

Q65. Which of the following is an explanation of the core competence?

- a) Corporate activities that comply with laws, various regulations, and social norms for managing business
- b) The business domain decided from the viewpoint of the market, technology, and products (or services)
- c) The overall business and system optimization methods for achieving the purpose of organizational activities
- d) The predominant abilities in the company's business area, which competitors cannot imitate

Q66. Companies are classified on the basis of their competitive position in the market. There are typically four types: leader, challenger, follower, and nicher. Which of the following is the most appropriate characteristic of a leader's strategy?

- a) Applying a differentiation strategy to all aspects of products, services, advertising, price and distribution channels or indirectly attacking the competitor's weaknesses or the gaps in the competitor's market coverage
- b) Capturing a specific market that high-ranking companies do not target and concentrating management resources in order to secure and maintain predominance in the market
- c) Determining the challenger company's real ability in the market and prioritize securing stable profits over expanding the market share by doing as the leader company does
- d) Proposing a new product and its usage method to consumers in order to increase the total demand while maintaining or expanding the market share

Q67. Which of the following is an explanation of the introduction stage of the product life cycle?

- a) It is the stage at which companies sell products to early adopters. Companies adopt strategies to enhance product recognition.
- b) It is the stage at which growth in demand slows. Companies try to maintain their market share and secure profits through various means, such as improving product quality.
- c) It is the stage at which sales and profit gradually decline. Companies refrain from making additional investments and consider withdrawing from the market.
- d) It is the stage at which sales increase rapidly. The market becomes active and competition intensifies because of new market participants.

Q69. Which of the following is the appropriate description of process innovation?

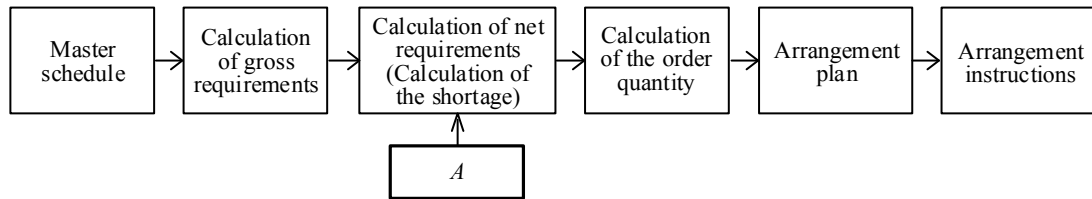
- a) Development of an innovative new product on the basis of an original and high technology
- b) Development of innovative manufacturing procedures that improve the quality of a product
- c) Outsourcing manufacturing to another company that has a semiconductor manufacturing process
- b) Wide adoption after passing the competition, resulting in the establishment of a de facto standard

Q70. Basic elements and examples of devices and services when the IoT is used in a factory's equipment maintenance tasks are compiled as shown below. When a) through d) correspond to any one of A through D , which of the following corresponds to A ?

Basic element	Example of device and service
Data collection	A
Data transmission	B
Data analysis	C
Data utilization	D

- a) Abnormal value judgment tool
- b) Display for work instructions
- c) Temperature sensor for equipment
- d) Wireless communication within the factory

Q71. The figure below shows the work procedure for MRP (Material Requirements Planning), a technique pertaining to a production management system. Which of the following is a necessary piece of information for calculating the net requirements to be inserted into *A* in the figure below?



- a) Bill of materials (configuration and requirements of each component in the final product)
- b) Inventory status (inventory amount, residual orders, in-process quantity)
- c) Ordering policy (lot organization method, ordering method, safety stock)
- d) Standard schedule (completion period, number of days of lead time)

Q72. Which of the following is an appropriate description of an RFID system?

- a) Multiple RF Tags that are within range communicate with each other, and create a mesh network.
- b) RF readers/writers generate an electromagnetic field that charges the RF tags within range to allow transmission of information.
- c) RF tags process unique positioning information by using multiple satellites, allowing for item tracking by longitude and latitude coordinates.
- d) RF tag transmission does not provide error correcting codes but still acquires high reliability through a wired connection.

Q73. Among the IoT application examples, which of the following is an explanation of HEMS?

- a) Connecting energy devices such as solar power generators, consumer electronic devices, and sensors, etc., to a household communication network in order to visualize the energy used and optimally control consumption
- b) Fully utilizing information communication technology and environment technology in order to visualize the energy urban infrastructure uses, including public facilities such as street-lamps and the transportation system, and optimally controlling consumption
- c) Measuring data such as vehicular condition, road status, etc., with the sensors installed in the vehicle and saving and analyzing the data via a network in order to support efficient driving
- d) Regularly measuring vibrations, temperature, sound, etc., with the sensors installed in factory machines, analyzing the degraded condition of the machines on the basis of the collected data, and replacing parts at the appropriate time

Q74. Which of the following is a case using deep learning in order to improve the performance of an in-car device?

- a) An accelerometer detects the collision of the vehicle against a wall and causes the air bag to inflate, thus protecting the passenger from injury.
- b) By acquiring and processing numerous images, the driver assistance system can more reliably distinguish between a pedestrian and a vehicle.
- c) By installing equipment that automatically performs idling stops, the fuel efficiency improves as compared with a very experienced driver operating a vehicle.
- d) The navigation system updates the software via a mobile phone line and refreshes the map.

Q64. In computerization investment, which of the following is a technique that is used to create categories on the basis of the similarities of risks and investment values and perform optimum resource allocation?

- a) 3C analysis
- b) Benchmarking
- c) Enterprise architecture
- d) IT portfolio

Q66. Which of the following is a technique that is used to identify and evaluate the internal and external factors that are helpful or harmful to the objectives of business organizations or projects?

- a) Five forces analysis
- b) PPM analysis
- c) SWOT analysis
- d) Value chain analysis

Q67. The sales prices of products are decided according to different sales price setting methods. Which of the following approaches sets a high sales price by using the consumer psychology that high quality equals to high price?

- a) Cost plus pricing
- b) Differential pricing
- c) Marketing price following pricing
- d) Prestige pricing

Q69. Which of the following is the appropriate explanation for product innovation in the management of technology?

- a) Acquiring business profits through achievements of the development of technology
- b) Developing new products or products that enable differentiation from other companies
- c) Making innovative reforms in business processes
- d) Strategically managing business with technology as the core

Q70. Among the different business systems supported by technology, which of the following analyzes routes of distribution, tracking and load tendency?

- a) LMS b) OMS c) TMS d) WMS

Q71. Which of the following is a product that can take advantage of the cell production system?

- a) A product that needs to be produced in large quantities to improve productivity
- b) A product that requires a division of labor on the basis of standardization, simplification, and specialization
- c) A product that requires a variety of types and needs flexible production
- d) A product whose specifications do not change over a long period of time

Q72. Which of the following performs its processing according to steps (1) through (3)?

- (1) Based on the types, quantities, and the parts list of the product planned to be manufactured during a fixed period of time in the future, the required quantity of components is calculated.
- (2) The net order quantity of each component is calculated from the amount of inventory that can be allocated.
- (3) The ordering time of the components is determined while considering the manufacturing and procurement lead time.

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|--------------------------------|-----------------------------------------|
| a) CAD (Computer Aided Design) | b) CRP (Capacity Requirements Planning) |
| c) JIT (Just In Time) | d) MRP (Material Requirements Planning) |

Q74. Which of the following is an appropriate example of utilizing machine learning at a production site?

- a) Instead of programming the working method for the production robot in the factory, the robot itself learns, thus improving the efficiency of work.
- b) The causes for the occurrence of defects in a factory are decomposed and arranged in a tree shape so that analysts can statistically look for the cause and solution.
- c) The production equipment in a factory is connected through high-speed communication so that the host computer can be controlled in real time.
- d) The productivity of employees in the factory improves each time the cumulative production volume doubles, and the unit cost reduces at a fixed percentage.

Q61. Which of the following is an explanation of CRM?

- a) It is a business approach for significantly improving the efficiency of the entire supply chain through the real time exchange of information regarding production, inventory, procurement, sales, distribution, etc.
- b) It is a concept to optimize customer loyalty by sharing information throughout all customer channels within a company and improving customer satisfaction by raising the level of service.
- c) It is a method for improving business efficiency by planning and managing business resources throughout the company effectively and comprehensively.
- d) It is a method for wholesale dealers or manufacturers to increase business transactions with retail stores by supporting their business activities, and increasing their sales and profits.

Q62. Which of the following is an explanation of BPO?

- a) A company outsources all work processes of a specific department, such as management section or call center and its work system operation, to an external provider.
- b) A company reduces software development costs by using employees of a temporary employment agency with lower personnel expenses.
- c) A company rents a portion of the processing and storage capacities of servers owned by a telecommunications service provider and operates systems without owning its own servers.
- d) A company uses software functions provided by an external provider over a network without owning the software.

Q63. Which of the following is an appropriate description of chatbot?

- a) A software that uses image processing techniques and is employed for applications to describe image details to a human
- b) A software that uses natural language processing techniques and is employed for applications to communicate with a human
- c) A software that uses signal processing techniques and is employed for applications to convert a human's voice into texts
- d) A software that uses speech processing techniques and is employed for applications to generate subtitles automatically for a human to read while watching videos

Q64. Which of the following is a technique that performs the optimum resource allocation for computerization investment in each category classified by the similarities of risks and investment value?

- a) 3C analysis
- b) Benchmarking
- c) Enterprise architecture
- d) IT portfolio

Q65. In the verification of stakeholder requirements, which of the following indicates the ability to keep track of the process until the implementation of a change request?

- a) Interoperability b) Maintainability c) Traceability d) Usability

Q66. Which of the following is an explanation of core competence?

- a) The basic mindset and action guidelines behind management activities
- b) The business opportunities and threats in the environment around a company
- c) The management resources that form the source of competitive advantage over other companies
- d) The objectives to be achieved through the execution of a business strategy

Q67. In a product life cycle, which of the following is a stage where the withdrawal of some companies is observed when the demand peaks, and decision-making is necessary to determine whether it is possible to gain a strong foothold?

- a) Decline stage
- b) Growth stage
- c) Introduction stage
- d) Maturity stage

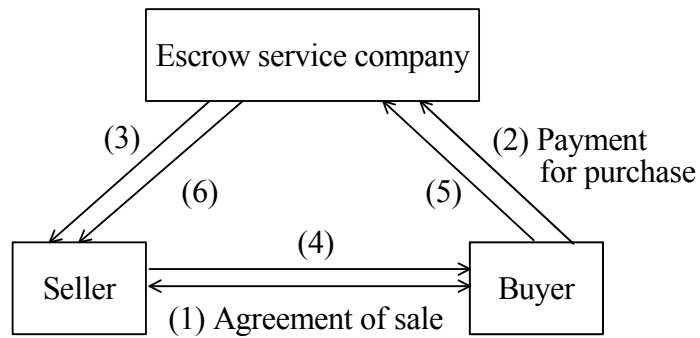
Q69. Which of the following is an appropriate explanation of concurrent engineering?

- a) A new product development technique that sequentially executes processes, such as product design, manufacturing, and sales activities
- b) A technique that analyzes a target system and clarifies its specifications
- c) A technique that executes processes, such as product design and production planning, in parallel during the new product development procedure
- d) A technique that tries to figure out the optimal combination of functions and cost and to improve value through systematic procedures

Q70. Which of the following is the appropriate description of telemedicine?

- a) Caring for patients by using computer technologies when the physician and patients are physically together in a hospital
- b) Caring for patients by using electronic communication technologies when the physician and patients are not in the same location
- c) Caring for patients by using electronic communication technologies when the physician and patients are physically together at the patients' house
- d) Caring for patients without using computer technologies when the physician and patients are physically together at the physician's clinic

Q72. The figure below shows the transaction model of an escrow service that is used in an Internet auction site or other similar transactions. Which of the following is the action that corresponds to (5) in this figure? Here, (1) through (6) indicate the sequence of transactions, and each of the numbers from (3) to (6) corresponds to an action in a) through d).



- | | |
|------------------------------|------------------------------|
| a) Notice of payment deposit | b) Notice of product receipt |
| c) Shipment of product | d) Transfer of payment |

Q73. Which of the following is an appropriate explanation of HEMS?

- a) It is a system that connects multiple home appliances through a network to visualize the power and perform optimum control of power consumption.
- b) It is a system that converts the electricity produced by a solar power generation system and a residential-use fuel cell for the electricity to be useable in households, etc.
- c) It is a system that recycles the useful parts of home appliances discarded by general households and offices to reduce the amount of waste materials and promote the effective use of resources.
- d) It is an electric hot water supply system that generates a considerable quantity of heat with a relatively small amount of energy by using a heat pump.

Q74. When real-time systems are classified into hard real-time and soft real-time systems, which of the following is in the category of a hard real-time system?

- a) Airbag control system
- b) Bank ATM system
- c) Seat reservation system
- d) Web delivery system

Q62. Which of the following is an on-demand service?

