ transportation systems that move people over the earth (A)

3. \_\_\_\_\_\_\_ transportation systems that move people and cargo over water (B)

4.\_\_\_\_\_\_\_ transportation systems that lift people and cargo into the air (C)

5.\_\_\_\_\_\_\_ transportation system that expands our knowledge of the universe (D)

6.\_\_\_\_\_\_\_ Uses engine as energy converter (H)

7.\_\_\_\_\_\_\_ Most transmissions in auto-mobiles and trucks are either mechanical or fluid devices (I)

8.\_\_\_\_\_\_\_ One basic structural unit of transportation vehicles (J)

9.\_\_\_\_\_\_\_ Separate passenger compartment from the drive system to increase passenger and operator comfort (K)

10.\_\_\_\_\_\_\_ Air is drawn in – piston down, air compressed – piston up, fuel injected and burns – piston down, gases forced out – piston up (L)

**Completion Questions**

Fill in the blank for the following statements using these keywords:

1. Structure
2. Propulsion
3. Suspension
4. Guidance
5. Control
6. Speed Control
7. Water-transportation
8. Commercial
9. The hull
10. Propeller
11. Compass, charts of rivers, harbors
12. \_\_\_\_\_\_ system keep passengers and goods safe, comfortable, and protected. **A)**
13. \_\_\_\_\_\_ this system produces force to propel vehicle from one point to another. **B)**
14. \_\_\_\_\_\_ this system is concerned with supporting the weight of vehicle and cargo. **C)**
15. \_\_\_\_\_\_ system keep operator informed about location, speeds, and directions. **D)**
16. \_\_\_\_\_\_ once a vehicle is in motion, this system deals with the control. **E)**
17. \_\_\_\_\_\_ this transportation system is essential since water covers more than 70% of Earths surface. **G)**
18. \_\_\_\_\_\_ this type of ship deals with transporting people and cargo for profit. **H)**
19. \_\_\_\_\_\_ forms the shell that allows the ship to float and contain a load. **I)**
20. \_\_\_\_\_\_ driven by a steam turbine or diesel engine propels most commercial ships. **J)**
21. \_\_\_\_\_\_ are components of the guidance of water-transportation vehicles. **K)**

**Essay Questions**

1. You are a mechanical engineer for the MTA and you have been given a design project for a new train. Your main task is the design a modern structural system. Using three (3) reasons, why is the structural system essential?
   1. Physical frame and covering for protection and storage
   2. Provides space for people, cargo, power, and control systems
   3. Provides a safe, and comfortable traveling experience
2. Producing parts for the five basic systems of vehicles may have some environmental implications, more negative than positive. For example, oil is a main component for propulsion systems (think how diesel engines work). What are some possibly negative outcomes of propulsion systems?
   1. Air pollution
   2. Fuel cost, vehicle maintenance related cost,
   3. If not operated correctly can lead to serious injuries
3. During our last class we watch a video on WWII that explained the significance of military ships during this period, and how it ultimately contributed greatly to winning the war. Write down the points you found most interesting and do you think there may have been a better use for the ships? Why or why not?
   1. The Guidance system was essential because it provided counter-intelligent information for the allies to use in their favor
   2. The Structural system was reinforced with iron and space for anti-aircraft weapons and warship weapons
   3. Agree or disagree with details and logical reasoning to solidify opinion
4. Based on our class discussion on WWII aviation, you are required to write a formal letter to Whiston Churchill. In this letter include your stance, whether you are in favor of Churchills air-unit or against. Provide three (3) reasons why, and back them up with three (3) air-transportation systems. Demonstrate understanding of air-transportation vehicles by connecting what you learned throughout the unit into your letter.
   1. Cost associated with the Propulsion system
   2. Experience needed to operate the Control system
   3. Limited information for the Guidance system
   4. Lack of resources, manpower, and time

Rubric for essay questions:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Unsatisfactory  1 | Developing  2 | Proficient  3 | Exemplary  4 |
| Writing – ideas:  Interesting, informative details | Writing had few details. | Writing had three or more details that supported the main idea. | Writing had many interesting details which supported the main idea. Writing included information based on personal experience. | All details were unique, interesting, and related to and supported the main idea. Writing included information based on personal experience. |
| Writing – Conventions:  Correct spelling, grammar, punctation, usage | More than 10 spelling and grammar errors. More than 10 capitalization and punctuation errors. Many sentences how flawed structure. | More than 5 spelling and grammar errors. More than 5 capitalization and punctuation errors. Less than 5 sentences show flawed structure. | Fewer than 5 spelling and grammar errors. Fewer than 5 capitalization and punctuation errors. One or two flawed sentences. | No spelling,  grammar,  capitalization or punctuation errors.  Sentences are all well-formed. |

**Performance Project**

**Cognitive Domain:** SWBAT explain different view points on the topic of transportation systems

**Psychomotor Domain:**  SWBAT construct a scholastic research paper

**Affective Domain:** SWBAT express their views on topic relating to transportation system

**Assignment:**

To conclude this unit, you are assigned to write a research paper using your understanding about transportation systems, vehicular systems, and land, water, air/space transportation vehicles. The purpose of this research paper is to sum up all the lessons we have covered and connect it to real-world topics.

