Practice exam

The practice exam includes practice questions for the IT Passport Examination.

Practice exam 1 309
Practice exam 2 340
Practice exam 3 370

Practice exam 1

*See page 19 in the "Answers and Explanations" booklet for the correct answers.

Strategy

Q1. Which of the following is the appropriate description concerning intellectual property rights of Web pages that use the Internet?

a) Information on a Web page is not considered a "transmission" under the Copyright Act because the information is only sent from the server to the client when the user sends a request to view the Web page.
b) Using an image scanner to capture a pinup image from a magazine, and posting it on a Web page is not considered socially acceptable behavior, but it is not a violation of the Copyright Act under existing legislation.
c) A Web page features a collection of works from other people based around a central theme. If you sample certain contents with the Web page creator's consent, it is not a violation of the Copyright Act.
d) You purchase a design contents compilation that includes image data and illustrations from a software retailer. If you use the contents for creating your company's Web page within the scope covered by the license agreement, it is not a violation of the Copyright Act.

Q2. Which of the following represents the "S" and "W" in SWOT analysis?

a) Schedule and Workings
b) Security and Web
c) System and Workflow
d) Strengths and Weaknesses

Q3. Which of the following describes the practice of meeting social responsibilities by acting in the interests of the public, practicing information disclosure, and gaining the understanding of stakeholders such as customers and shareholders?

a) CSR
b) RFP
c) ROE
d) Corporate philosophy

Q4. Which of the following is the appropriate description of the "star" in PPM (Product Portfolio Management)?

a) A product that requires investment with growth, but offers a high market growth rate and high market share.
b) A product with a low market growth rate and low market share, which offers low potential and low outflow of investment.
c) A product that offers a high market growth rate but requires substantial investment funds due to low market share, while offering long-term potential for growth.
d) A product that offers a low market growth rate but high market share, so that it is possible to generate profits with low capital.

Q5. A dispatch employee is working under a dispatch contract. Which of the following is an appropriate response by the client company? Here, assume that no particular employment conditions have been agreed upon.

a) The dispatch employee is responsible for performing maintenance on a sales information system, and directly requests to take paid leave. The client company determines that the paid leave will not interfere with the work, and approves the paid leave.
b) The client company directly instructs the dispatch employee to perform maintenance on groupware, just as if the person were an employee of the client company.
c) The client company instructs the dispatch employee to enter data into a production management system, but an entry error leads to the production of defective products. The client company blames the responsibility for the manufactured goods on the dispatching company.
d) The dispatch employee does not finish the data processing for a sales management system, during the regular work hours. The client company instructs the dispatch employee to work overtime, just as if the person were an employee of the client company.

Q6. Which of the following is an essential management resource for managing a corporation, in addition to people, materials, and money?

a) Environment
b) Information
c) Imagination
d) Responsibility

Q7. Which of the following describes software that supports collaborative work between people by providing communication functions such as electronic conferencing and e-mail, and workflow functions such as bug report management?

a) CAD
b) SCM
c) Expert system
d) Groupware

Q8. Which of the following is applicable to BtoC EC (Electronic Commerce)?

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

Q9. Which of the following acts concerning the copyright of a program could be considered an infringement of the Copyright Act?

a) A company instructs an employee to create a program as part of his work. Since there are no particular provisions for it in the employee rules, the company copies the program without the permission of the creator, and sells it to another company.
b) A company purchases a program and partially alters the program without the permission of the author in order to use the program effectively on its computers.
c) A company purchases a program and makes a copy without the permission of the author, for its own backup purposes. The copy is held in safekeeping.
d) A company purchases a program for which it has a license. The company then copies the program without the permission of the author, and instructs a subsidiary to use the copied program.

Q10. A certain company provides computerization services. Which of the following describes a document that contains necessary information for promoting the computerization services, and is used to gather information from the ordering company such as a system vendor?

a) Proposal
b) Request for information
c) Request for proposal
d) Request for order

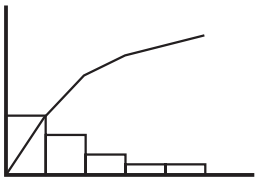
Q11. Which of the following should be taken into consideration for planning the development of an information system?

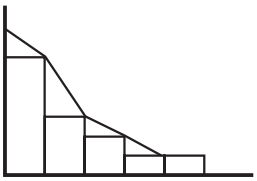
a) Analyze and clarify the effectiveness and return on investment of installing the system.
b) Use a system that is already being used by another company in order to prevent confusion.
c) Prepare an operations manual, and select the administrator and personnel in charge of fault management.
d) Develop everything from the ground up with the company's employees, taking into consideration operations and maintenance.

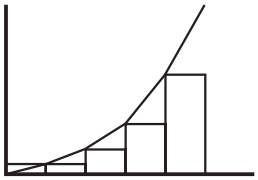
Q12. Which of the following is the highest decision-making authority of a Japanese stock company?

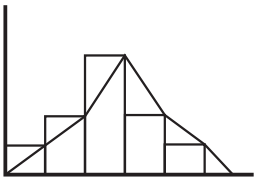
a) Stockholders' meeting
b) Board of governors
c) Executive meeting
d) Board of directors

Q13. A certain plant retains records of the number of defective products that have occurred to date, organized by the cause of occurrence. Which of the following diagrams shows the top causes of defective products and percentage of occurrence?

a)


b)


c)


d)


Q14. Which of the following does not correspond to personal information that is protected under the Act on the Protection of Personal Information?

a) Own name and date of birth that a person enters on a questionnaire sheet
b) Human resources information managed by a corporation
c) Names and phone numbers of companies published on Web pages
d) Images taken from a security camera at a bank ATM

Q15. Which of the following is the system that records sales information at the retail point of sales, and collects, stores, and analyzes product sales information for each product?

a) CAD
b) CIM
c) EOS
d) POS

Q16. Which of the following is expressed by an E-R diagram?

a) Association between process and relationship
b) Association between entity and process
c) Association between processes
d) Association between entities

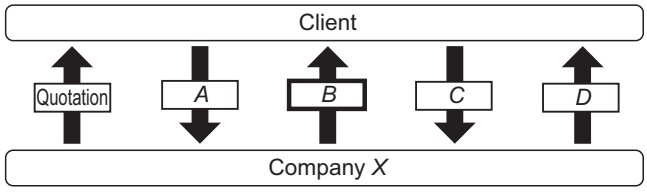
Q17. Which of the following is the correct description of an income statement?

a) Summarizes and tabulates journal slips in one statement
b) Lists all revenues and expenses during the accounting period, and indicates profit and loss
c) Lists the respective credits and debits for each title of account, and generates the balance totals
d) Describes the financial position of a corporation at a given point in time

Q18. Which of the following is appropriate under a service contract?

a) The employer directs the worker to engage in work, under the employer's direction.
b) The worker engages in labor under the instruction of the client.
c) An employment relationship arises between the worker and the client, in addition to the original employment relationship between the worker and employer.
d) The client directs the pay structure of the worker, including the base salary and overtime pay.

Q19. Items (*A*) to (*D*) in the diagram show the procedure for Company *X* to receive and deliver documents, under transactions with a client. Which of the following documents corresponds to (*B*), where answers (*A*) to (*D*) each correspond with one of the items (*A*) to (*D*)?



a) Inspection sheet
b) Invoice
c) Order confirmation
d) Purchase order

Q20.

There are four (4) separate venues that are each rented at 15,000 yen per day. One of the venues will be chosen for an exhibition of artwork. The table below shows the respective number of visitors expected for each venue, in the case of clear skies, cloudy skies, and rain respectively. The chance of clear skies, cloudy skies, and rain on the day of the exhibition are 50%, 30%, and 20% respectively. Which of the following venues can be expected to draw the most number of visitors?

Venue	Clear skies	Cloudy skies	Rain
A	30	15	10
B	20	30	5
C	15	20	15
D	25	15	10

a) A
b) B
c) C
d) D

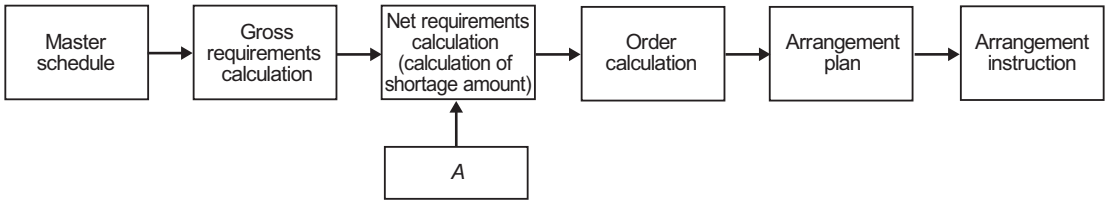
Q21.

Which of the following statements applies to an information appliance?

a) Connecting a digital terrestrial broadcast television to the Internet, and participating in a television program.
b) A fully automatic clothes washer that uses the right amount of water for the volume of laundry.
c) A fully automatic vacuum cleaner that cleans every room in a house.
d) An air-conditioner unit that maintains a specific temperature in a room.

Q22.

The diagram shows the calculation procedure for MRP (Material Requirements Planning), which is a technique for production management systems. Which of the following is necessary information that corresponds to (*A*) in the diagram?



a) Basic schedule (time of completion, lead time number of days)
b) Inventory status (remaining inventory, remaining orders, remaining in process)
c) Purchase order policy (lot-sizing method, purchase order system, safety stock)
d) Bill of materials (list of components and quantities required for final product)

Q23. A dispatch worker is dispatched under a worker dispatch contract, and develops a program under the instruction of the client company. Assuming that no separate conditions have been decided, who owns the copyright to the program?

a) Client company
b) Person from the client company who directly issues the instructions
c) Dispatching company
d) Dispatch worker

Q24. Which of the following is achieved using RFID (Radio Frequency Identification) technology?

a) Ability to use the services of a bank or other financial institution from home.
b) Ability to watch a television program on a cellular phone, using one-segment broadcasting.
c) Ability to download music data to a cellular phone or portable music player.
d) Ability to borrow several library books all at once, simply by placing a pile of books on an automatic borrowing device.

Q25. Which of the following describes an approach for the cycle from the release of a product until the product is discontinued and disappears from the market, in which the cycle is divided into four (4) stages to maximize profits at each stage?

a) PDCA cycle
b) Product life cycle
c) Management cycle
d) Software life cycle

Q26. Which of the following shows the correct order of the standards organizations (*A*) to (*D*) below?

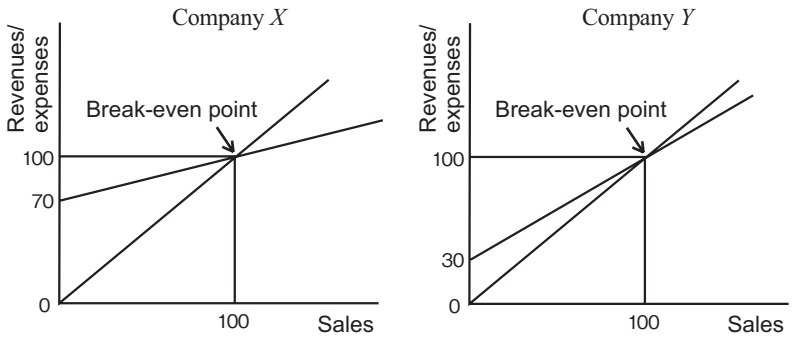
(*A*) International Organization for Standardization: Develops international standards relating to industry and technology, and provides coordination between countries.
(*B*) Institute of Electrical and Electronics Engineers: An institute based in the United States that is involved in the fields of electrical engineering and electronic engineering, which was instrumental in developing LAN and other interface standards.
(*C*) American National Standards Institute: A private standards organization that develops standards for industry in the United States, and acts as the U.S. representative to ISO.
(*D*) Telecommunication Standardization Sector: A body under the United Nations that issues recommendations concerning standards for telecommunications.

	(*A*)	(*B*)	(*C*)	(*D*)
a)	ANSI	ISO	ITU-T	IEEE
b)	IEEE	ISO	ANSI	ITU-T
c)	ISO	IEEE	ANSI	ITU-T
d)	ISO	ITU-T	ANSI	IEEE

Q27. Which of the following describes the actual work of a worker, where the worker obeys a separate chain of command from the employment relationship?

a) Transfer of employment
b) Contracting
c) Part-time
d) Dispatching

Q28. The diagrams below show the break-even point for two (2) companies. Which of the following is the correct description of the break-even analysis for Company *X* and Company *Y*?



a) If Company *X* and Company *Y* both increase their sales, Company *Y* with lower fixed costs will generate less of an increase in profits than Company *X*.
b) Company *X* has lower variable costs per unit of product. If sales exceed the break-even point, Company *X* will generate more of an increase in profits than Company *Y*.
c) The break-even point for both companies is the same, so the sales required to generate the same amount of profit is always the same.
d) The break-even point for both companies is the same, as is their fixed costs. If sales are the same, the resulting profit/loss is also the same.

Q29. Which of the following is a methodology for modeling business processes?

a) PDPC
b) Portfolio
c) Distribution chart
d) UML

Q30. Which of the following describes outsourcing?

a) Entrusting work to an expert outside company rather than performing the work in-house, such as program design for systems development and operations/maintenance
b) Entrusting program design to an outside company, and operations/maintenance to a separate outside company
c) A form of business that provides a full-range of services such as systems design, development, testing, and operations/maintenance
d) A form of cooperation with an outside company for program design and development

Q31. Under *JIS Q9000:2000 (ISO 9000:2000) – Quality Management Systems: Fundamentals and Vocabulary*, which of the following describes a third party audit?

a) Audit of the quality management system through internal control.
b) Audit of the quality management system of a company by stockholders' meeting.
c) Audit of the quality management system of a company by an examination body.
d) Audit of the quality management system of a subsidiary by the board of directors.

Q32. Which of the following is a tool that enables multiple participants to converse between themselves in real time over the Internet using text messages?

a) Social networking service
b) Bulletin board
c) Chat
d) Blog

Q33. In the example below, which is the amount of net sales needed to achieve a target profit of 18 million yen?

Net sales	100 million yen
Variable costs . .	50 million yen
Fixed costs	30 million yen

a) 80 million yen
b) 88 million yen
c) 96 million yen
d) 120 million yen

Q34. Which of the following describes IE (Industrial Engineering)?

a) A methodology for analyzing a problem using the latest science and technology, in order to identify the best solution
b) A methodology used by a group to generate ideas through the exchange of opinions under a set of rules, and produce a solution
c) A methodology that uses various methods to consider the work time, and engage in activities such as scheduling and management, and cost planning
d) A methodology for dividing the scope of tabulated data into a number of segments, and expressing the amount of data in the segments using a bar graph

Q35. Which of the following is not recorded in accounting records?

a) Complete destruction of a company-owned vehicle due to a traffic accident.
b) Debts waived by a creditor.
c) Signing of a lease for renting an office.
d) Company-owned building that burned down due to fire.

