October 2018

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 fall IT Passport Examination conducted in 2018?

   a) August   b) September   c) October   d) November

   Since the correct answer is "c)" (October), mark your answer sheet as follows:

   [Sample Answer]

Q1	ⓐ	ⓑ	●	ⓓ

   Do not open the exam booklet until instructed to do so.

   Inquiries about the exam questions will not be answered.

Q1. A survey into the amount of pocket money is conducted at three (3) schools. When the consolidated results of the survey are used to calculate the average pocket money per student for all the students of the three (3) schools, which of the following is the expression that is entered into cell C5?

	A	B	C
1		Number of students	Average of pocket money per student
2	School M	150	1,250
3	School N	250	850
4	School P	60	1,530
5	Average of pocket money per student		

a) $(B2*B3*B4)/(C2*C3*C4)$
b) $(B2*C2+B3*C3+B4*C4)/SUM(B2:B4)$
c) $SUM(C2:C4)/SUM(B2:B4)$
d) $AVERAGE(C2:C4)$

Q2. Which of the following is obtained by multiplying the binary value 10110 by three (3)?

a) 111010   b) 111110   c) 1000010   d) 10110000

Q3. Which of the following is an appropriate purpose of appending a check digit to a customer code?

a) To check the customer code for input errors
b) To arrange customers in the order of acquisition when a list of customers is created
c) To enable customers to be inferred easily and quickly
d) To enable the grouping of customers by geographical area or other attributes
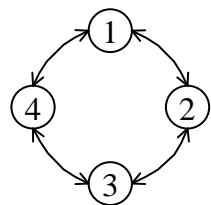
Q4. Which of the following is an appropriate description concerning the characteristics of EUC (End User Computing)?

 a) EUC enables users to directly access, reference, and manipulate data that they need for business operations.
 b) EUC gives priority to system operation and maintenance, so it causes backlogs to increase in the information systems department.
 c) EUC requires more development staff members in the information systems department, so it often leads to an increase in the operating costs of the department.
 d) EUC allows the information systems department to take a leadership role in application development, so it can reduce the workload of users.

Q5. At a desk that is only large enough to place 4 files at the same time, 6 files, *A* through *F*, are used to perform a task. When 4 files are already placed on the desk, the least recently used file must be placed back into the drawer before the fifth file can be placed on the desk. When the files are used in the sequence *A*, *B*, *C*, *D*, *B*, *A*, *E*, *A*, *B*, *F*, which of the following is the last file placed back into the drawer?

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

Q6. There exist four states numbered 1 through 4. The four states are connected as shown in the figure below, and the state transition occurs in a clockwise or counter-clockwise direction.

If the current state is 1, which of the following is the state that is reached after the procedure below is performed twice?

[Procedure]
The number of the current state is multiplied by 11, and the result is divided by three (3). The process below is performed based on the remainder of the division.
- When the remainder is zero (0), a transition to the next state occurs in the clockwise direction.
- When the remainder is one (1), a transition to the next state occurs in the counter-clockwise direction.
- When the remainder is two (2), a transition to the second state occurs in the clockwise direction.

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

Q7. In a queue, three elements 33, 27, and 12 are stored (or enqueued) in this order. After the element 45 is added to this queue, two elements are retrieved (or dequeued). Which of the following is the second element that has been retrieved?

a) 12   b) 27   c) 33   d) 45

Q8. There is a program that displays text in accordance with the specifications below. When the original text described below is displayed, in what point size does the program display the underlined character string?   Here, the first character of the original text is displayed in 10 points.

[Specifications]
  The characters between <B> and </B> are displayed one point larger than the preceding character.
  The characters between <S> and </S> are displayed one point smaller than the preceding character.
  Each of <B> </B> and <S> </S> must be used as a pair, and both of them can be nested with each other.

[Original text]
  The system administrator promotes and implements <B>department-level<B> or <S>group-level</S> computerization</B> from a user's <S>standpoint</S>.</B>

a) 10   b) 11   c) 12   d) 13

Q9. Which of the following is an appropriate description concerning the Java language?

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

Q10. Which of the following is the correct comparison of the amount of data?

a) 1 KB < 1 MB < 1 GB < 1 TB
b) 1 KB < 1 MB < 1 TB < 1 GB
c) 1 KB < 1 TB < 1 MB < 1 GB
d) 1 TB < 1 KB < 1 MB < 1 GB

Q11. Which of the following is designed to virtually reduce the time for the CPU to access the main memory, in order to improve the processing efficiency of a PC?

a) SSD
b) Virtual memory
c) Cache memory
d) Defragmentation
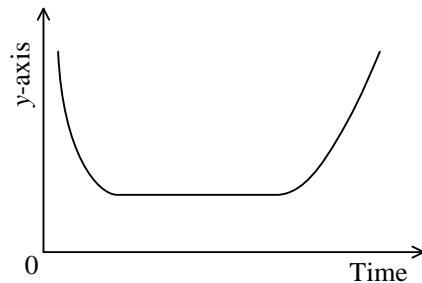
Q12. Which of the following is an appropriate description concerning CPU performance?

a) Compared with a 64-bit CPU, a 32-bit CPU is able to process a longer data at one time.
b) The less the capacity of cache memory in the CPU, the faster the processing speed.
c) For a CPU of a given architecture, raising the clock frequency increases processing speed.
d) A dual core CPU can perform a greater number of processes simultaneously than a quad core CPU can.