- a) A DVD movie purchased from an internet site
- b) A pocketbook printed by a publishing company using offset printing after deciding the number of copies
- c) A repeat broadcast drama that is delivered on the internet in response to the request of the user
- d) Internet news periodically delivered to a smart phone

Q63. Which of the following is the appropriate example of utilizing Business Intelligence (BI)?

- a) Analyzing a large volume of data stored on a business system to evaluate business performance and develop a business strategy
- b) Computerizing the daily routine works, such as decision requests, to ensure that such procedures are carried out without fail and to enable their swift completion
- c) Enabling employees to use computerized learning materials via a network and managing their learning and performance
- d) Obtaining publications, such as annual reports issued by competitors, to understand their business strategies and financial situations

Q66. According to the “competitive strategy” proposed by Philip Kotler, which of the following describes a company that has no high market share but utilizes quantitatively large management resources?

- a) Market challenger
- b) Market follower
- c) Market leader
- d) Market nicher

Q67. Which of the following is an appropriate explanation of telemarketing?

- a) Direct marketing that includes calling people at home and asking for donations, opinions, or purchases.
- b) Direct marketing that sells products and services and builds customer relationships over the internet.
- c) Direct marketing that sends offers, announcements, reminders, or other items to a person at a particular address.
- d) Direct marketing that sends sales alerts, links to website updates, appointments, or delivery reminders to large groups of people.

Q68. Which of the following is mostly tacit knowledge?

- a) A list of countries and their capitals
- b) An inventory of assets
- c) Contents of a washing machine manual
- d) How to ride a bicycle

Q69. Which of the following is appropriate as a description of Customer Relationship Management (CRM) software?

- a) It mainly provides online tools for sales, customer service, and marketing.
- b) It mainly provides partner relationship management.
- c) It only supports direct-marketing campaigns.
- d) It provides information and tools to make call center, help desk, and customer support staff more efficient mainly by phone.

Q70. In a process that aims to produce ideal technology, technology follows an evolutionary process that progresses from the introduction stage, growth stage, maturity stage, decline stage. Then it transitions to the next technological phase. Which of the following is used to represent this technological evolution process?

- a) Bathtub curve
- b) Demand curve
- c) Learning curve
- d) Technology S-curve

Q71. Which of the following is an explanation of a sharing economy?

- a) It is a concept by which efficient management and operation of renewable energy and urban infrastructure are performed by using IT, which leads to an improvement in the quality of people's lives and helps achieve continuous economic growth.
- b) It is a concept by which the productivity of an entire economy increases as a result of utilizing IT, and the demand-and-supply gap is eliminated via the progress of SCM, which leads to sustainable growth free from inflation.
- c) It is a mechanism by which over-the-counter and Internet sales are combined in a business transaction, and the strong points of both are utilized and linked to expand overall sales.
- d) It is a mechanism mainly between individuals by which the community function and other functions of social media are utilized to share, lend, or borrow the unemployed assets owned by individuals.

Q72. Which of the following is a characteristic of an IC tag (RFID)?

- a) It handles a large amount of information. Thus it uses an external storage device for storing information.
- b) It is stain-resistant, and recorded information can be read from the outside of a package.
- c) It is used by inserting the tag into a dedicated magnetic reader.
- d) It uses GPS to display location information or attribute information about the current location.

Q73. Which of the following is an example of Consumer Generated Media (CGM)?

- a) A company website through which the company publishes information for individual investors about its management status, financial status, and performance trends
- b) A company website through which the company transmits information to general consumers about the characteristics and usage method of its products
- c) A website of a governmental organization through which the agency publishes information for general citizens about its policies and administrative services
- d) A website, such as a blog or SNS, on which an individual sends information to unspecified large number of people about the evaluation of products used by the individual

Q74. Which of the following is an appropriate computing concept that describes the idea of physical objects, such as devices, vehicles, and buildings, that are connected to the internet and are able to identify themselves to other devices?

- a) Computer networks
- b) Deep learning
- c) Internet of things
- d) Network topology

Q67. In a growth matrix proposed by Ansoff, which of the following is a strategy for an organization that tries to expand a business by introducing new products into new markets?

- a) Diversification
- b) Market development
- c) Market penetration
- d) Product development

Q68. Which of the following is an external factor related to company's products, identified by SWOT analysis?

- a) Strengths in product functions
- b) Strengths in sales power
- c) Threats by new entrants
- d) Weaknesses in product quality

Q69. Heskett classified customers into four categories and explained the importance of improving customer satisfaction. Which of the following types of customers is dissatisfied and, if given a chance, would encourage others to switch as well?

- a) Captive b) Mercenary c) Propagandist d) Terrorist

Q70. Which of the following is a definition of Customer Relationship Management (CRM)?

- a) A framework used to support and integrate processes, people, and information across an organization to give a unified gate-way for information and a knowledge base for employees, partners, and customers
- b) A technology for managing all of a company's relationships and interactions with customers and potential customers in order to improve business relationships
- c) A type of software that organizations use to manage day-to-day business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations
- d) The broad range of activities required to plan, control and execute a product's flow, from acquiring raw materials and production through distribution to the final customer, in the most streamlined and cost-effective way possible

Q71. Which of the following is an appropriate explanation of the technology *S* curve?

- a) It represents the diffusion process of a new technology. It shows that the growth rate of the penetration rate gradually decreases as products applying the technology penetrate the market, by using a frequency distribution curve.
- b) It represents the maturing process of technology. It shows that during the time until the new technology is actually spread, the degree of awareness changes as time passes.
- c) It represents the process of technological progress. It shows that technology advances slowly at the beginning and then advances rapidly, and thereafter, slowly stagnates.
- d) It represents the relationship between production volume and unit cost. It shows the course of reduction in unit cost in accordance with an increase in cumulative production volume.

Q72. Which of the following is one of the main characteristics of a blockchain?

- a) A centralized ledger on a server
- b) A client server network
- c) A distributed ledger on a peer to peer network
- d) A type of cryptocurrency

Q73. When a production plan is created, it is important to select an appropriate production system. Which of the following is a suitable production system for varied and flexible high-mix low-volume production by single or several operators in charge of all processes?

- a) Build-to-order production system
- b) Cell production system
- c) Continuous production system
- d) Individual production system

Q74. Which of the following is a control method for a status of “a somewhat large number” or “slightly” ?

- a) Feedback control
- b) Fuzzy control
- c) PWM (Pulse Width Modulation) control
- d) Sequence control

Q62. Which of the following is an explanation of SCM (Supply Chain Management)?

- a) Customer information collected through various channels is consolidated and utilized to establish closer relationships with customers.
- b) Employees' skills and behavioral characteristics are managed for appropriate personnel assignment and evaluation from the perspective of human resources strategy.
- c) Intellectual assets of individuals, such as know-how and experience, are shared as inspiration for creative work.
- d) The sequence of business operations, from purchasing and production to sales and distribution, is reexamined across companies in view of total optimization, so as to minimize inventory and accelerate delivery.

Q63. Concerning computerization costs, which of the following is the cost that indicates the running cost?

- a) The consulting cost of information systems strategy planning
- b) The cost of system engineering for performance requirements definition
- c) The installation cost of software packages
- d) The maintenance cost of information-processing equipment, such as a server

Q66. Which of the following should be undertaken in order to eliminate the “digital divide”?

- a) Estimating IT investment, setting result targets based on investment goals, and performing prior evaluation of the feasibility of achieving each result target
- b) Increasing learning opportunities for information literacy, and preparing an environment to further facilitate the use of information & telecommunications equipment and information services
- c) Reducing energy consumption by promoting the efficiency of business operations with the help of IT, including telecommuting, energy savings for electrical appliances and facilities, and so forth
- d) Using IC tags to enable the tracking of distribution information on products and foodstuffs, in all processes from production to final consumption or disposal

Q68. Which of the following is an external factor concerning an in-house product identified using SWOT analysis?

- a) Cost competitiveness
- b) Functional strengths
- c) Quality-related weaknesses
- d) Threats owing to a new entry

Q69. According to the “competitive strategy” proposed by Philip Kotler, which of the following describes a company that has no high market share, but has the strategic aim to increase income and acquire a unique position by focusing management resources on particular products and services?

- a) Market challenger
- b) Market follower
- c) Market leader
- d) Market nicher

Q70. Which of the following is a technique for separating company activities into core activities and support activities for each business function, and analyzing which activities generate the profit derived from the products and services provided to customers?

- a) 3C analysis
- b) Five forces analysis
- c) SWOT analysis
- d) Value chain analysis

Q71. Which of the following is an explanation of knowledge management?

- a) A flat organization structure with minimal hierarchical layers is maintained to accelerate decision-making.
- b) Comparative analysis with other successful companies is performed to drive management innovation.
- c) Knowledge scattered across an enterprise is shared to improve overall problem-solving capability.
- d) Management is centered on proprietary know-how and technology that are not easy for other companies to imitate.

Q72. Which of the following is an explanation of CAD?

- a) Evaluating product performance and functions using computers, without using the actual product to perform testing or experimentation
- b) Using a computer to convert product design drawings to process design information, and support automation of machine processing, etc.
- c) Using a computer to create product design drawings from attribute data concerning product shape, composition, etc.
- d) Using a computer to derive the required volumes and timing of materials from a production schedule, a BOM (bill of materials), inventory volumes, etc.

Q73. Which of the following performs processing according to steps (1) through (3)?

- (1) Based on the types and quantities, as well as the parts list of the product to be manufactured within a future fixed period of time, the required quantity of components is calculated.
- (2) The net order quantity of each component is calculated from the amount of inventory that can be allocated.
- (3) The ordering time for the components is determined with consideration for the manufacturing or procurement lead time.

a) CAD

b) CRP

c) JIT

d) MRP

Q74. Which of the following is an explanation of EDI?

- a) A communication service that provides added value, such as the storage of data transmitted over networks and conversion of data formats
- b) An international standard for e-mail services based on the OSI basic reference model, which provides comprehensive services for the generation, transmission, and processing of messages
- c) An ordering system that allows orders to be placed by transmitting order information from a data entry terminal to the head office or a supplier
- d) The exchange of business transaction data between computers (including terminals) over the Internet on the basis of standard protocols

Q75. Which of the following is the procurement process that enables suppliers to bid against one another on the Internet in order to sell their products or services under the conditions specified by a general customer?

- a) B to B
- b) G to C
- c) Reverse auction
- d) Virtual mall

Q4. Which of the following is an appropriate explanation of the feedback control?

- a) It performs a control in a predetermined order.
- b) It performs a control so that the output matches the target.
- c) It performs a control to avoid external disturbances to the output.
- d) It performs a control without using the output.

Q21. Which of the following is an appropriate explanation of the function of an actuator?

- a) It changes an analog electrical signal into a digital electrical signal, which a computer can process.
- b) It changes an electrical control signal that is supplied by a computer into a mechanical motion.
- c) It identifies a physical quantity and changes it into an electrical signal.
- d) It is used in devices such as a keyboard or touch panel to enter data in a computer.

Q22. Which of the following is an appropriate example of utilizing an RFID?

- a) Close range transmission of data using infrared rays
- b) Identification and management of personnel or items by using a very small wireless chip
- c) Input of information by using a reader to read a digital code that is printed on a paper
- d) Transmission of audio data between a cellphone and headphones

Q61. Which of the following is a case that enables the customer support operations at a call center to improve the quality by applying a pattern recognition function or machine learning function to the accumulated data?

- a) Deriving the most appropriate response in real time from the related materials and all the previous support history according to the content of the inquiry made by a customer
- b) Displaying the digital content of a response manual or basic customer information on a pop-up window of a screen for responding to the requests from the operators
- c) Repeatedly providing a roll play training to new operators from an experienced operator who serves as a lecturer by using the response manual as the teaching material
- d) Transferring a phone call or the relevant support screen to an experienced operator or a dedicated staff when the operator who is responding to a customer over the phone is unable to provide an answer

Q67. In a growth matrix proposed by Ansoff, which of the following is a strategy for expanding a business with an existing product in an existing market?

- | | |
|-----------------------|------------------------|
| a) Diversification | b) Market development |
| c) Market penetration | d) Product development |

Q68. Which of the following is a characteristic of the growth stage in a product life cycle?

- a) Demand decreases, and the withdrawal of some companies is seen. A decision needs to be made regarding whether it is possible to gain a strong foothold at this stage. Migration into an alternative market is also considered.
- b) Demand is occasional, and the exploitation of new demand is the key to success. Conviction for succeeding in a specific target market is necessary.
- c) Demand reaches a peak, and the differentiation of the product and segmentation of the market become clear. The competition between the competitors also intensifies, and it becomes important to add new product types and reduce the cost.
- d) The market starts to understand the worth of the product. Both the product line and channel need to be expanded. This stage sees an increase in the sales and also requires investment.

Q69. Which of the following marketing approaches is for the push strategy?

- a) A manufacturer distinguishes customers into profitable and non-profitable ones so that the manufacturer can provide priority services to the profitable customers.
- b) A manufacturer does his/her best to predict what customers want before producing an item or service.
- c) A manufacturer receives requests from customers for their own version of products or services they want, so that the manufacturer can produce them.
- d) A manufacturer tries to achieve much closer and one-to-one contact with the customers for producing new products.