Management

Q36. Which of the following describes the FP (Function Point) method?

a) A method for estimating functions and the degree of difficulty converted as a value, using a GUI input/output screen
b) A method for estimating person-hours, based on the past record for the number of program steps for the overall system
c) A method used in systems development for enhancing the level of completeness, by dividing up the system and repeatedly implementing a development cycle
d) A depreciation method based on a fixed rate for the value of assets such as purchased equipment

Q37. Which of the following is a set of guidelines for best practices and know-how, compiled for the success of a business that uses IT services?

a) ITIL
b) IT infrastructure
c) IT governance
d) IT service management

Q38. Which of the following is the appropriate precaution to observe when preparing test data for a white box test?

a) Boundary value for each equivalence class obtained through the application of equivalence partitioning
b) Program internal structure such as algorithm
c) Program functions
d) Program input and output relationship

Q39. Which of the following is part of IT service management at the core of ITIL?

a) Infrastructure management and security management
b) Business perspective and application management
c) Service support and service frame
d) Service support and service delivery

Q40. Which of the following is the correct sequence for designing a system based on a system requirements definition?

a) Software detailed design → System architecture design → Software architecture design
b) System architecture design → Software detailed design → Software architecture design
c) Software architecture design → Software detailed design → System architecture design
d) System architecture design → Software architecture design → Software detailed design

Q41. Which of the following is a development model for creating an experimental model that realizes the requirements while achieving verification from users, at the initial stages of systems development?

a) Spiral model
b) Waterfall model
c) Portfolio
d) Prototyping model

Q42. Which of the following is the appropriate description of PMBOK?

a) A methodology for conducting regular meetings between project members.
b) A set of guidelines for the body of knowledge for project management.
c) A method of managing schedules and costs that is specifically used for systems development.
d) An international standard for quality management.

Q43. Which of the following is a framework that is built around the basic elements of internal control?

a) Monitoring system
b) IT governance
c) System audit standards
d) COSO framework

Q44. Which of the following is a milestone for project management under systems development?

a) Initial maintenance and inspection, performed after the system goes live
b) System integration review date with the client's participation
c) Selection of project members
d) Programming processes based on the design

Q45. Which of the following stipulates the quality and scope of IT services provided to the client?

a) OGC
b) ITIL
c) SLA
d) IEC

Q46. Which of the following is the appropriate description of a common framework?

a) A unified and common framework for systems development, to secure the compatibility of each system
b) A common framework for systems development, to unify terminology and standardize the contents of work, from planning and development through to operations and maintenance
c) A common framework for systems development, to unify different development models from each system vendor and enable mutual cooperation
d) A unified and common framework for systems development, to achieve a fixed level and enable development in a short period of time

Q47. Which of the following descriptions applies to a system requirements definition?

a) If the system requirements definition does not clearly define the initial purpose of the computerization by users (system user departments), there is no issue with gradually introducing requests.
b) Check and verify the design, and determine if there are any bugs in the system.
c) Establish the concrete functions that should be achieved, through investigation/analysis of requests from users (system user departments).
d) The systems development department should play a central role in establishing the systems requirement definition, in order to guide the subsequent development.

Q48. Which of the following is the correct description of the approach of facility management?

a) Enhance the position of a company and its business partners to enable mutual growth, by securing a better relationship between the own company and employees at business partners that do business with the company.
b) Provision of know-how for the operation of information systems.
c) Integrated operation and maintenance of facilities that are used to manage the information systems of a corporation.
d) Management of information systems to keep them in an optimal state, such as computers, networks, facilities, and equipment.

Q49. Which of the following is the appropriate description of SLM?

a) A methodology for maintaining the system level of a corporation that uses information systems
b) A methodology used to compare the level of IT services between corporations, providing a management model for standout companies
c) A methodology of management for maintaining and improving the service level
d) A methodology for securing a level of convenience for computer users who use a standalone environment

Q50. Which of the following work is necessary for project management?

a) Prepare an operating manual in three (3) months, so that your own company can sell package software.
b) Conduct three (3) days of training by the human resources department to integrate 10 new employees.
c) Calculation work that is performed every year by accounting departments.
d) Thorough correction of defects by stopping a system that is in operation.

Q51. Which of the following is a methodology for verifying that functions are executed according to the design document, with a focus on output results for input data?

a) Top-down test
b) Bottom-up test
c) Black box test
d) White box test

Q52. Which of the following conditions is the most appropriate for changing and adding a program to a system that is currently live?

a) After finishing changes to the program, perform tests using the same conditions as the production environment, before determining whether to go live.
b) When adding a program, changes are made directly to the live system by judging the right time to make the changes.
c) If the system is live, shutdown all systems first before swiftly adding the program, since it is not possible to test the program that will be added.
d) It is sufficient to test only the portion that is added, to confirm that the added program operates normally.

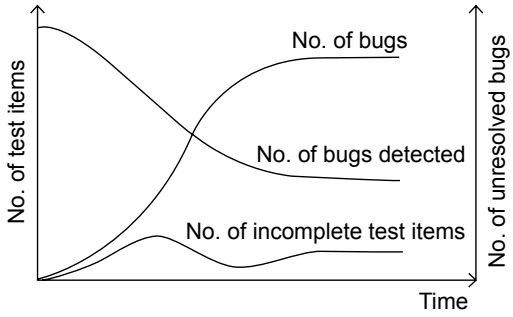
Q53. A black box test is to be performed for a system that is under development. The effective scope of variable A is an integer expressed by $0<A<50$. Which of the following is the correct test data that should be prepared for performing boundary value analysis?

a) −3, −2, −1, 51, 52, 53
b) −1, 0, 1, 49, 50, 51
c) 0, 1, 2, 50, 51, 52
d) 1, 2, 3, 47, 48, 49

Q54. It is understood that a system change requires changing 30% of an overall program that has 3,000 lines. One (1) programmer in a single day is capable of changing 0.25 lines of the program, and each programmer works 20 days per month. Which of the following is the number of person-months required for the change?

a) 11.25
b) 180
c) 225
d) 600

Q55. In the control chart for a program test, all of the lines have leveled off, as in the diagram below. Which of the following is the correct interpretation of this information?



a) The current bugs are difficult to resolve, so there has been no progress with subsequent tests.
b) The track record for completed test items has improved to the point where no more bugs have arisen.
c) Bugs have arisen, so the track record of completed test items is no longer improving.
d) The ratio of bug occurrences and test item completion are the same, so there are no longer any unresolved bugs.

Q56. Which of the following is the correct description of the scope?

a) The final deliverables of the project, and the scope of work required to produce the deliverables
b) Identify the breakdown of factor organizations for a project, and express them in a hierarchical structure
c) Verify the budget and work progress, to quantitatively evaluate the progress of the project
d) Reassess the work schedule that is decided by the project design document

Technology

Q57. Which of the following is the appropriate description of information security policy?

a) Describes the procedures for implementing the security level determined by the organization.
b) Necessary to prevent various threats against information assets.
c) Establishes the order of potential risks in using information systems, starting with risks that have the greatest probability of occurring and incur the greatest loss.
d) Upper management provides employees with an explanation of the organizational approach and initiatives for the information security policy.

Q58. A net sales projection for the next fiscal year is being formulated for various markets, based on a 15% market growth rate. The formula is entered in cell C4, and the contents of cell C4 are to be copied to cells C5 and C6. Which of the following formulas should be entered in cell C4?

	A	B	C
1	Growth rate	15%	
2			
3		2009	2010
4	Market *A*	8,500	
5	Market *B*	4,000	
6	Market *C*	15,000	

a) =B4*(1+B1)
b) =B4*(1+B$1)
c) =B4*1+B$1
d) =B4*B$1

Q59. Which of the following is the image format that reflects all of the characteristics indicated below?

(1) Used for static images.
(2) Records RGB 24-bit data as separate luminosity signals and color signals, making it suitable for images with natural colors, such as photographs.
(3) Performs finer digitization for lower-frequency components, because human vision is less sensitive to high frequencies and more sensitive to low frequencies.
(4) When a compressed file is decompressed, sometimes the original image cannot be completely restored.

a) BMP
b) GIF
c) JPEG
d) MPEG

Q60. Which of the following indicates the number of pages that can be printed per minute, as a unit for evaluating the performance of a printer?

a) cps
b) cpi
c) dpi
d) ppm

Q61. Which of the following is the appropriate effect of cache memory?

a) Data is read from the main memory and stored in the cache memory. The CPU subsequently reads the same data from the cache memory, to speed up data transfer.
b) Data is read from the main memory and stored in the cache memory. Instructions are processed in parallel, to speed up operations.
c) Instructions are read from the main memory and stored in the cache memory. These instructions are decoded and executed from the cache memory, to speed up operations.
d) Instructions are read from the main memory and stored in the cache memory. Data from the main memory is read to the register, to speed up data transfer.

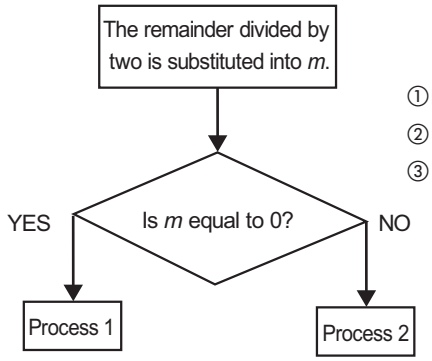
Q62. A system has two (2) processing units, each with an availability factor of 0.9. Disregarding other factors, which of the following is the difference in availability when at least one (1) of the processing units must operate normally, compared with when both processing units must operate normally?

a) 0.09
b) 0.10
c) 0.18
d) 0.19

Q63. Which of the following is the appropriate description of OLED (Organic Light-Emitting Diode) technology?

a) A display device that uses liquid crystals and ranges in size from 10 inches to 60 inches. Takes advantage of the property of liquid crystals to change their permeability to light when a voltage is applied.
b) Emits light when voltage is applied. Does not require a backlight, and is characterized by low voltage drive and low power consumption.
c) Automatically displays an animated image when the personal computer is left idle for a certain length of time, to prevent screen burn-in.
d) Basically uses the same principles as a CRT television, and comes in a variety of sizes such as 15-inch, 17-inch, and 21-inch sizes.

Q64. Which of the following equates to Process 1, when using the procedures in the flowchart below?



①Divide n by 2 and find the remainder. Replace for m.
②If the value of m is 0, indicate "Even number."
③If the value of m is 1, indicate "Odd number."

a) Indicate as "Even number"
b) Indicate as "Odd number"
c) Indicate value of m
d) Indicate value of n

Q65. Which of the following describes a file that is stored to enable the recovery of a database as a precaution against hardware failure, by copying the database contents at a given point in time?

a) Data mart
b) Data mining
c) Backup file
d) Log file

Q66. Which of the following is achieved by implementing IPv6, compared with IPv4 that is widely used today?

a) Address the shortage of IP addresses caused by the rapid spread of the Internet
b) Use Japanese in e-mail addresses and domain names
c) Connect to the Internet from regular households, using optical fiber
d) Use multicasting to send packets simultaneously to multiple hosts

Q67. Which of the following is a characteristic of JavaScript?

a) Directly describes a program within an HTML file, and is executed by a browser.
b) Is executed on a Web server, and resides in the memory once executed, to enable fast processing.
c) Is compiled first before execution.
d) Cannot read or write to user files when downloaded.

Q68. Which of the following is the characteristic of a peer-to-peer system, in contrast with a client/server system?

a) Requires deployment of a server, in addition to personal computers.
b) Enables personal computers to use mutual data, in an equal relationship.
c) Limited in the number of personal computers that can be connected over a network.
d) Personal computers connected over a network are fixed to the network.

Q69. Which of the following is the first step that should be taken when a personal computer connected to a network is infected with a computer virus?

a) Sever the infected computer from the network.
b) Turn off the computer power.
c) Install antivirus software.
d) Report to the system administrator.

Q70. On a magnetic disk, one sector equals 512 bytes, and 28-bit sector number is used to manage the sectors. If 512×2^{21} equals one (1) gigabyte, which of the following is the maximum number of gigabytes that can be managed on the disk?

a) 32
b) 64
c) 128
d) 256

Q71. Which of the following input devices is a pointing device?

a) Barcode reader
b) Handwritten character input device
c) Keyboard
d) Touch panel

Q72. Which of the following represents the total cost from installation through to operation, for equipment such as a personal computer, server, or network equipment?

a) TCO
b) TCP
c) TPC
d) TQC

Q73. Which of the following is the appropriate description concerning e-mail?

a) MIME prescribes the data formats that can be sent using e-mail, such as images and sound files in addition to text.
b) POP3 is used when sending e-mail from a client to a mail server.
c) If the e-mail address for your current provider is abc@***.***.ne.jp, and you switch to another provider, you will no longer be able to use the portion to the left of the @ sign ("abc").
d) E-mail addresses are managed using DHCP.

Q74. Which of the following describes pattern matching for computer antivirus software?

a) Compares files before infection and after infection, and detects viruses by determining if there are any changes to the files.
b) Detects viruses by comparing the signature code of existing known viruses.
c) Detects viruses by monitoring for abnormal phenomena caused by viruses within the system.
d) Detects viruses by matching the checksum of files.

Q75. Which of the following media is best suited as a backup media for a file on a personal computer, based on the conditions described below?

Conditions
(1) File size is 30GB.
(2) Backing up is conducted once a week without generation management.
(3) Fast completion of a backup is desired.
(4) Easy backup operation and media management is desired.

a) CD-R
b) DVD-R
c) HD
d) MO

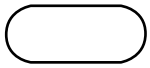
Q76. Which of the following is the appropriate description of interpreted language processing?

a) Speed of program execution is slower than compiled language processing.
b) Recursive function calls are not permitted.
c) Source program is first translated into a machine language before execution.
d) Not suited for building an interactive execution environment.

Q77. Which of the following is a set of rules used to specify a website for viewing from a Web browser?

a) URL
b) Web server
c) UML
d) Hostname

Q78. Which of the following statements describes the flowchart symbol shown below?



a) Indicates the start and end of a loop
b) Indicates input and output of data
c) Indicates processing such as an operation
d) Indicates the start and end of a flowchart

Q79. Which of the following is a characteristic of a data structure?

a) Arrays can be used to separate the data structure from algorithms.
b) Subscripts can be used to read data in arrays according to an optional sequence.
c) Subscripts can be used to search and update data in lists.
d) Existing data in lists must be moved when inserting or deleting data.

Q80. In biometric authentication, which of the following is used for matching by feature extraction or pattern matching, using images inputted from a small optical sensor or thin electrostatic sensor?

a) Iris
b) Fingerprint
c) Voiceprint
d) Retina

Q81. Which of the following is used at the point of connection between company networks and the Internet, to prevent unauthorized access from the outside using functions such as packet filtering?

a) DNS
b) NAT
c) Gateway
d) Firewall

Q82. Which of the following should be considered in Web design?

a) The Web page should be designed to require detailed input by users, taking into account the diversity of user characteristics.
b) Use many high quality (large) images, so that the content of the Web page is visually appealing.
c) Although it is important to make the content of a Web page visually appealing, images should be minimally used for accessibility to users.
d) Input errors do not need to be taken into account, because the literacy level varies from user to user.

Q83. A common example of this type of software is Linux. Which of the following types of software can be freely redistributed, requires the inclusion of source code for redistribution, and allows for modification of derivative software?

a) Open source software
b) Component software
c) Shareware
d) Middleware

Q84. Which of the following is the appropriate description of Information accessibility?

a) An environment that anyone can access from anywhere and at any time, by connecting to information networks such as the Internet
b) An environment that enables work formats for working from a place other than an office, through the use of communications networks.
c) An environment that enables communications while users are on the move, such as using voice, image, and text data. Laptop computers and cellular phones provide such an environment.
d) An environment that enables the use of information equipment, even if input is limited to methods such as voice or handwritten text.

Q85. Which of the following is the appropriate description of HTML?

a) A language used to describe the location of resources on the Internet and the method of access.
b) A language used for markup of hypertext using tags.
c) A language used for markup of scripts that operate on browsers.
d) A language used to describe protocols for communications between browsers and Web servers.

Q86. Which of the following is the appropriate description of resolution?

a) Expresses the number of horizontal and vertical dots that can be displayed on a screen.
b) Expresses the number of blinks by a mouse pointer used for pointing on a screen.
c) Expresses the number of display colors that can be displayed on the screen.
d) Expresses the size of text that can be displayed on the screen.