Q13. Which of the following is the most appropriate description concerning a multi-core processor?
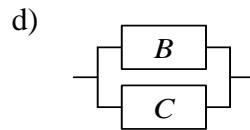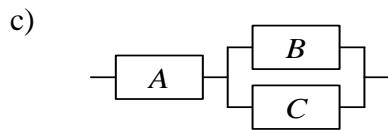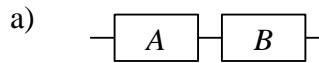
a) Several microprocessors are installed in one PC with the purpose of improving the reliability of the processing results by performing the same processing at the same time in each processor.
b) If the structure and clock frequency of the arithmetic logical unit are the same, a quad core processor has four times as much processing power as a dual core processor.
c) The clock frequency is temporarily increased according to the load of the processing so as to achieve high-speed processing.
d) A single CPU has several processing circuits that perform operations, and each processing circuit performs different processing at the same time with the purpose of improving the processing power.

Q14. In reliability engineering, which of the following is the index represented by the y-axis of a bathtub curve?

a) Failure rate
c) Mean time between failures

b) Reliability
d) Mean time to repair

Q15. There are three devices, *A*, *B*, and *C*, with availabilities of 0.90, 0.95, and 0.95 respectively. Among the systems combining these devices shown below, which of the following has the highest availability? Here, at least one of the parallel-connected devices must be available, and all of the serially-connected devices must be available.

a)

b)

c)

d)

Q16. When the processing speed of the system overall is constrained because of slow processing speed in one of the components, which of the following is a term for the component of a system that is causing the problem?

a) Throughput
c) Flowchart

b) Defragmentation
d) Bottleneck

Q17. As shown in the spreadsheet below, three types of examinations were conducted. Each type of examination has a different perfect score. Each resulting score is converted to a value assuming 100 points as the perfect score, and displayed in cells F3 through H10. Which of the following is the expression to be entered in cell F3? Here, the expression in cell F3 is copied to cells F3 through H10.

	A	B	C	D	E	F	G	H
1		English	Math	Science		English	Math	Science
2	Perfect score →	250	200	150				
3	John Mayer	180	180	115				
4	Brian Jones	235	155	95				
5	Tom Scott	206	85	150				
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
10	Susan Miller	245	105	108				

a) $100 * B3 / \$B2$

b) $100 * B3 / B\$2$

c) $100 * \$B3 / \$B2$

d) $100 * B\$3 / B\$2$

Q18. An examination is conducted, and the results of the examination are grouped into four grades "Excellent," "Good," "Passed," and "Not passed," based on the scores by using spreadsheet software. To show the results of grouping in column C, an expression is entered in cell C1 and then copied to cells C2 through C35. Which of the following is the appropriate expression to be entered into cell C1? Here, the procedure for grouping is as shown below.

[Spreadsheet creation procedure]
(1) Cells A1 through A35 contain scores.
(2) Cell A36 contains a function to calculate the average score.
(3) Cell B1 contains the expression below, and this expression is copied to cells B2 through B35.

A1 − A36

(4) Grades are defined as follows: if the score is above the average by 10 points or more, it is marked as "Excellent"; if it is equal to or above the average by less than 10 points, it is marked as "Good"; if it is below the average by 10 points or less, it is marked as "Passed"; all other scores are marked as "Not passed."

a) IF(B1 > 10, 'Passed',
        IF(B1 > 0, 'Not passed', IF(B1 < −10, 'Excellent', 'Good')))

b) IF(B1 > 10, 'Excellent',
        IF(B1 > 0, 'Good', IF(B1 < −10, 'Passed', 'Not passed')))

c) IF (B1 ≥ 10, 'Excellent',
        IF (B1 > 0, 'Good', IF (B1 < −10, 'Not passed', 'Passed')))

d) IF (B1 ≥ 10, 'Excellent',
        IF (B1 ≥ 0, 'Good', IF (B1 < −10, 'Not passed', 'Passed')))

Q19. Which of the following is the image data that is pasted onto the documents and web pages created by the word-processing software and presentation software so as to improve the expressive power?

a) CSS
b) Capture
c) Clip art
d) Template

Q20. Which of the following is the expression to be entered into cell D4 in order to calculate the after-tax prices of the products shown in cells A4 and A5 by using the two tentative sales tax rates that are set in cells D2 and E2?　Here, the expression to be entered into cell D4 is copied to cells D5, E4, and E5.

	A	B	C	D	E
1				Sales tax rate 1	Sales tax rate 2
2			Tax rate	0.1	0.2
3	Product name	Before-tax price		After-tax price 1	After-tax price 2
4	Product A	500		550	600
5	Product B	600		660	720

a) $B4*(1.0+D2)$

b) $B\$4*(1.0+D\$2)$

c) $\$B4*(1.0+D\$2)$

d) $\$B\$4*(1.0+\$D2)$

Q21. Which of the following is an advantage of using OSS (Open Source Software)?

a) Technical support can be received free of charge from the developer at the time of installation.

b) The software is not prone to infection of viruses, as the source code is not released.

c) Compensation can be received for damages caused by defects in the software.

d) The source code can be modified to fit the environment of the user in accordance with the license terms.