Q70. Which of the following can take advantage of the cell production method?

- a) Products that need to be mass produced to increase productivity
- b) Products that require division of labor by standardization, simplification, and specialization
- c) Products that require flexible production to produce a variety of types
- d) Products whose specifications do not change for a long period

Q71. Which of the following **is not appropriate** as an application example of the IoT (Internet of Things)?

- a) A computer that independently performs file management, arithmetic and logic operations, printing processing, and other tasks without accessing a server to avoid the security problems on the Internet
- b) A system that allows the manufacturer to understand the operating status, failure locations, and parts that require replacement in real-time via the Internet by having sensors and a communication function built in a large-scale construction equipment
- c) A system that collects automobile location information in real time and distributes the traffic jam information by communication between automobiles or between automobiles and road side units
- d) An electricity meter that sends information on the amount of power usage by communication with a power company in lieu of a meter reader

Q72. Which of the following is a description of CGM (Consumer Generated Media)?

- a) It allows the customers of a company who want to join a mailing list to register on it and periodically receive information via e-mail.
- b) It enables the delivery of the digital contents prepared by an individual to a viewer or audience and its sharing between the users.
- c) It offers functions for trading goods in an auction format and works as an intermediary for the consumers in personal trading.
- d) It provides a common ground for online shops of individual storekeepers and takes over the tasks of issuing common points and settling credit card payments.

Q73. Which of the following is a description of the long tail?

- a) A link to a company is placed on a website or blog, and the company pays a referral fee when the product is purchased via the link.
- b) By directly shipping products from manufacturers or wholesalers, one can sell products on his or her own website without taking a risk of inventories.
- c) It performs necessary processing, including integrated and systematic management, and delivery of digital content such as text and images that comprise web content.
- d) The accumulated sales of the product groups that are not selling well account for a percentage that cannot be ignored against the total sales in Internet shopping.

Q74. Which of the following is a use case of deep learning to improve the performance of an in-car device?

- a) An accelerometer detects the collision of the vehicle against a wall and causes the air bag to blow up, thus protecting the passenger from injury.
- b) By installing equipment that automatically performs idling stop, the fuel efficiency improves as compared with the case when a driver with a vast experience of driving drives a vehicle.
- c) By the acquisition and processing of numerous images, the driver assistance system can distinguish between a pedestrian and vehicle more reliably.
- d) The navigation system updates the software by a mobile phone line and refreshes the map.

Q23. By using a sensor that detects changes in shape, the condition of infrastructure such as elevated highways can be monitored and maintained. Which of the following is a sensor that is used for this purpose?

- a) Gyro
- b) Hall element
- c) Strain gage
- d) Thermistor

Q63. Which of the following is an explanation of SOA?

- a) It is a business system for performing integrated management (rather than department-wise management) of mission-critical tasks to improve the efficiency of management by effectively utilizing the management resources.
- b) It is a document that is agreed upon by an ordering company and an IT outsourcing service provider concerning the quality of a service.
- c) It is a system architecture that provides the components of a business process and its supporting IT infrastructure in the form of a service.
- d) It is a technique of drastically revising an existing organization and business rules, and reconstructing the workflow, control mechanism, and information system.

Q68. In SWOT analysis, which of the following is generally positioned as a threat?

- a) Entry of strong companies in the market
- b) High growth rate of business domain
- c) High production efficiency as compared with other competitors
- d) Low market share

Q69. Which of the following is a leader strategy among the competitive strategies of a company?

- a) Concentrating limited management resources in a specialized market into which other companies do not enter despite the presence of potential demand
- b) Employing a differentiation strategy from various viewpoints such as products, services, sales promotion, and distribution channels, with the aim of seizing the market share
- c) Employing an omnidirectional strategy targeting all market customers with the aim of maintaining or improving profit and reputation, and securing optimum market share
- d) Suppressing the cost of development and advertising, and aiming for continued existence in the market by observing the strategies of target companies and simulating them promptly

Q70. Which of the following is an explanation of Supply Chain Management (SCM)?

- a) Customer information collected through various channels is consolidated and utilized to establish closer relationships with customers.
- b) Employees' skills and behavior characteristics are grasped, and management such as personnel assignment and evaluation that are appropriate from the perspective of human resources strategy is performed.
- c) Intellectual assets of individuals, such as know-how and experience, are shared across the organization as inspiration for creative work.
- d) The sequence of business operations, from purchasing and production to sales and distribution, is reexamined within the company and among companies in view of total optimization, so as to accelerate delivery and minimize inventory.

Q71. Which of the following is an appropriate example of a core technology?

- a) It is a development technology by combining general components with the purpose of fast-track development and fast-track market introduction of products.
- b) It is a device technology that employs the same CPU core as that of competitors and enhances the portability of software.
- c) It is an idling stop technology of an automobile engine that cannot be imitated by competitors.
- d) It is an interface technology whose purpose is to create standard interfaces by forming an alliance and to use them commonly.

Q73. The basic elements and examples of devices and services when IoT is used in the equipment maintenance tasks of a factory are compiled as shown below. When a) through d) correspond to any one of *A* through *D*, which of the following corresponds to *A*?

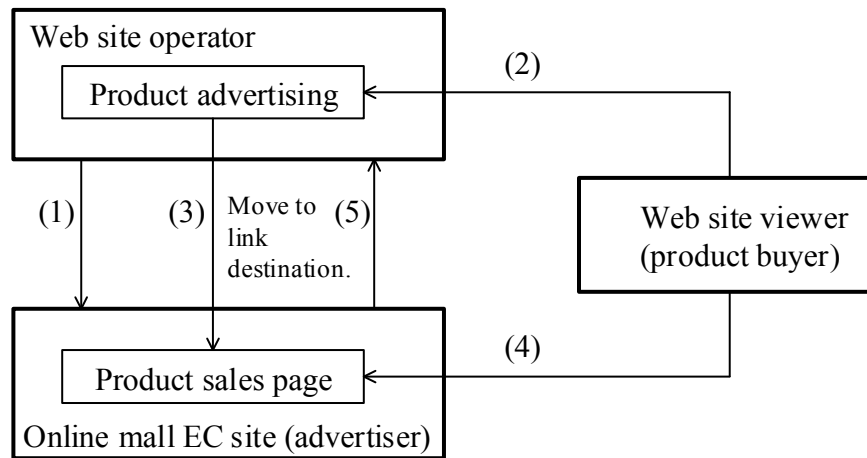
Basic element	Example of device and service
Data collection	<i>A</i>
Data transmission	<i>B</i>
Data analysis	<i>C</i>
Data utilization	<i>D</i>

- a) Abnormal value judgment tool
- b) Display for work instructions
- c) Temperature sensor for equipment
- d) Wireless communication within factory

Q74. Which of the following is a characteristic of MRP?

- a) The development, designing, and production preparation of a product are performed simultaneously in parallel.
- b) The number of required components is calculated based on the standard production plan of a product.
- c) The production of a product is started after an order from a customer is received.
- d) Work instructions and transport instructions are provided by using a worksheet.

Q75. Which of the following corresponds to (5) in an example of a model of an affiliate program shown below in Internet advertising? Here, (1) through (5) indicate the order of operations in the model, and each of (1), (2), (4), and (5) corresponds to one of a) through d).



- a) Agree to and participate in the affiliate program
- b) Click the advertisement on the website
- c) Pay a contingency fee in accordance with the sales of the product
- d) Purchase the desired product

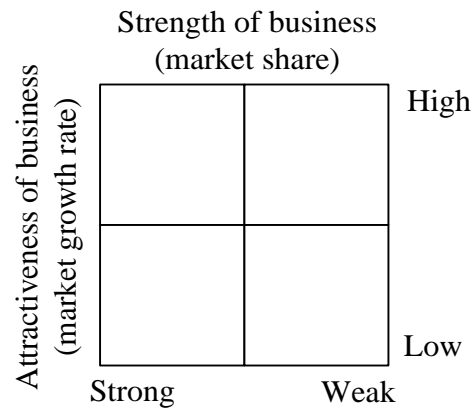
Q76. Which of the following is a part of total quality management?

- a) Designing products and services that meet or exceed customers' expectations
- b) Focusing on the appointment of staff with long-term work experience in a similar environment
- c) Prioritizing central decisions rather than empowerment for ensuring quality of products and services
- d) Promoting the capability of each department to work independently in a competitive manner

Q67. Which of the following is an explanation of the digital divide?

- a) It refers to an economical or social gap that occurs because of differences in abilities and opportunities when using computers and communication networks.
- b) It refers to communications and broadcast services that can be used equally by any citizen with reasonable charges, without any difference between regions.
- c) It refers to citizens participating directly in government policies and autonomous bodies through the use of the Internet.
- d) It refers to the provision of all services from a single place for each event of the daily life of citizens or each field of corporate activity.

Q68. Which of the following is the purpose of analyzing business plans and competitive advantages through portfolio management that uses the matrix shown in the figure?



- a) To evaluate tactics for maintaining a competitive edge in the market by improving product quality
- b) To evaluate the change in the market by considering seasonal fluctuation factors and geographical distribution in order to set an objective
- c) To evaluate the competitors' move in the market so that the promotion effect, set as an objective, can be measured
- d) To evaluate the position of the company's business as the basis for setting an objective and prioritizing resource allocation

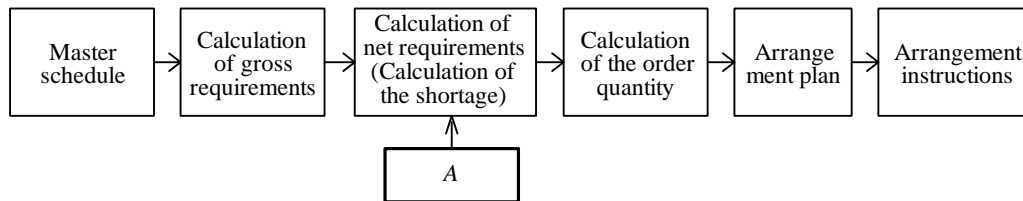
Q69. Which of the following is an explanation of core competence?

- a) Corporate activities that follow laws, various regulations, and social norms for performance management
- b) Overall system and operation optimization techniques to achieve the purposes of organizational activities
- c) Predominant abilities that cannot be imitated by competitors in a company's area of activity
- d) The development region of a business that is decided upon based on the viewpoint of the market, technology, and products (or services)

Q70. Which of the following is the basic strategy of a niche in a competitive position?

- a) A differentiation strategy necessary for a leader attack, such as a share pursuit
- b) An imitation strategy that quickly responds to market opportunities
- c) An omni-directional strategy that covers the entire market and secures the highest share
- d) A specialization strategy that aims at the specialization of the product and market

Q71. The figure below is the work procedure of MRP (Material Requirements Planning), a technique of a production management system. Which of the following information to be inserted into A in the figure below is necessary for calculating the net requirements?



- a) Bill of materials (configuration and requirements of each component in the final product)
- b) Inventory status (inventory amount, residual orders, in-process quantity)
- c) Ordering policy (lot organization method, ordering method, safety stock)
- d) Standard schedule (completion period, number of days of lead time)

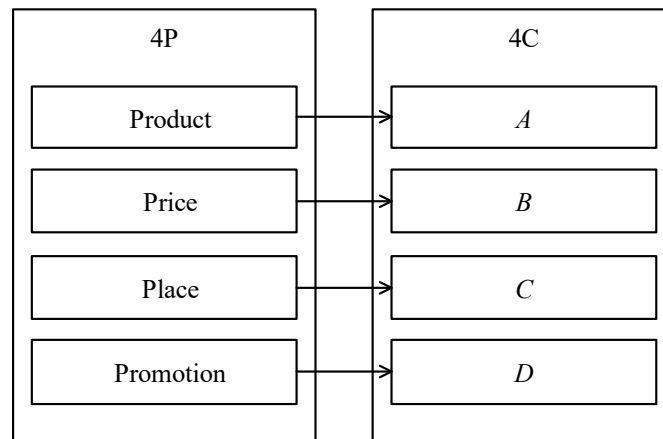
Q72. Which of the following describes an RFID system?

- a) Multiple RF Tags within range communicate with each other, and create a mesh network.
- b) RF Readers/Writers generate an electromagnetic field that charges the RF Tags within range to allow transmission of information.
- c) RF Tags process unique positioning information by using multiple satellites which allow for the tracking of the item using longitude and latitude coordinates.
- d) RF Tag transmission does not provide error correcting codes and still acquires high reliability through a wired connection.

Q69. Which of the following is a marketing technique used to provide incentives for distributors by applying conditions such as kickbacks and rebates, and increase the demands of consumers?

- a) Direct marketing
- b) Pull strategy
- c) Push strategy
- d) Relationship marketing

Q70. The figure below illustrates the relationship between the four (4) Ps proposed from the seller's viewpoint and the four (4) Cs proposed from the buyer's viewpoint in the marketing mix. Which of the following corresponds to blank *A* in the figure below? Here, a) through d) correspond to one of blanks *A* through *D*, without an exception.



