



April 2017

IT Passport Examination

Questions must be answered in accordance with the following:

Question Nos.	Q1 – Q100
Question Selection	All questions are compulsory.
Examination Time	9:30 – 11:30 (120 minutes)

Instructions:

1. Use a pencil. If you need to change an answer, erase your previous answer completely and neatly. Wipe away any eraser debris.
2. Mark your examinee information and your answers in accordance with the instructions below. Your answer will not be graded if you do not mark properly. Do not mark nor write on the answer sheet outside of the prescribed places.
 - (1) **Examinee Number**
Write your examinee number in the space provided, and mark the appropriate space below each digit.
 - (2) **Date of Birth**
Write your date of birth (in numbers) exactly as it is printed on your examination admission card, and mark the appropriate space below each digit.
 - (3) **Answers**
Select one answer (a through d) for each question.
Mark your answers as shown in the following sample question.

[Sample Question]

Q1. In which month is the spring IT Passport Examination conducted in 2017?

- a) February b) March c) April d) May

Since the correct answer is “c” (April), mark your answer sheet as follows:

[Sample Answer]

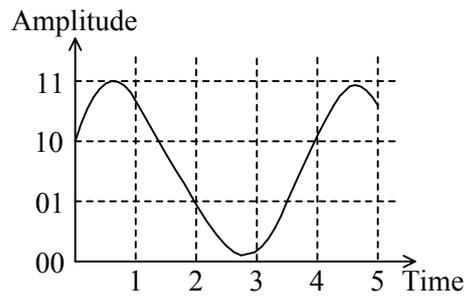
Q1	<input type="radio"/> a	<input type="radio"/> b	<input checked="" type="radio"/> c	<input type="radio"/> d
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**Do not open the exam booklet until instructed to do so.
Inquiries about the exam questions will not be answered.**

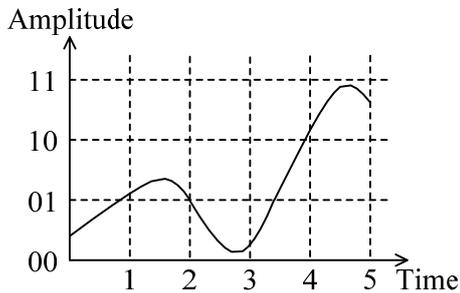
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Answer questions Q1 through Q45 concerning technology.

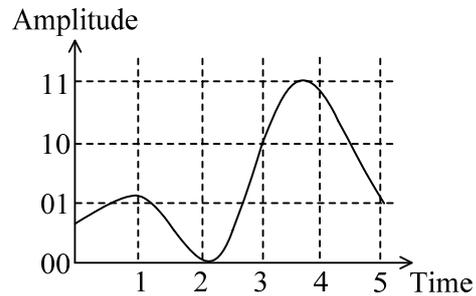
Q1. An analog sound signal is digitized. Sampling is performed at Time 1 through Time 5 in the figure below, and four-level quantization is performed; in other words, the levels closest to the sampling point are selected. After that, two-bit encoding is performed. The result is “11 01 00 10 11”. When digitization is performed in the same way, which of the following figures represents the sound signal that results in “01 00 10 11 01”?



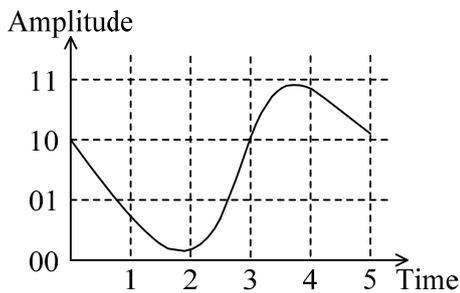
a)



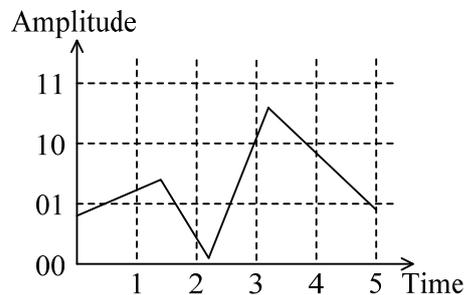
b)



c)



d)



Q2. A search is performed by specifying a character string comprised of multiple alphabetic characters and one delimiter character “.” (period). An “*” (asterisk) represents an arbitrary character string with zero or more characters, and a “?” (question mark) represents an arbitrary single character. Which of the following character strings matches the character string represented below?

X*.Y??

- a) XY.XYY b) XXX.YY c) XYX.YXY d) YXYX.YXY

Q3. As shown in the table below, columns *A* and *B* contain all possible combinations of numbers 0 through 9, and the table has 100 rows in total. When all the rows where the value in column *A* is equal to or less than the value in column *B* are removed from the table, how many rows remain in the table?

<i>A</i>	<i>B</i>
0	0
0	1
0	2
⋮	⋮
9	8
9	9

- a) 40 b) 45 c) 50 d) 55

Q4. As shown in Figure 1, there is a box that generates a single output in response to two inputs. The input to this box is either “Agree” or “Disagree.” The output “Agree” is generated only when both inputs are “Agree,” and in other cases the output “Disagree” is generated. When three inputs are entered into two boxes as shown in Figure 2, which of the following is the correct description concerning the output? Here, each box of Figure 2 has the same function as the box of Figure 1.

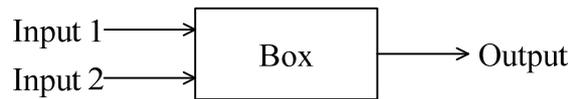


Figure 1

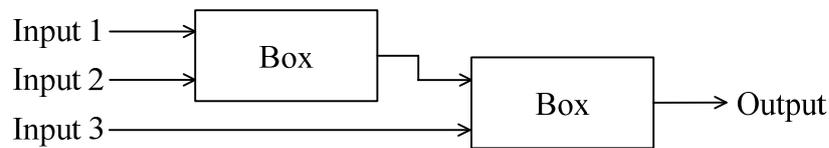


Figure 2

- a) The output “Agree” is generated at all times when one or more inputs are “Agree.”
- b) The output “Agree” is generated at all times when two or more inputs are “Agree.”
- c) The output “Disagree” is generated only when two or more inputs are “Disagree.”
- d) The output “Agree” is generated only when all three inputs are “Agree.”