Q22. Multiple files stored on a hard disk are used in work, from Monday to Friday. In order to handle failure of the hard disk, the data is backed up to another hard disk after the end of each day's work. When the backup has following conditions, what is the total time required (in minutes) to perform backups of data for Monday to Friday?

[Conditions for backups]
(1) There are 6,000 files used in work, each with a size of 3 Mbytes.
(2) In each day's work, 1,000 files are modified. Modifications do not change the size of the files.
(3) Files are copied to the other hard disk at a speed of 10 Mbytes/second. One file at a time is backed up; backup continues without interruption.
(4) From Monday to Thursday, only files modified that day are backed up. On Friday, all files are backed up, whether or not they have been modified.

a) 25   b) 35   c) 50   d) 150

Q23. Which of the following is an appropriate explanation of a blade server?

a) It uses multiple board-type computers equipped with CPU and memory, housed in a dedicated body.
b) It enables the use of office software, e-mail software, etc. as web services over the Internet.
c) It is embedded in equipment such as home appliances or automobiles.
d) It supports handwriting input function by using a liquid crystal display with a touch panel.

Q24. Which of the following is an appropriate concept of universal design?

a) Ensuring that, once a product is designed, the design remains usable without being changed for a long period of time
b) Ensuring that products keep the same levels of performance and quality regardless of where they are manufactured in the world
c) Making the design as simple and easy as possible in order to reduce the manufacturing cost
d) Making products usable to many people regardless of differences in age, culture, and ability as well as whether disability is present

Q25. Which of the following is the most appropriate explanation of virtual reality?

a) Improving the GUI not by displaying an image gradually from top to bottom, but by first displaying a coarse mosaic-like image, and then by gradually increasing the sharpness of the image

b) Enabling computer-simulated objects and spaces to be perceived like the real world by using computer graphics or other techniques

c) Conducting computer simulations instead of, among others, the wind-tunnel test used for the design of cars and airplanes

d) Combining images of separately shot scenery and people to create an image that is different from the real world

Q26. A hard disk failure occurred on a mail server, and e-mails of many users were lost. Recovery of data was attempted, but e-mails sent and received during the two-week period after the last backup could not be restored because backups were only created every two weeks. Taking a lesson from this incident, a measure is to be implemented to allow restoration up to the state of the day before such a failure. Which of the following is an appropriate measure?

a) Performing daily incremental backup in addition to biweekly (every two-week) full backup

b) Accumulating e-mails on multiple different hard disks in a distributed manner

c) Implementing hard disk mirroring on the mail server for higher reliability, without changing the existing backup schedule

d) Storing daily backup onto the same hard disk media, and a biweekly (every two-week) copy of the backup to another storage media

Q27. The "Sales Details" table and the "Products" table are managed in a relational database. What is the total number of notebooks sold?

Sales Details

Voucher number	Product_code	Number_sold
H001	S001	20
H001	S003	40
H002	S002	60
H002	S003	80

Products

Product_code	Product_name
S001	Pencil
S002	Eraser
S003	Notebook

a) 40 b) 80 c) 120 d) 200

Q28. Which of the following is an appropriate effect obtained through the normalization of data in a relational database?

a) Securing of data compatibility between different types of computers
b) Improvement of storage efficiency through data compression
c) Elimination of redundancy and inconsistency of data
d) Omission of backups that are necessary in preparation for the failure of devices storing data

Q29. Which of the following is an appropriate description concerning foreign keys in a relational database?

a) A property held by the foreign key is called a unique constraint.
b) Duplicate values cannot be set in the fields that are set as foreign keys.
c) Multiple foreign keys can be defined in a single table.
d) Multiple fields cannot be collectively set as a single foreign key.

Q30. Which of the following is used to identify a wireless LAN network?

a) Bluetooth   b) ESSID   c) LTE   d) WPA2

Q31. Mr. *A* specifies the destinations for an e-mail as below and sends it. Mr. *Y* receives this e-mail, and sends a reply to all the recipients and the sender listed in the e-mail. Among Mr. *A*, Mr. *X*, and Mr. *Z*, which of the following is the list that includes all and only the destinations of the e-mail that Mr. *Y* sends?

[Destinations specified for Mr. *A*'s e-mail]
   To: *X*
   CC: *Y*
   BCC: *Z*

a) *A*   b) *A*, *X*   c) *A*, *X*, *Z*   d) *X*, *Z*

Q32. Which of the following is an appropriate explanation of the POP communications protocol?

a) It is a protocol for the remote control of a computer from a terminal that is in a different location.
b) It is a protocol for file transfer.
c) It is a protocol for sending e-mails to a mail server.
d) It is a protocol that e-mail software uses in order to receive e-mails from a mail server.

Q33. Which of the following is an example of damage incurred by the theft of cookies by a cross site scripting attack or other attack?

a) The PC becomes infected by a virus.
b) The files on the PC are sent to an outside destination.
c) Web service accounts are hijacked.
d) Intrusion into the network takes place over the wireless LAN.

Q34. Among the examples of conducting communication between a PC, a server, a communication device, a printer, etc., which of the following is the list that contains all and only the examples that require the use of a WAN?

A: In a server room, a PC and a web server are connected to the same network hub, and a company overview web page is uploaded from the PC to the web server.

B: A notebook PC is connected to an access point in a LAN within a campus of a university, and lecture materials are downloaded from a web server on the same campus.