- a) Communication (interaction with customers)
- b) Convenience (convenience of customers)
- c) Cost (customers' expense)
- d) Customer value (value for customers)

Q71. The sales price of products is decided according to the different sales price setting methods.

Which of the following approaches sets a high sales price by using the consumer psychology that high quality equals to high price?

- a) Cost plus pricing
- b) Differential Pricing
- c) Marketing price following pricing
- d) Prestige pricing

Q72. Which of the following is an appropriate explanation of the technology *S*-curve?

- a) It represents the diffusion process of a new technology, where a frequency distribution curve shows the growth of the new technology diffusion gradually decreases as the product using the technology is popularized in the market.
- b) It represents the maturing process of technology. It shows that, during the time until the new technology is actually spread, the degree of awareness and expectation changes as time passes.
- c) It represents the process of technology progress. It shows that technology advances slowly at the beginning and then advances rapidly; thereafter, its progress gently becomes stagnant.
- d) It represents the relationship between production volume and unit cost. It shows the course of reduction in unit cost with an increase in cumulative production volume.

Q73. Which of the following is an example of Consumer Generated Media (CGM)?

- a) A website of a company through which the company publishes information about its management and financial status, as well as performance trends for individual investors
- b) A website of a company through which the company transmits information about the characteristics and usage methods of its products to the general consumers
- c) A website of a government organization through which the agency publishes information about its policies and administrative services to the general citizens
- d) A website such as a blog and SNS, etc. through which an individual transmits information to the general public about the evaluation of products, etc. that he/she has used

Q74. Which of the following indicates a price setting method based on the cost plus approach?

- a) Deciding the price by adding a margin right from the beginning with the prerequisite of offering a discount to the customer
- b) Deciding the price by incorporating the desired margin with reference to the manufacturing cost and business expenses
- c) Deciding the price on a level that can be expected to compete in the market
- d) Deciding the price step-by-step in view of maximum profits and minimum risks through price analysis

Q68. Companies are classified based on their competitive position in the market. There are typically four types: leader, challenger, follower, and nicher. Which of the following is an appropriate characteristic of the strategy of a leader?

- a) A full frontal matching attack against the competitor's product, advertising, price and distribution, or indirect attack on the competitor's weaknesses or on gaps in the competitor's market coverage
- b) Capturing a specific market that is not targeted by a high-ranking company and concentrating management resources for securing and maintaining the predominance in the market
- c) Determining the real ability of the challenger company in the market, and giving priority for securing stable profits rather than expanding the market share by doing as the leader company does
- d) Proposing a new product and its usage method to the consumer to expand the total demand while maintaining or expanding the market share

Q69. Which of the following is a marketing technique to create demands from consumers by using advertisements that improve the brand image of a company or a product?

- a) Direct marketing
- b) Relationship marketing
- c) Pull strategy
- d) Push strategy

Q70. PEST analysis is used for analyzing the external environment in determining a business strategy. What are the external environmental factors the PEST analysis analyzes?

- a) Politics, Economics, Society, Technology
- b) Politics, Enterprises, Society, Time
- c) Price, Economics, Satisfaction, Technology
- d) Price, Enterprises, Safety, Time

Q71. Which of the following is an explanation of the IoT (Internet of Things)?

- a) It refers to a form of electronic commerce carried out over the Internet, consisting of a typical C to C transaction by which a seller posts a product's name, photo, minimum selling price, and other information on a website, after which the bidder that offers the highest amount within the time limit becomes the successful bidder.
- b) It refers to data centers designed for the connection to the Internet, with server operation failure prevented through the implementation of measures including quality management of communication lines, server maintenance, air conditioning, and power source-related countermeasures against power interruptions and outages.
- c) It refers to Internet advertising such as a banner advertisement that displays an image, with a link to an advertiser's website, or an e-mail advertisement that publicizes an advertiser's website.
- d) It refers to the installation of communication functionality to various objects, in addition to information and communication devices, and enabling automatic recognition or remote measurement by connecting these to the Internet, to achieve high-level decision-making services and automated control through the collection and analysis of large volumes of data.

Q72. Which of the following is an explanation of benchmarking used for corporate management?

- a) It refers to a qualitative and quantitative understanding of a company's own products, services, and operation through comparison with those of competitors or advanced companies.
- b) It refers to drastically reforming the quality and structure of a company by redesigning its business processes from a customer viewpoint and by taking full advantage of information technology.
- c) It refers to the ability to plan and manage the allocation of company-wide management resources in an effective and integrated manner and to achieve an improvement in management efficiency.
- d) It refers to the concentration of management resources on the unique skills and technologies of a company that can generate profit and that are superior to those of other companies.

Q73. Which of the following is an explanation of the long tail?

- a) Generally known as the 80:20 empirical rule, the name derives from the phenomenon by which 80% of a company's sales are accounted for by the best-selling 20% of its products, or by which 80% of a company's losses due to quality defects are accounted for by the top 20% of all causes of defects.
- b) If "value of network" is determined as the usefulness of the mutual access by the subscribers of the network," then the value of the network is approximately proportional to the square of the number of users.
- c) It enables a company to share the management resources through conducting multiple business activities simultaneously, and through the effective use of the shared resources, to relatively reduce the cost rather than conducting each business independently.
- d) It is effective in reducing the risk of opportunity loss in an online shop that uses the Internet by lining up a broad range of items, including products for which sales opportunities are few.

Q74. Which of the following performs processing according to steps (1) through (3)?

- (1) Based on the types and quantities as well as the parts list of the product planned to be manufactured in a fixed period of time in the future, the required quantity of components is calculated.
- (2) The net order quantity of each component is calculated from the amount of inventory that can be allocated.
- (3) The ordering time of the components is determined while considering the manufacturing and procurement lead time.

- | | |
|--------------------------------|-----------------------------------------|
| a) CAD (Computer Aided Design) | b) CRP (Capacity Requirements Planning) |
| c) JIT (Just In Time) | d) MRP (Material Requirements Planning) |

Q75. Which of the following is the procurement process that enables suppliers to bid against one another on the Internet to sell their products or services under the conditions specified by a general customer?

- a) B to B
- b) G to C
- c) Reverse auction
- d) Virtual mall

Q62. When a workflow system is used for business improvement, which of the following is an appropriate effect that can be expected?

- a) A standard protocol used for data exchange between a company and its customers can be provided.
- b) Processing speed for office procedures from document submission to approval can be improved.
- c) Services, such as a discount, can be provided according to the amount purchased by the customer.
- d) Shipping and receiving of stocked products can be automated in a warehouse.

Q66. In the table shown below, the investment category and KPI have been arranged according to the investment purpose. Which of the following corresponds to investment purpose *C* ? Here, a) to d) are applied to any one of *A* to *D*.

Investment purpose	Investment category	KPI
<i>A</i>	Business efficiency improvement investment	Adhering to the delivery date, and required number of days for monthly closing of accounts
<i>B</i>	Information utilization investment	Number of registered proposals, and number of proposals to customers
<i>C</i>	Strategic investment	ROI of new business and market share of a new product
<i>D</i>	IT infrastructure investment	Number of system failures and search response time

- a) Betterment of the work process and improvement of work quality
- b) Creation of business and establishment of competitive advantages
- c) Reduction of system maintenance and management cost, and improvement of system performance
- d) Visualization and sharing of knowledge

Q67. A SWOT analysis is a technique that is used to identify and evaluate the internal and external factors that are advantageous or disadvantageous to achieve the objectives of the business or project. When a company's situation is analyzed as shown in the table below, which of the following is the most appropriate combination that corresponds to the company's Strengths that give the company advantages over others, Weaknesses that give the company disadvantages relative to others, Opportunities that are exploited for the company's advantages, and Threats that cause troubles for the business or project?

	Advantage	Disadvantage
Internal Factor	The company has attempted to promote innovation. Therefore, the company holds a significant number of patents.	The company cannot provide staff training as a result of its low budget. Therefore, many staff members are forced to work inefficiently.
External Factor	A world contest is determined to be held by an international committee in a location near the company next year.	This year, significant rain caused flooding in several locations, including the area near the company.

a)

	Advantage	Disadvantage
Internal	Opportunities	Weaknesses
External	Strengths	Threats

b)

	Advantage	Disadvantage
Internal	Strengths	Threats
External	Opportunities	Weaknesses

c)

	Advantage	Disadvantage
Internal	Strengths	Weaknesses
External	Opportunities	Threats

d)

	Advantage	Disadvantage
Internal	Strengths	Weaknesses
External	Threats	Opportunities

Q68. According to the “competitive strategy” by Philip Kotler, which of the following is a company that has no high market share, but has the strategic aim of achieving high profits and acquiring a unique position by focusing management resources on particular products and services?

- | | |
|----------------------|--------------------|
| a) Market challenger | b) Market follower |
| c) Market leader | d) Market nicher |

Q69. Which of the following is an explanation of knowledge management?

- a) Management centered on strengths that are a challenge for other companies to imitate, such as the enterprise's own know-how and technology
- b) Management innovation driven by performing comparative analysis with other successful companies
- c) Management which improves the overall problem-solving capability by sharing knowledge that is scattered across the enterprise
- d) Management which maintains a flat organization structure with minimal hierarchical layers to accelerate decision-making

Q70. Which of the following is a characteristic of an IC tag (RFID)?

- a) An IC tag handles a significant amount of information, and thus it uses an external storage device for storing information.
- b) An IC tag is resistant to dirt, and the recorded information can be read even from outside the container.
- c) An IC tag needs to be inserted into a dedicated magnetic reader to read the recorded information.
- d) An IC tag uses GPS to display the positional and attribute information of the current location.

Q72. Which of the following is an example of the use of social media in business?

- a) A company posts its business strategies regarding accommodating itself to market changes, in professional business magazines, thus aiming to improve their reputation as a trustworthy company.
- b) A company sets up a site on the Internet for sharing opinions on matters such as the usage status of its products, which leads to improvement of the product.
- c) The researchers of a company buy the latest professional magazines that are not sold within the country through online shopping, which contributes to the research and development activities.
- d) The sales department frequently posts product articles in magazines that are circulated in large numbers, thus aiming at improving awareness of the product.

Q73. Which of the following is an appropriate explanation of tethering as a function of cell phones?

- a) A cell phone can be used by inserting a different telecommunications carrier's SIM card into the cell phone.
- b) By using a cell phone as a modem or access point, data communication that uses a network, such as the Internet, is enabled on a PC, game console, or other such devices.
- c) Cell phone access to websites that are harmful to young people is disabled on request to the telecommunications carrier.
- d) Even outside the service area of the contracted telecommunications carrier, a cell phone can be used with the service of another carrier.

Q69. Which of the following is an appropriate explanation of the “Question mark” product in the product portfolio management (PPM) matrix?

- a) It needs appropriate investments to maintain, although it has a large rate of market share and a high rate of market growth.
- b) It needs minimal investments to harvest owing to a large rate of market share and a low rate of market growth.
- c) It needs significant investments to nurture owing to a small rate of market share and a high rate of market growth.
- d) It needs to be withdrawn owing to a small rate of market share and a low rate of market growth.

Q70. An apparel manufacturing and selling company is evaluated by value chain analysis. When activities in the company are classified into inbound logistics, productions, outbound logistics, sales/marketing, and services, which of the following is classified as inbound logistics?

- a) Activity to deliver clothes to a buyer
- b) Activity to order material, carry out inspections, and manage inventory
- c) Advertising activity
- d) Sewing activity

Q71. Which of the following is a price-setting method based on cost-plus pricing?

- a) On the assumption of a discount for a customer, the price is set by adding a profit margin from the beginning.
- b) On the basis of manufacturing cost and operating expenses, the price is set by incorporating a desired margin.
- c) The maximum profit and minimum risk are considered based on price analysis, and the price is set step by step.
- d) The price is set with an estimated competitive price on the market.

Q72. Which of the following is an explanation of consumer generated media (CGM)?

- a) It allows the customers of a company who want to join a mailing list to be registered to it and periodically delivers information via e-mail.
- b) It enables the distribution of digital content that an individual reader creates, and it enables sharing of such content between users.
- c) It integrates online shops offered by personal tenants, issues common loyalty points, and settles credit card payments on behalf of those tenants.
- d) It offers functions for trading goods in an auction format and works as an intermediary between consumers in personal trading.

Q73. Which of the following is an explanation of an e-marketplace?

- a) It is a method in which many sellers and buyers meet in a market set up on the Internet and trade directly without an intermediate distributor.
- b) It is a method that aims for overall optimization from material procurement to product distribution by sharing information such as ordering, inventory, sales, and logistics between a company and its business partners.
- c) It is a method that converts information concerning business transactions into a standardized format and electronically exchanges data such as estimation, ordering, shipment and delivery, and payment between companies.
- d) It is a method that runs a sales promotion campaign on the Internet and then draws customers to a real store to encourage them to make purchases.