Q87. When digitizing an analog signal, which of the following is the appropriate description of what happens to the reproducible waveform and sound quality, when the sampling frequency is reduced and the quantization value is increased?

a) The waveform of the source analog signal is shorter, and sound quality is good.
b) The waveform of the source analog signal is fully reproducible, and sound quality is good.
c) The waveform of the source analog signal is shortened, but sound quality is poor.
d) The waveform of the source analog signal is fully reproducible, but sound quality is poor.

Q88. Which of the following is the appropriate description of a blade server?

a) A server whose purpose is to perform high-speed processing for science and technology calculations in applications such as weather forecasting, air traffic control, and aerospace development.
b) A server with a DBMS that provides the same environment as if the client is directly connected to the database.
c) A type of server that can process large amounts of data, while taking up less space by sharing a power supply and external interfaces.
d) A type of server that manages IP addresses and domain names for computers.

Medium question 1

Read the following description regarding work data and its processing, and answer questions **Q89** through **Q92**.

Ms. *F* was hired by a membership-based mail-order cosmetics company. She works in the sales department under a senior employee, where she analyzes sales performance data. Each product has a unique name without duplication and its classification is organized. For data analysis, the sales performance data and member ledger for the past year are as follows:

[Sales Performance Data]

Sales_date	Member_number	Product_name	Category	Unit price	Quantity	Sales_amount
20071006	123001	Emulsion A	Basic skin care	3,000	1	3,000
20071007	100302	Rouge C	Lipstick	2,000	2	4,000
20071008	110210	Lotion B	Basic skin care	1,500	1	1,500
⋮	⋮	⋮	⋮	⋮	⋮	⋮

[Member Ledger]

Member_number	Member_name	Address_1	Address_2	Telephone_number
100001	Susan Johnson	New York	500 Washington Ave., Kingston	914-XXX-XXXX
100002	Anna Smith	Florida	2200 Yamato Road, Boca Raton	561-XXX-XXXX
100003	Helen Brown	North Carolina	4100 Capital Blvd., Raleigh	919-XXX-XXXX
⋮	⋮	⋮	⋮	⋮

Note: Address_1 indicates the State part of each member's address information and Address_2, the remaining address information.

Q89.

Technology

Ms. *F* is to summarize monthly sales performance in a table, by product. To calculate monthly sales performance by product, which of the following combinations of sales performance data is required, at the very least?

Answer group:

a) Product_name and Sales_amount
b) Sales_date, Product_name, and Sales_amount
c) Sales_date, Product_name, Category, and Sales_amount
d) Sales_date, Product_name, Category, Unit_price, and Sales_amount

Q90.

Technology

Ms. *F* is to summarize last month's sales performance in a table, by product. Based on overall sales performance data, which of the following is an appropriate process to calculate monthly sales performance by product?

a) 1. Calculate the total sales of products with the same "Product_name."
   2. Sort the data by "Category."
   3. Extract the data of products that were sold last month, based on "Sales_date."

b) 1. Extract the data for last month, based on "Sales_date."
   2. Sort the extracted data by "Category."
   3. Calculate the total of unit prices for products in the same "Category."

c) 1. Extract the data for last month, based on "Sales_date."
   2. Sort the extracted data by "Product_name."
   3. Calculate the total sales of products with the same "Product_name."

d) 1. Sort the data by "Product_name."
   2. Calculate the total sales of products with the same "Product_name."
   3. Extract the data of products that were sold last month, based on "Sales_date."

Q91.

Technology

To check the rate of increase in monthly sales by product, Ms. *F* is to compare the monthly sales performance for last month and the month before last, by product. Which of the following expressions is used to calculate the rate of increase?

a) Sales performance last month – sales performance two months ago
b) (Sales performance last month – sales performance two months ago) / 2
c) (Sales performance last month – sales performance two months ago) / Sales performance last month
d) (Sales performance last month – sales performance two months ago) / Sales performance two months ago

Q92.

Technology

Ms. *F* is to summarize last month's sales performance in a table, by State (Address_1). Based on member address, which of the following is an appropriate process to calculate monthly sales performance by State?

a) 1. Extract the data for last month from the sales performance data, based on "Sales date."
   2. Sort the extracted sales performance data by "Member_number."
   3. Calculate the total sales of products with the same "Member_number."

b) 1. Extract the data for last month from the sales performance data, based on "Sales date."
   2. Using member numbers as the key, join the extracted sales performance data and the member ledger.
   3. Sort the joined information by "Address_1."
   4. Calculate the total sales in units of the same State.

c) 1. Using member numbers as the key, join sales performance data and the member ledger.
   2. Sort the joined information by "Address_1."
   3. Calculate the total sales in units of the same State.

d) 1. Using member numbers as the key, join sales performance data and the member ledger.
   2. Sort the joined information by "Member_number."
   3. Calculate the total sales of products with the same "Member_number."
   4. Sort the data by "Address_1."
   5. Calculate the total sales in units of the same State.

Medium question 2

Read the following description regarding sales promotions and sending of postcards, and answer questions **Q93** through **Q96**.

Ms. *A* joins a company that sells passenger vehicles and mini-cars. Ms. *A* is assigned to the sales promotion department, and is given the responsibility of sending out postcards for sales promotions. The customer list and types of sales campaign postcards are as shown below.

[Excerpt from customer list]
Passenger vehicle

Customer code	Customer name	Salesperson
1311	Inoue	C01
2051	Ono	A12
4293	Tanaka	B30
1806	Mori	A11
7745	Yagi	D04

[Mini-car]

Customer code	Customer name	Salesperson
2051	Ono	A12
4293	Tanaka	B30
5018	Harada	A11

[Types of sales campaign postcards]
(1) Vehicle inspection discount promotion postcard, for all customers.
(2) New vehicle discount promotion postcard, only for customers who purchased a passenger vehicle.
(3) Free gas promotion, for customers who purchased a passenger vehicle and mini-car.

Q93.
Technology

Ms. *A* investigates the number of postcards needed for the vehicle inspection discount promotion, by merging the customers in both tables into one (1) table. Which of the following formulas is used to derive the number of postcards that are needed?

a) A⊕B
b) A+B
c) ¬A
d) A&B

Q94.

Technology

Which of the following is the correct result from Q93?

a)

Customer code	Customer name	Salesperson
2051	Ono	A12
4293	Tanaka	B30
5018	Harada	A11

b)

Customer code	Customer name	Salesperson
2051	Ono	A12
4293	Tanaka	B30

c)

Customer code	Customer name	Salesperson
1311	Inoue	C01
2051	Ono	A12
4293	Tanaka	B30
1806	Mori	A11
7745	Yagi	D04
5018	Harada	A11

d)

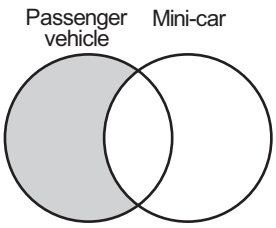
Customer code	Customer name	Salesperson
1311	Inoue	C01
2051	Ono	A12
4293	Tanaka	B30
1806	Mori	A11
7745	Yagi	D04
2051	Ono	A12
4293	Tanaka	B30
5018	Harada	A11

Q95.

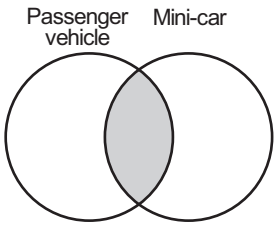
Technology

Ms. *A* investigates the number of postcards needed for the new vehicle discount promotion, visually expressed as a Venn diagram. Which of the following Venn diagrams is correct?

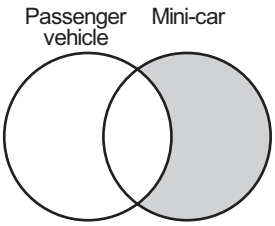
a)



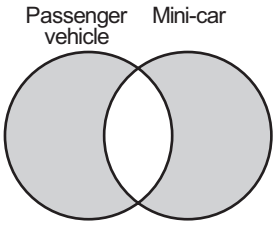
b)



c)



d)



Q96.

Technology

Ms. *A* investigates the number of postcards needed for the free gas promotion, mathematically expressed as a truth table. Which of the following is the correct truth table?

a)

Passenger vehicle	Mini-car	Postcard
1	1	1
1	0	1
0	1	1
0	0	0

b)

Passenger vehicle	Mini-car	Postcard
1	1	1
1	0	0
0	1	0
0	0	0

c)

Passenger vehicle	Mini-car	Postcard
1	1	0
1	0	1
0	1	1
0	0	0

d)

Passenger vehicle	Mini-car	Postcard
0	0	1
0	1	0
1	0	0
1	1	0

Medium question 3

Read the following description regarding the creation of a schedule, and answer questions **Q97** through **Q100**.

The sales management department of Company *X* plans to perform a version upgrade of its inventory management system. The new inventory management system requires a version upgrade of application software and hardware upgrades.
Ms. *B* of the sales management department examines the situation with Ms. *C* of the systems department, to identify the work involved in performing the version upgrade of the inventory management system.

Table: List of work necessary for version upgrade

Work No.	Description	Work days
S1	System backup	2
D1	Data extraction	2
D2	Data conversion	2
H1	Hardware procurement3	3
H2	Build hardware environment	2
S2	Install application software	2
S3	Customize application software	2
D3	Load data	1
S4	Operational test	3

*Work days are the number of days if Ms. *C* of the systems department is working alone.

In order to establish a schedule for the work, Ms. *C* creates the following arrow diagram.

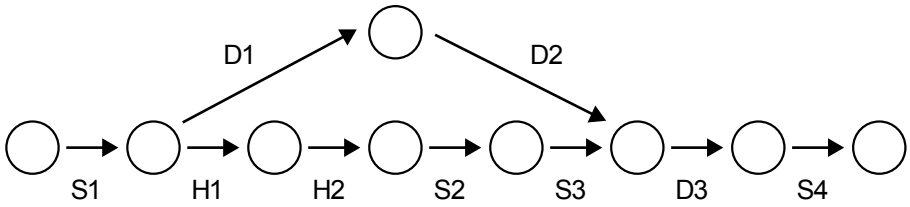


Figure: Arrow diagram for schedule

Q97. Management

If the work is performed as shown in the arrow diagram, which of the following is the appropriate description of the interdependency of the work?

a) Data conversion (*D2*) cannot be started until hardware procurement (*H1*) is completed.
b) Customization of application software (*S3*) cannot be started until data conversion (*D2*) is completed.
c) Installation of application software (*S2*) can be started until the hardware environment is built (*H2*).
d) Installation of application software (*S2*) is performed after hardware procurement (*H1*) is completed.

Q98.

Management

If Ms. *C* working alone can shorten the time for hardware procurement (*H1*) and installation of application software (*S2*) by one(1) day each, which of the following is the number of overall days required to perform the work?

a) 19
b) 21
c) 17
d) 15

Q99.

Management

In dividing work that is performed in the same systems department, Ms. *D* is asked to perform all the work of data extraction (*D1*) and data conversion (*D2*). Ms. *C* and Ms. *D* are each asked to perform half of the work of data loading (*D3*) and the operational test (*S4*). Ms. *D* performs the work concurrently with Ms. *C*, and at the same level of work efficiency. Which of the following is the number of days required to perform the work?

a) 12
b) 16
c) 13
d) 10

Q100.

Management

IWhich of the following activities should Ms. *B* in the sales management department actively be involved with?

a) System backup (*S1*)
b) Operational test (*S4*)
c) Hardware procurement (*H4*)
d) Data extraction (*D1*)

Practice exam 2

*See page 38 in the "Answers and Explanations" booklet for the correct answers.

Strategy

Q1. Which of the following describes a project organization?

a) An organization whose members belong to both functional departments with their own area of specialization and departments that execute a specific enterprise.
b) An organization in which departments are organized according to the nature of the work, such as purchasing, production, sales, or financial affairs.
c) A temporary and flexible organization in which experts from respective departments are gathered together and organized in response to a specific issue, and action is taken after determining time periods and goals.
d) An organization in which self-contained management activities can be developed because functions required for profit responsibility and business execution are held by product, or by customer, or by region.

Q2. Which of the following is the appropriate reason for the need of a business strategy?

a) To carry out corporate management that adapts to changes in the social environment and gains an advantage in competition with other companies.
b) To make profit by having employees work long hours.
c) To procure the large amount of funding required for developing new products from stockholders.
d) To avoid risks related to political or legal problems.

Q3. In the PDCA model, which of the following is implemented in the Plan step?

a) Shifting to action for resolving problems on the basis of reflection.
b) Reflecting on whether things went as planned and the reasons for any failures.
c) Preparing and putting into practice entry sheets, resumes, interviews, etc.
d) Organizing oneself by carrying out a self-analysis, and raising any problems.

Q4. Which of the following is the reason why customer satisfaction has gained recognition?

a) Because it is best not to invest too much in marketable products that require little funding.
b) Because better results are obtained when products are manufactured from the perspective of the customer than from the perspective of the producer.
c) Because managing customer information collectively improves operating efficiency.
d) In order to secure customers who are susceptible to brand power.

Q5. During system development, which of the following is the appropriate item for consideration when introducing a technology strategy?

a) Whether or not it has an effect on technology development investment.
b) Whether or not it has business value to the corporation.
c) Whether or not profit will increase if the technology is introduced.
d) What to do about technology that cannot be handled within the project.

Q6. It would appear that the amount of ultraviolet rays tend to increase when the concentration of the ozone layer decreases. Therefore, data is collected and examined. Which of the following is the most suitable type of diagram for this analysis?

a) Tree diagram
b) Scatter diagram
c) Pareto chart
d) Cause and effect diagram

Q7. Which of the following is the method for realizing a business strategy or enterprise strategy by analyzing the capability of one's company from four (4) points: advantages, disadvantages, chances, dangers?

a) BPM analysis
b) SWOT analysis
c) SaaS analysis
d) Multi-weight analysis

Q8. Which of the following is not supported by a POS system?

a) Determining raw material costs and distribution routes of products.
b) Determining menus that sell well at a restaurant according to the day of the week or time period.
c) Determining trends in popular dishes on the food floor of a department store.
d) Determining differences in turnover according to location of tenants in a large shopping center.

Q9. Which of the following is the appropriate statement concerning intellectual property rights for Internet websites?

a) Drawing pictures from photographs or tracing illustrations or characters and posting them on a website does not constitute a copyright infringement.
b) Scanning a photograph or poster of a famous person and posting it on a website does not constitute a copyright infringement under current law.
c) There is nothing wrong with downloading the logo of another company from the Internet and using it as your own company's logo.
d) As long as usage is within the scope of the license, using collections of free material on the Internet when creating your own website does not constitute a copyright infringement.

Q10. Which of the following is appropriate as the specific steps in computerization planning?

a) Review of schedule →Risk analysis →Review of development structure
b) Review of development structure →Risk analysis →Review of schedule
c) Review of schedule →Review of development structure →Risk analysis
d) Risk analysis →Review of development structure →Review of schedule

Q11. Which of the following is the most appropriate as the concept behind an information systems strategy?

a) Improving the efficiency of other work by computerizing all points of contact with the customer.
b) Planning improvement of business efficiency in the medium- and long-term by computerizing current business activities.
c) Providing a network within the company and computerizing the workflow.
d) Communicating using information systems in transactions between businesses.

Q12. Which of the following describes contact management, one of the basic functions of SFA (Sales Force Automation)?

a) Improving operating efficiency by replying promptly to inquiries from sales representatives.
b) Increasing the order ratio by having the entire sales organization deal with customers, rather than sales representatives alone.
c) Managing histories of visits to customers, sales results, etc. and carrying out effective sales activities aimed at prospective customers and existing customers.
d) Bringing to light and sharing sales techniques accumulated at the individual level, with the aim of improving the level of the entire sales department.