C: A file server connected to a LAN in the Tokyo headquarters is accessed from a PC in the Osaka branch office, and files are downloaded.

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

Q35. Which of the following is an appropriate disposal method for media that stores confidential information to ensure that information leakage does not occur?

a) CDs and DVDs are destroyed and then are disposed of.
b) A PC is disposed of with its CPU being destroyed.
c) USB memory is disposed of with its files and folders being deleted.
d) Paper documentation is not used as memo paper and is sealed in a confidential envelope and then is disposed of together with general trash.

Q36. Which of the following sets conditions for character type, length, etc. used for passwords that are set for accounts on a computer, etc.?

a) Single sign-on   b) Password crack
c) Password policy   d) One-time password

Q37. Which of the following is a technique for taking advantage of psychological weaknesses or carelessness in order to improperly obtain confidential information?

a) DoS attack
b) SQL injection
c) Social engineering
d) Buffer overflow

Q38. Which of the following is the threat that can be prevented by encrypting data?

a) Deletion of data because of an operational error
b) Social engineering
c) Tapping of communication content
d) DoS attack on the server in which data is stored

Q39. When an abnormality in power supply voltage caused by power failure, lightning strike, etc. has been detected, a company wishes to inform its computers of this event, continue supplying power for a certain period of time, and safely shut down systems. Which of the following is an appropriate device that should be installed between computers and the power supply for this purpose?

a) DMZ
b) GPU
c) UPS
d) VPN

Q40. Which of the following is an appropriate explanation of a VPN?

a) A wireless network over which devices engage in two-way communication without going through an access point
b) A network that is set up within a relatively limited area, such as an office or a building
c) A virtual network that is set up by using a public network, etc., and is used in the manner of a dedicated network
d) A network to which a PC is connected to prior to be connected to an internal company network, etc. in order to test the PC's security

Q41. Among confidentiality, integrity, and availability, which of the following is the list that contains all items that are lost in the incident below, which involves information security?

All of the files on a server in the workplace were encrypted and saved. However, the server was infected by a virus, and a number of the files were deleted. Elimination of the virus and recovery of the files required several hours, during which work could not be performed and users were inconvenienced.

a) Confidentiality

b) Confidentiality, integrity

c) Integrity, availability

d) Availability

Q42. In a file system that uses the access control methods below, which of the following settings for access rights to file *A* satisfy the conditions for access control?

[Access control method of the file system]
- Units for the setting of access rights: Owner; Users in the same group as owner; Other users
- Access rights: *R* (Read), *W* (Write), *X* (Execute)
- Priority of access rights: From highest priority to lowest, settings are prioritized in the order of "Owner"; "Users in the same group as owner"; "Other users"

[Conditions for access control to file *A*]
- All users are able to execute the file.
- Only the owner and users in the same group as the owner are able to read from the file.
- Only the owner is able to write to the file.

*: Set   –: Not set

	Owner			Users in the same group as the owner			Other users		
	R	*W*	*X*	*R*	*W*	*X*	*R*	*W*	*X*
a)	*	*	*	*	*	*	–	–	*
b)	*	*	*	*	–	*	*	–	*
c)	*	*	*	*	–	*	*	*	–
d)	*	*	*	*	–	*	–	–	*

Q43. During the use of a PC in workplace, a message was displayed stating that antivirus software had detected a virus. Which of the following is an appropriate action that should be taken immediately on the PC?

a) Reboot of the PC
b) Notification to the workplace by e-mail from the PC
c) Disconnection of the PC from networks
d) Backup of files on the PC

Q44. Which of the following is an appropriate example of biometric authentication?

a) Authentication by drawing a line connecting some of the nine (9) dots displayed on a screen
b) Authentication by a password and a user ID that is unique for each individual
c) Authentication by recognizing the shape of a signature, the stroke order and pen pressure used in signing, etc. using a reader device
d) Authentication by selecting, from among multiple illustrations, a combination of illustrations that the user memorizes

Q45. Which of the following is an appropriate description concerning the reliability of a system or a device?

a) Controlling a system in a safe state in order to minimize damage when a fault occurs in a device is called foolproof.
b) Reducing the probability of occurrence of a fault in a device by using high-quality and high-reliability parts and elements is called fail-safe.
c) Enabling continuation of system processing when a fault occurs in a system due to an error is called fault tolerance.
d) Taking measures in the design stage so that humans do not make mistakes in system operation, or no faults or failures occur even if they make mistakes is called fail soft.

Q46. In order to check that a system works normally, a user department and the information systems department are to jointly perform operational testing before operation,. Which of the following is an appropriate content of the test performed by the user department?

   a) Testing whether the system operates based on the intended business procedures

   b) Testing whether operations, such as the start-up and shut-down of online processing and night time batch processing, are performed based on predetermined operational procedures

   c) Testing whether all modules are created based on specifications

   d) Testing the failure recovery procedure used at the occurrence of a problem on hardware or OS

Q47. Which of the following is the test method that verifies a system based solely on the functions as it is seen from the outside and with no consideration of the internal structure, focusing only on inputs and outputs to check that the output expected from the system specifications is obtained for any given input?