**Logistics:**

Your task is to select one transportation system you found most interesting (land, water, air/space, etc.) and research three (3) problems relating to your transportation system. For example, if you choose land-transportation vehicles, right now there are several pending issues revolving around this transportation system in NYC. MTA subway systems are experiencing severe scrutiny for declining structure and other operational related-matters. NYC is considering implementing a congestion pricing in parts of Manhattan to reduce bottle-neck traffic jams, and Brooklyn Heights promenade will soon undergo construction that will last about ten years. Once you have decided on a topic to research related to your transportation system, this is how I recommend you structure your paper:

1. Times New Roman font, size 12, double spaced, include introduction, body paragraphs, and conclusion.
2. Paper should be at-least five (5) pages in length (seems like a lot, don’t worry you will be so invested in your topic and findings that you will end up “writing 3 more pages!”)
3. proof read your work three (3) times before submitting (I recommend sharing your work for peer-review before submitting, optional)

1. Be sure to check spelling, use correct grammar, and punctuation.
2. Cite/annotate all sources you will include in your research. Make sure these sources are reputable.
3. Present the problem (e.g. NYC traffic jams)
4. Research and present three (3) solutions to problem identified (e.g. congestion pricing)
5. Present three (3) in favor and three (3) against arguments per solution (reserve your opinion for the conclusion portion)
6. Include two (2) statistical data (e.g. ¼ New Yorkers are in favor of congestion pricing), include three (3) article sources (I recommend staying away from op-eds and opinion pieces), include two docs or informational videos you watched (TED talks will do)
7. Relate your topic to what you have learned about transportation systems (e.g. consider people, materials, time, energy, finance, equipment, capital, and knowledge). Identify at-least three (3). For example, if you are researching the MTA subway system problem, identify the people involved (think customers, workers, management, politicians), identify the materials involved (think resources to build trains, repair tracks, and metro-cards), and identify finance (think raising metro-fare, funding projects, delay-related expenses).
8. In the conclusion portion of the paper, present your initial opinion, elaborate on your view. Then state whether your view changed after conducting research on the topic you choose, elaborate why or why not. Lastly, based on your search and all the information you collected, state any solutions you think will work better than the ones already proposed, elaborate why or why not?
9. MOST IMPORTANTLY: choose a transportation system you found most interesting and pick a topic you like most about that transportation system. The purpose of this research paper is not to torture you, it’s to answer the big question, “why are we learning this”. The purpose of this research paper is to also help you develop as a critical thinker as you grow academically. If done correctly, you will learn how to think critically, analyze information, discern whether information is reliable or not, present opposing views in an objective manner, and most importantly organize information, knowledge, and thoughts in a sequence that demonstrate higher order of thinking.

**Last Remarks:**

Learning is fun, this should be your approach. So, have fun! Think of yourself as an explorer or investigator on an exciting journey of discovery. Once again, this assignment is not to punish you or merely reward you with another grade, if anything, this is another opportunity to take ownership of your learning and carve it out any which way suits you best. Good luck!

Below you will find a rubric on how you will be graded (don’t be intimidated by the rubric, use this as a guide):

**Rubric:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Unsatisfactory  1 | Developing  2 | Proficient  3 | Exemplary  4 |
| Research – Quantity:  Primary and secondary sources | Work did not have information from any primary sources. Included information from only one secondary source. | Included information from multiple secondary sources. Used information from one primary source. | Included information from at least three secondary sources. Used information from relevant primary source materials. | Included information from reputable secondary sources. Made extensive use of relevant and interesting primary source materials. |
| Research – Quality: Information from reputable sources | Included more opinion than fact. Information was taken from unreliable sources. | Included a mixture of facts from reputable sources and opinions from unreliable sources. | Included facts, conclusions, and opinions from reliable sources. | Included facts, conclusions, and opinions from reliable sources. Included opinions of subject-matter experts. |
| Writing – ideas:  Interesting, informative details | Writing had few details. | Writing had three or more details that supported the main idea. | Writing had many interesting details which supported the main idea. Writing included information based on personal experience. | All details were unique, interesting, and related to and supported the main idea. Writing included information based on personal experience. |
| Writing – Conventions:  Correct spelling, grammar, punctation, usage | More than 10 spelling and grammar errors. More than 10 capitalization and punctuation errors. Many sentences how flawed structure. | More than 5 spelling and grammar errors. More than 5 capitalization and punctuation errors. Less than 5 sentences show flawed structure. | Fewer than 5 spelling and grammar errors. Fewer than 5 capitalization and punctuation errors. One or two flawed sentences. | No spelling,  grammar,  capitalization or punctuation errors.  Sentences are all well-formed. |
| Research – Documentation:  Bibliography and citation | Did not include project bibliography or credits. One or two sources were cited. | Project bibliography or credits were incomplete. Less than half of the sources were cited. | Project bibliography or credits were complete. All information and media sources were cited. | Project bibliography or credits were complete and flawlessly formatted. All sources were cited, and media included captions showing source. |