Q5. There is a desk that can hold at most four (4) files. On this desk, six (6) files *A* through *F* are used for a job. When the fifth file needs to be put on the desk, the file with the longest time since the last use among the four (4) will be put in a drawer. If the files are put on the desk and referenced in order of *A, B, C, D, E, C, B, D, F, B*, which of the following is the last file to be put in the drawer?

- a) *A* b) *B* c) *D* d) *E*

Q6. Which of the following can be created using HTML?

- a) Web browser b) Web page
- c) Cookie d) SQL program

Q7. The procedure described below is executed for two variables x and y , in order from step (1) through step (4). When the procedure is terminated, what is the resulting value of x ?

[Procedure]

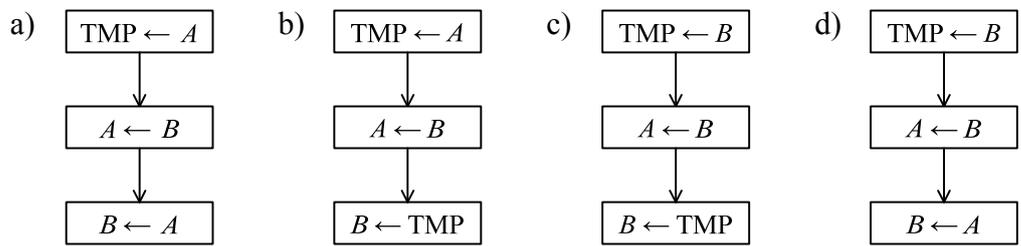
- (1) Assign 2 to x , and 3 to y .
- (2) Subtract 1 from the value of y , and assign the resulting value to y .
- (3) Add the values of x and y , and assign the resulting value to x .
- (4) If the value of y is 1, terminate the procedure. Otherwise, return to step (2).

- a) 4 b) 5 c) 7 d) 8

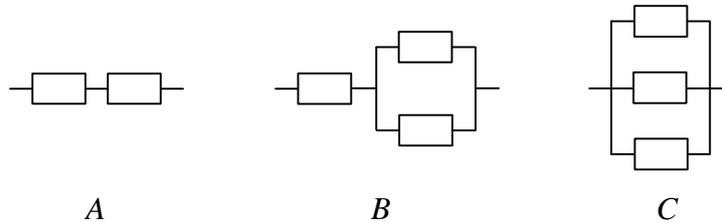
Q8. Which of the following is an appropriate description concerning the Java language?

- a) It is a markup language that is used for describing web pages.
- b) It is a language that is developed for scientific and engineering calculations.
- c) It is an object-oriented language that provides platform-independent portability.
- d) It is a language that is developed for business-oriented calculations.

Q9. The data is exchanged between variable A and variable B . When variable TMP is used to temporarily store data, which of the following is the procedure for exchanging data correctly? Here, " $x \leftarrow y$ " indicates that the content of " x " is replaced with the data of " y ".



Q14. The system configurations *A* through *C* are made up by connecting multiple identical devices. Which of the following is a list where *A* through *C* are sorted in descending order of availability? Here,  represents a device. The parallel connection requires only one (1) of the devices to be functional, while the series connection requires all devices to be functional.



- | | |
|-------------------|-------------------|
| a) <i>A, B, C</i> | b) <i>B, A, C</i> |
| c) <i>C, A, B</i> | d) <i>C, B, A</i> |

Q15. Which of the following is an explanation of characteristics of a dual system?

- a) It provides two (2) sets of systems that perform the same processing and checks the correctness of the processing by comparing the results. If one of the systems fails, it isolates the failed system and continues the processing.
- b) The same two (2) devices are used, so that the processing capability can be increased to double that of a simplex system.
- c) It provides a currently used system for performing online processing and also a backup system that is made on standby while performing batch processing. In the event of a failure in the currently used system, it switches to the backup system, starts the online processing, and continues the service.
- d) It connects multiple devices in series and configures them in such a way that the load of each function is assigned to one of them, so that processing capability is high. But if any one of the devices in charge of any function fails, it becomes unable to provide the service.

Q16. When a computer system operates for 1,200 hours, the status of the normal operation time and the repair time is shown in the table below. What is the value of MTTR (Mean Time To Repair, in hours) of the system?

Elapsed time (Hours)	Status
0 through 250	Normal operation
250 through 265	Repair time
265 through 580	Normal operation
580 through 600	Repair time
600 through 990	Normal operation
990 through 1,000	Repair time
1,000 through 1,200	Normal operation

- a) 10 b) 15 c) 20 d) 45

Q17. There is a system where a full backup is made after closing time every Sunday, and an incremental backup is made after closing time on Monday through Saturday. On a Wednesday, a failure happened during business hours, so a decision was made to restore data to the state at the time of closing on Tuesday by using backup files. Which of the following contains all the necessary backup files for restoring data? Here, an incremental backup file means a backup file that contains only the data that has been modified since the previous backup file (a full backup file or an incremental backup file) was made.

- a) A full backup file on Sunday, incremental backup files on Monday and Tuesday
- b) A full backup file on Sunday, an incremental backup file on Tuesday
- c) Incremental backup files on Monday and Tuesday
- d) An incremental backup file on Tuesday

Q18. Which of the following is an appropriate combination of software that includes only OSS (Open Source Software)?