   a) Operational test   b) Integration test

   c) Black box test   d) White box test

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 screens for easy-to-use for system users?
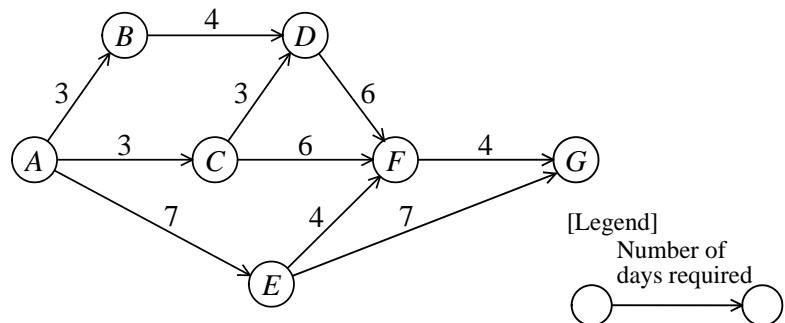
   A: The time to recover from a failure

   B: The ease of learning 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. The processes of system development include system requirements definition, systems architecture design, system integration testing, and software acceptance. Which of the following is an activity that is performed in system requirements definition?

a) The party to which development is outsourced uses the software under the same conditions as the actual production environment in order to determine if it runs correctly.

b) A system test plan is created, and a test environment is prepared.

c) The functions and performance required of the system are clarified.

d) A program is created and test results are reviewed according to the evaluation criteria.

Q50. A company purchased the enterprise license of software *X* that can be used for 100 PCs, and then installed it on those PCs.　Which of the following is an action that complies with the license agreement?

a) Of the 100 PCs, 10 PCs are moved to another department without uninstalling software *X* from the hard disks, and continue to be used.

b) 10 PCs are additionally purchased, and software *X* is installed on those PCs without purchasing additional licenses.

c) After sales of software *X* is discontinued, the company stops managing the license keys and allows users to install it freely.

d) License usage is controlled so that the number of PCs concurrently using the software, not the number of PCs on which software *X* is installed, is equal to or less than the number of purchased licenses.

Q51. Which of the following is the first task to be performed when a project is initiated?

a) Progress management

b) Scheduling

c) Clarification of the project goals

d) Budget planning

Q52. In the arrow diagram below, what is the maximum number of days that can be allowed as a delay of the activity "$C{\rightarrow}F$" on condition that the total number of days required for activities from A through G is not affected?

[Legend]
Number of days required

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

Q53. Which of the following is an item that must be clarified in order to determine the appropriate assignment of the members participating in a project?

a) Cost estimation method
b) Reporting method of activity progress
c) Acceptance standards of deliverables
d) Roles and responsibilities to be assigned

Q54. In a system development project, as a measure for improving the productivity of program creation, a training to improve skills for using development tools is planned for new members.   Which of the following is the most appropriate indicator to evaluate the effect of this measure?

a) The total number of participants in training
b) The number of times training is provided
c) The amount of programming created in one day by each member
d) Total time of participation in training by each member

Q55. Quality management in system development projects has a quality planning process to define quality requirements and quality standards for deliverables and to specify the methods for achieving them. Which of the following is appropriate to this quality planning process?

    a) If deliverables are not exactly the same as those of past system development projects, past quality standards cannot be used as reference.

    b) Since schedules have the highest priority in all projects, it is acceptable to shorten the period for reviewing and testing for achieving target quality.

    c) Quality should have the highest priory in all projects, and, to enhance the quality of deliverables, constraints should not be placed on the budget.

    d) The effects by reductions in reworking, improvement in productivity, improvement of stakeholder satisfaction, and others brought about by activities to achieve targeted quality, and their required costs are to be compared.

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

    a) The cost and time required to create development 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 entrusted to the outsource that creates the deliverables.

    c) Since a project's progress report meetings are a means of communication, they are not subject to decomposition.

    d) If there are some experiences in developing similar systems, it is not necessary to perform decomposition again.

Q57. The response measure for risks that may occur in a project can be classified as avoidance, mitigation, acceptance, and transfer. In a system development project, the design and development process is to be subcontracted to Company *A*. In a previous system development, Company *A* suffered a delay for delivery, so it is also possible that a delay will occur in this project. Which of the following is a response measure that corresponds to mitigation of the risk of a delay?

a) The inclusion of causal analysis of the previous delay at Company *A*, and preventive measures on the basis of this analysis into this development plan
b) Cancellation of subcontracting to Company *A*
c) Inclusion in the contract of the term of the compensation for damages by Company *A* in the event of a delay
d) Inclusion in the project of the cost of measures in response to a delay

Q58. Which of the following is an appropriate description concerning reliability?

a) The availability of the device increases if the MTBF and MTTR are lengthened.
b) The availability of the device increases if the MTBF is lengthened and the MTTR is shortened.
c) If the MTBF is lengthened, the MTTR is shortened.
d) If the MTTR is shortened, the MTBF is lengthened.

Q59. Which of the following is an appropriate explanation concerning proactive countermeasures against various threats that hinder stable operation of information systems?

a) If unauthorized intrusion from the outside can be prevented completely, that is sufficient as a proactive countermeasure against unauthorized access.
b) It is difficult to predict natural disasters, so proactive countermeasures should focus on human-caused disasters.
c) If all data is backed up, no other proactive countermeasures are required.
d) Necessary proactive countermeasures should be taken, taking into consideration the trade-off between anticipated losses and costs of countermeasures.