Q13.

Which of the following describes the association diagram method?

a) A method that examines countermeasures and determines processes that will lead to desirable results for various problems that may arise during development.
b) A method that clarifies problems requiring solution by grouping collected information according to mutual relationships.
c) A method that reveals cause-and-effect relationships between phenomena whose causes are intricately intertwined.
d) A method that sequentially develops means/policies for achieving goals/objectives and seeks the most suitable means/policies.

Q14.

If the record of receipts and issues for a component is displayed as a table, which of the following is the issue price in yen on April 10 when a first-in first-out method is employed?

Date of transaction	Transaction details	Quantity (items)	Unit price (yen)	Amount (yen)
April 1	Carry-over from previous month	2,000	100	200,000
April 5	Purchase	3,000	130	390,000
April 10	Issue	3,000		

a) 100
b) 110
c) 115
d) 118

Q15.

Which of the following can be expected as a result of introducing SCM?

a) Reduction in surplus stock and lowering of distribution costs.
b) Understanding of management resources for the entire corporation, making reallocation possible.
c) Improvement in customer satisfaction.
d) Able to use cutting-edge technology efficiently.

Q16.

In a profit and loss analysis, which of the following is treated as a fixed cost?

a) Cost of advertising in the mass media
b) Overtime pay for sales department employees
c) Commission charges associated with sale of products
d) Shipping costs for purchasing

Q17.

Which of the following thousands of yen is the break-even point found using the income statement shown below?

Income statement	
(Unit: thousand yen)	
Item	Amount
Sales	4,000
Materials costs (variable)	500
Outsourcing costs (variable)	350
Advertising costs (variable)	350
Labor costs (fixed)	450
Gross profit on sales	**2,350**
Depreciation expense (fixed)	250
Current income	**2,100**

a) 1000
b) 2000
c) 3000
d) 4000

Q18.

Which of the following describes a compliance program concerning personal information protection?

a) A management system that is systematically integrated within a business operator for the purpose of dealing with personal information protection.
b) An access control program that carries out encryption and personal authentication for the purpose of personal information protection.
c) A plan for continuing a service that processes personal information when it has stopped, by employing alternative means in order to restore the system that has stopped.
d) A series of activities involving comprehensive inspections and evaluations of information systems related to personal information by an independent third party, who then gives advice/recommendations to the head of the business operator and conducts follow-ups.

Q19.

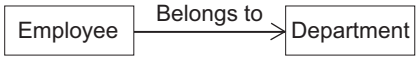
Which of the following determines where and how risks exist when constructing and operating a system, and measures the degree of loss that will result if those risks materialize and the size of their impact?

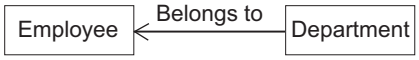
a) Risk management
b) High-risk high-return
c) Risk analysis
d) Risk evaluation

Q20.

If the condition given below applies, which of the following is appropriate as an E-R diagram showing the departments employees belong to?

Condition: An employee belongs to one department, and one department has one or more employees belonging to it.

a) 

b) 

c)

d)

Q21.

Which of the following is the mechanism for exchanging data between corporations and is used in electronic commerce?

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

Q22.

Which of the following describes a niche strategy?

a) A strategy that aims to promote sales by aggressively marketing the company's products to consumers.
b) A strategy that focuses on a specific market rather than markets entered by major companies, and aims to secure and maintain profitability in that market.
c) A strategy that motivates consumers to buy by raising the brand image held by the consumers regarding a corporation itself or its products/services.
d) A strategy that promotes the purchase of products by advertising to consumers through means such as television and magazines.

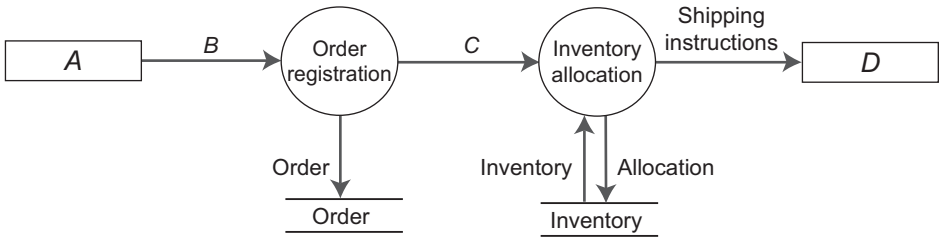
Q23.

Which of the following describes data mining?

a) Extracting part of a large-scale database according to the intended purpose and carrying out processing such as summarizing data in advance, in order to improve search efficiency.
b) Using statistical or inference methods to find meaningful information in a large-scale database.
c) Creating an indexed file suitable for implementing a star schema in a large-scale database.
d) Efficiently managing metadata in a large-scale database.

Q24.

When an order from a customer is entered into an online terminal, the system records the order, allocates the inventory, and outputs shipping instructions from a printer installed in the warehouse. If this system is described using a DFD, which of the following is the appropriate combination of words corresponding to (*A*)~(*D*)?



	A	*B*	*C*	*D*
a)	Terminal	Order	Registered order	Printer
b)	Terminal	Registration instruction	Allocation instruction	Printer
c)	Customer	Order	Registered order	Warehouse
d)	Customer	Registration instruction	Allocation instruction	Warehouse

Q25.

Which of the following is the name of the system that automatically settles fares for smooth passage through tollbooths when using expressways or other toll roads?

a) GPS application system
b) ETC system
c) Traceability system
d) Credit system

Q26. Which of the following is appropriate with regard to a service contract?

a) The employer engages the worker in work under his/her own direction and orders.
b) The worker engages in work under the direction and orders of the contractor.
c) The worker has an employment relationship not only with their original employer but also with the contractor.
d) The contractor specifies the worker's wage structure including base pay and overtime pay.

Q27. Which of the following is the correct characteristic of a Gantt chart?

a) Allows you to grasp work start and finish schedules and achievements.
b) Allows you to sort and display collected data and survey results by characteristic.
c) Allows you to represent the relationship as a straight line when there is a correlation between two (2) types of data.
d) Allows you to divide the range of compiled data into a number of segments and represent the number of pieces of data in the segments using a bar graph.

Q28. Which of the following is appropriate for defining computerization requirements, such as task overview and workflow?

a) Operational requirements
b) Functional requirements
c) Requirements definition
d) Contents definition

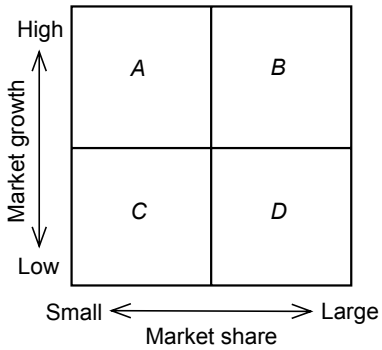
Q29. Which of the following is a quality management activity based on JIS Q 9001:2000 (ISO 9001:2000)?

a) Preventive measures for potential problems are carried out at the on-site level and are not reported to the management level.
b) Third-party audits are carried out periodically and therefore internal audits are not conducted.
c) Records related to quality are stored on a server so that the information can be shared between the people concerned.
d) Projects are made up of company employees and partner company employees, but quality policy is conveyed only to company employees.

Q30. Which of the following is appropriate as a description of outsourcing that makes use of another company's services?

a) All functions including system development, operation, and maintenance are outsourced to a specialized company.
b) Equipment is provided by the users themselves, and operation is outsourced to a specialized company.
c) Part of a server owned by an external specialized company is rented, and operation is outsourced.
d) System development and provision of equipment is all done by the company itself, and only operation is outsourced.

Q31. If enterprises are sorted into (*A*)~(*D*) in the figure, which of the following falls under (*C*)?



a) An enterprise that currently produces a large influx of capital, but at the same time, will require an investment of fund for years to come.
b) An enterprise that currently fulfills a function as a major provider of fund, but should not have capital newly invested in it.
c) An enterprise that has little need for investment to grow the business, and must consider withdrawal in the future.
d) An enterprise that requires investment, but is attractive and could become a provider of fund in the future.

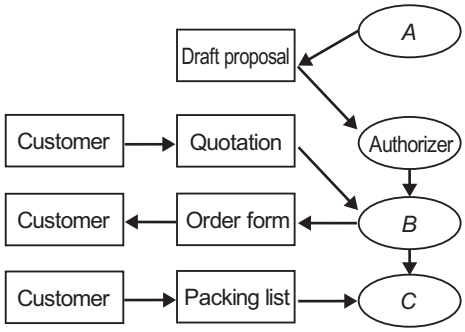
Q32.

Which of the following is the most appropriate statement concerning ERP packages?

a) Analysis of the corporation's business processes is unnecessary, so installation can be performed relatively easily.
b) It is preferable that the systems department takes charge of maintenance after installation.
c) During installation, verification and standardization of business processes is essential.
d) An integrated package specific to the business processes of Japanese corporations.

Q33.

When the duties involved in the procedures for a purchase transaction according to an individual contract are split up, which of the following combinations of people in charge should be entered into (*A*), (*B*), and (*C*)?



	A	*B*	*C*
a)	Person requesting purchase	Person in charge of receiving inspection	Person in charge of ordering
b)	Person requesting purchase	Person in charge of ordering	Person in charge of receiving inspection
c)	Person in charge of ordering	Person in charge of receiving inspection	Person requesting purchase
d)	Person in charge of ordering	Person requesting purchase	Person in charge of receiving inspection

Q34.

Which of the following is appropriate handling of trade secrets in the Unfair Competition Prevention Act?

a) Displaying false information about the place of origin or quality of a product marketed as a specialty product of your corporation.
b) Copying and obtaining a rival company's technical information from a corporation that did business with the rival company.
c) Disclosing information such as corporate knowhow, customer lists, and system specifications at your own corporation and integrated corporations.
d) Creating a product that imitates the product of another company that is widely known among customers, and selling it on the market.

Management

Q35. Which of the following is the development method that focuses on the structure of the data handled by the business and develops a system based on it?

a) Structure method
b) Data oriented approach
c) Process oriented approach
d) Object orientation

Q36. Which of the following is the appropriate method for using ITIL?

a) Apply to everything, in accordance with the ITIL items.
b) Rather than introducing ITIL as it is, utilize the areas that are applicable to the business.
c) Install ITIL on the client side and use it on an individual basis.
d) Install ITIL on the server and use it on an Intranet.

Q37. Which of the following is the appropriate statement concerning systems architecture design and software architecture design?

a) In systems architecture design, the structure within programs is designed, while in software architecture design, models for each program are created.
b) In systems architecture design, data required for the system is clarified and human interfaces are designed, while in software architecture design, check methods and processing methods for realizing the designed functions are determined.
c) In systems architecture design, functions required for the system are clarified and the structure is determined, while in software architecture design, the system's input/output screens are determined.
d) Systems architecture design is systems design looked at from the side of the systems department, while software architecture design is systems design looked at from the side of the user.

Q38. Which of the following is the quality assurance agreement exchanged for the purpose of operations management based on agreement between an IT service provider and a user, and defines the quality and scope of IT service for the user?

a) OGC
b) IEC
c) ITIL
d) SLA

Q39. Which of the following is the appropriate reason for creating a project completion report?

a) Leaving contact details of the staff involved in the project in order to get assistance in case of system failure.
b) Leaving proof that the ordering party accepted the system.
c) Leaving information on project evaluations that were carried out so that it can be made use of in the next project.
d) Leaving details of changes to the specifications that occurred during execution of the project.

Q40. Two (2) types of data are prepared during system development; valid data and invalid data. Which of the following is an appropriate method for appointing typical values from each class as test data?

a) Equivalence partitioning
b) Branch partitioning
c) Boundary value partitioning
d) Real value partitioning

Q41. Company *A* is considering introducing company-wide computerization in order to improve the efficiency of work done by hand up until now. Centered on the systems division, development is progressing with the aim of starting actual operation on the first day of the first half in four (4) months time. Which of the following is most appropriate as a matter that should be considered in order to achieve safe operation in four (4) months while maintaining system quality? Assume that the development model is a waterfall model.

a) Having all of the processes reviewed when post-development testing is complete.
b) Having specification documents for systems architecture design, software architecture design, and software detailed design stored and made use of in operation and maintenance.
c) Having staff invested into the project so that work can be performed in parallel within processes such as design, development (programming), and testing.
d) Having testing and operation work carried out in parallel, at the same time as work begins on system architecture design.

Q42. Of the processes involved in a system audit, which of the following is the characteristic process that does not exist in accounting audits or operations audits?

a) Hearing with the manager of the department being audited during the preliminary audit.
b) Acquisition and checking of documents, records, and other material during the main audit.
c) Creation of audit plans for each period.
d) Exchange of opinions with the department being audited based on a draft audit report.

Q43. Which of the following is the most necessary item when you discover a fault in an information system used on an Intranet Web browser and report it to the helpdesk?

a) The return e-mail address
b) The amount of free space on the hard disk of the computer you are using
c) The applications installed on the computer
d) Specific tasks, screens, status of the fault, repeatability, etc.

Q44. Which of the following is the appropriate description of "audit" in a system audit?

a) An audit is carried out in two (2) steps with a preliminary audit and a main audit.
b) An audit is complete after being carried out once.
c) An audit is carried out until the approval of the auditors is gained.
d) The number of times an audit is carried out is determined by the amount given in the report.

Q45. Which of the following is the software development method that constructs a system by partitioning the system into a number of subsystems and repeating the cycle from requirements analysis to operation for each subsystem?

a) Relational model
b) Spiral model
c) Prototyping model
d) Waterfall model

Q46. Which of the following is appropriate as the main objective of a penetration test?

a) Confirming whether or not all of the required functions are included in a system
b) Confirming whether or not the system is suited to the actual business
c) Confirming the amount of work that can be processed per unit of time
d) Carrying out an attack from outside, and confirming whether or not there are security holes, firewall weak points, or setting errors in the system

Q47. Which of the following is appropriate as a concept for maintaining and protecting the facilities and equipment held by a corporation and keeping them in a better state?

a) ICT infrastructure
b) Service level management
c) Facility management
d) Infrastructure support management

Q48.

Which of the following is the correct description of service delivery within the ITIL framework?

a) Explains about ensuring data safety and confidentiality and the software lifecycle.
b) Explains methods for adequately providing medium- and long- term planning and improvements in the IT service.
c) Explains IT service operation and support and best practice in planning and improvements.
d) Explains methods for support to enable the user to use the IT service appropriately.

Q49.

Centered on the systems division, Company A is developing a system for linking its headquarters with its sales offices nationwide via a network. When conducting system testing using the headquarters' LAN environment before actual operation, which of the following is difficult to verify?
Assume use of LAN at headquarters and within each sales office, and a network of communication lines connecting headquarters and each sales office.

a) Program processing time
b) Response time
c) Server load
d) Amount of work that can be processed per unit of time

Q50.

Which of the following describes IT governance?

a) An organizational structure or mechanism that uses information systems to implement business strategies and increase competitive power
b) A technique for making predictions about events that may occur in the future
c) Application technology that links telephones, fax machines, and computers
d) A method for planning optimization of distribution as a whole, with the aim of meeting the needs of consumers

Q51.

Which of the following is not an appropriate approach to failure countermeasures in a system used for mission-critical tasks?

a) If program changes are made, carry out a regression test to avoid system failure.
b) If a failure occurs, carry out recovery work after first contacting the relevant departments.
c) Carry out regular maintenance work to prevent failures.
d) If a failure occurs, carry out recovery work after stopping the entire system and investigating the cause.