Q74. Which of the following is an explanation of a smart grid?

- a) It is a system that aims at the utilization of recyclable energy, supply of stable electric power, and optimum demand adjustment through the integrated control of power generation and power consumption based on communication and information-processing technology.
- b) It is a system that can provide ideal health advice to each individual by performing analysis based on similar case reports, such as the result of health examinations and medication use.
- c) It is a system that can search for information on restaurants and entertainment, send and receive traffic information, and communicate the current position at the time of an emergency by using information-processing equipment installed in vehicles.
- d) It is a system that supports varied work styles by enabling mutual communication between workers with varied working styles, such as home-based employees and senior workers.

Q67. Which of the following is a technique that is used to identify and evaluate the internal and external factors that are helpful or harmful to the objectives of business organizations or projects?

- a) Five forces analysis
- b) PPM analysis
- c) SWOT analysis
- d) Value chain analysis

Q68. Which of the following is a technique for classifying company activities into primary activities and support activities, and analyzing which activities generate the profit of the products or services provided to customers?

- a) 3C analysis
- b) Five forces analysis
- c) SWOT analysis
- d) Value chain analysis

Q69. Which of the following is an explanation of the core competence?

- a) It refers to the business domain that is decided from the viewpoint of the market, technology, and products (or services).
- b) It refers to the corporate activities that comply with laws, various regulations, and social norms for managing business.
- c) It refers to the overall system optimization techniques for achieving the purpose of organizational activities.
- d) It refers to the predominant abilities in the business area of the company, which cannot be imitated by competitors.

Q70. Which of the following is a description of the growth stage of the product life cycle?

- a) It is the stage at which companies sell products to early adopters. Companies adopt strategies to enhance product recognition.
- b) It is the stage at which growth in demand slows. Companies try to maintain market share and secure profits through various means such as quality improvements.
- c) It is the stage at which sales and profit gradually decline. Companies refrain from additional investment and consider withdrawal from the market.
- d) It is the stage at which sales increase rapidly. The market becomes active and the competition intensifies because of new market participants.

Q71. Among the different business systems supported by technology, which of the following analyzes routes of distribution, tracking and load tendency?

a) LMS

b) OMS

c) TMS

d) WMS

Q72. Which of the following is an explanation of the strategy map that is used in the balanced score card?

- a) It classifies and shows the products or businesses of a company in the four cells formed by the two axes of the market attractiveness and the company's superiority.
- b) It shows the cause-and-effect relationship between issues, countermeasures, and goals, on the basis of the four perspectives that consist of finance, customer, internal business process, and learning and growth.
- c) It shows the position of a company or its products in a market by using two key elements as the X-axis and Y-axis.
- d) It shows what types of management resources to be used, what types of products and services to be provided, and what types of customers to be targeted.

Q73. Which of the following is an appropriate explanation of the concurrent engineering?

- a) A new product development technique that sequentially executes processes such as product design, manufacturing, and sales activities
- b) A technique that analyzes a target system and clarifies its specifications
- c) A technique that executes processes such as product design and production planning in parallel during the new product development procedure
- d) A technique that tries to figure out the optimal combinations of functions and cost, and to improve value through systematic procedures

Q74. Which of the following is an explanation of CAD?

- a) By using computers, converting drawings of the product design to the process design information, and supporting automation of machine processing, etc.
- b) By using computers, creating drawings of the product design from attribute data concerning product shape, composition, etc.
- c) By using computers, evaluating product performance and functions without actual products
- d) By using computers, finding required volumes and timing of materials from a production schedule, a BOM (bill of materials), inventory volumes, etc.

Q64. Which of the following is an appropriate description of BPR (Business Process Reengineering)?

- a) BPR is a management practice that is used to provide the overall governance of an organization in a business process environment, with the goal of improving agility and operational performance.
- b) BPR is a management strategy that is used to automate key business processes that help in saving time, promoting efficiency, and ultimately reducing costs, in order to enhance the value of an organization.
- c) BPR is a management system that is used in marketing and business in order to automate the sales activities, such as contact management, order taking and fulfillment, information sharing, inventory monitoring, and sales forecast analysis.
- d) BPR is a management technique that is used to redesign and restructure the value-creating processes in an organization in order to gain significant benefits in productivity, profitability, service, and quality through maximizing the potential of individuals and teams.

Q67. According to “competitive strategy” proposed by Philip Kotler, which of the following is the company that has a small market share, but has the strategic aim of increasing income and acquiring a unique position by focusing management resources on particular products and services?

- a) Market challenger
- b) Market follower
- c) Market leader
- d) Market nicher

Q69. Which of the following is the business management technique that is used to develop specific targets and measures to implement a planned strategy, in consideration of the appropriate mutual relationships among four perspectives (i.e., financial, customer, internal business processes, and learning and growth)?

- a) Balanced score card
- b) Growth matrix
- c) Product portfolio management
- d) SWOT analysis

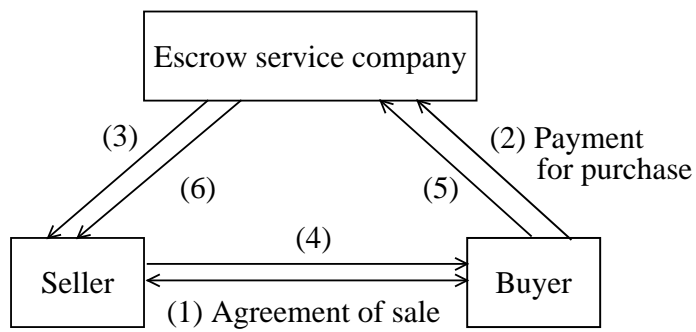
Q70. Which of the following is an explanation of the long tail?

- a) The long tail refers to the ability to sell products on one's own website by shipping products directly from the manufacturer or wholesaler without taking the risk of inventory.
- b) The long tail refers to the integrated and systematic management, delivery, and other handling of the text, images, and such other digital content that make up web content.
- c) The long tail refers to the payment of a referral fee by a company when its product is purchased via a link to the company on a website or blog.
- d) The long tail refers to the situation where the sales percentage for a group of poor-selling products cannot be ignored in terms of the total sales of Internet shopping.

Q71. Which of the following is the purpose of SCM?

- a) To construct favorable customer relationships through unified management, including customer information, purchasing history, and complaints, and also through meticulous customer response
- b) To improve management efficiency through integrated management of all information concerning core business operations such as production, sales, inventory, and accounting
- c) To improve the efficiency of sales activity through unified management of customer information, business meeting schedules, and business meeting status including progress status
- d) To reduce costs and shorten delivery periods through integrated management of information across multiple companies or organizations from procurement to sales

Q72. The figure below shows the transaction model of an escrow service that is used on an Internet auction site or such other transaction. Which of the following is the action that corresponds to (5) in this figure? Here, (1) through (6) indicate the sequence of transactions, and each of (3) through (6) corresponds to one of a) through d).

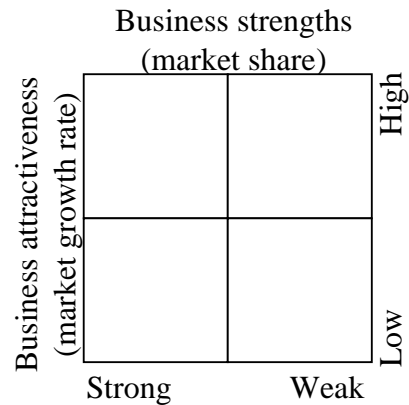


- | | |
|---------------------------------|---------------------------------|
| a) Notice of deposit of payment | b) Notice of receipt of product |
| c) Shipment of product | d) Transfer of payment |

Q73. Which of the following is an explanation of RFID?

- a) RFID is a combination of an extremely small integrated circuit and an antenna, which is used for an electronic tag that enables an object to be identified and located by using the wireless automatic recognition technique.
- b) RFID is a method of settlement that is based on monetary value saved on an IC card or a cell phone, and is used in a POS register or such other device.
- c) RFID is a technique that uses bio-information, such as the physical characteristics of human beings, for the identification and authentication of individuals, and includes fingerprint authentication and vein authentication.
- d) RFID is used to represent information in a monochrome lattice pattern, and can save a large amount of information including alphanumeric characters and double-byte characters.

Q68. The matrix shown below is used for PPM (Product Portfolio Management). Which of the following is the purpose of analyzing business plans and competitive superiority by using this matrix?



- a) To evaluate the current position of a company so that the promotion effect set as an objective can be measured
- b) To evaluate the current position of a company as the basis for setting an objective and prioritizing resource allocation
- c) To evaluate the marketing tactics for maintaining a competitive edge in the market by setting an objective and improving product quality
- d) To evaluate the change in the market by considering seasonal fluctuation factors and geographical distribution, in order to set an objective

Q69. Which of the following is an explanation concerning a franchise chain in the retail industry?

- a) A form of organization where a group of outlet stores are opened in a commercial shopping area that is developed under a local or regional development plan
- b) A form of organization where a head office allows its members to use the trademarks and signs, and also provides managerial training and assistance, at a fixed rate of compensation
- c) A form of organization where a wholesale distributor plays a leading role and multiple retailers voluntarily participate to gain the benefit of cooperation while their independence is maintained
- d) A form of organization where multiple retailers perform their business activities, such as procurement, inventory management, and product development, in cooperation with each other

Q70. Which of the following is the primary purpose of implementing an ERP system that is used for business management?

- a) To build a long term relationship with the customer as a result of deepened understanding of customer's needs and desire
- b) To integrate all departments and functions across a company into a single computer system that can serve the entire company's needs
- c) To maximize the value added along the series of business operations including purchase, production, sale, and distribution
- d) To transform raw data into meaningful and useful information for business purposes and implement an effective strategy that can provide a competitive market advantage

Q71. Which of the following is an appropriate explanation concerning product innovation in the management of technology?

- a) Developing a new or differentiated product that is a key to success
- b) Making an operating profit through the results of technology development
- c) Making progressive reforms in the business process
- d) Managing strategic business that revolves around technology

Q72. Among the various types of e-commerce transactions, which of the following is an appropriate example of B2C (i.e., “B to C”)?

- a) Company *A* places an online order of materials from its supplier twice a month.
- b) Mr. *B* buys a book from an online shop owned by Company *A*.
- c) Mr. *B* pays an annual tax via a Web site hosted by the central tax office.
- d) Mr. *B* posts an online advertisement to sell his car and finally Mr. *C* buys it.

Q73. Which of the following is an explanation concerning EDI?

- a) A communication service that provides added values, such as storage of data transmitted over networks and conversion of data formats
- b) An international standard for e-mail services based on the OSI model, which provides comprehensive services for the generation, transmission, and processing of messages
- c) An ordering system that enables orders to be placed by transmitting order information from a data entry terminal to the head office or a supplier
- d) The exchange of business transaction data between computers over the Internet or other dedicated communication lines, in accordance with standard protocols

Q68. Which of the following is an explanation of SCM?

- a) A series of business operations including purchase, production, sale, and distribution is reviewed from the viewpoint of total optimization among companies in order to reduce delivery lead time and inventory.
- b) Customer information collected through various channels is managed in an integrated manner in order to build closer relationships with customers by using such information.
- c) Intellectual assets of individuals, such as skills and experiences, are shared across work units, jobs, and locations in order to achieve creative activities in an efficient and effective manner.
- d) The skills and behavioral characteristics of a company's employees are managed for implementing appropriate personnel assignment and evaluation from the perspective of human resources strategy.

Q70. When a company's own product is analyzed by using a SWOT analysis, which of the following is classified as an external factor?

- a) Cost competitiveness
- b) Functional strengths
- c) Quality-related weaknesses
- d) Threats of new competitors

Q71. Which of the following is the purpose of CRM?

- a) To acquire customer loyalty and maximize customer lifetime value
- b) To determine the order point and quantity of material necessary for production
- c) To obtain the sales information of each product at the time of sales
- d) To reduce loss of sales opportunities caused by insufficient inventory

Q72. Which of the following is an explanation of social media?

- a) It provides a mechanism that allows a neighboring store to use the positional information of a cell phone and send an advertisement to the cell phone user in real time.
- b) It provides a mechanism that promotes the connection between users so that the information posted by a user over the Internet is widely transmitted to a large number of users.
- c) It provides a mechanism that specifies a target keyword in advance and displays an advertisement when the keyword is used in a search operation.
- d) It provides a mechanism where the payment of remuneration is made to a customer when the customer buys a product from an EC site introduces the product on his own Web page and another customer who sees the Web page buys the same product.

Q73. Which of the following is an explanation of core competence adopted in business administration?

- a) It refers to a bundle of a company's unique skills and technologies that are the source of competitive superiority and are superior to those of competitors.
- b) It refers to a qualitative and quantitative understanding of products, services, and operations through comparison with the strongest competitor or advanced companies.
- c) It refers to fundamental reconsideration and radical redesigning of business processes to dramatically improve the cost, quality, service, and speed of a company.
- d) It refers to the ability to control the company-wide management resources in an integrated manner and to achieve an improvement in management efficiency.