Q60. Which of the following is the most appropriate explanation of what a service desk implements?

a) It eliminates the root cause of an incident and prevents the recurrence of the incident.
b) It installs updated software in order to prevent the recurrence of an incident.
c) It performs centralized management of changes in a service.
d) It receives and records inquiries from users.

Q61. An SLA contains a written description of arrangements, such as the content of the service agreed upon between a service provider and a service user. Which of the following is an appropriate merit that is obtained by both the service provider and the service user through concluding an SLA?

a) It is possible to confirm the validity of the invoiced amount, based on the content of the service performed.
b) It is possible to have shared recognition of the content, scope of provision, and minimum required level of the service.
c) It is possible to negotiate fees when the content of the service is insufficient or incomplete.
d) It is possible to perform service operations without excessive demands placed on the content of service.

Q62. Among the management activities for an information system that are performed by IT service management, which of the following is a process that provides a temporary workaround for a system failure and performs a prompt recovery?

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

Q63. A system auditor is required to have an independent and professional standpoint. When a system audit is performed in a company, which of the following is the example that contradicts with the independence of the system auditor?

a) An external certified public accountant performs the audit of the financial accounting system.

b) The system auditor of a consulting company performs the audit of the information systems department.

c) The system auditor of the information systems department of the company performs the audit of the information systems department.

d) The system auditor of the internal audit department performs the audit of the information systems department.

Q64. Which of the following is an appropriate combination of words to be inserted into blanks *A* and *B* in the description below concerning the implementation of internal control?

The implementation of internal control requires ☐ *A* ☐ , separation of duties, setting of rules and procedures, and ☐ *B* ☐ .

	A	*B*
a)	computerization of business operation	improvement of business efficiency
b)	computerization of business operation	establishment of checking systems
c)	clarification of business processes	improvement of business efficiency
d)	clarification of business processes	establishment of checking systems

Q65. Which of the following is an appropriate description concerning evaluations in systems audit?

a) Areas for which there is no audit evidence are evaluated through inference.

b) Evaluation must be based on audit evidence.

c) Evaluation is performed according to the views of the system user department.

d) Evaluation is performed according to the views of the audited department.

Q66. Which of the following is an explanation of corporate philosophy?

    a) Fundamental concepts that present the company's significance of existence and values, and act as the guideline for business activities

    b) Resources, usually categorized as people, money, materials, or information, which are utilized by a company to gain a competitive advantage

    c) Long-term, mid-term, and short-term decision making plans for realizing the vision that indicates the future direction of the company

    d) Unique style or characteristics of a company, also referred to as corporate culture, which has been derived and established over many years of business activities

Q67. Among the senior management positions, which of the following is the highest-ranking person who exercises control over the information system?

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

Q68. Which of the following is a cost that has a relationship with the calculation of operating profit in an income statement?

    a) Advertising cost   b) Loss on disposal of fixed assets

    c) Interest paid   d) Corporate tax

Q69. Which of the following is a consolidated financial statement by which a parent company indicates the status of revenue and expenses of an accounting period of a corporate group including subsidiaries?

    a) Consolidated statement of shareholders' equity

    b) Consolidated cash flow statement

    c) Consolidated income statement

    d) Consolidated balance sheet

Q70. Which of the following is an appropriate diagram or chart that is used for ABC analysis?

a) Control chart

b) Scatter diagram

c) Cause and effect diagram

d) Pareto chart

Q71. Which of the following is the scope that the CFO, one of the positions involved in corporate management, bears responsibility for?

a) Technology   b) Finance   c) Information   d) Personnel

Q72. Which of the following is the most appropriate term that applies to the example below?

"In order to achieve continuous growth, a company withdraws from business area *A* with stagnant sales, and puts the management resources into strengthening business area *B*."

a) Business environment

b) Business strategy

c) Management vision

d) Management philosophy

Q73. Among the lists of corporate activities *A* through *D*, which of the following is the list that contains all activities concerning the establishment of compliance?

A: Supporting fine art and cultural activities

B: Training employees in the codes of conduct

C: Performing activities for prevention of global desertification

D: Creating a mechanism of internal communication

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

Q74. Which of the following is one of the characteristics of QR code?

a) Reading direction is identified using position detection patterns (cut-out symbols).
b) It requires more space than a one-dimensional bar code to represent the same amount of data.
c) It can only encode numbers and alphabetical characters.
d) It is a stacked bar code, which is composed of a set of bar codes stacked vertically one above another.

Q75. Which of the following is an explanation of a volume license agreement on software?

a) It is an agreement in which a master copy of software is provided to a customer, such as an enterprise who purchases the software in high volume, and the number of permitted installations is defined in advance.
b) It is an agreement in which the location of use is restricted to a specified facility, and the software can be used without limiting the number of computers or users in the facility.
c) It is an agreement in which the use of software is permitted by accepting the terms and conditions of the contract displayed on the screen when the software is downloaded from the Internet.
d) It is an agreement in which standard licensing terms are defined and a license agreement is considered to be automatically concluded between the rights holder and the purchaser when a certain amount of package is unwrapped.