Q52. When conducting testing in the following order, and items such as test case design and manual verification according to the system's requirements specification are taken into account, which of the following is the stage where it is desirable to have staff from the user department participate?

Unit testing → Integration testing → System testing → Operational testing

a) Unit testing
b) Integration testing
c) System testing
d) Operational testing

Q53. When conducting a system audit, which of the following is carried out in order to gain an understanding of the department being audited and an overview of the system in question?

a) System survey
b) Preliminary survey
c) Main audit
d) Preliminary audit

Q54. Which of the following means policies and procedures for incorporating internal control into business activities?

a) System of government
b) Independent evaluations
c) Control activities
d) Governance

Q55. Among methods for estimating system development costs, which of the following is the method for estimating development person-hours and development costs, by quantifying the number of files involved in the system development and the difficulty level of the functions?

a) Just point method
b) Function Point method
c) Program step method
d) Chunking method

Q56.

A system in current operation will be changed in order to make the content suit the business content better. When the system was examined, it was found that 20% of the 5,000 programs owned require alteration. Which of the following is the person-months required for the alterations? Assume that a programmer works for 20 days per month, and the number of programs that one programmer can modify per day is 0.2.

a) 230
b) 240
c) 250
d) 260

Q57.

Which of the following is appropriate as the typical process of a project?

a) Progress management→ Schedule development → Goal setting
b) Goal setting → Schedule development → Progress management
c) Schedule development → Progress management → Goal setting
d) Schedule development → Goal setting → Progress management

Q58.

It is decided to reduce the costs involved in system development by outsourcing the system development to a specialized company. In this case, which of the following should be considered?

a) Awarding the work to an outsourcee with a good record among group companies so that the acceptance inspection can be finished early.
b) Understanding the state of progress of system development at your company as well, so that problems are discovered early.
c) Outsourcing system requirements definition, systems architecture design, development, testing, and operation and maintenance collectively to a specialized company.
d) Even if the outsourcee is reliable, having your company's development department proactively involved and issuing detailed work instructions.

Q59.

Which of the following must be clarified when implementing control activities in internal control?

a) Business processes and the risk of fraud occurring
b) Policies and procedures for achieving organizational goals
c) Frameworks for the laws and ordinances, standards, and models required for carrying out business activities
d) Return on investment due to introduction of information systems

Technology

Q60. After processing the latest computer catalog data in various ways, such as carrying out color correction and trimming, you want to make it available on the shared server. Which of the following is the most appropriate format for compressing this kind of multimedia data?

a) GIF
b) MPEG
c) JPEG
d) BMP

Q61. Which of the following is one of the audio compression formats used in the video data compression format, MPEG-1, and is the most popular format for transmitting music data over the Internet?

a) MP3
b) SDMI
c) ATRAC3
d) MIDI

Q62. Which of the following is the appropriate description of clock frequency?

a) The CPU clock frequency and the clock frequency of the external bus connecting the main memory do not have to be the same.
b) If the CPU clock frequency is the same, the program execution performance will be at the same level.
c) If the CPU clock frequency is doubled, the execution performance of the entire system will quadruple.
d) The lower the clock frequency, the higher the computer's instruction execution speed.

Q63. Which of the following is the most appropriate statement about middleware?

a) Operates between the OS and the application software, and provides common basic functions in various fields of use.
b) Free of charge and open to the public, it enables improvement and redistribution of software.
c) Manages hardware and application software.
d) Can be used in the same way in various businesses and industries.

Q64.

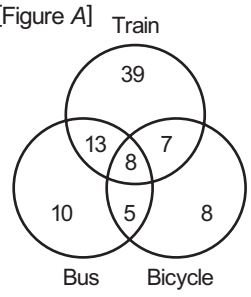
Which of the following does not require a backlight as it generates light when a voltage is applied, and is characterized by low power consumption and low driving voltage?

a) CRT
b) PDP
c) TFT liquid crystal
d) Organic EL

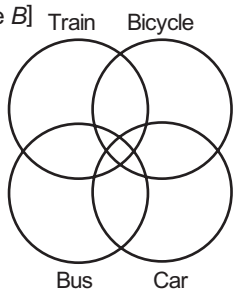
Q65.

Figure *A* shows the results of a survey of the number of people who commute to work by each means of transport; train, bus, and bicycle. When the number of people who commute to work by car is added, as shown in Figure *B*, which of the following cannot be represented?

[Figure *A*]



[Figure *B*]



	Train	Bicycle	Bus	Car
a)	Used	Used	Used	Used
b)	Used	Used	Used	Not used
c)	Not used	Used	Used	Not used
d)	Not used	Not used	Used	Not used

Q66.

Which of the following must be clarified when implementing control activities in internal control?

a) Recovering data up to the point the log file was backed up using the post-update journal (post-update information).
b) Recovering data up to the point immediately before the start of the transaction, using the post-update journal (post-update information).
c) Recovering data up to the point the log file was backed up using the pre-update journal (pre-update information).
d) Recovering data up to the point immediately before the start of the transaction, using the pre-update journal (pre-update information).

Q67.

Which of the following is the appropriate description of MIME used by the Internet?

a) A protocol for encrypting passwords.
b) A protocol with superior security functions for preventing e-mail interception, impersonation, and falsification.
c) A common protocol that can be used by all networks.
d) A protocol that enables multimedia such as sound and static images to be handled in e-mail.

Q68.

If the following sequence is carried out, which of the following is the value of (A)?

① Assign the initial value "2" to (A)
② Assign the value of "Ax 2" to (A)
③ Repeat ② five times.

a) 20
b) 32
c) 64
d) 128

Q69.

A client/server system has been constructed to allow execution of client processing at the browser. Compared to when carried out using a dedicated application, which of the following work will be reduced the most?

a) Maintenance of client environment
b) Management of hardware resources
c) Batch processing
d) Searching large amounts of data

Q70.

Which of the following requires conversion of analog data into digital data?

a) Retrieving images from VHS video equipment and storing them on a DVD.
b) Showing large-volume moving images in MPEG format on a display.
c) Storing images in BMP format saved on a floppy disk on a CD-R.
d) Allowing sound stored on a DVD to be listened to using a headphone terminal.

Q71. Which of the following is the appropriate statement concerning a CPU's primary cache and secondary cache?

a) The primary and secondary caches are classified according to their access speeds, with the high-speed cache called primary and the low-speed cache called secondary.
b) The primary cache is a memory for increasing the speed of data transfer between a magnetic disk and the CPU, while the secondary cache is a memory for increasing the speed of video board drawing.
c) The primary cache is a memory for increasing the speed of memory access, while the secondary cache is a memory for making the capacity of the main memory appear larger.
d) The cache that is accessed first is called the primary cache, and if the required information is not there, the cache that is accessed next is called the secondary cache.

Q72. Which of the following is the appropriate description of a general purpose computer?

a) A specialized computer for office functions at companies
b) A computer designed so that it can be used for both office functions and scientific computing
c) An extremely high-speed, high-performance computer for the purpose of scientific computing and other high-speed processing
d) A high-performance computer used for specialized tasks

Q73. Which of the following is the appropriate statement concerning a benchmark test for a computer system?

a) Expresses as a ratio the extent to which a system is operating normally, and judges whether or not the system is fit for its purpose.
b) Measures the number of floating-point calculations the computer can execute per second, and compares it to other products.
c) Measures the computer's performance by expressing the number of instructions that the CPU can execute per second in units of a million.
d) Quantifies program processing performance by executing test software, and compares it to other products.

Q74. Which of the following is the most appropriate as a method for preventing insufficient capacity in the mailbox of a mail server?

a) Place a limit on the capacity of users' mailboxes.
b) Make it so that e-mails with high-volume images attached cannot be sent.
c) Make it so that the oldest e-mails are periodically deleted.
d) Send high-volume e-mails in bulk and in the early morning so that they do not hinder other mail transmission.

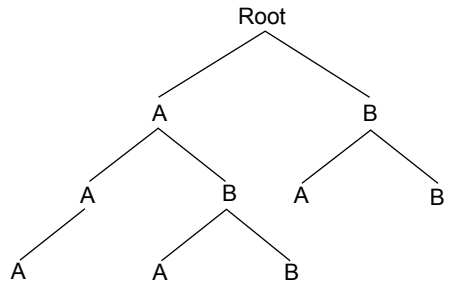
Q75.

Which of the following is the appropriate statement about XML?

a) An object-oriented language based on C++.
b) An interpreter language for text processing, and a standard language for CGI (Common Gateway Interface) programs running on a Web server.
c) A standard page description language for desktop publishing.
d) A language that expresses the structure and meaning of data using tags.

Q76.

Multiple directories with directory names A and B are managed using the structure shown in the figure.



If the current directory is moved in the order of \A\B→..→..\B→.\A, where is the final current directory? Here, the method for specifying directories is as follows:

[Method for specifying directories]
(1) Directories on the path are specified in order separated by "\" followed by "\" and directory name, as in "directory name\ ... \directory name".
(2) The current directory is indicated by "."
(3) A directory that is one level higher is indicated by ".."
(4) If a directory name begins with "\", a root directory at the left end is assumed to have been omitted.
(5) If a directory name begins with anything other than "\", ".", or "..", at the left end ". \" indicating that it is under the current directory is assumed to have been omitted.

a) \A
b) \A\A
c) \A\B\A
d) \B\A

Q77. Which of the following corresponds to the technique called phishing?

a) Causing a mail server to stop functioning by sending a huge quantity of e-mails to the mail server.
b) Attacking a server by using a computer with insufficient security as a cover.
c) Using dictionary files to analyze and steal user names and passwords.
d) Fraudulently obtaining personal information by sending e-mails under the guise of a real company.

Q78. Which of the following is the common feature of serial interfaces, USB, and IEEE1394?

a) Can be attached and detached without turning off power to the computer.
b) Can connect up to 127 peripheral devices using hubs.
c) Low data transfer speeds.
d) Can transfer data using infrared rays.

Q79. Which of the following is the appropriate description of a plug-in?

a) It is a program that adds functions to application software.
b) It is used on the Internet and can search for information you want to know.
c) It uses programming language syntax to describe the system's processing procedures, etc.
d) It is a standby power source that prevents interruptions in the power supply when power outages or power flickers occur.

Q80. Which of the following is not applicable as something that can be performed in a network environment but not in a standalone environment using a single computer?

a) Exchanging data
b) Sharing printers
c) Editing data
d) Sharing programs and data

Q81. Which of the following is the appropriate description of a Java servlet?

a) A program developed by Java that is executed on the Web application server in response to a client request.
b) A program developed by Java that is downloaded from the server and executed.
c) A protocol for handling programs developed by Java as components of applications.
d) An interpreter that executes programs developed by Java, and has a function that executes intermediate codes called bytecodes.

Q82. Which of the following is the appropriate characteristic of a database?

a) It can be accessed by multiple users at the same time due to an exclusive control function.
b) It is difficult to share data between operations due to an exclusive control function.
c) The procedure for making backups is complicated.
d) Because a database is created to suit the format of the data, it cannot respond flexibly to data format changes.

Q83. Mr. *A* holds a digital certificate. When Mr. *A* orders a product from Store *B* by e-mail, he makes a digital signature using his own private key. Store *B* then confirms the signature using Mr. *A*'s public key. Which of the following can be confirmed using this method? Here, assume that only Mr. *A* can use Mr. *A*'s private key.

a) The content of the order sent from Mr. *A* to Store *B* is not leaked to a third party.
b) The order sent by Mr. *A* reaches Store *B*.
c) The order that arrives at Store *B* is from Mr. *A*.
d) Store *B* obtains permission to sell a product to Mr. *A*.

Q84. In GUI design, which of the following components is used to allow selection of multiple items?

a) Text box
b) Pull-down menu
c) Checkbox
d) Radio button

Q85. Which of the following is the appropriate description of a cluster system?

a) A system configuration that, by linking multiple computers in a network, allows them all to be used as one computer. If an error occurs on one of the linked computers, it is possible to continue providing service by operating one of the other computers.
b) A system configuration that manages resources such as application software and files on the server-side, making it possible for computers on the client-side to possess only the required minimum of functions.
c) A system configuration that provides a pair of systems. One is used as the primary system and the other is used as the secondary system. Processing is ordinarily carried out using the primary system.
d) A mechanism installed between the Internet and a network within a company for protection against unauthorized invasion from the Internet.

Q86.

Which of the following is correct as the concept behind universal design?

a) Design that reduces inputting errors by adding popup screens so that input contents must be reconfirmed
b) Design that is aimed at making the response time from when a processing request is made until the first result is received as short as possible
c) Design of products, services, and environments that pays attention to making them usable by as many people as possible without special designs or modifications
d) Design that focuses on using many images in order to express the content of Web pages visually

Q87.

Which of the following is the appropriate basic structure in a flowchart for working out the sum from 1 to 10 using the sequence below?

① Assign the initial value "0" to x
② Assign the initial value "1" to i
③ End when i is greater that 10
④ If i is 10 or smaller, add i to x, and substitute that value for x
⑤ Add 1 to i, and substitute that value for i
⑥ Return to ③

a) Sequence structure
b) Selection structure
c) Conditional branch
d) Repetition structure

Q88.

Which of the following is the appropriate statement concerning information security policy?

a) The security policy of a corporation aims to define the content that must be set in each security system. Therefore, the content varies depending on the security-related products that are introduced.
b) The security policy of a corporation forms the basis for actions and decisions to be complied with. It does not include the corporation's direction or position with regard to tackling security.
c) It is desirable that a corporation's top management announces externally the vulnerabilities of the information system that forms the primary reason for developing the security policy.
d) The perspective on actions and decisions to be complied with in order to achieve the target security level must be clarified.

Medium question 1

Read the following account concerning computer security measures and rules, and answer questions **Q89** through **Q92**.

After Mr. *M* was hired, he was assigned to a department that has rules concerning the initial settings of newly installed PCs. Some of these rules are as follows:

Excerpt from "Rules for Initial Settings of New PCs"

(1) Prepare computers by installing the specified antivirus software and enabling the automatic update function.
(2) Change the default values of Web browser security settings, such as limitation of software like Java applets running on Web browsers, to security levels specified by the system administrator, without leaving them intact.
(3) Enabling automatic OS updates, as a measure in case security holes and the like are discovered.
(4) Before installing software other than application software provided by the department, obtain approval from the department director.

Q89.

Technology

A new employee, Mr. *M* was provided with a new PC, so he promptly started configuring his PC according to "Rules for Initial Settings of New PCs." Which of the following actions is not appropriate in consideration of the four rules (1) through (4)?

a) After configuring the antivirus software, he ran a complete scan of the hard disks to check for viruses, just in case.
b) He did not know how to configure the Web browser, so he asked the system administrator for configuration instructions.
c) Since the new PC came bundled with a three-month trial version of antivirus software preinstalled, he configured it for automatic updates and started using this software.
d) When he enabled automatic OS updates, an update started immediately, so he followed the instructions displayed to complete the update.

Q90. Technology

Mr. *M* did not understand the reason for changing the browser settings, as required by the rule (2) of the "Rules for Initial Settings of New PCs," so he asked the system administrator, Mr. *N*. Which of the following is an appropriate reply from Mr. *N*?

a) To execute automatic updates when browser vulnerabilities are discovered and updates to fix them are released
b) To implement security measures when a browser-based mail service called webmail is used
c) To prevent execution of malicious scripts and installation of unauthorized programs, which are activated by clicking a button or the like on some web pages
d) To prohibit employees from browsing web pages of personal interest or fee-based sites, which are not associated with their jobs, during working hours

Q91. Technology

The system administrator, Mr. *N* explained to Mr. *M*: "The most critical reason for organizations to establish these kinds of rules is that [ ]." Which of the following is the most appropriate description that should be inserted in the above blank box [ ]?

a) a virus on one employee's PC may spread and infect other employees' PCs
b) PCs infected by a virus may become temporarily unusable, or the data on them may become corrupt
c) virus infections may cause large amounts of unneeded data to be sent over the LAN, increasing the network load and possibly interfering with business processes of the organization
d) virus infections may cause personal or confidential information to be leaked on the Interne

Q92. Technology

The system administrator, Mr. *N* told Mr. *M*, "Peer-to-peer software such as Winny and Share has caused many incidents recently. That is why we established the rule ([ ])." Which rule number of the "Rules for Initial Settings of New PCs" should be inserted in the above blank box [ ]?