Q74. Which of the following is the procurement process that enables suppliers to bid against one another on the Internet in order to sell their products or services under the conditions specified by a general customer?

- a) B to B
- b) G to C
- c) Reverse auction
- d) Virtual mall

Q75. Which of the following is an explanation of knowledge management?

- a) Business is conducted to accelerate decision making processes by organizing a flat structure with minimal hierarchical layers.
- b) Business is conducted to enhance the problem-solving ability of the entire workforce by sharing information, skills, and understanding dispersed across a company.
- c) Business is conducted to promote management innovation by performing a comparative analysis with other successful companies .
- d) Business is conducted with the focus on a company's own know-how, technology, and other advantages that cannot be imitated by competitors.

Q67. According to Michael Porter, who is the author of “Competitive Strategy”, which of the following is the tool that is used to classify a company’s business activities into main activities and supporting activities on a function-by-function basis in order to identify key activities that generate the profit for the company and the possible benefit for customers?

- a) 3C analysis
- b) Five forces analysis
- c) SWOT analysis
- d) Value chain analysis

Q68. Among the four stages, introduction, growth, maturity, and decline in the product life cycle, which of the following is a characteristic of the growth stage?

- a) Customers are aware of product, and as a result, sales increase. However, profits might sometimes decline for the company that first introduced the product, because competitors enter the market.
- b) Demand is weak and limited, and the exploitation of new demands is the key to success. The company needs to sell the product to specific prospective customers with conviction.
- c) Demand reaches a peak, and the differentiation of the product and the segmentation of the market become clear. The competition between companies increases, and the company needs to create a new variety of products and reduce costs.
- d) Some companies withdraw from the market because of a downturn in demand. In this stage, the company decides if it can maintain its competitive advantage and considers the possibility of entering alternative markets.

Q69. Which of the following is an example of the strategic target and key performance indicator of a balanced score card from the viewpoint of customers?

- a) Since the target is to continue to promote a balanced and sustainable growth, the backlog of orders is the indicator.
- b) Since the target is to establish a close and continuing relationship with the major customers, the number of complaints is the indicator.
- c) Since the target is to improve product development capabilities, the time of attending classes for the training of product development is the indicator.
- d) Since the target is to keep the delivery date of the product, the number of days by which the manufacturing period is shortened is the indicator.

Q70. Which of the following is a pricing method that is based on the cost plus method?

- a) Deciding the price by adding a margin from the very beginning with the prerequisite of offering a discount to the customer
- b) Deciding the price by incorporating the desired margin in addition to the manufacturing costs and business expenses
- c) Deciding the price on a level that can be expected to reasonably compete in the marketplace
- d) Deciding the price step-by-step in view of maximum profits and minimum risks through price analysis

Q72. Which of the following is a characteristic of an IC tag (i.e., RFID)?

- a) An IC tag handles a large amount of information, so it uses an external storage device for storing information.
- b) An IC tag is resistant to dirt, and the recorded information is accessible from outside the packaging
- c) An IC tag must be swiped through a dedicated magnetic reader, making physical contact with the tag.
- d) An IC tag uses GPS to display the positional information and attribute information of the receiving location.

Q73. Which of the following is the appropriate term applicable to the description below?

It is used to describe the economic concept or strategy of a certain Internet-based business targeting less-competitive niche markets, which enables the business to gain significant profit in selling small volumes of hard-to-find items to many customers, instead of selling large volumes of reduced number of popular items.

- | | |
|--------------|------------------|
| a) Affiliate | b) Drop shipping |
| c) Long tail | d) Opt-in |

Q74. Which of the following is applicable to “A” in the comparison table below that shows the characteristics of each production system of continuous production, individual production, lot production, and process production?

Production system	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Production quantity	Small	Medium	Large	Large
Form of Main production	Build-to-order	Build-to-order/ build-to-stock	Build-to-stock	Build-to-order/ build-to-stock
Type of product	Many	Some	Few	Few
Frequency of arrangements	High	Medium	Low	Very low
Processing (example)	Assembly	Assembly	Assembly	Chemical

- | | |
|--------------------------|--------------------------|
| a) Continuous production | b) Individual production |
| c) Lot production | d) Process production |

Q75. Which of the following is the methodology that performs both production scheduling and inventory control on the basis of steps (1) through (3) described below?

- (1) Based on the types and quantities as well as the component list of the product planned to be manufactured during a fixed period of time in the future, the required quantity of components is calculated.
- (2) The net order quantity of each component is calculated from the amount of inventory that can be allocated.
- (3) The ordering point of each component is determined in consideration of the manufacturing or procurement lead time.

- a) CAM b) FMS c) JIT d) MRP

Q76. Which of the following is an appropriate reason for using a flash memory device as a built-in memory feature of a one-chip microcomputer?

- a) The code size of the program can be reduced.
- b) The processing capability of the microcomputer is enhanced.
- c) The program can be rewritten after the microcomputer is shipped.
- d) The reliability is improved in comparison with a mask ROM.

Q65. Which of the following is an improvement index in supply chain management?

- a) Ratio of increase in number of loyal customers
- b) Ratio of prevention of drop in unit sales price
- c) Ratio of reduction in dead stock
- d) Ratio of reduction in overtime

Q68. Which of the following is an explanation of core competence management?

- a) A flat organization structure with minimal hierarchical layers is maintained to accelerate decision making.
- b) Comparative analysis with other successful companies is performed to drive management innovation.
- c) Knowledge scattered across the company is shared to improve the overall problem solving capability.
- d) Management is centered on proprietary know-how and technology that are not easy for other companies to imitate.

Q69. In the product life cycle, which of the following is the stage where the market begins to understand the value of the product, and both product lines and sales channels need to be expanded?

- a) Introduction stage
- b) Decline stage
- c) Growth stage
- d) Maturity stage

Q70. A SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis is a technique that is used to identify and evaluate the *internal* and *external* factors that are *helpful* or *harmful* to achieving the objectives of business organizations or projects. Which of the following is the appropriate matrix that shows a combination of those factors?

a)

	Helpful	Harmful
Internal	Opportunities	Weaknesses
External	Strengths	Threats

b)

	Helpful	Harmful
Internal	Strengths	Threats
External	Opportunities	Weaknesses

c)

	Helpful	Harmful
Internal	Strengths	Weaknesses
External	Opportunities	Threats

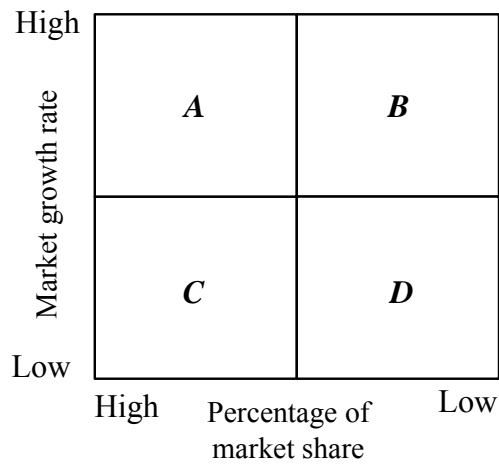
d)

	Helpful	Harmful
Internal	Strengths	Weaknesses
External	Threats	Opportunities

Q71. Which of the following is an appropriate form of transaction where one company (i.e., the bidder) gains a decisive share of the basic equity of another target business?

- a) Acquisition
- b) Business alliance
- c) Capital participation
- d) Merger

Q72. Product Portfolio Management (PPM) is a method for analyzing the positioning of a product within the market and reviewing the resource allocation. As shown below, PPM uses a matrix chart divided into four quadrants, with the market growth rate on the vertical axis, and the market share on the horizontal axis. Which of the following is the appropriate quadrant in which a product referred to as “cash cow” is categorized?



a) *A*

b) *B*

c) *C*

d) *D*

Q73. Which of the following is an appropriate explanation of direct telemarketing?

- a) A type of direct marketing that involves not only selling products on the phone but also asking for donations or opinions
- b) A type of direct marketing that uses electronic mail as a means of communicating commercial or fund-raising messages to potential or current customers
- c) A type of direct marketing that uses short message service to send customers sales alerts, links to website updates, appointment or delivery reminders, or personalized messages
- d) A type of direct marketing where a company makes efforts to market products and services and to build customer relationships over the Internet

Q74. Which of the following is an appropriate example of the effective utilization of RFID?

- a) Identification and control of humans or objects by using a small wireless chip
- b) Information entry by scanning a digital code printed on paper through a reader
- c) Short-range data communication using infrared rays
- d) Voice data communications between a cell phone and headphones

Q66. Which of the following enables users to connect to the system of a service provider via the Internet and make online use of the necessary functions of the applications that are offered by the service provider as needed?

- a) BPO (Business Process Outsourcing)
- b) SaaS (Software as a Service)
- c) SOA (Service Oriented Architecture)
- d) VPS (Virtual Private Server)

Q69. Which of the following is an appropriate explanation of the benchmarking used for corporate management?

- a) Focusing the management resources on unique and proprietary skills and technologies that can generate profit and that are superior to those of other companies
- b) Improving the efficiency of management by effectively and comprehensively planning and managing the distribution of the management resources of the entire company
- c) Reforming the quality and structure of the company by redesigning business processes from the viewpoint of the customer, and by taking full advantage of information technology
- d) Understanding products, services, and operations of the company qualitatively and quantitatively in comparison with those of the strongest competitor or a leading company

Q70. Which of the following is an explanation of marketing mix?

- a) A company's products are effectively sold by combining product strategy, price strategy, channel strategy, promotion strategy, and others appropriately.
- b) An appropriate policy is adopted in consideration of the relationship with marketplaces and competitive products in each stage of introduction, growth, maturity, and decline.
- c) Customer markets are divided into segments based on a certain standard, and the market segment in which the most competitive advantage is gained is selected.
- d) The positioning of each business is clarified based on a combination of the market growth rate and the relative market share of the company, and the future policy for each business is reviewed.

Q71. Which of the following is an appropriate explanation of demographic segment that is one of the market segments?

- a) A group of a population segmented based on actual consumers' knowledge, their uses of products, and their responses to certain products
- b) A group of a population segmented based on social class, lifestyle, or personality characteristics
- c) A group of a population segmented by factors such as age, gender, family size, income, occupation, education, religion, race, generation, and nationality
- d) A group of a population segmented by factors such as nations, states, regions, counties, cities, or neighborhoods

Q72. Which of the following is an appropriate explanation of product innovation in the management of technology?

- a) Developing new products or products differentiated from other companies
- b) Making an operating profit through the results of technology development
- c) Making progressive reforms in the business process
- d) Managing strategic business that revolves around technology

Q73. Which of the following is the situation where an improvement can be expected by installing an MRP (Material Requirements Planning) system?

- a) Drawing information is managed on both electronic files and hard copies, so the history of design changes cannot be accurately traced.
- b) High-mix, low-volume production is adopted, so the cost of installing production equipment is increasing.
- c) Information about materials and quantities necessary for production is complicated, so a miscalculation of order quantity or an interruption of production often occurs.
- d) There are too many design changes, so production efficiency does not improve.

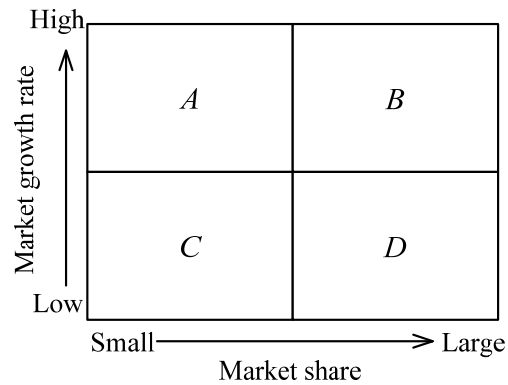
Q75. Which of the following is an explanation of BCP (Business Continuity Plan)?

- a) In order to achieve the corporate goal, the details and flow of business operations are visualized, and the business process is continuously improved in a regular cycle.
- b) In order to achieve the corporate strategy, a strategy is reviewed from the viewpoint of finance, customers, internal business processes, and learning and growth.
- c) In order to avoid risks of business interruptions or recover promptly from damages, a policy or an activity procedure is prepared in advance.
- d) In order to improve business efficiency and reduce business costs, business processes are outsourced.

Q66. Which of the following is an explanation of “contact management” that is a basic function of SFA (Sales Force Automation)?

- a) Enhancing sales efficiency and effectiveness by responding promptly to inquiries from salespersons
- b) Improving the performance level of the entire sales department by identifying and sharing sales techniques accumulated on an individual basis
- c) Increasing the rate of order acceptance by having the entire sales organization respond to a customer, rather than having only a single salesperson do so
- d) Performing effective sales activities for existing and prospective customers by managing a set of records including customer visiting days and sales results

Q68. When a company's business is divided into four categories *A* through *D* as shown in the figure below, which of the following is the characteristic of the business that is classified as category *B*?