- a) Internet Explorer, Linux, PostgreSQL
- b) Internet Explorer, PostgreSQL, Windows
- c) Firefox, Linux, Thunderbird
- d) Firefox, Thunderbird, Windows

Q19. Which of the following is an appropriate description concerning the OS for PCs?

- a) Only one type of OS can be installed and executed on one PC.
- b) There is no OS for PCs that are equipped with a 64-bit CPU.
- c) When an OS is upgraded to a new version, any software operating with the old version of the OS can no longer be used.
- d) There exist some OSs for PCs that can be started up by using an external storage device, such as a CD-ROM and USB memory, other than the hard disk.

Q20. Which of the following is the most appropriate purpose of installing a business application software package instead of self-developed application software?

- a) To enhance the environment of development
- b) To reduce the cost of development
- c) To acquire knowledge of software development methods
- d) To improve the skills of application developers

Q21. Which of the following is the most appropriate explanation of a “multimedia authoring tool”?

- a) It is a tool that is used to create multimedia content by combining materials, such as image, sound, and text, on the screen.
- b) It is a tool that is used to play back multimedia content, such as image, sound, and text, in the PC environment.
- c) It is a tool that is used to search for multimedia information, such as image, sound, and text.
- d) It is a tool that is used to interactively define schema for multimedia database containing information, such as image, sound, and text.

Q22. What is the minimum amount (in Mbytes) of virtual memory that is required under the conditions below?

[Conditions]

1. Memory required for the OS: 200 Mbytes
2. Memory required for applications: An amount of 50 Mbytes is required for each application, and a total can be calculated by multiplying it by the number of applications that run concurrently. Eight applications run concurrently.
3. Memory required for controlling main memory or other related functions: 512 Mbytes of main memory and another 20 Mbytes is required.
4. Required virtual memory: The required amount is the sum of the above items 1 through 3.

a) 762

b) 782

c) 1,112

d) 1,132

Q23. On a standalone PC, sequential access to a database is taking longer to process than before. When the number of records remains almost unchanged, which of the following can be considered to be the cause?

- a) Unnecessary records, such as already deleted data, are read.
- b) Data has been added and deleted many times, so the record area in the database file is fragmented.
- c) Access takes longer as free space in the database has increased.
- d) Because of hardware deterioration, data transmission between the hard disk and the processor has become slower.

Q24. Which of the following is an appropriate description of AR (Augmented Reality)?

- a) A technology that creates memory space beyond the amount of memory actually installed and makes this available as main memory
- b) A technology that overlays and displays computer-generated information on camera footage or other content that captures real environments
- c) A technology that analyzes and digitizes the human voice by using a computer in order to utilize it for commanding a computer, entering characters, and so on
- d) A science or a technology for emulating human intellectual work such as inference, learning, and ability to understand language, by using a computer

Q25. Which of the following is a technique that can be used to compress both video and audio data?

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

Q26. The “Purchase_list” table in a relational database manages the purchases of products. This table should be normalized and divided into a “Purchase” table and a “Product” table. Which of the following is the most appropriate field that should be contained in common in the two divided tables? Here, each purchase includes only one product, and can be uniquely identified by Purchase_number. Also, each product can be uniquely identified by Product_number.

Purchase_list

Purchase_number	Product_number	Product_name	Count	Unit_price	Payment_method	Delivery_date
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- a) Purchase_number b) Payment_method
c) Product_number d) Product_name

Q27. When designing a database, which of the following is used for the purpose of organizing and representing the relation of data?

- a) E-R diagram b) Arrow diagram
c) Gantt chart d) Flowchart

Q28. When a relational database is constructed according to the processes (A through C) below, which of the following is the appropriate execution sequence?

- A: Identifying the data items to be managed
B: Analyzing the target business operations
C: Creating the relational database tables

- a) $A \rightarrow B \rightarrow C$ b) $B \rightarrow A \rightarrow C$
c) $B \rightarrow C \rightarrow A$ d) $C \rightarrow A \rightarrow B$

Q29. Which of the following is the relational operation that extracts only the rows of a product whose price is 10 dollars or more, from the “Product” table of the relational database shown below?

Product

Product number	Product name	Price (dollars)
S001	Scissors	20
S002	Pencil	5
S003	Notebook	12
S004	Eraser	8
S005	Ruler	15

- a) Join b) Projection c) Selection d) Union

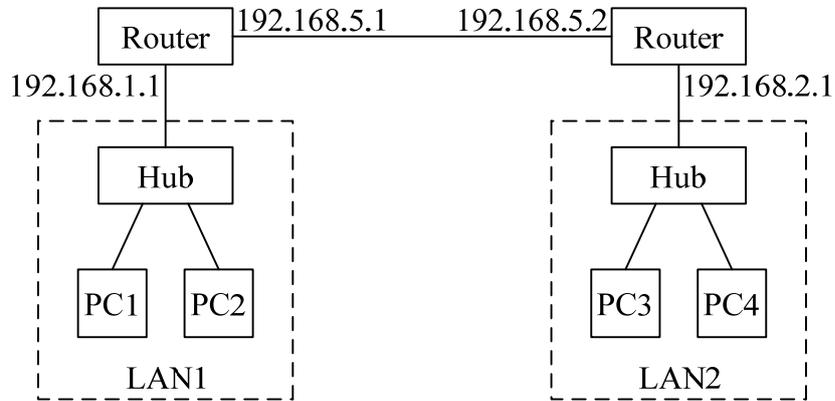
Q30. In some web sites, information about the viewing of them by using a browser is stored in a viewer's PC through the browser. Later, when the web sites are accessed, the stored information is used so as to enhance the convenience of viewing. Which of the following is a mechanism that is used for this purpose?

- a) Cookie b) SQL c) URL d) XML

Q31. Which of the following is an appropriate role of a subnet mask?

