

Chapter 2: Transportation: The Critical Link in the Economy

MULTIPLE CHOICE

1. The Federal Highway Administration expects transportation volume to increase by how much by 2035?
- 50%
 - 100%
 - 200%
 - 300%

ANS: D PTS: 1 DIF: Medium REF: Page 32

2. When did double stack rail container service begin?
- 1916
 - 1962
 - 2006
 - 1982

ANS: D PTS: 1 DIF: Easy REF: Page 33

3. What was the primary reason for the creation of the U.S. interstate road way system?
- commerce
 - defense
 - create depression era jobs
 - promote manufacturing

ANS: B PTS: 1 DIF: Medium REF: Page 33

4. On a per capita basis what commodity has the highest demand based on weight?
- meat
 - beverages
 - fruit
 - vegetables

ANS: D PTS: 1 DIF: Medium REF: Page 35

5. If a product costs \$10 to produce, the firm expects 10% margin on the cost to produce and transportation per unit costs \$2, what is the least price the firm is likely to accept for the product?
- \$12.99
 - \$12.00
 - \$13.00
 - \$12.01

ANS: C PTS: 1 DIF: Hard REF: Page 36

6. Based upon Lardner's Law, if transportation cost is cut in half, how much does the relevant market area increase?
- 200%
 - 50%
 - 400%
 - 600%

ANS: C PTS: 1 DIF: Hard REF: Page 36

7. What key element is supporting the ability to sell products made in large scale production facilities?
- efficient transportation
 - highly technical production
 - just in time sourcing
 - high quality design

ANS: A PTS: 1 DIF: Hard REF: Page 38

8. The economic center of Mexico is
- Guadalajara
 - Puebla
 - Tijuana
 - Mexico City

ANS: D PTS: 1 DIF: Easy REF: Page 41

9. Which major societal function consumes the greatest percentage of GDP?
- Transportation
 - Housing
 - Health Care
 - Food

ANS: B PTS: 1 DIF: Medium REF: Page 41

10. What is the reason for lower freight transportation?
- more efficient use of equipment
 - lower demand
 - higher fuel prices
 - driver shortage

ANS: A PTS: 1 DIF: Hard REF: Page 42

11. What percentage of ton mile traffic in the U.S. is carried by air?
- 4%
 - 10%
 - less than 1%
 - 24%

ANS: C PTS: 1 DIF: Medium REF: Page 43

12. What chemical emissions from internal combustion leads to acid rain?
- sulfur dioxide
 - arsenic
 - carbon dioxide
 - methane

ANS: A PTS: 1 DIF: Hard REF: Page 45

13. What environmental event significantly increased the visibility of industrial transportation safety?
- Chernobyl meltdown
 - Three mile island
 - Exxon Valdez
 - Iraqi oil field fires

ANS: C PTS: 1 DIF: Easy REF: Page 45

14. According to the book, in 2006, how many people lost their lives due to transportation related accidents?
- 3,256
 - 12,652
 - 25,658
 - 44,912

ANS: D PTS: 1 DIF: Medium REF: Page 46

15. Ozone reduction is a concern due to what compound used in refrigeration?
- carbon dioxide
 - chloroform
 - chlorofluorocarbons
 - chlorophyll

ANS: C PTS: 1 DIF: Hard REF: Page 45

16. What does the right of eminent domain mean?
- you can use force to protect your house
 - the government can seize your house for public use
 - if you are born in the U.S. you are a citizen automatically
 - rail companies can seize your land

ANS: B PTS: 1 DIF: Medium REF: Page 47

17. Which of the following is not considered a non-economic transportation regulation area?
- safety
 - security
 - environment
 - price fixing

ANS: D PTS: 1 DIF: Easy REF: Page 49

18. Which of the following is considered a transportation supply trend?
- higher fuel charges
 - increased use of third party services
 - more international transportation
 - leasing of containers

ANS: B PTS: 1 DIF: Hard REF: Page 49

19. Which of the following is considered an operations and management transportation trend?
- greater concern with security
 - increased non economic regulation
 - closer link with marketing and sales of the carrier
 - more international alliances

ANS: C PTS: 1 DIF: Hard REF: Page 49

20. Who determines which transportation services are available?
- government
 - consumer
 - the service providers
 - manufacturers

SHORT ANSWER

1. Transportation provides what critical link in the economy?

ANS:

Transportation provides for the link between producers and consumers.

PTS: 1

DIF: Easy

REF: Page 31

2. Which administration passed legislation in support of the interstate highway system?

ANS:

The Eisenhower administration.

PTS: 1

DIF: Easy

REF: Page 30

3. Why is transportation considered a cost center in the firm?

ANS:

Changes in price of transportation will impact the price of products without impacting its form.

PTS: 1

DIF: Medium

REF: Page 48

4. What factors, other than economic factors, has shaped the American transportation system?

ANS:

Political and military factors have also shaped the system.

PTS: 1

DIF: Hard

REF: Pages 47-48

5. What is the duty of a common carrier?

ANS:

The common carrier has the duty to render service without discrimination based upon set rates for a specific commodity.