- a) It currently serves as a primary supply source of cash, and no additional investments should be made.
- b) It has little need for additional investments in business continuity, and the possibility of withdrawal must be considered in the future.
- c) It is currently generating a large inflow of cash, but it also needs continuous investment into the future.
- d) It is currently generating a small inflow of cash, but some additional investments may make it change to a supply source of cash in the future.

Q69. Which of the following is the technique and concept for improving management efficiency by planning and controlling the company-wide management resources in an effective and integrated way?

- a) CRM b) ERP c) MRP d) SCM

Q70. The four perspectives of the BSC (Balanced Score Card) includes “financial,” “learning and growth,” “internal business process,” and one other. Which of the following is the one remaining perspective that is sometimes extended to or replaced by “stakeholder” for modified or extended BSC models?

- | | |
|---------------------------|---------------|
| a) Company’s own strength | b) Compliance |
| c) Customer | d) Governance |

Q71. Which of the following is an appropriate explanation of a franchise chain in the retail industry?

- a) A form of organization established by multiple retailers in which those retailers jointly perform their business activities such as procurement, inventory management, and product development
- b) A form of organization in which a group of outlets are opened in a commercial accumulation area that is planned and created through regional development activities
- c) A form of organization in which a head office provides to its members usage rights of its trademarks and signs, and also provides managerial training and assistance in exchange for a fixed rate of compensation
- d) A form of organization lead by a wholesale distributor in which multiple retailers voluntarily participate to gain the benefit of cooperation while their independence is maintained

Q72. Which of the following is an appropriate characteristic of an RFID tag that is a type of IC tag and is used for locating and tracking merchandise, inventory, or other assets?

- a) It optically reads information encoded in a barcode.
- b) It reads information stored on magnetic material upon physical contact.
- c) It reads information without physical contact by using electromagnetic waves.
- d) It reads information without physical contact by using infrared rays.

Q73. Which of the following is an appropriate explanation of EDI?

- a) A communication service that provides value-added functions such as storage of data transmitted over the network and conversion of data formats
- b) A method for electronically exchange of business data between computers over a network, based on standard formats and protocols
- c) An international standard for e-mail services which provides the generation, transmission, and processing of messages, based on the OSI basic reference model
- d) An ordering system that enables orders to be placed by transmitting order information from a data entry terminal to the head office or a supplier

Q65. Which of the following is an appropriate explanation of SOA?

- a) It is a concept for improving management efficiency by managing the business processes of the entire business group in an integrated manner and by utilizing the management resources effectively.
- b) It is a design approach to architecture that builds software applications as reusable services and utilizes those services in a network such as the Internet in order to achieve a high level of productivity.
- c) It is a management technique for clarifying problems by analyzing and organizing the flow of business operations in units of operations and for making continuous improvements to the efficiency of business operations.
- d) It is a strategy for entrusting part of a company's business operations from planning to operation, including not only the business system but also the business operations themselves, entirely to an external company.

Q66. Which of the following is an appropriate explanation of SCM (Supply Chain Management)?

- a) It is a business concept for managing customer information collected through various channels in a centralized manner and for building closer ties with customers by using such information.
- b) It is a business process for managing the series of business operations linking purchase, production, sale, and distribution from the viewpoint of total optimization among companies in order to reduce delivery lead time and stock.
- c) It is a business system for managing the skills and behavioral characteristics of employees and for implementing appropriate personnel allocation and evaluation from the viewpoint of personnel strategy.
- d) It is a systematic approach to sharing skills, experiences, and best practices across work units, jobs, and locations, including the effective use of available data and organizational learning.

Q67. Which of the following is the most appropriate explanation of system integration?

- a) A part of a company's business processes is farmed out to other independent companies that have better skills and more experiences.
- b) Business applications or tools are developed and delivered over the Internet, usually for rent rather than outright purchase.
- c) Necessary tasks related to an information system, such as planning, construction, and operations, are performed all together based on an underpinning contract.
- d) Only the necessary software functions including maintenance and support are selected and purchased over the Internet.

Q68. In verification of stakeholder requirements, which of the following means the ability to keep track of the process until the implementation of a change request related to a defined requirement is completed?

- a) Interoperability
- b) Maintainability
- c) Traceability
- d) Usability

Q70. The marketing strategies are categorized into four basic types: leader, challenger, follower, and nicher. The market follower is a firm that is not a market leader and that does not attempt to be a market leader. In addition, the follower can often find the reinvention of ideas easier than the originators. Which of the following is the basic strategy of the follower as a competitive position?

- a) All-around strategy for covering the entire market and ensuring the largest share
- b) Differentiation strategy needed to attack the leader in pursuit of market share
- c) Imitation strategy for quickly responding to market opportunities
- d) Specialization strategy for focusing on a specific product or market segment

Q71. The product life cycle is a concept based on the idea that all products pass through four stages: introduction, growth, maturity, and decline. Which of the following is the characteristic of the maturity stage in the product life cycle?

- a) As demand decreases, some companies withdraw from the market. A company should judge whether it can become a strong player in this stage and, if necessary, should consider entering an alternative market.
- b) As demand increases, product differentiation and market segmentation become evident. Competition between competitors increases, and addition of new models and reduction of costs become important.
- c) Sales grow slowly, and success depends on whether new demand can be created. It is necessary to provide information, such as features, benefits, and price, for potential target customers.
- d) The market begins to understand the value of the product. Both the product line and sales channels need to be expanded. In this stage, sales increase, but investment is required.

Q72. Which of the following is a type of information system that helps companies change or otherwise alter their business strategy and structure and thus create a competitive advantage?

- a) DSS b) KMS c) MIS d) SIS

Q73. Which of the following is an appropriate explanation of CRM?

- a) It is a method for improving business performance by sharing information between all customer channels within a company and by increasing customer satisfaction.
- b) It is a method for improving efficiency by sharing information between related companies including production, inventory, purchasing, sales, and distribution.
- c) It is a method for improving management efficiency by controlling company-wide business resources in an integrated way so that they can be used effectively.
- d) It is a method in which wholesalers and manufacturers expand transactions with retail shops by supporting their business activities to increase sales and profits.

Q74. Which of the following is the characteristic of the cell production system where production is grouped into cells with each cell taking responsibility for the production of each product?

- a) A “Kanban” card is used as a communication tool for making work instructions and on-site management visible in the manufacturing field.
- b) A single worker or a group of several workers completely assembles each product from start to finish.
- c) Each process runs autonomously, and production in the succeeding process is performed based on output from the preceding process.
- d) The required parts, specifications, and quantities are communicated from the succeeding process to the preceding process.

Q75. Which of the following is an appropriate explanation of XBRL?

- a) It is a data description language developed for financial information exchange and reporting, based on XML (eXtensible Markup Language).
- b) It is a document display format that can store not only text and images but also information such as layouts and fonts in a file.
- c) It is a page description language that can represent Web pages, including images, sounds, and video, on the Internet.
- d) It is a programming language initially developed for small computers and mainly intended to create various types of forms in an easy way.

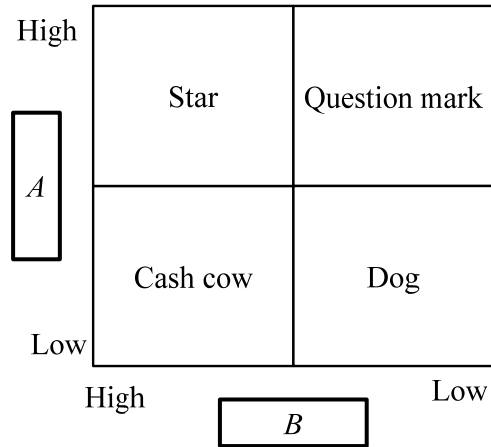
Q65. Which of the following dramatically improves a company's performance, including cost, quality, service, speed, and so on, by fundamentally reviewing and redesigning business processes?

- | | |
|------------------|--------------------|
| a) Alliance | b) Core competence |
| c) Going concern | d) Reengineering |

Q66. Which of the following enables users to connect to the system of a service provider via the Internet and make online use of the necessary functions of the applications offered by the service provider as needed?

- a) ERP b) SaaS c) SCM d) XBRL

Q71. Which of the following is the appropriate combination of the phrases to be inserted in blanks *A* and *B* shown in the PPM (Product Portfolio Management) matrix below?



	<i>A</i>	<i>B</i>
a)	Market growth rate	Percentage of market share
b)	Market growth rate	Ratio of gross profit to net sales
c)	Percentage of market share	Market growth rate
d)	Ratio of gross profit to net sales	Percentage of market share

Q72. Which of the following is a niche strategy for business management?

- a) Emphasis on cash flow
- b) Lead time reduction
- c) Market specialization
- d) Vertical integration

Q73. Which of the following is an appropriate explanation of knowledge management?

- a) Accomplishing management innovations for one's own company by a comparative analysis with other companies that achieve superior performance
- b) Conducting business by focusing on the company's unique know-how, technology, and other advantages that cannot be imitated by other companies
- c) Conducting business while sharing information, skills, or understanding dispersed in the company and enhancing the problem-solving ability of the entire workforce
- d) Conducting business with a flat organizational structure having as few levels as possible in order to enable quick decision making

Q74. Which of the following is a method where tasks are performed according to the steps (1) through (3)?

- (1) Calculate the necessary quantities of the components, based on the types, quantity, and component list for products planned to be produced in a certain period of time.
- (2) Calculate the net ordering quantity for each component, in consideration of the quantity in stock available for allocation.
- (3) Determine the reorder timing for each component, in consideration of the lead time for manufacturing or procurement or both.

a) CAD

b) ERP

c) JIT

d) MRP

Q75. Which of the following uses RFID?

- a) Bar code
- b) IC tag
- c) Magnetic card
- d) Memory card

Q65. Which of the following is an explanation of ERP?

- a) It is the technique and concept for improvement in management efficiency by planning and controlling the company-wide management resources in an effective and integrated way.
- b) It is the technique and concept to perform commercial transactions for consumers and between companies by using electronic networks, such as the Internet.
- c) It is the technique and concept to use IT for business activities to improve efficiency and quality for a significant increase in sales/profits and improved customer satisfaction.
- d) It is the technique and concept where wholesalers and manufacturers support the business activities of retail stores for increased turnover.

Q66. Which of the following is an explanation of BPR?

- a) Focusing the management resources on proprietary skills and techniques that are profitable and superior to those of the competitors
- b) Planning and managing effectively and comprehensively the allocation of management resources of the entire company to improve management efficiency
- c) Redesigning the business processes from a customer perspective, by making full use of information technology to radically change the characteristics and structure of the company
- d) Understanding qualitatively and quantitatively the products, services, and operations of the company by comparing them with those of the strongest competitor or of other advanced corporations

Q67. Which of the following is the service provided by ASPs?

- a) Services in which external providers collectively undertake business operations, such as general affairs, personnel affairs, accounting, and payroll accounting, which are performed internally at customer organizations
- b) Services in which providers lend some of their servers to customers so that these customers can use the servers as their own servers
- c) Services to provide a variety of functions of a general-purpose application system to multiple customers over a network
- d) Services to provide facilities equipped with high-speed lines and earthquake-resistant features owned by providers in order to install customer servers or communication equipment

Q69. Which of the following is an explanation of SOA?

- a) It is an architectural style or method to implement software functions corresponding to each activity in business operations as services, and to build the entire system by combining these services.
- b) It is an architectural style or method to provide IT services that satisfy customer requirements in accordance with a service level agreement, and to build a process required to continuously improve their quality.
- c) It is an architectural style or method to realize data communication between heterogeneous systems by dividing communication services into seven layers and defining standard protocols and specifications of communication services for each layer.
- d) It is an architectural style or method to store software on servers in the network to provide only services required by users via a network.

Q71. Which of the following describes characteristics of the growth stage of the product life cycle?

- a) Demand decreases, and some companies withdraw from the market. In this stage, the company decides if it can maintain its competitive advantage and examines the possibility of entering alternative markets.
- b) Demand increases, and the differentiation of the product and the segmentation of the market become more apparent. Competition also increases, and the company needs to create a new variety of products and reduce costs.
- c) Demand is limited, and it is essential to create new demand. The company needs to sell the product to specific target customers with conviction.
- d) The market begins to understand the value of the product. The company needs to expand its product lines and distribution channels. During this stage, sales increase but more investment is required.

Q72. Which of the following is a mechanism used in electronic commerce to exchange data between companies?

- a) CA b) EDI c) SSL d) XBRL

Q72. Which of the following is an advantage of M&A?

- a) A company can accumulate knowledge and experience by functional specialization and achieve scale economy.
- b) A company can clarify profit responsibility by dividing its business operations according to product or market and adopting a self-supporting accounting system.
- c) A company can establish a new business in a short period of time by acquiring skills and know-how that it does not have.
- d) A company can exert a high level of psychological energy through a sense of autonomy and minimize the influence of the existing business.

Q73. Which of the following describes the characteristics of niche strategy in the context of competitive strategy?