- a) Identifying a MAC address on an Ethernet from an IP address
- b) Separating a network address included in an IP address and a host address of the individual computer that belongs to the network
- c) Associating a private IP address with a global IP address that is used for relaying between an internal network and the Internet
- d) Associating a domain name of destination with an IP address

Q32. There is a TCP/IP network that is configured to enable PC1 through PC4 to communicate with each other by using hubs and routers. When the IP addresses that are assigned to each port of the routers are as shown in the figure below, which of the following is an appropriate IP address of the default gateway to assign to PC1?



- a) 192.168.1.1 b) 192.168.2.1 c) 192.168.5.1 d) 192.168.5.2

Q33. Among the cases of communication between PCs, servers, communication devices, printers, and other devices, which of the following needs to use a WAN?

- a) Multiple PCs and a file server are connected to a LAN in Osaka branch office, and files stored in the file server are made to be accessible from any PC connected to the LAN.
- b) Inside a house, a PC and a printer are connected with Bluetooth, and documents created on the PC are printed on the printer.
- c) Inside a server room, a PC and a web server are connected to a hub, and the web server is maintained from the PC.
- d) A PC connected to the LAN in Kyoto-City sales office accesses the server in Tokyo head office and uploads sales information.

Q34. A DHCP server has been installed in a LAN. When a PC that automatically acquires information from the DHCP server is to be connected to the LAN, which of the following will be set in the PC?

- a) IP address
- b) Latest virus definition file
- c) Address list of spam mail
- d) Mail addresses assigned by the provider

Q35. Which of the following contains all and only the authentication methods where the information required for the authentication does not have to be changed nor updated regularly?

- A Iris recognition
- B Authentication with a digital certificate
- C Password authentication

- a) A
- b) B
- c) C
- d) A, B

Q36. Which of the following is an appropriate operation example of a server room where security should be maintained?

- a) In order to simplify management, an ID card for entry and exit is issued to each department, not to individuals.
- b) In order to make it possible for all employees and visitors to see where the server room is, a room name sign is posted at the entrance.
- c) In order to prevent leakage of entry and exit information, entry and exit records are not collected.
- d) In order to prevent unauthorized activities, working in a server room is not allowed when a supervisor is absent.

Q37. In the description concerning transmitting confidential data by using public key cryptography, which of the following is an appropriate combination of words to be inserted into blanks *A* and *B*?

A data receiver *X* prepares its own A key and B key and delivers the A key to a data sender *Y*. The data sender *Y* uses the A key that is delivered from the receiver *X* to encrypt data, and sends the encrypted data to the receiver *X*. The receiver *X* uses its own B key to decrypt the encrypted data that is received from the sender *Y*.

	<i>A</i>	<i>B</i>
a)	public	symmetric
b)	public	private
c)	private	public
d)	private	symmetric

Q38. Concerning information security, which of the following is an event where availability is compromised?

- a) A USB memory that stores a copy of confidential information was stolen.
- b) A customer information management system has been operated with incorrect customer information.
- c) An in-house server was hacked and confidential information was leaked.
- d) An electronic payment system for business partners suffered a DoS attack and became unable to perform processing.

Q39. When an authentication method is classified into three (3) categories of “authentication by memory”, “authentication by possession”, and “authentication by personal physical and behavioral characteristics”, which of the following is categorized as “authentication by personal physical and behavioral characteristics”?

- a) ID card authentication
- b) Mnemonic authentication
- c) Biometric authentication
- d) Password authentication

Q40. Which of the following is the name given to a file that is provided to fix a software problem?

- a) Pattern file
- b) Backup file
- c) Batch file
- d) Patch file

Q41. Among the descriptions *A* through *D* of how to handle a contact list that includes customer names, addresses, and other information, which of the following contains all and only the appropriate descriptions in terms of personal information protection?

- A* Even if a customer asks to check their own registration information, this cannot be disclosed on the grounds of information protection.
- B* A list of all names and addresses is extracted from the contact list and is sent to all the customers to have them check for errors.
- C* A CD-ROM that includes contact list data is to be shredded before it is discarded.
- D* Contact list data is to be encrypted when it is stored in a file.

- a) *A, C, D*
- b) *A, D*
- c) *B, C*
- d) *C, D*

Q42. Which of the following is an appropriate explanation of phishing?

- a) An attacker's act of sending a command via network to a virus-infected PC and having it execute an illegal program
- b) Sending an e-mail that pretends to be from a financial institution, directing a user to a false web site, and illegally acquiring a PIN, a credit card number, or other information
- c) Identifying a password by using a dictionary data that enumerates strings that are likely to be used as a password
- d) Sending a large number of packets from multiple computers to a target server and disabling the function of the server

Q43. The communication protocol between a browser and a web server was changed from HTTP to HTTPS. Which of the following does this achieve?

- a) Improvement of transfer rate between a client PC and a web server
- b) Prevention of computer virus infection
- c) Protection of confidentiality in communication
- d) Improvement of browser display speed

Q44. Which of the following is an appropriate explanation of a DoS attack?

- a) It refers to interrupting a network service by sending a large number of requests.
- b) It refers to spying on the data of other people on a communication path.
- c) It refers to trying various combinations of letters or numbers to unlock an account.
- d) It refers to using a service on a network illegally by pretending to be another person.

Q45. Which of the following is an appropriate description concerning the characteristics of cross site scripting?

- a) It is an attack by which data being considered too long is sent to an application on a Web site where the length of input data is not checked.
- b) It is an attack that illegally uses the function of recording, invoking, and executing the operating procedures of word processing software or spreadsheet software.
- c) It is an attack that intrudes into a computer under the disguise of a useful program so that a user installs it unsuspectingly.
- d) It is an attack that uses a vulnerability, whereby a malicious script included in the data entered on a Web site is sent to a Web browser as it is.

Answer questions Q46 through Q65 concerning management.