Q76. In the case of placing an order for a product on an Internet shopping site, at which point is the sales contract concluded?

a) At the point in time when the consumer's purchase message reaches the shop
b) At the point in time when the shop sends out an acceptance notice to the consumer
c) At the point in time when the shop's acceptance notice reaches the consumer
d) At the point in time when the ordered product reaches the consumer

Q77. Which of the following is an international standard for environmental management systems developed by ISO?

a) ISO 9000
b) ISO 14000
c) ISO/IEC 20000
d) ISO/IEC 27000

Q78. Which of the following examples of sending e-mail is <u>inappropriate</u> from the standpoint of the protection of personal information?

a) In responding to an e-mail asking questions about a product, you placed the e-mail addresses of multiple customers in the "CC" field as you want these customers to read the response.

b) You created one (1) e-mail message for each of your top 10 customers as determined by the amount of mail-order purchases, in order to inform each customer of a corresponding prize.

c) You sent an e-mail message with information on an alumni meeting, and addressed the message to the e-mail addresses of all members listed in the alumni association directory that is distributed to all members.

d) When you were arranging a special spring exhibition, you placed the e-mail addresses of selected members in the "BCC" field of an e-mail message and sent the message in order to solicit exhibits.

Q79. Which of the following is an explanation of compliance management?

a) It is a business process of monitoring and checking whether the business management is adequate and appropriate, so as to maintain the legitimacy of the business activities towards the shareholders.

b) It is a business process of holding accountability to the shareholders and other stakeholders for the operational activities and business performance.

c) It is a business process of implementing rules, manuals, and checking systems based on business ethics, and performing business activities in accordance with legal requirements and social norms.

d) It is a business process of providing investors and analysts with accurate management information necessary for making investment decisions, on a timely and continuous basis.

Q80. Company *X* summarized the results of positioning analysis of its marketing power in relation to competitors into the table as shown below. In the table, "1" is the lowest score, and "5" is the highest score. Where does Company *X* rank from the top?

	Weight	Company X	Company A	Company B	Company C
Price	5	3	4	3	2
Product quality	3	3	3	2	5
Brand name	3	4	2	5	1
Selling power	4	2	4	4	5

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

Q81. In the planning of the business strategy of a retail business, "retention of loyal customers" is set as the CSF (Critical Success Factor). Which of the following is the most appropriate analysis that is used for evaluating the achievement level of the CSF?

a) RFM analysis by customer
b) Demographic analysis of new customers
c) POS analysis of new products
d) ABC analysis of the total sales amount by store and by product

Q82. Which of the following is the marketing technique that is composed of four components: product, price, place, and promotion?

a) Social marketing   b) Direct marketing
c) Marketing channel   d) Marketing mix

Q83. Which of the following is an appropriate combination of a management theme and a technique for achieving it?

[Management themes]

A: A company wishes to develop efficient business processes that span from procurement of components to sales.

B: A company wishes to understand customers' preferences and other information, and use this information in product planning and sales promotion.

C: A company wishes to know the product name, quantity, and other sales-related information at the time of sale in order to restock appropriately and analyze strong-selling products.

[Techniques]

CRM, POS, SCM
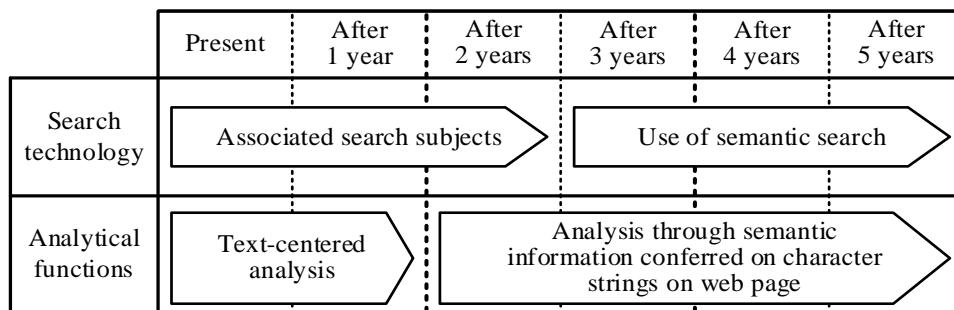
	A	B	C
a)	SCM	CRM	POS
b)	POS	CRM	SCM
c)	CRM	SCM	POS
d)	SCM	POS	CRM

Q84. Which of the following is appropriate as the evaluation axes in PPM that are used in optimizing the allocation of management resources across multiple businesses in a company?

a) Technology and products
b) Market growth rate and market share
c) Products and markets
d) Strengths and weaknesses, and opportunities and threats

Q85. In the promotion of technology development, charts such as the one shown in the example are used for the evaluation of progress or for checking consistency with related technologies. What is the name of this sort of chart that records the route toward progress in required functions, underlying technology, etc. through research and development initiatives on the time axis?

Prospects for web page search technology and analytical functions

	Present	After 1 year	After 2 years	After 3 years	After 4 years	After 5 years
Search technology	Associated search subjects			Use of semantic search		
Analytical functions	Text-centered analysis		Analysis through semantic information conferred on character strings on web page			

a) Control chart
b) Cause and effect diagram
c) Pareto chart
d) Roadmap

Q86. Which of the following is supported by a CAD system?

a) Process designing
b) Production planning
c) Product designing
d) Delivery planning

Q87. Which of the following is the situation where an improvement can be expected by installing an MRP (Material Requirements Planning) system?

a) Drawing information is managed using electronic files and hard copies, so the design change history cannot be accurately known.
b) Information concerning materials necessary for manufacturing and their required quantities is insufficient or incorrect, so production is adversely affected.
c) There are too many design change requests, so production efficiency does not increase.
d) High-mix, low-volume production is adopted, so the cost of installing production equipment is increasing.