- a) Acquiring new demand while maintaining its market shares by expanding the entire market size
- b) Deploying a differentiation strategy aiming at improving its standing in the market and seizing top market shares
- c) Reducing costs incurred during product development by observing the leader's behavior and promptly imitating it
- d) Specializing in a market segment where other companies cannot enter easily to achieve higher profitability

Q74. Which of the following is **not** an appropriate usage for embedded systems?

- a) A host system for managing train ticket reservations
- b) A system for controlling audio/video equipment
- c) A system for controlling FA equipment or medical devices
- d) ATM terminal system for a bank

Q75. Which of the following is “B to C” in electronic commerce?

- a) CALS
- b) Virtual company
- c) Virtual mall
- d) Web-EDI

Q37. Which of the following performs reasoning using a knowledge base?

- a) Expert system
- b) Fuzzy computer
- c) Neural network
- d) Virtual reality

Q80. Which of the following is a characteristic of IC tags (RFIDs)?

- a) IC tags are dirt-resistant, and the information recorded on them can be read even from outside the package.
- b) IC tags are embedded in plastic cards, and special-purpose readers are used to insert IC tags and to read them.
- c) IC tags manage large amounts of information, so external memory devices are used for information storage.
- d) IC tags use GPS to indicate positional information.

Q80. Which of the following is the situation that is expected to be improved by the introduction of an MRP (Material Requirements Planning) system?

- a) Design changes are so frequent that production efficiency does not improve.
- b) Drawing information is managed both by electronic files and on paper, so the history of design changes cannot be correctly understood.
- c) Information concerning materials necessary for manufacturing and their required quantities is complex, so errors can occur repeatedly in the estimated quantity of order and thereby bring about problems to production.
- d) Many types of products are produced in small quantities, so the introduction cost of manufacturing facilities is increasing.

Q74. Which of the following is an appropriate description concerning CRM (Customer Relationship Management)?

- a) It is a management technique that vastly improves efficiency throughout the entire supply chain by exchanging all information such as production, inventory, purchasing, sales, and distribution in real time.
- b) It is a method for wholesalers and manufacturers to expand their transactions by supporting the business activities of retailers with the aim of increasing retailers' sales and profits.
- c) It is a technique for effectively and comprehensively planning and managing business resources throughout an entire company to raise management efficiency.
- d) It is an approach for increasing customer satisfaction and ultimately revenues by sharing information and raising the service levels, not only in the sales division but in all customer related channels within a company.

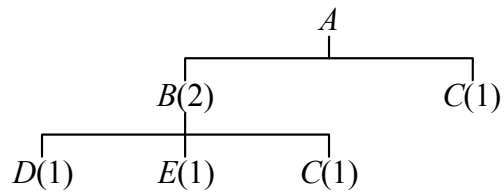
- Q80.** There are various types of e-commerce, depending on the transaction: B2B, B2C, C2C, m-commerce, etc. Which of the following refers to the activities associated with the selling and buying of goods and services via the Internet such as an online auction website and an online flea market?
- a) B2B (Business to Business)
 - b) B2C (Business to Consumer)
 - c) C2C (Consumer to Consumer)
 - d) m-commerce (Mobile Commerce)

Q68. Company T sells three (3) products: A , B , and C . Currently, products A , B , and C have 10,000, 20,000, and 80,000 purchasers every month, respectively. There is a plan to change the product line and sell four (4) new products, P , Q , R , and S , from next year. Accordingly, a trial calculation was made on the proportion of existing customers that will purchase the new products and the number of new customers. Which of the following is an appropriate conclusion from the trial calculation? Here, numerical values up to one (1) decimal point in each line of the table below represent the proportion of people who will change to the new product from the corresponding old product.

	Number of people	P	Q	R	S
A	10,000	0.5	0.3	0.1	0.1
B	20,000	0.1	0.6	0.1	0.1
C	80,000	0.1	0.1	0.3	0.3
Number of existing customers		15,000	23,000	27,000	27,000
Number of new customers		5,000	7,000	13,000	23,000

- a) Among the purchasers of product A , 1,000 people are estimated to purchase the new product Q .
- b) Of the prospective purchasers of the new product P , 50% are estimated to be purchasers of product A .
- c) The number of new customers of the new product S are estimated to be fewer than the number of people who will purchase the new product S among the purchasers of product C .
- d) The purchasers of product B are estimated to purchase any one (1) of the new products P , Q , R , and S .

Q71. The figure below shows the relationships among the components of product A , and the numbers in parentheses indicate the quantity of components necessary to produce one unit of the upper-level product or component. When 10 units of product A are produced, how many units of component C must be ordered? Here, there are presently five units of component C in the inventory.



a) 15

b) 20

c) 25

d) 30

Q62. The table below shows the result of analyzing the activities of a sales representative on one (1) particular day. By installing Sales Force Automation (SFA), preparation time for customer visits can be reduced by 0.1 hours per customer visit. In order to increase the number of customer visits to six (6) per day without changing the total working hours and the hours per customer visit, how many hours must be reduced from “Other operation”?

Time analysis of the working hours for a day					Number of customer visits per day
Total working hours					
	Customer visit hours	Office work hours			
		Visit preparation hours	Other operation hours		
8.0	5.0	3.0	1.5	1.5	5

- a) 0.3 b) 0.5 c) 0.7 d) 1.0

Q77. When the weather tomorrow is sunny with 30% probability, cloudy with 50% probability, and rainy with 20% probability, which of the following strategies offers the highest expected value?

(Unit: Value)

	Sunny	Cloudy	Rainy
Strategy S1	+80	+20	−40
Strategy S2	+60	+10	−10
Strategy S3	+40	+30	−20
Strategy S4	+50	+15	−15

a) S1

b) S2

c) S3

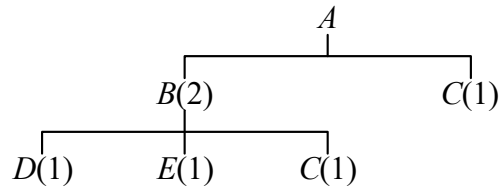
d) S4

Q66. The weighted comprehensive evaluation method which integrates and quantifies the evaluation scores of multiple items is applied to quantitatively evaluate the effect of improvements. Which of the following is the improvement proposal that should be prioritized in the table below?

Evaluation items	Weighting factor of evaluation item	Improvement proposals			
		Proposal 1	Proposal 2	Proposal 3	Proposal 4
Labor savings	4	6	8	2	5
Shortening of time frame	3	5	5	9	5
Reduction of resources	3	6	4	7	6

- a) Proposal 1 b) Proposal 2 c) Proposal 3 d) Proposal 4

Q75. The figure below shows the relationships among components for product A , and a number in parentheses is the quantity of components needed to produce one unit of the upper-level product or component. When 10 units of product A are produced, how many units of component C must be ordered? Here, there are presently five units of component C in the inventory, and the components in the inventory must be used for the production before the order.



- a) 15 b) 20 c) 25 d) 30

Q63. The table below shows the result of analyzing the daily activities of a sales representative. By implementing SFA (Sales Force Automation), the preparation time for customer visits can be reduced by 0.1 hours per customer visit. In order to increase the number of customer visits to six (6) per day without changing the total working hours and the hours per customer visit, how many hours must be reduced from “Other working time”?

Time analysis of working hours for a day

Total working hours					Number of customer visits per day
	Customer visit time	Office work			
		Preparation time for customer visits	Other working time		
8.0	5.0	3.0	1.5	1.5	5

- a) 0.3 b) 0.5 c) 0.7 d) 1.0

Q78. Three products, A , B , and C , are processed by two (2) machines, $M1$ and $M2$. Processing must be conducted in the order of $M1 \rightarrow M2$. The time required for each machine to process each product is shown in the table below.

Under these conditions, which of the following is the processing order of three (3) products that results in the shortest time from the beginning of the processing until all products are finished? Here, when $M1$ has processed a product, it can successively process another product.

Product \ Machine	Machine	
	$M1$	$M2$
A	7	3
B	5	6
C	4	2

a) $A \rightarrow C \rightarrow B$

b) $B \rightarrow A \rightarrow C$

c) $B \rightarrow C \rightarrow A$

d) $C \rightarrow B \rightarrow A$

Q75. Products *A*, *B*, *C*, and *D* are to be introduced to the market. The table below shows the expected profit for each product with three (3) sales forecasts (High, Medium, and Low) that are estimated to occur in accordance with the probability in the table. Which of the following is the product that is expected to make the highest profit according to the expected value principle?

Product	High		Medium		Low	
	Profit (\$)	Probability (%)	Profit (\$)	Probability (%)	Profit (\$)	Probability (%)
<i>A</i>	100,000	75	20,000	20	-40,000	5
<i>B</i>	130,000	60	30,000	30	-20,000	10
<i>C</i>	150,000	50	40,000	30	-20,000	20
<i>D</i>	100,000	70	10,000	20	-50,000	10

a) *A*

b) *B*

c) *C*

d) *D*

Q68. When the effect of improvement is quantitatively evaluated, a weighted overall evaluation is used as a method of integrating and quantifying the results of the evaluation of multiple items. Which of the following is the improvement proposal that should be prioritized in the table below?

Evaluation items	Weighting factor of evaluation item	Improvement proposals			
		Proposal 1	Proposal 2	Proposal 3	Proposal 4
Labor saving	4	6	8	2	5
Shortening of timeframe	3	5	5	9	5
Reduction of resources	3	6	4	7	6

- a) Proposal 1
- b) Proposal 2
- c) Proposal 3
- d) Proposal 4

Q75. When the relationship between the list price of a product and the demand for the product is defined as a linear expression, which of the following is an appropriate numerical value to be inserted into blank *A* below?

- (1) When the list price is set to 30 dollars, demand is 0 units.
- (2) When the list price is set to 10 dollars, demand is 60,000 units.
- (3) When the list price is set to 15 dollars, demand is *A* units.

- a) 30,000 b) 35,000 c) 40,000 d) 45,000

Q77. Company *T* sells three types of products *A*, *B*, and *C*. At present, products *A*, *B*, and *C* are sold to 10,000, 20,000, and 80,000 customers respectively every month. The product lineup is to be updated from the next year, and four new types of products *P*, *Q*, *R*, and *S* are to be sold.

As such, the ratio (in percentage) of current customers who are expected to buy new products and the number of new customers are estimated as shown in the table below.

Which of the following is an appropriate description concerning this estimate?

	Number of customers	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>
<i>A</i>	10,000	50%	30%	10%	10%
<i>B</i>	20,000	10%	60%	10%	10%
<i>C</i>	80,000	10%	10%	30%	30%
Number of current customers		15,000	23,000	27,000	27,000
Number of new customers		5,000	7,000	13,000	23,000

- a) Among the customers of product *A*, 1,000 customers are expected to buy product *Q*.
- b) Half of the prospective customers of product *P* are expected to be the customers of product *A*.
- c) The customers of product *B* are expected to buy any one of products *P*, *Q*, *R*, and *S*.
- d) The number of new customers of product *S* is expected to be less than the number of customers of product *S* among the customers of product *C*.

Q68. When the effect of improvement is evaluated quantitatively, there is a method called weighted comprehensive evaluation to put together the results of evaluating multiple items and quantify those results. Among the improvement plans shown in the table below, which one should take precedence?

Evaluation item	Weight of evaluation item	Improvement plan			
		Plan 1	Plan 2	Plan 3	Plan 4
Labor saving	4	6	8	2	5
Lead time reduction	3	5	5	9	5
Resource saving	3	6	4	7	6

- a) Plan 1 b) Plan 2 c) Plan 3 d) Plan 4

Q78. When 300 pieces of product A in the component table below are shipped, which of the following is the net requirement of component b ? Here, the quantity in stock for A , a , b , and c are as shown in the stock table below. In addition, there are no other items in process, on back order, or already allocated.

Component table

Item	Quantity of component		
	a	b	c
A	3	2	
a		1	2

Stock table

Item	Quantity in stock
A	100
a	100
b	300
c	400

a) 200

b) 600

c) 900

d) 1,500

Q76. When the relationship between the list price and expected demand of a product can be expressed by a linear expression, which of the following is the appropriate value to be inserted in the blank A ?

- (1) When the list price is set to 30 dollars, the quantity demanded is 0.
- (2) When the list price is set to 10 dollars, the quantity demanded is 60,000.
- (3) When the list price is set to 15 dollars, the quantity demanded is A .

- a) 30,000 b) 35,000 c) 40,000 d) 45,000

Q79. Three products A , B , and C are processed by two machines M1 and M2. Processing must be performed in order of $M1 \rightarrow M2$ (M1 first and then M2). The table shows the time required to process each product on each machine.

In this case, which of the following shows the order of processing these three products so that the time required from the start of the process to the completion of the process for all the products may be the shortest? Here, when processing of a product at M1 is completed, another product can be processed consecutively at M1. Preparation time, such as setup time, is ignored.

Product \ Machine	M1	M
A	7	3
B	5	6
C	4	2

a) $A \rightarrow C \rightarrow B$

b) $B \rightarrow A \rightarrow C$

c) $B \rightarrow C \rightarrow A$

d) $C \rightarrow B \rightarrow A$