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

Medium question 2

Read the following account concerning database construction and answer questions **Q93** through **Q96**.

The company that Mr. *A* has joined operates a sports club with a membership system. Mr. *A* is in charge of reception procedures, and under the direction of his boss, will examine computerization of the reservation system for the facilities. Issues to be considered are as follows:

[Reservation system for facilities – Issues to be considered]

(1) Regarding the reservation method, the reservation is received by telephone or at the reception desk, or is carried out by the user at a dedicated terminal.
(2) The user wears a wristband inside the sports club, and user authentication is carried out at a dedicated terminal via a contactless method using the wristband.
(3) Reorganization processing is implemented at a rate of once a week.
(4) Items recorded in the system are as follows:

Facility code	Facility name	Member code	Member name	Start time	Finish time

Q93.
Technology

Mr. *A* decides to give the system concurrency functions because there are a number of methods for making reservations. In this case, which of the following is appropriate as a function that is required to allow the same reservation data to be referenced, but to prevent reservation updates from being duplicated?

a) Setting user authority for system use, and adding security functions so that there is no leaking of reservation data.
b) Adding a data recovery function so that, in the case of a failure occurring in the system, the data is returned to the status before the failure occurred.
c) Setting an exclusive lock, and adding an exclusive control function to prevent system referencing and updating.
d) Setting a shared lock, and adding an exclusive control function to prevent system updating.

Q94.
Strategy

Mr. *A* decides to incorporate a user authentication function into the wristband worn by the user inside the sports club. Which of the following is the appropriate item to incorporate into the wristband?

a) IC tag
b) IC card
c) Magnetic card
d) Plastic card

Q95.
Technology

Mr. *A* did not understand the reason why Item (3) of the [Reservation system for facilities - Issues to be considered] must be implemented, so he asked his boss. Which of the following is the appropriate reply from his boss?

a) When a system is used for a long time, the amount of free space on the hard disk decreases. Item (3) is carried out in order to secure free space and get rid of unnecessary records.
b) When the number of records accessed simultaneously increases, the seek operation of the magnetic disk takes more time and file access efficiency falls. As a countermeasure, files that are accessed simultaneously are arranged so that they are adjacent to each other in the magnetic disk.
c) When additions, updates, and deletions to the database are made repeatedly, space that is not reused occurs, and this leads to an increase in the database's used space and a fall in processing speed. Item (3) is carried out in order to avoid deterioration in performance by organizing discontinuous free space.
d) When records are deleted, the Recycle Bin in which the targeted files are temporarily stored becomes full, and access efficiency falls if old files in the Recycle Bin are physically erased each time new records are created and deleted. As a countermeasure, files in the Recycle Bin are erased collectively.

Q96.
Technology

Mr. *A* decides to partition the data in Item (4) of the [Reservation system for facilities - Issues for to be considered] in order to avoid duplication of data. There is no cutoff in the period of use of a facility, and any time can be entered as long as it is inside of business hours. Which of the following is the most appropriate partitioning?

a)

Facility code	Facility name		
Member code	Member name	Start time	Finish time

b)

Facility code	Facility name	Start time	Finish time
Member code	Member name		

c)

Facility code	Facility name	
Member code	Member name	
Facility code	Start time	Finish time

d)

Facility code	Facility name		
Member code	Member name		
Facility code	Member code	Start time	Finish time

Medium question 3

Read the following account concerning networks and answer questions **Q97** through **Q100**.

The company that Mr. *A* has joined is examining the construction of a network within the office that allows connection to the Internet. Under the direction of his boss, Mr. *A* will procure the required equipment. The network requirements are as follows:

[Network requirements]
(1) One (1) file server and seven (7) computers for office functions are installed.
(2) One (1) multifunction printer is installed.
(3) Security software is installed on the computers.
(4) The existing internal network that uses telephone equipment is integrated into the IP network.

Q97.
Technology

Mr. *A* finds an 8-port hub that is not being used in the office, so he decides to purchase only enough hubs for the number of ports lacking. Which of the following is the method for purchasing the necessary hubs with the lowest budget?

a) There are sufficient hubs, so there is no need to purchase any more.
b) Purchase one 8-port hub.
c) Purchase two 8-port hubs.
d) Purchase one 16-port hub.

Q98.
Technology

Mr. *A* decides to procure cables to connect the equipment. Which of the following is the minimum number of cables required?

a) 8
b) 9
c) 10
d) 11

Q99.

Technology

Mr. *A* decides to purchase security software. Which of the following is the method for procuring the software with the lowest budget?

a) Purchase one (1) piece of software and install the software on all of the computers.
b) Purchase eight (8) pieces of software and install the software on all of the computers.
c) Purchase one (1) piece of software and seven licenses and install the software on all of the computers.
d) Purchase one (1) piece of software and install the software on the server only.

Q100.

Technology

Regarding Item (4) of the [Network requirements], which of the following is the device that allows construction of an internal network?

a) PBX
b) Hub
c) Router
d) TA

Practice exam 3

See page 57 in the "Answers and Explanations" booklet for the correct answers.

Strategy

Q1. Which of the following is an organizational structure comprised of several self-contained organizational units that have the functions necessary for managing profit responsibility and executing tasks by product, customer, or region?

a) Divisional system organization
b) Internal venture organization
c) Functional organization
d) Matrix organization

Q2. Which of the following is an act of unfair competition?

a) Compiling research on another company's product technology and using it to enter a new field.
b) Selling a product after falsely indicating its origin.
c) Placing an ad banner for one of your company's products on someone else's Web page with their permission.
d) Obtaining information on another company's new products from a Web page and using it as a reference for your own.

Q3. Which of the following is the appropriate description of a computerization planning?

a) A development plan designed to streamline operations by computerizing each given task
b) A development plan for developing an information system that streamlines operations based on the business and enterprise strategies
c) A development plan for computerizing all tasks according to the company's management objectives
d) A development plan designed to enable the company's system development department to implement computerization within the company

Q4. Which of the following is the correct statement concerning copyrights?

a) Ideas, designs, and marks are covered by copyright protection.
b) Copyright protection lasts 30 years.
c) In order to obtain rights, it is necessary to register with the relevant authority.
d) Rights come into existence the moment work is created.

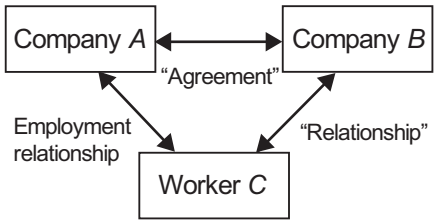
Q5. Which of the following is a characteristic of a cell production system?

a) It is suited for continuous production of a specific product type because there is a special line installed for it.
b) It is suited for high-mix, low-volume production because teams of one person or more handle all processes.
c) Products can be supplied according to consumer demand because the necessary items are produced in necessary quantities at the necessary time.
d) Excessive inventory can be controlled because design, arrangements, and production are carried out according to the customer's order.

Q6. Which of the following is the purpose of CRM?

a) To acquire customer loyalty and maximize customer lifetime value
b) To reduce the number of lost sales opportunities arising from insufficient inventory
c) To determine how much material is needed for manufacturing and when they should be ordered
d) To ascertain sales information by product at the point of sale

Q7. The figure below shows a company-worker employment relationship. Which of the following is the relationship between Company *B* and Worker *C*?



a) The "contract" is a service contract, and when Company *A* is the consignee and Company *B* is the consigner, Company *B* has the authority to provide instructions to Worker *C*.
b) The "contract" pertains to the lease of an employee, and when Company *A* sends Worker *C* to Company *B*, Company *B* has the authority to provide instructions to Worker *C*.
c) The "contract" is a temporary worker dispatch contract, and when Company *A* is the dispatching company and Company *B* is the receiving company, there is also an employment relationship between Company *B* and Worker *C*.
d) The "contract" is a temporary worker dispatch contract, and when Company *A* is the dispatching company and Company *B* is the receiving company, it is said that Worker *C* is on lease to Company *B*.

Q8. Which of the following is the appropriate assigning of personnel when considering a development system for the computerization planning?

a) Have the system put together solely by the system development department.
b) Have the system put together by the business operations department that will use it and an external system development company.
c) Have the system put together by the system development department and an external system development company.
d) Have the system put together by the system development department and the business operations department that will use it.

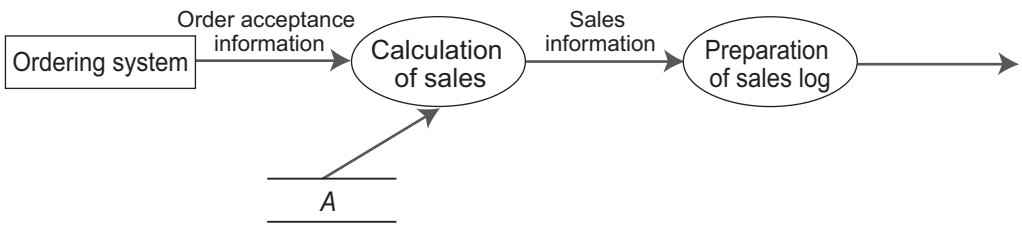
Q9. Which of the following is appropriate as a description for a debit card?

a) Issued by a credit card company to automate payment of highway tolls
b) Used to pay for products and services that require advance payment
c) Points are earned relative to the amount of the charge when the card is presented upon purchase of products or services
d) A charge card from your financial institution used to pay for products in real time directly from your bank account

Q10. Which of the following points makes an embedded system different from a regular computer system?

a) No OS is used.
b) It cannot be used without connecting to the Internet.
c) It is written to a ROM inside the device.
d) It comes with the SG mark showing that it meets product safety standards.

Q11. Which of the following is represented by (*A*) in the sales management system DFD below?



a) Sales file
b) Order file
c) Unit price file
d) Payment file

Q12.

Which of the following is the appropriate definition of ROE (Return On Equity)?

a) The ratio of profit to management capital. It expresses the efficiency of capital invested in the main business activities and shows the true profitability of those activities.
b) The ratio of profit to equity capital. It is an indicator of earning power with respect to shareholders' equity and shows the operational efficiency of shareholders' equity, giving a rough guide as to the company's ability to pay dividends.
c) The ratio of profit to total assets. It shows the operational efficiency of capital invested in the company's business activities.
d) The ratio of profit to investment capital. It is an indicator for determining investment efficiency in the company as a whole, individual investment projects, businesses, etc.

Q13.

Which of the following is not appropriate for examining an operational requirements definition?

a) User (system user department) requirements
b) System development schedule
c) Human interface design requirements
d) Requirements for improving operational flow

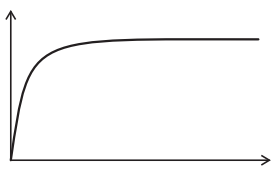
Q14.

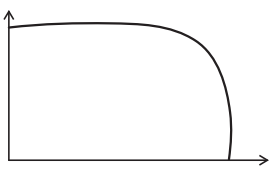
Which of the following describes electronic money?

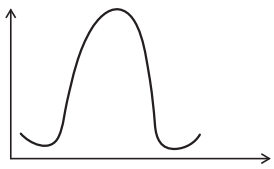
a) Used as payment when purchasing computers and other electronic devices
b) Account balance is checked at time of payment, and funds are withdrawn on the spot
c) Used to pay for products in lieu of cash
d) The company uses communication lines to handle quotes and invoices

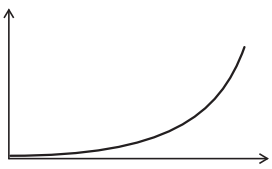
Q15.

Which of the following graphs shows an ABC analysis of product sales by size? The vertical axis is sales, and the horizontal axis is size.

a)


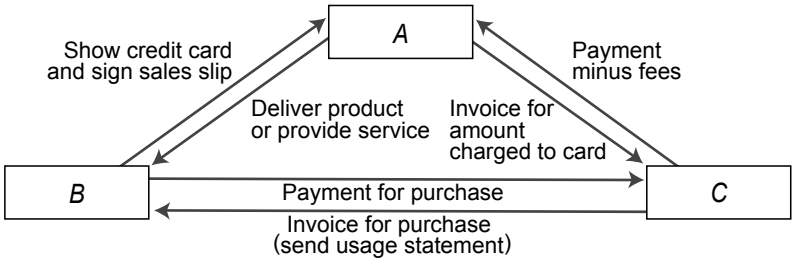
b)


c)


d)


Q16.

The figure below shows a credit card transaction. Which of the following corresponds to (*A*), (*B*), and (*C*)?



	A	*B*	*C*
a)	Merchant	User	Credit card company
b)	Merchant	Credit card company	User
c)	User	Merchant	Credit card company
d)	Credit card company	User	Merchant

Q17.

Which of the following is appropriate with regard to program copyrights

a) A pirated program was knowingly used to perform business tasks.
b) Copies were made of a purchased program and distributed to the development department.
c) Copies were made of a purchased program and distributed to partner companies.
d) A program was modified to work with the system currently in use.

Q18.

Which of the following is the appropriate statement concerning a system that incorporates CTI technology?

a) An e-mail system that can send/receive e-mail to/from mobile phones
b) A settlement transaction system in which approval can be made from an external PC connecting to a remote access point
c) A telephone answering system at a call center used to handle inquiries related to products that have been sold
d) An order system that allows products to be ordered over the Internet by means of a browser

Q19.

Which of the following is a form of transaction that presents products and purchase requirements to general consumers on the Internet, and one or more sellers respond to their requests?

a) BtoB
b) GtoC
c) Reverse auction
d) Virtual mall

Q20. Which of the following describes M&A?

a) Manufacturing a product under your own company's name that is sold under a brand of a contracted company.
b) Acquiring stock in a company and becoming a shareholder in order to deepen ties.
c) A merger/acquisition between companies where several companies are combined into one, or part or all of a company is bought out.
d) Outsourcing all or most of the work related to system development, operation, and maintenance to a third party specialist

Q21. You need to manufacture 30 units of Product *A*. Product *A* is made by combining three (3) units of Product *B* with four (4) units of Product *C*. If there are ten (10) units of Product *B* and six (6) units of Product *C* in inventory, which of the following is the net requirement for Product *B*?

a) 100
b) 90
c) 80
d) 70

Q22. Which of the following acts infringes on information ethics concerning e-mail?

a) Sending an advertisement e-mail to all customers subscribed to the company's mailing list at once
b) Sending an encrypted e-mail containing customer information
c) Sending an e-mail with the same Roman numeral as the product name in the body of the message in order to properly convey the product information
d) Deleting an e-mail containing a request to forward the contents on to others, determining it to be chain mail

Q23. Which of the following is the appropriate description of SOA, a type of solution?

a) An Internet-based software distribution service with an established trial period
b) A concept where only the required software is used, and fees are paid for only those functions
c) A concept where software functions and parts are regarded as independent services and a system is built by combining them
d) A concept where a single system is built by putting together individual parts from different software

Q24. Which of the following is appropriate as the description concerning how data flow in a DFD is presented?

a) There should be one data flow coming from a single process.
b) Data flows from different processes should not flow into the same process.
c) Files exchanging data should be linked with a data flow.
d) Data flows between processes should be given names that indicate what the information is.

