

REVIEW QUESTIONS

1. Complete the following paragraph describing the importance of transistors by picking the appropriate text to fill in the gaps.

(Question type: Fill in the blanks)

“Transistors form _____ of computers today and represent a _____ in technology because they are _____ devices. They employ _____ effects in order to act as _____”.

2. Match the provided descriptors to the appropriate characteristics of information technology.

(Question type: Matrix)

	MOSFET	IC	Information as bits	Delayed differentiation	Von Neumann architecture
Symbolic representation allowing error-free processing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solid-state transistor technology, based on quantum mechanics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electronic elements deposited on a flat substrate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic structure of most computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This is not a characteristic of information technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Complete the following figure of a simplified von Neumann architecture by inserting the correct elements and by finding examples.

(Question type: Labeling)

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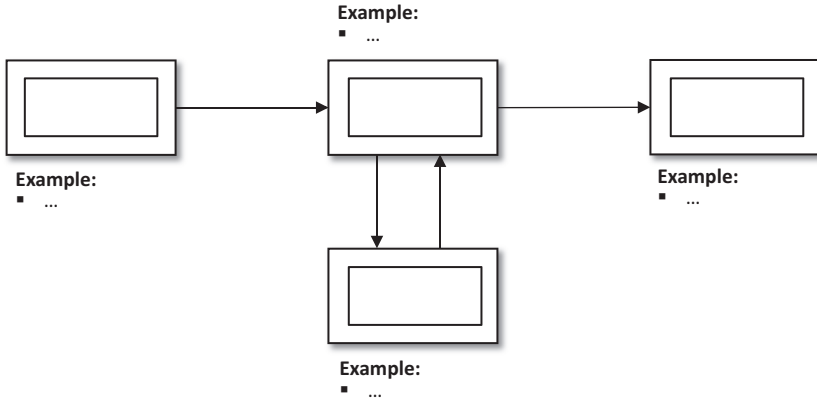


FIGURE 4.7 Insert the correct labels and three examples each

4. Which of the following are characteristics of information goods?
(Question type: Multiple response)
 - Extremely high variable costs
 - Information goods are often priced according to costs
 - Anything that can be expressed interpretively can be an information good
 - Anything that can be encoded as digital information can be an information good
 - Comparatively high fixed costs
 - Low variable costs
 - Zero marginal costs
 - Information goods change the world
 - Low marginal costs

5. Which of the following statements about Moore’s law is incorrect?
(Question type: Multiple choice)
 - It is about the possibility of adding more logical elements to ICs
 - It has remained valid for a remarkably long time
 - It was first formulated in 1965
 - It is about the expansion of Random Access Memory (RAM)
 - It refers to the amount of computing power that can be bought for a constant amount of money

6. To generate some extra income, you have written an ebook about your hobby. Through careful analysis, you have established that demand for your ebook is as follows:
 - The demand curve is a straight line
 - At a price of zero, the ebook would be downloaded 9,000 times
 - For each 1c increase in price, the number of downloads decreases by 14
 - The estimated equilibrium price is \$4.20

- It is estimated that one-half of your customers will buy the ebook through a subscription and that this group has a higher willingness to pay. You have decided to use differential pricing and charge your subscription customers \$0.08 more than the equilibrium price.

(Question type: Calculation)

Calculate the total consumer surplus.

7. A study of flexible manufacturing systems has analyzed the markets for CNC control software and small CNC machining systems in two time periods. This analysis has produced the following estimates for the CNC control software.

	Average price	Total market revenue
Period 1	\$6,800	\$850,000
Period 2	\$2,600	\$1,300,000

For the CNC machining systems, the following estimates were obtained:

	Average price	Total market revenue
Period 1	\$11,000	\$2,250,000
Period 2	\$11,000	\$4,850,000

(Question type: Calculation)

Calculate the cross price elasticity of demand for the CNC machining systems with respect to the price of the CNC control software.

8. Which of the following elements are normally found in flexible manufacturing systems?

(Question type: Multiple response)

- Manual labor inspection stations
- Material handling systems
- Computer control systems
- Work machines such as CNC systems
- Trolleys instead of forklifts
- Injection molding machines
- Word processing software

9. Which of the following statements about machine learning is correct?

(Question type: Multiple choice)

- It involves a learning entity
- It makes use of symbolic artificial intelligence
- It is based on advanced statistics

- It is inferior to symbolic artificial intelligence
 - All automation is a form of artificial intelligence
10. There is overwhelming evidence that increasing automation benefits everyone in society.
- (Question type: True/false)**
- Is this statement true or false?
- True False

REFERENCES AND FURTHER READING

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