- Q46.** When the test for system development is conducted in the order of unit test, integration test, system test, and operational test, which of the following is appropriate as an activity in the system test?
- a) It is verified that there is no error in each program.
 - b) It is verified by the developer that the performance requirements are being satisfied.
 - c) It is verified that there is no error in the interface between programs.
 - d) It is verified that business operations can be performed as defined in the requirements through actual operation by users.
- Q47.** The processes of system development include software requirements definition, software architecture design, software integration test, software installation, and software acceptance. Which one of the following activities is implemented during software acceptance? Here, the persons concerned with system development are divided into developers and users.
- a) The software for which development is complete is deployed in the production environment by the developers.
 - b) The developers interview the users for clarification of the functions and performance required of the software.
 - c) The users confirm that the software satisfies the requirements and is at a usable level.
 - d) The developers perform a review to confirm that the definition of software requirements satisfies the needs of the users.

Q48. Among the descriptions *A* through *D* below, which of the following is the list that contains all items that are to be considered in the design of easy-to-use user interface for system users?

A: The time to recover from a failure

B: The ease of learning methods of operation

C: The layout of pushbuttons

D: The size and color of text

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

Q49. A new system is required to operate 24 hours a day, 365 days a year. Which of the following is the development phase that involves making such a decision?

- a) Software acceptance b) Testing
c) Programming d) Requirements definition

Q50. When system development is conducted sequentially from upstream to downstream processes, a significant amount of rework might arise in the test phase that is performed by the system user. For the purpose of preventing such rework, which of the following is the method that is used to create trial models in an early stage and clarify user requirements?

- a) Object-oriented approach b) Spiral model
c) Data oriented approach d) Prototyping

Q51. When the system development activities are implemented, a plan is set up to complete the activities in 20 days by six (6) members having the same productivity. However, the plan is changed to have the activities finished in 15 days, and new members are added. When the productivity of the new members is half of the initially planned members, what is the minimum number of new members necessary for finishing the activities in 15 days?

- a) 1 b) 2 c) 4 d) 6

Q52. Which of the following is an appropriate description concerning project scope management?

- a) It defines and manages deliverables such as the products and services created by a project, as well as the activities necessary for their completion.
- b) It manages the activity path that requires the longest time through the entire project.
- c) It manages the events that may be advantageous or disadvantageous for the results of the project.
- d) It coordinates the interested persons of the implementation and results of the project.

Q53. Forms of communication include reciprocal-type communication, by which information is exchanged among two (2) or more parties; push-type communication, by which information is sent to specified persons; and pull-type communication, by which persons access necessary information under their own volition. Which of the following is a description of pull-type communication?

- a) Looking up progress meeting schedules on an internal bulletin board site
- b) Coordinating progress meeting schedules with key members via telephone
- c) Using a teleconferencing system to conduct progress meetings
- d) Attaching the minutes of progress meetings to email for distribution

Q54. Which of the following is a document that is created in a system development project and defines the targeted scope of development?

- a) Migration plan
- b) Integration test specifications
- c) Requirements specification
- d) User manual

Q55. In project management, it is necessary to manage cost, time, quality, and other factors. Which of the following is an appropriate description concerning project management?

- a) Since cost, time, and quality differ in order of priority according to constraints, a balance among these must be achieved.
- b) Since cost, time, and quality are all independent of each other, there is no need to achieve a balance among these.
- c) Since cost and quality are in direct proportion to each other, management can be performed with the focus on either one of these.
- d) Since cost and time are in inverse proportion to each other, management can be performed with the focus on either one of these.

Q56. Which of the following is an appropriate explanation of decomposition that is performed to create the WBS of a system development project?

- a) The cost and time required to create project deliverables can be estimated, and it is desirable that decomposition be performed up to the manageable level.
- b) When system development is outsourced, all decomposition of deliverables should be left to the discretion of the outsourcee that creates the deliverables.
- c) Since a meeting that is held to report the progress of a project is a means of communication, the meeting is not subject to decomposition.
- d) If there are some experiences in developing similar systems, it is not necessary to perform decomposition again.

Q57. In order to increase the productivity of programming activities in a system development project, the course of training to improve skills necessary for using development tools is planned for new project members. Which of the following is the most appropriate indicator that can be used to evaluate the effect of this plan?

- a) The total number of participants in training
- b) The number of times that training is implemented
- c) The amount of programs created in one day by each member
- d) The total hours of participation in training by each member

Q58. Which of the following is an appropriate activity for planning and implementing the points described below in order to maintain and preserve the project room and equipment used for system development?

A chamber to ensure confidentiality of test data is set up within a project room, and entrance and exit is controlled. The server that is set up for testing is connected to an uninterruptible power supply in order to prevent data loss due to a power outage.

- a) Asset management
- b) Environment management system
- c) Quality management system
- d) Facilities management

Q59. Which of the following activities aims at the maintenance and improvement of the service level through monitoring and review of the service status in order to implement the terms of agreement of an SLA?

- a) CSR
- b) ERP
- c) SLM
- d) SWOT

Q60. Which of the following is appropriate as an example of an item for evaluating the service level of a service desk that receives queries from system users over the telephone?

- a) Cost of the service
- b) Number of system failures
- c) Availability of the system
- d) Response time for queries

Q61. When a contract is signed between a user organization and an IT service provider, which of the following is the document that describes the consensus between the two parties in order to define the quality and scope of services?

- a) Service catalog
- b) Service document
- c) Service level agreement
- d) Service level requirements

Q62. Which of the following is classified as the C (i.e., Check) of the PDCA cycle for service management concerning a mail system?

- a) A review of server configuration was proposed to shorten the response time of the mail system.
- b) An availability target was set for the mail system, and necessary resources were clearly identified.
- c) The number of faults and the recovery time were measured for the mail system, and its availability was calculated from them and compared with the target value.
- d) Storage allocation and other system setup tasks were performed in accordance with details of the mail system design.