PTS: 1

DIF: Medium

REF: Page 47

ESSAY

1. Explain the economic significance of transportation.

ANS:

Transportation is considered the life support system of a civilization. Transportation systems have a major impact on population patterns and economic development. The lack of transportation infrastructure is considered one of the significant factors that has restrained economic development in many third world countries. From a daily living perspective transportation is critical to supporting the tremendous resource requirements of the average U.S. citizen, for example a city of 3 million people requires more than million pounds of meat, poultry, fish, eggs, cheese, and beverages a day.

PTS: 1 DIF: Medium REF: Page 34

2. Explain how transportation helps determine the economic value of a product.

ANS:

Transportation cost has a direct impact on the amount of demand that a commodity will have. As transportation costs increase demand for a product will generally go down (this is especially true the more elastic the demand). For example, if a commodity cost \$10 to purchase and people in a certain part of the country are willing to pay \$12 for that commodity that commodity can only be sold if the transportation cost is less than \$2 per unit sold. What is interesting is that any dollar saved in transportation equates to a dollar of additional profit.

PTS: 1 DIF: Medium REF: Pages 34-36

3. Explain place utility.

ANS:

Place utility refers to the value of an article based upon its location. For example a bottle of water is worth about a dollar if you are standing next to a machine that sells water for a dollar. But how much is a bottle of water worth if you are out of water and in the middle of a hot desert? The same bottle has different value depending on the place. The more efficient a transportation system the lower the landed cost associated with a product and either the lower price it can be sold for or the greater the profit.

PTS: 1 DIF: Medium REF: Page 35

4. Explain time utility.

ANS:

The concept of time utility is similar to that of place utility. For example snow shovels have little utility in the Bahamas, and significant utility in North Dakota. The snow shovels' utility is also impacted by time. While snow shovels have greater utility in the Dakotas than Bahamas they have little utility in August in North Dakota. Their utility is impacted by the time of the year and more specifically snow fall.

An item in the same market may have tremendous demand or no demand at all based upon time.

PTS: 1 DIF: Medium REF: Page 37

5. Explain how transportation adds utility to goods.

ANS:

Transportation adds utility to goods in number of ways. The basic utility of a good is based upon what the good is designed to do. For instance an iPod's primary utility is mobile music production. Transportation provides utility in the form of time and place utility. Additionally transportation also allows large scale production by connecting production sources with demand source in an efficient manner.

PTS: 1 DIF: Medium REF: Page 38

6. Explain why geographic specialization occurs.

ANS:

Geographic specialization refers to the concept that certain areas, based upon natural resources, infrastructure, demographics, and policy, are able to produce goods more efficiently than another area. Competition rewards efficient operations. The more efficient and effective a company is able to perform a task they more competitive that company becomes. So based on things like natural resources (e.g., timber for furniture production) certain areas are likely to specialize in certain production and then buy goods from another location that cannot not be efficiently produced locally.

PTS: 1 DIF: Medium REF: Page 38

7. Explain how efficient transportation decreases the chance local entrepreneurs will act opportunistically.

ANS:

Efficient global transportation means that over time the price of a good produced locally will end up equal to the price that good can be produced somewhere else plus the transportation to get that good delivered locally. This means that if a producer makes a good inefficiently, and/or charges a relatively high profit, that sooner or later other producers in other parts for the world will realize they can sell the product in that local market and make a higher profit if they produce the good more efficiently or they can sell more if they have a lower price.

PTS: 1 DIF: Hard REF: Page 38

8. Explain modalsplit.

ANS:

Modalsplit is an analytical tool used to study transportation by dividing the total transportation market for passenger and freight transport according to volume and mode. For passenger transportation more than 77 percent of the passenger mile traffic is highway traffic. Although since 1970 air travel has decreased in relative cost, as such air traffic passenger miles has increased.

Looking at freight, intercity modal split is dominated by rail. Since 1990 rail share has increased in ton miles due to the rising cost of fuel.

PTS: 1 DIF: Medium REF: Page 42

9. What is transportation's impact on the environment?

ANS:

Transportation is the backbone of the economy and provides numerous benefits. However associated with these benefits is some associated societal cost. Transportation pollutes the environment and consumes natural resources. Use of transportation must always consider the tradeoff between benefit and cost. Increasingly this tradeoff is getting more attention. There is growing realization and acceptance by businesses that they have an important role to play in maintaining a healthy environment. Interestingly a number of firms are finding that reducing environmental impact means reducing waste, and reducing waste ultimately leads to greater profit.

PTS: 1 DIF: Hard REF: Page 44

10. Explain the relationship between the political process and transportation.

ANS:

The initial construction of nearly all transportation infrastructure and their maintenance is supported by the government (with the exception of freight rail service which is largely privately funded). Transportation is key to economic growth and prosperity and impacts all elements of business. Additionally transportation infrastructure is beyond the ability of anyone industry to fund and maintain. In order to keep industry from acting opportunistically, and avoid market failures the government is also involved in establishing policy and regulation with respect to transportation safety and organization.

The government involvement in transportation may lead to certain drawbacks for some parts of the public. For instance, through right of eminent domain, if government makes a determination that a certain route is important to societal transportation good, the government can seize personal property.

The transportation network is also important for national defense. The system of national highways mean that the government can quickly mobilize armies from one side of the country to another during a time of conflict.

PTS: 1

DIF: Medium

REF: Page 47