Q25. Which of the following is the appropriate statement concerning how software purchased as a single computer license is used at a company?

a) When buying a new computer made by a different manufacturer to replace the current one, it is okay to modify the program without permission from the owner of the copyright as long as it is necessary.
b) The license purchased belongs to the company, so the software can be installed and used freely within the company.
c) The purchased software can be shared via the company's Intranet and installed on multiple computers.
d) When the software is upgraded, the older version that is no longer used can be installed on multiple computers.

Q26. Which of the following is the appropriate description of core competence management?

a) Constantly monitoring corporate activities, checking the transparency and soundness of management activities, and preventing misconduct on the part of management and organizations within the company.
b) Clarifying the responsibilities of each level of management.
c) Performing a comparative analysis with outstanding competitors and reforming the company's management practices.
d) Executing management that focuses on the company's strengths in core technologies and capital strength no other company can imitate.

Q27.

Which of the following is the break-even revenues required by the following income statement in millions of yen?

[Income statement] Unit: 1,000,000 yen

Revenues	1,000
Materials cost (variable cost)	250
Subcontracting cost (variable cost)	250
Fixed subcontracting cost	100
Gross profit	400
Fixed sales cost	50
Profit	350

a) 220 million yen
b) 300 million yen
c) 450 million yen
d) 475 million yen

Q28.

Which of the following is an Internet-based software distribution service?

a) SOA
b) ASP
c) ISP
d) Housing service

Q29.

Which of the following in corporate accounting expresses the state of a company's assets, liabilities, and shareholder's equity at a certain point in time, and provides information on the company's financial position to its shareholders, creditors, and other stakeholders?

a) Statement of shareholders' equity
b) Balance sheet
c) Income statement
d) Journal book

Q30. You request an estimate for a four (4)-year lease on a piece of ten (10) million yen equipment and learn the total amount of lease payments would be 11.52 million yen. If the lease is renewed, and the total amount of lease payments is 12 million yen, which of the following is the total number of months of use? Here, no new costs arise during the term of use, and the monthly lease payment upon renewal is 1/12 of the initial monthly lease payment.

a) 54
b) 56
c) 72
d) 76

Q31. The table below shows the sales, related costs, and profit for a certain product in the current year. If the sales price is 5,000 yen, which of the following is the number of units that must be sold to double the profit next year?

Unit: 1,000 yen

Sales	10,000
Cost	
Fixed	2,000
Variable	6,000
Profit	2,000

a) 2,400
b) 2,500
c) 3,000
d) 4,000

Management

Q32. Which of the following is appropriate as a description of IT service management?

a) A management method designed to increase corporate profits through the efficient use of IT services
b) A management method designed to ensure the steady and efficient operation of IT services
c) A utilization method designed to ensure that everyone can make full use of IT services
d) A management method designed to widely promote IT services within the company

Q33. Which of the following is appropriate to conduct during the planning stage of project management?

a) Identifying the necessary elements of the project
b) Launching the project
c) Holding a kick-off meeting
d) Selecting a project manager

Q34. Which of the following system development design tasks are performed during the external design process?

a) Design of data flow between programs for when subsystems are broken down into programs
b) Code design for easily identifying, classifying, and arranging data used by the system
c) Physical design of files and databases utilizing hardware characteristics
d) Program test planning and test case design

Q35. Which of the following is appropriate as the reason for conducting reviews after each system development process is completed?

a) To check whether or not the system is easy for the user (system user department) to operate
b) To sort out the functions required of the system
c) To verify whether or not the system has been designed according to the system requirements definition
d) To improve the quality by identifying and fixing bugs in the design and system

Q36. Which of the following refers to the activity of checking progress on recommendations for improvement and supporting improvement efforts following the system audit report?

a) Help desk
b) Lifecycle
c) Hearing
d) Follow-up

Q37. Which of the following refers to guidelines within the ITIL framework concerning medium- and long-term plans and improvement?

a) Service business
b) Service support
c) Service delivery
d) Service management

Q38. Which of the following is the correct order of processes in service support?

a) Incident management → Problem management → Configuration management → Change management → Release management
b) Configuration management → Problem management → Incident management → Change management → Release management
c) Release management →Incident management →Problem management → Change management → Configuration management
d) Change management → Problem management → Configuration management → Release management → Incident management

Q39. Which of the following is the appropriate timing for preparing a project completion report?

a) Right after the system is completed
b) After the system is delivered
c) Before disbanding the project team
d) After the system is accepted

Q40. Which of the following is the appropriate description of the prototyping model?

a) Prototypes are created at an early stage in system development, and the system specs are evaluated and determined while having the user (system user department) check as development goes forward.
b) The system is broken down in to several subsystems, and the cycle from requirements analysis to operation is repeated for each subsystem.
c) Development starts from functions related to the human interface while responding to user (system user department) requests, and the work proceeds while continuously making changes and improvements.
d) Development is implemented while performing repeated tests to cover both true and false cases with respect to all conditional judgments.

Q41. Which of the following is most appropriate as the role of the system user department in large-scale system development?

a) The system user department must actively test the system after development and make sure it can actually handle the task.
b) The system user department should not be involved in system development, but should leave everything up to the system development department.
c) The system user department contributes to systems architecture design that identifies the functions necessary to the system, and review from an operational perspective after installation, but it does not contribute to detailed program design.
d) The system user department must actively contribute to system development and offer advice so that the work can proceed efficiently.

Q42.

You want to manage the progress on unit testing for 100 programs by the degree of task completion and the person-hour ratio for each task. The table below shows the tasks for unit testing, person-hour ratios, and number of programs that have reached task completion. Which of the following is the current progress (expressed as a percentage) on the unit testing? Here, no tasks are currently in progress.

Task	Person-hour ratio (%)	Number of programs that have reached task completion
Design of test data	20	100
Preparation of test data	20	100
Implementation of test	20	70
Verification of test results	40	50

a) 20
b) 26
c) 74
d) 80

Q43.

Which of the following does not need to be addressed by the help desk for information systems used inside a company?

a) Trouble related to devices brought in from outside by employees and connected to a computer
b) Employee complaints about the information system
c) Questions about how to use the information system
d) Problems experienced on computers using the information system

Q44.

Which of the following is not a service support process?

a) Security management
b) Incident management
c) Configuration management
d) Release management

Q45.

Which of the following is the purpose of system audits?

a) To determine whether or not the standards and measures related to the information system are correct
b) To investigate whether or not any illegalities exist in the management method of the information system
c) To make sure disaster prevention measures for the information system are correctly implemented
d) To determine whether or not the information system is contributing to management

Q46. In system audit planning, which of the following is the documented audit plan that covers several years?

a) Documented basic plan
b) Individual documented plan
c) Documented medium- and long-term plan
d) Documented annual plan

Q47. Which of the following basic elements necessary for implementing internal control is a mechanism for mitigating the effect of a small mistake on corporate activities as a whole?

a) Control activities
b) Information and communications
c) Monitoring
d) Control environment

Q48. Which of the following is appropriate as a description of boundary value analysis?

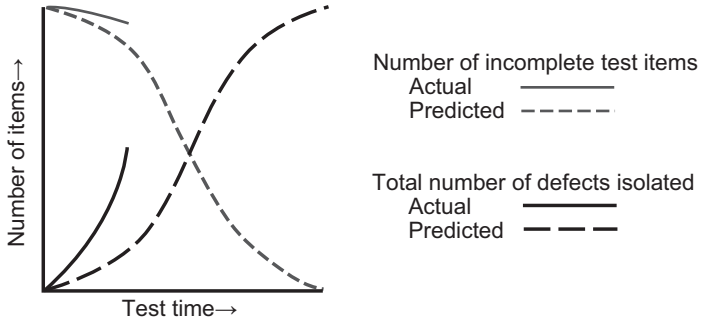
a) A method where boundary values are identified for the data entered into the system and used as test data
b) A method where equivalence class border values are used as test data
c) A method of testing where boundary values that can be entered into the system are analyzed
d) A method of analysis for identifying input values that do not produce errors but are on the borderline

Q49. In internal control, which of the following is important for ascertaining a company's financial condition?

a) Efficiency and effectiveness
b) Compliance with laws and regulations
c) Reliability of financial reporting
d) Protection of assets

Q50.

The graph below shows the number of incomplete test items and the number of defects isolated in an integration test process. Which of the following is the appropriate measure to take?



Test Process Quality Control Chart

a) The test environment is poor, so environmental improvements should be investigated.
b) Insufficient manpower has been invested, so more personnel should be assigned.
c) No particular measures need to be reviewed. The test should be continued as is.
d) The quality is poor, so the test items and results from the previous process should be reviewed.

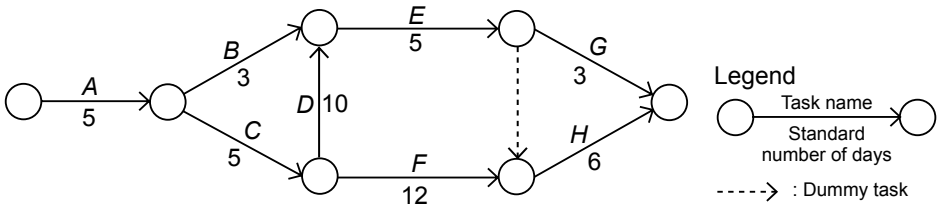
Q51.

Which of the following is appropriate as a description of IT governance?

a) Stipulates the company's medium- to long-term strategy, investment amount, etc. for information systems
b) A mechanism for increasing the efficiency and effectiveness of operations when introducing an information system
c) A mechanism for assessing whether or not internal controls are functioning correctly
d) A mechanism governing the establishment and execution of an IT strategy for utilizing information systems

Q52.

A review of tasks (*A*)-(*H*) shown on the arrow diagram below indicates that only Task (*D*) can be shortened and the number of days required can be reduced to six (6). Which of the following is the number of overall work days required that can be shortened? Here, the numbers by the arrows indicate the standard number of days for each task.



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

Q53. Which of the following is the appropriate statement concerning program tests that are part of system development?

a) It is necessary to check whether or not the program is working properly, so the data prepared for program tests should include values other than those that are appropriate.
b) The test environment should be prepared by someone who is very familiar with the proper operating environment for the program (for example, a programmer).
c) The quality of the program needs to be improved using program tests, so the tests should be repeated over an extended period of time.
d) If the program is modified after the tests are complete, the tests should be performed again. The exact same data that was used in previous tests should be prepared again.

Q54. Which of the following is the appropriate statement concerning the maintenance of a program that is currently in operation?

a) Programs that are currently in operation should be modified directly to prevent confusion.
b) Even if there are changes to the system development specifications, the original state should be preserved.
c) An agreement with a specialist is essential for program maintenance work, and the causes of failures should be removed remotely.
d) Programs that are currently in operation should not be modified directly, but copied over to a test machine for modification work.

Q55. The estimated person-hours for developing a certain system was 150 person-months. Up until now, 60 person-months have been invested, and the overall system is behind schedule at 30 percent completion. If the same level of productivity is maintained, which of the following is the number of person-months over the estimate needed to complete system development?

a) 50
b) 90
c) 105
d) 140

Q56. Which of the following is appropriate as a description of security wires?

a) They are attached to prevent printers and racks in the office from falling over in the event of an earthquake.
b) They are attached to fasten notebook computers and small devices in place and prevent theft.
c) They are attached to each computer to keep all the peripheral devices together.
d) When a security wire is attached, only the designated users can use the device.

Q57. Which of the following are the virus that infect files created with word processing and spreadsheet software?

a) Boot sector viruses
b) Program viruses
c) Stealth viruses
d) Macro viruses

Q58. Which of the following is the system in database management systems that performs searches and updates data within the database online at the request of clients connected to the server?

a) Dual system
b) Online transaction processing system
c) Duplex system
d) Client/server system

Q59. When selecting four (4) numbers from one (1) to twenty (20), which of the following are the odds of selecting the same four (4) numbers as the winning ticket? Each number can only be selected once.

a) 1/24
b) 1/480
c) 1/4845
d) 1/16000

Q60. When comparing two-layer and three-layer client/server systems, which of the following is descriptive of three-layer systems?

a) Application development and maintenance work is less efficient.
b) The communications traffic between the client and server is more easily increased.
c) Even if the data processing logic is changed, the impact on the client module can be kept to a minimum.
d) The database used is split into three functional layers, so performance is improved.

Q61. Which of the following correctly describes preparing a backup for computer and disk device failures?

a) 10 MB of space is sufficient for the backup media.
b) Backing up can be performed at any time of the day.
c) Backing up is only performed when important data is saved.
d) At least two backup files should be created and stored in different locations.

Q62. Which of the following is the most appropriate as a description of a bridge, a component of LANs?

a) It amplifies a cable's electrical signal to extend the cable.
b) It connects multiple LANs that use the same data link control protocol.
c) It connects multiple LANs and WANs.
d) It converts the protocols of LANs and WANs of different protocols and connects them.

Q63. When designing an input screen, which of the following needs to be considered?

a) The proficiency of each user varies, so input checks for operations such as registering, updating, and canceling input data should be omitted to improve operability.
b) The operation method should be designed to prevent incorrect operations. The system should stop if incorrect operations are performed.
c) Form input screens should have a uniform design whether the form is submitted internally or to customers.
d) Help functions should be made available for only those items that require an explanation, and the screen should be made as simple and easy-to-understand as possible.

Q64.

You are tasked with creating a database to manage where computers are installed at a company that has offices in several buildings. You create an "asset" table, a "room" table, and a "building" table, and link each of them together. When new data is entered, the data in the referenced table must already exist. Which of the following is the appropriate order of input? Here, the underlined items in each table are either primary or foreign keys.

Asset

Computer number	Building number	Room number	Model

Room

Building number	Room number	Room name

Building

Building number	Building name

a) "Asset" table →"Building" table →"Room" table
b) "Building" table →"Room" table →"Asset" table
c) "Room" table →"Asset" table →"Building" table
d) "Room" table →"Building" table →"Asset" table

Q65.

Which of the following is a benefit of virtual storage systems?

a) Increases the effective access speed of the main memory.
b) Increases the apparent storage capacity of the main memory.
c) Reduces power consumption.
d) Information stored on main memory even if power is turned off.

Q66.

Which of the following is the input device classified as a pointing device, and used for graphic input on CAD systems?

a) OCR
b) OMR
c) Image scanner
d) Tablet

Q67.

Which of the following is the technology used to encrypt e-mails when sending and receiving them?

a) BASE64
b) GZIP
c) PNG
d) S/MIME

Q68.

Which of the following an appropriate statement concerning CPU clock frequency?

a) The clock frequency determines the timing of CPU command execution. The higher the clock frequency, the faster the computer executes commands.
b) The clock frequency determines the speed of LAN communication. The higher the clock frequency, the faster the speed of LAN communication.
c) The clock frequency determines the rpm at which the magnetic disk spins. The higher the clock frequency, the higher the rpms and transfer rate of the magnetic disk.
d) The clock frequency is a reference for the computer's internal clock. When the clock frequency is doubled, the interrupt interval is reduced by half, and the real-time processing speed increases.

Q69.

The results of a spreadsheet software skills test given to 100 people are shown in the table below. Which of the following is the correct average, median, and mode for the test results?

Score	0	10	20	30	40	50	60	70	80	90	100
People	2	4	7	14	9	11	18	14	16	4	1

	Average	Median	Mode
a)	53.1	60	60
b)	52.9	40	40
c)	60	40	80
d)	53	45	55

Q70.