Q63. Which of the following is an appropriate description of the roles of a system auditor?

- a) Preparing a workflow, work description, and risk control matrix that reflect the flow and contents of business operations, evaluating the risks, and installing an appropriate system
- b) Installing a mechanism for appropriate monitoring and self-inspection in each process of planning, development, operation, and maintenance of the information system, and taking actions by which the information system can operate smoothly
- c) Verifying whether or not the risks of the information system are being controlled appropriately and effectively from a standpoint that is independent of the department being audited, and reporting it to the client
- d) Specifying the policies and objectives, and establishing a management system so that the risks of the information system are controlled appropriately

Q64. Which of the following is an activity in the system audit on the system development department?

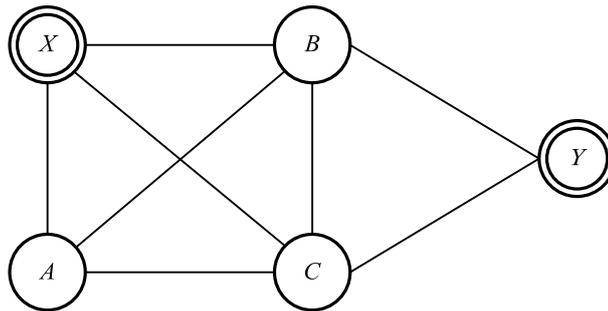
- a) Creation of an outsourcing agreement to be concluded with the development contractor
- b) Correction of defects found during review of the external design document
- c) Report of defects in the system development procedures
- d) Programming training for programmers

Q65. Among the improvement activities that are performed on the basis of the results of a system audit conducted as an internal audit within a company, which of the following is conducted by the system auditor?

- a) Individual improvements are performed on the basis of the improvement action plan.
- b) The improvement action plan is approved.
- c) The items to be improved are decided, and the improvement action plan is developed.
- d) The improvement status is confirmed, and the improvement results are evaluated.

Answer questions Q66 through Q100 concerning strategy.

Q66. A person wishes to start at point X , pass through all of points A , B , and C , and arrive at point Y . When the routes and the required times between points are as shown in the figure and the table, what is the shortest time in minutes from point X to point Y ? Here, the points A , B , and C may be passed through in any order.



Unit: minutes

		Ending point			
		A	B	C	Y
Starting point	X	20	20	40	Not possible
	A	-	40	30	Not possible
	B	40	-	20	60
	C	30	20	-	60

a) 110

b) 130

c) 140

d) 150

Q67. Among rules for the organizational operation of a company, which of the following describe separation of job duties?

- a) Rules that define the management organization and ladder that are the foundation of the company
- b) Rules that define the work content, responsibilities, and authority of each department
- c) Rules that define employees' working conditions and other matters related to employment
- d) Rules that define proper conduct in terms of laws, regulations, and social norms

Q68. Which of the following examples of capacity building and guidance for subordinates is classified as OJT?

- a) A company made subordinates set careers and targets and make plans for achieving these.
- b) With subordinates' careers in mind, a company made subordinates attend a manager development course hosted by the Personnel Department.
- c) A company made subordinates take part in a new development project to improve their design capabilities.
- d) A company selected an externally hosted seminar matched to subordinates' fields of expertise and careers, and made the subordinates attend it.

Q69. Which of the following is the appropriate combination of words and phrases to be inserted into blanks *A* and *B* in the description below, concerning companies of making and receiving investments?

Company *C* is making an investment in Company *D*. To increase its *A* Company *D*, Company *C* may *B*.

	<i>A</i>	<i>B</i>
a)	control over	sell a portion of stocks
b)	control over	acquire additional stocks
c)	ratio of shareholding in	dispatch auditors
d)	ratio of shareholding in	dispatch directors

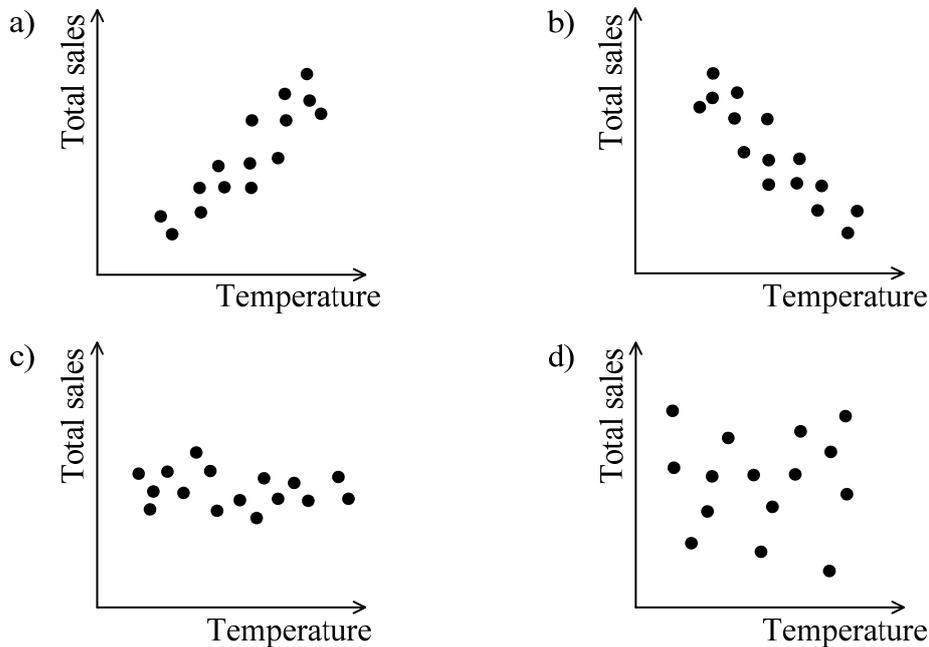
Q70. Among the senior management positions in a company or such other organization, which of the following is the highest-ranking person who exercises control over the information systems?