Q88. The table below shows the relationship between the standard number of staff and the number of days required to complete preparation activities *A* through *E* of an event. The preparation activities started 35 days before the event and have been conducted according to the table; however, only one staff member was assigned during the first 20 days. In order to complete the remaining activities to meet the original deadline, what is the minimum number of staff members that must be reserved per day for the remaining period? Here, the preparation activities can be performed in any sequence, any staff member can achieve the same productivity in each activity, and any number of staff members can be assigned to an activity at one time.

Preparation activity	Standard number of staff (persons)	Number of days required (days)
A	2	5
B	2	5
C	3	10
D	2	5
E	5	10

a) 4   b) 5   c) 6   d) 7

Q89. A factory is engaged in assembly production of product *P* that consists of components *A* and *B*. The processing of component *A* requires component *C*, and the processing period is one week. The delivery lead times of purchased components *B* and *C* are two weeks and three weeks, respectively. Product *P* can be assembled in one week only after components *A* and *B* are both delivered. What is the minimum number of weeks required to produce one unit of product *P*, including the delivery periods of the components? Here, there is no stock of any of the components.

a) 4   b) 5   c) 6   d) 7

Q90. Which of the following is an appropriate explanation of the point card system (or loyalty program) offered by retailers?

a) It is a system that enables the card applicant to do shopping within a credit limit through deferred payment of the amount.
b) It is a system that enables the payment of the shopping amount through a bank ATM card.
c) It is a system where credit corresponding to purchase amount is accumulated, and services are offered according to the accumulated credit.
d) It is a system where an amount is prepaid on the assumption of purchase of products, and the amount is deducted from the card each time a product is purchased.

Q91. Which of the following describes EDI?

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

Q92. An ERP package is a suite of fully integrated software applications that are used to perform administrative business processes, such as financial management, procurement, personnel, and payroll administration. Which of the following is the most appropriate description concerning such an ERP package?

a) An ERP package can be installed with relative ease because the business processes of a company do not need to be analyzed.

b) An ERP package should be maintained by individual user departments after its installation.

c) An ERP package should be installed after the business processes of a company are verified and standardized.

d) An ERP package is an integrated type of system software that is designed especially for the domestic business processes.

Q93. When system development is outsourced for the purpose of building a system, which of the following is an appropriate item to be considered?

a) Placing an order with a reliable outsourcee in order to complete the acceptance test in a simple and easy way

b) Monitoring the progress of development on the outsourcer side in order to find and resolve problems early

c) Entrusting all tasks, including the determination of the specifications of business processes, to an outsourcee who is familiar with the business processes

d) Giving detailed instructions on outsourced tasks down to each staff member, even if the outsourcee is reliable

Q94. Which of the following is term for a method that uses data such as accumulated sales data to find regularity such as a correlation between weather and products that sell well?

a) Data warehouse
b) Data processing
c) Data mining
d) Data modeling

Q95. Which of the following is the most appropriate training content for improving the information literacy of sales employees?

a) Methods for analyzing the structure of sales performance data used in work, and designing databases

b) A method for analyzing past sales performance data stored in an information system, for use in work

c) A method for analyzing progress management data from development work on sales systems, in order to improve project management standards

d) A method for surveying satisfaction with sales systems and drawing a roadmap for improving them

Q96. Which of the following is an item that must be considered when information systems strategy is drafted?

a) Methods for shortening the development period

b) Consistency with the business strategies

c) Methods for reducing costs

d) Introduction of the latest technologies

Q97. Which of the following is an explanation of "acceptance inspection" performed for a vendor?

a) Checking the estimate submitted by the vendor and placing an order on the basis of that estimate

b) Checking whether the deliverables provided by the vendor conform to the requested specifications

c) Requesting the vendor to study and submit the proposal for the implementation of a new system

d) Requesting the vendor to provide information for the purpose of collecting information

Q98. Which of the following is a process in the software life cycle that includes the creation of a computerization project?

a) Operation

b) Development

c) Planning

d) Requirements definition

Q99. Which of the following is the most appropriate description concerning the creation of documents in the development and maintenance of software?

a) When an itemized list or a chart is used, meaning and content become unclear. Therefore, text based on natural language is used as much as possible.

b) A clear relationship between documents is important and makes it possible to check the consistency between documents, which leads to an improvement in quality.

c) Duplication and redundancy of the content of a document are necessary to improve not only the maintainability of the software but also the maintainability of the document.

d) The first priority is that a document can be understood better by developers than by maintenance personnel, and it is desirable to improve productivity without taking too much time.

Q100. For the procurement of a system, which of the following is an appropriate combination of the words or terms corresponding to blanks A and B?

In Company A, during the procurement of a new system, an RFI is presented to vendors with the aim of obtaining   ___A___ . Thereafter, an RFP is presented to the vendors with the aim of obtaining   ___B___ , and then a contractor is selected.

	A	B
a)	technology trend research reports	proposals
b)	technology trend research reports	non-disclosure agreements
c)	financial statements	proposals
d)	proposals	technology trend research reports