Which of the following is an appropriate statement concerning an Internet service?

a) FTP is a service for transferring files.
b) Telnet is an information sharing service where people that register for a newsgroup receive messages from other group members.
c) WWW is a service for exchanging messages.
d) Net news is a service that allows computers to be operated remotely over a network.

Q71. Printing for jobs (*A*)-(*C*) is performed via spooler. Processing starts simultaneously for each job. Processing for Job (*A*) finishes in 10 seconds, Job (*B*) in 70 seconds, and Job (*C*) in 80 seconds, and then the printing request is sent. After the spooler receives the processing request, the next printing job starts when the one before it finishes. The printing time for each job is 30 seconds. Which of the following is the number of seconds it takes for all printing to finish after the jobs are started?

a) 100
b) 110
c) 120
d) 130

Q72. Which of the following is appropriate as a description of a Java servlet?

a) A program developed using Java that is executed server-side according to browser requests.
b) A mechanism for embedding Java code into HTML and dynamically generating Web pages, and is executed on the Web application server-side according to server requests.
c) A program developed using Java as well as a Java class created according to certain rules in order to act as a component.
d) A Java program downloaded to a Web browser over a network and executed by the browser.

Q73. Which of the following languages allows a document's structure to be described by inserting tags within the document?

a) Schema language
b) Scripting language
c) Style specification language
d) Markup language

Q74. You want to save image data taken on a digital camera to a removable media to import it to your computer. Which of the following is appropriate to use as memory for this media?

a) Flash memory
b) DRAM
c) SDRAM
d) SRAM

Q75. Which of the following is an open source OS that can be freely modified and redistributed as long as certain rules are followed?

a) MS-DOS
b) Windows Vista
c) UNIX
d) Linux

Q76. Which of the following is an international standard for digital compression coding covering broadcast quality for everything from analog TV to HDTV, and is used in digital broadcasts and DVD-Video?

a) MPEG-1
b) MPEG-2
c) MPEG-4
d) MPEG-7

Q77. Which of the following describes a multimedia authoring tool?

a) Software for creating applications that combine images, sound, text, and other data on the screen.
b) A tool for distributing audio, video, and other multimedia data over the Internet.
c) A tool for compressing images, sound, text, and other multimedia data.
d) A tool for importing video signals from VCRs and other devices, and converting them into digital data for use on a computer.

Q78. Data dated October 21, 2007 is stored in a database as an eight (8) -digit decimal number (20071021). Which of the following formulas will extract the month from this number (D)? Here, x/y is the quotient of x divided by y (fraction portion is dropped) and $x\%y$ is the remainder of x divided by y.

a) (D% 10000) % 100
b) (D% 10000) / 100
c) (D/10000) % 100
d) (D/10000) / 100

Q79.

Which of the following is the act of fraudulently obtaining passwords and other confidential information from individuals within an organization by pretending there is an emergency situation?

a) Social engineering
b) Trojan horse
c) Password cracking
d) Springboard attack

Q80.

There is an OS that can set read, update, and file create access rights for directories. These three (3) types of access are enabled or disabled using one (1) bit each. When three (3) bits are set using an octal number from zero (0) – seven (7), which of the following is correct according to the trial and error results shown below?

[Trial and error results]
① When set to 0, no type of access was allowed.
② When set to 3, read and update access was allowed, but create access was not.
③ When set to 7, all types of access were allowed.

a) If set to 2, read and create are allowed.
b) If set to 4, create only is allowed.
c) If set to 5, update only is allowed.
d) If set to 6, read and update are allowed.

Q81.

Which of the following is appropriate as an interface that can connect multiple peripheral devices using a hub?

a) Serial ATA
b) RS-232C
c) IEEE1284
d) USB

Q82.

When dividing the costs of a computer system into initial and running costs, which of the following costs are included in the initial costs?

a) Operator costs
b) Equipment maintenance costs
c) Software costs
d) Equipment leasing costs

Q83.

Which of the following is a technical specification for developing new Java programs by making frequently used functions of programs developed in Java into components for reuse and combining them?

a) Java applet
b) Java application
c) JavaScript
d) JavaBeans

Q84.

Company *A* uses a phone line once a day to transmit daily report data. They installed data compression/decompression software to reduce costs, and the actual calculated compression rate (post-compression data/pre-compression data) was 60%. The basic fee for the phone line is 2,600 yen per month, and the usage fee is 40 yen per minute (rounded up). Before installing the software, the line was used for an average of 50 minutes and 30 seconds a day. The cost of the software is 112,000 yen, and the amount of time the line is used is proportional to the size of the data transmitted. Which of the following is the number of months it will take to recover the cost of the software? Here, there are 20 operating days per month.

a) 6
b) 7
c) 8
d) 9

Q85.

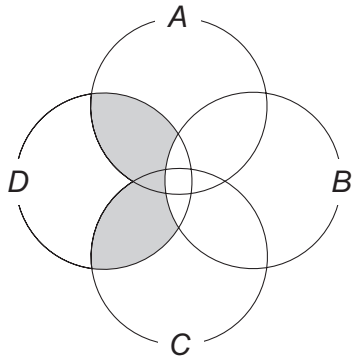
A certain store carries about 200 different products. Which of the following is suited to use a pull-down or pop-up menu on the new product data registration screen?

	Item	Format and rules
a)	Product number	5-digit alpha-numerical code assigned to each individual product
b)	Product name	Up to 40-character name (Japanese) assigned to each individual product
c)	Product category	Up to 10-character name (Japanese) assigned to each of the 5 categories
d)	Price	Up to 8-digit value from 10,000 to 100,000 yen

Q86. Which of the following is a measure designed to detect leaks of confidential data?

a) Limit the number of users that can access confidential data and familiarize them with password management.
b) Keep user access logs for confidential data and check them regularly.
c) Prepare a manual for handling confidential data and educate the users.
d) Prepare backups of confidential data and store them in a safe place.

Q87. In the Venn diagram below, which of the following appropriately expresses the search condition for the darkened areas?



a) (not *B*) and (*A* and *D*) and (*C* and *D*)
b) (not *B*) and (*A* and *D*) or (*C* and *D*)
c) (not *B*) and (*A* or *D*) or (*C* or *D*)
d) (not *B*) and (*A* or *D*) and (*C* or *D*)

Q85. Which of the following is appropriate as a precaution that should be taken when designing a server room?

a) Install a vibration-free floor.
b) Install many doors.
c) Run water pip es through attic.
d) Make sure it gets a lot of sunshine.

Medium question 1

Read the following paragraph on computer security and answer questions **Q89** through **Q92**.

The company where Mr. *B* works is infected by a computer virus. Following the instructions of his supervisor, Mr. *B*, who is in charge of security in the information systems department, reviews the computer security rules. Some of the rules are as follows:

Excerpt from computer security rules
(1) Run a virus scan daily.
(2) Disconnect the network cable immediately in the event of a virus infection.
(3) Use the firewall's packet filtering function.
(4) Manage internal security according to the stipulations for physical safety management measures in the "Guidelines for Personal Information Protection Laws Concerning Fields of Economy and Industry".

Q89.
Technology

Mr. *B* decides that something else is needed in addition to the daily virus scans in order to use the anti-virus software effectively. Which of the following is appropriate as an additional item?

a) Do not perform Windows Update since anti-virus software has been installed.
b) Always open and check the contents of attachments sent by e-mail from unfamiliar senders.
c) Turn the anti-virus software's auto update function on and keep the pattern files up to date.
d) Save files brought in from outside and e-mail attachments to high security computers.

Q90.
Technology

Mr. *B* is told by his supervisor to add stipulations concerning what to do after the network cable is disconnected to Rule (2) of the computer security rules. Which of the following is the appropriate action to take by computer users?

a) Tell the other users to shut down their computers.
b) Access the internal server and check to see whether the same virus has infected computers in the past.
c) Make a call to the person in charge at the information systems department.
d) Send an e-mail to the person in charge at the information systems department to notify them of the situation.

Q91.

Technology

In accordance with Rule (3) of the computer security rules, Mr. *B* decides to use the firewall's packet filtering function. Which of the following is appropriate as a description of the packet filtering function?

a) A function that looks up IP addresses, TCP port numbers, UDP port numbers, and other information, and allows only pre-approved packets through
b) A function that blocks access to non-work-related websites
c) A function that restricts server access to allow only a certain number of packets
d) A function that checks for virus infections and removes any that are detected

Q92.

Technology

Which of the following is not specifically addressed in the stipulations for physical safety management measures in the "Guidelines for Personal Information Protection Laws Concerning Fields of Economy and Industry"?

a) Entrance access control
b) Disclosure of other people's personal information
c) Prevention of theft
d) Physical protection of devices and equipment

Medium question 2

Read the following paragraph on database construction and answer questions **Q93** through **Q96**.

Company *A* manufactures bread at 10 plants. In recent years, the kinds of bread handled have increased. In order to streamline purchasing of the ingredients and make information on past purchases more readily searchable, the company plans to computerize work that was previously performed manually. Accordingly, the purchasing department is tasked with designing the database structure. The conditions for the product (bread) and the ingredients are as follows:

(1) The type of the product determines where it will be manufactured.
(2) Each product uses at least one (1) ingredient.
(3) Each ingredient is used in at least one (1) product.

The database structure designed by the purchasing department is as follows:

Product table

Product ID	Manufacturing date	Planned manufacturing volume	Plant ID

Ingredient table

Ingredient ID	Ingredient name

Ingredient usage table

Product ID	Ingredient ID	Amount used

Q93. Technology

Which of the following is the appropriate combination of (*A*) and (*B*) for the primary and foreign keys of the ingredient usage table?

In the ingredient usage table, [*A*] describes the relation between product and ingredient, and [*B*] is the primary key. Based on the foreign key concept, product IDs that do not exist in the product table and ingredient IDs that do not exist in the ingredient table cannot be registered in the ingredient usage table.

	A	*B*
a)	Many-to-many	Product ID and ingredient ID
b)	One-to-one	Ingredient ID
c)	One-to-many	Product ID
d)	Many-to-one	Product ID and ingredient ID

Q94.
Technology

The purchasing department uses one (1) shared database. Which of the following is the function that prevents others from updating or referencing data when an employee is entering data?

a) Shared lock
b) Restriction
c) Access right
d) Exclusive lock

Q95.
Technology

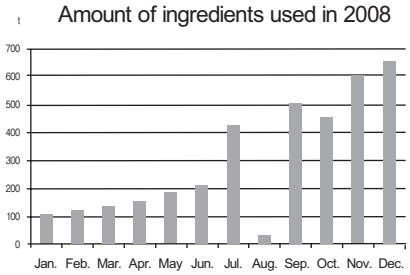
You want to calculate the amount of ingredients used per product based on the ingredient usage table. Which of the following is the appropriate calculation method?

a) Group by ingredient ID and add the amount used by product.
b) Group by product ID and add the amount used by ingredient.
c) After adding the total amount of ingredients used, sort it by product ID.
d) The amount of each ingredient cannot be calculated.

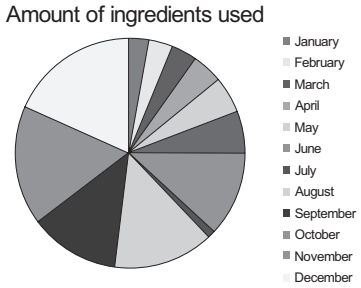
Q96.
Strategy

You want to put the monthly amount of ingredients used between January and December 2008 into a graph for comparison. Which of the following graphs is best suited for that purpose?

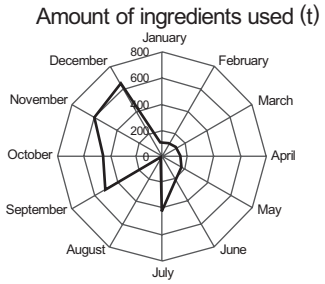
a)



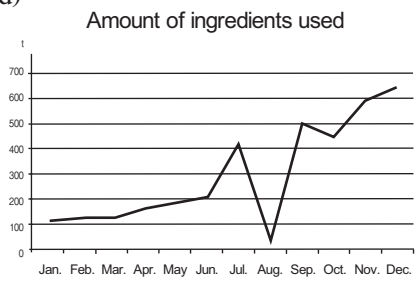
b)



c)



d)



Medium question 3

Read the following paragraph on product data analysis and answer questions **Q97** through **Q100.**

The planning and development department at Company *P*, a Japanese confectionary manufacturer, decides to analyze sales performance by division. Mr. *S* from the planning and development department prepares the table below showing the sales performance of each division.

Table: Sales performance by Division

Unit: 1,000 yen

	Budget	Actual	Compared to budget	Compared to previous year
Kawasaki office	451	432	96%	103%
Yokohama office	772	605	78%	92%
Kanagawa branch	**1,223**	**1,037**	**85%**	**96%**
Hamamatsu office	377	365	97%	107%
Mishima office	590	523	89%	96%
Shizuoka branch	**967**	**888**	**92%**	**98%**

Q97.

Strategy

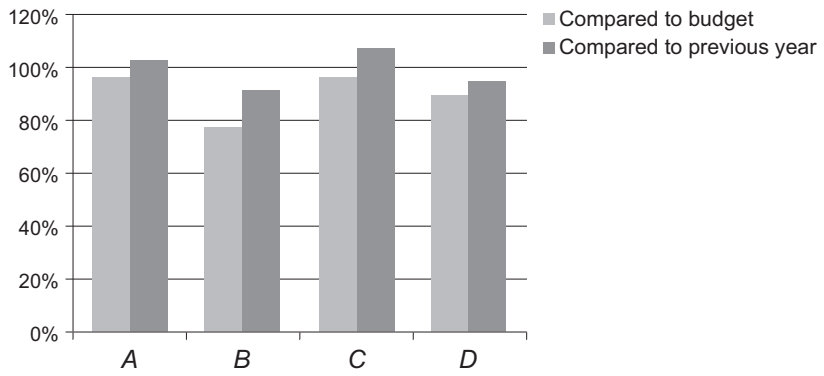
Which of the following is appropriate as an analysis of the sales performance by division?

a) Sales grew the most compared to the previous year at the Yokohama office.
b) Comparing the sales offices, the Yokohama office has the highest sales volume, but the Hamamatsu office posted results closest to the budget.
c) Sales have declined at all the sales offices compared to the previous year.
d) Comparing the Kanagawa and Shizuoka branches, the Kanagawa branch posted results closest to the previous year's performance.

Q98.

Strategy

The graph below was created based on the table showing the sales performance by division. Which of the following sales offices is represented by *B* in the graph?



a) Mishima office
b) Yokohama office
c) Kawasaki office
d) Hamamatsu office

Q99.

Technology

You decide to calculate the composition ratio of each office's sales performance based on the by-division sales performance data entered in the spreadsheet software. If you are going to copy the formula entered in cell D3 to cells D4 to D7, which of the following the appro priate formula to use?

	A	B	C	D	E	F
1						Unit: 1,000 yen
2		Budget	Actual	Composition ratio	Compared to budget	Compared to previous year
3	Kawasaki office	451	432		96%	103%
4	Yokohama office	772	605		78%	92%
5	Hamamatsu office	377	365		97%	107%
6	Mishima office	590	523		89%	96%
7	Total	2190	1925		88%	96%

a) =C$3 / C$7
b) =C3 / C7
c) =C3 / $C7
d) =C3 / C$7

Q100.

Strategy

You decide to create a graph showing the composition ratio of each office's sales performance based on the by-division sales performance data entered in the spreadsheet software. Which of the following is appropriate as a graph that shows sales performance composition ratios?

a) Line graph
b) Stacked bar graph
c) Pie chart
d) Scatter plot