- a) CEO b) CFO c) CIO d) COO

Q71. In order to prepare for any potential bad debt on accounts receivable from a business partner, which of the following is an action that enables the appropriation of a part of the business partner's property for accounts receivable more preferentially than the other parties?

- a) Adding debt b) Issuing an invoice
c) Setting collateral d) Increasing interest

Q72. Which of the following has a negative correlation between temperature and total sales?



Q73. Which of the following is appropriate as an expected advantage of the adoption of ISO 9001 by companies?

- a) The companies' trade procedures will be standardized, leading to increased efficiency and the reduction of non-tariff barriers.
- b) Technical specifications will be standardized in the industry, and increase in product quality and expansion of markets will move forward.
- c) Methods for handling information assets will be standardized and the quality of information security will increase.
- d) Business operations concerning quality management will be standardized, and the quality and efficiency of management will increase.

Q74. Which of the following is appropriate as a characteristic of the QR code?

- a) The code can contain only single-byte alphanumeric characters and symbols.
- b) The amount of information that can be stored is equivalent to that of a barcode.
- c) The code can be read from any direction including the top, bottom, left, and right.
- d) The code has a two-dimensional structure in which three barcode layers are stacked.

Q75. Which of the following is a case example where Bluetooth is used as a standard protocol of wireless communications for cellular phones, household electric appliances, or such other devices?

- a) Connecting two controllers to one home video game console without any cables
- b) Receiving signals from some GPS satellites into a car navigation system
- c) Reading a QR code by using a cellular phone
- d) Reading the information or data on an IC card ticket at an automatic ticket gate

Q76. Which of the following is the type of software that can be copied or modified freely without permission from the owner of copyright?

- a) Open source software
- b) Package software
- c) Shareware
- d) Utility software

Q77. Which of the following is the right that belongs to a purchaser of a PC software package provided by means of CD-ROM?

- a) Copyright of the CD-ROM storing the program
- b) Copyright of the program stored in the CD-ROM
- c) Design right of the CD-ROM storing the program
- d) Right to use the program stored in the CD-ROM

Q78. An e-mail with a subject of “Caution: New computer virus” was received from the external network. The sender is not a well-known person, and the content may or may not be true. However, the e-mail describes the characteristics of the virus, and instructs that the e-mail must be forwarded to as many people as possible. Which of the following is an appropriate course of action to be taken in response to this e-mail?

- a) Forwarding the e-mail to acquaintances
- b) Forwarding the e-mail to all employees
- c) Not forwarding the e-mail to anyone
- d) Writing the sender an e-mail asking for a measure against the virus

Q79. In order to consider near-term strategies, automobile manufacturer Company A identified its strengths and weaknesses, as well as the opportunities and threats it faces in the external environment. On the basis of the results, which of the following is appropriate as measures to leverage the company's strengths and overcome the threats?

Internal environment	<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Strong brand image • Accumulation of multi-directional research and development 	<p><u>Weaknesses</u></p> <ul style="list-style-type: none"> • Large-scale retirement of skilled workers
External environment	<p><u>Opportunities</u></p> <ul style="list-style-type: none"> • Monetary easing under interest rate decline 	<p><u>Threats</u></p> <ul style="list-style-type: none"> • Sharp rise in oil price • Spread of environmental conservation consciousness

- a) Extend the retirement age of skilled workers or implement rehiring
- b) Procure funds at low interest and stockpile large reserves of oil
- c) Conduct research and development and commercialize electric automobiles
- d) Take advantage of brand image to strengthen sales capabilities

Q80. Which of the following is a marketing technique that seeks to analyze the needs of each individual person and provide products and services that fulfill those needs?

- a) Social marketing
- b) Telemarketing
- c) Mass marketing
- d) One-to-one marketing

Q81. Which of the following is a technique that analyzes the value of a product or service through the relationship between functionality and cost, and enhances that value through reduction in cost and increase in functionality and quality?

- a) Supply chain management
- b) Knowledge management
- c) Value engineering
- d) Reverse engineering

Q82. Which of the following is appropriate as information necessary for CRM?

- a) Customer data and customer purchasing history
- b) Blueprint data
- c) Data of experts' knowledge
- d) Day and time of sales, shop, product sold, and quantity sold

Q83. In order to achieve the marketing objectives such as an increase in the total sales and the expansion of market share, a company aims for optimization by combining four elements called 4Ps. Which of the following is an appropriate combination of the four elements?

- a) Place, Price, Product, Profit
- b) Place, Price, Product, Promotion
- c) Place, Product, Profit, Promotion
- d) Price, Product, Profit, Promotion

Q84. Among the forms of e-commerce, which of the following is the form in which consumers purchase products from individuals, including transactions conducted at an auction site, instead of from manufacturers and retail stores?

- a) B to B b) B to C c) B to G d) C to C

Q85. In creating a technology development strategy, which of the following is an appropriate explanation of a technology portfolio used to perform analysis?

- a) It indicates the position of the company's technology in the market, on a matrix with technological level and maturity of technology as axes.
- b) For the company's products, it indicates the period from the start of development to the achievement of the break-even point, cumulative investment, and cumulative profit etc.
- c) It indicates the development schedule and attainment targets for technologies that the company should develop, the relationships among developed technologies, new products, and business plans, etc.
- d) It breaks down the technologies held by the company into component technologies, and indicates them systematically in a tree structure.

Q86. A company wishes to create digital files from paper documents and paper blueprints, and make these available company-wide. Which of the following is appropriate equipment to be used?

- a) GPS receiver b) Scanner
c) Digitizer d) Plotter

Q87. Which of the following is appropriate as a characteristic of an ERP package?

- a) As it is a system that comprehensively supports business unique to an industry, it is used only for certain industry sectors such as the mobile phone business.
- b) As it is a system specific to finance and accounting service, any functions up to passing accounting data to general accounting process must be developed or purchased separately.
- c) It is an integrated business system that processes various business-related applications, and is used in companies of various scales in various industry sectors.
- d) It is a system that integrates sales, purchasing, and financial accounting, and is a system specialized for the use of small company such as individually-owned shops.

Q88. Which of the following is an appropriate explanation of CAD, as used in the manufacturing industry?

- a) The derivation of the required quantity of materials from a product production plan and the placement of orders for the materials.
- b) The management of the information of components, semi-finished products, or quantities
- c) The unified management of the information in the process from design through manufacturing, such as design documents or component tables.
- d) The use of computers in product design to improve the productivity of the designing process and the reliability of design specifications.

Q89. Which of the following is an appropriate case example that corresponds to traceability?

- a) Computers are applied to education through the use of the Internet and web technology.
- b) All development activities are outsourced to external specialized companies without placing the development department within one's own company.
- c) Business performance is improved by sharing and using personal knowledge and information effectively across the entire organization.
- d) The record from production up to sales can be confirmed on the basis of the food labels pasted on meat and fish products.

Q90. Which of the following is the system that is housed in home electric appliances, such as rice cookers and air conditioners, and is used to implement the specific functions of such appliances?

- a) Expert system
- b) Enterprise system
- c) Embedded system
- d) Simplex system

Q91. Among advertisements on the Internet, which of the following is an appropriate explanation of a banner advertisement?

- a) When a web site is being browsed, an advertisement from an advertiser is automatically displayed in another new window.
- b) When a link from a web page to another page is clicked, a page with an advertisement is briefly shown before the target page is displayed.
- c) When an advertisement image that is placed on a part of a web page is clicked, a page prepared by an advertiser is displayed.
- d) When keywords are entered into a search service site, an advertisement related to the keywords is displayed on the page showing the search results.

Q92. Which of the following is a technology that is defined by some international standards and used for contactless IC cards, such as tickets for public transport?

- a) IrDA
- b) RFID
- c) Bluetooth
- d) Wi-Fi

Q93. Which of the following is most appropriate as an example of using SNS in marketing?

- a) Seamlessly delivering goods ordered over the Internet and receiving payment for the goods
- b) Using commenting functions to let registered members post evaluations of the company's products
- c) Causing the company's website to appear high in the search results of search engines, with the aim of increasing site visitors
- d) Setting a price lower than that of industry competitors to heighten customers' desire to purchase

Q94. Which of the following is the most appropriate description of business improvement on the basis of BPM (Business Process Management)?

- a) Integrate data within the company, and use the data to support decision-making in business
- b) Manage business and business resources in an integrated manner, and improve methods for making use of business resources
- c) Review business processes themselves on the basis of the results of business execution, and make continuous improvements
- d) Advance the division of labor in business processes and improve work efficiency

Q95. Which of the following corresponds to information literacy?

- a) Knowledge of new PC products and the performance of each model
- b) The ability to perceive the impacts of technological innovations on society
- c) The ability to search for data necessary for business and use it in accordance with goals
- d) The ability to use high-level programming languages and develop software

Q96. When the software life cycle in the figure below is classified into the operation process, development process, planning process, maintenance process, and requirements definition process, which of the following corresponds to A? Here, each of “Development,” “Planning,” “Maintenance,” and “Requirements definition” goes into one of A and the shaded blocks.



- a) Development
- b) Planning
- c) Maintenance
- d) Requirements definition

Q97. Company A, which manufactures and sells house building materials, identifies a problem with its logistics operation and develops an improvement plan to resolve the problem. Which of the following is the most appropriate mechanism that should be computerized to implement the improvement plan?

[Problem]

Since it takes several days to deliver the product ordered by a sales office, each sales office has in stock all of the products dealt with by the company in fear of being out of stock. As a result, an enormous inventory cost is incurred by Company A as a whole.

[Improvement plan]

A logistics warehouse is built in the major territory of the sales area, and delivery trucks are allocated so that any product can be delivered on the day the order is received from the sales office.

- a) A mechanism that enables each sales office to inquire the number of new housing starts in its sales territory
- b) A mechanism that enables each sales office to immediately inform the logistics warehouse about the order details
- c) A mechanism that enables the manager of each sales office to understand the current inventory cost
- d) A mechanism that enables management to compare and analyze the sales performance of individual sales offices

Q98. When an error message to be displayed by an application program is designed, which of the following is an appropriate item to be considered?

- a) Only the fact and details of the error, rather than the way of handling the error, should be displayed.
- b) Only the information that system developers need to identify the cause of the error should be displayed.
- c) Since it is desirable that the error message be as short as possible, the abbreviation and error code should be displayed as they are.
- d) The action to be taken by a user should be displayed briefly and precisely with the error message.

Q99. In the development of a consolidated accounting system, functional requirements and non-functional requirements were classified as shown in the table below. Which of the following is the appropriate description to be inserted into blank A?

Functional requirements	Non-functional requirements
<ul style="list-style-type: none"> • Accounting in accordance with international accounting standards can be performed • Confirmation of account closing results is performed by the accounting department manager • Records are obtained of all account closing process 	<ul style="list-style-type: none"> • Even the most time-consuming batch processing is completed within 8 hours • A • All data to be kept is encrypted

- a) Annual downtime as a result of failure, etc. totals 10 hours or less
- b) Slips with entry mistakes are corrected by using a correction slip
- c) Apart from legal forms, data for the creation of materials for executives meetings can be automatically extracted
- d) Companies subject to consolidation can be changed every year

Q100. In system development, which of the following is the process in which the business functions to be newly constructed or reconstructed are clarified and the scope and the functions of the information system are specifically specified based on the business functions?

- a) External design
- b) Internal design
- c) Programming
- d) Requirements definition