October 2022

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 sample question below.

   [Sample Question]

   Q1. Which of the following should be used for marking your answer on the answer sheet?

   a) Ballpoint pen   b) Crayon   c) Fountain pen   d) Pencil

   Since the correct answer is "d)" (Pencil), mark the answer as below:

   [Sample Answer]

Q1	ⓐ	ⓑ	ⓒ	●

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

Inquiries about the exam questions will not be answered.

Company names and product names appearing in the examination questions are trademarks or registered trademarks of their respective companies. Note that the symbols ® and ™ are not used within.

Q1. As shown in the figure below, decimal numbers 2, 5, 10, and 21 are represented using five (5) squares that are black or white.

2 □□□■□

5 □□■□■

10 □■□■□

21 ■□■□■

A white square indicates 0, and a black square indicates a different positive value that is determined depending on the position of the square. The sum total of the values of the five (5) squares is a numeric value that is represented by the five (5) squares. Which of the following is the decimal number that is represented by ■■□□□?

a) 12   b) 20   c) 24   d) 30

Q2. There are five (5) lamps arranged in line. Each of them can be turned on and off independently. How many patterns are there where two (2) or more lamps are turned on? Here, the pattern where all lamps are turned on is counted as one (1) and the pattern where any one of them is turned on is counted as five (5).

a) 4   b) 10   c) 26   d) 32

Q3. Which of the following is the binary number that is obtained by adding the binary numbers 01011010 and 01101011? Here, the binary numbers are expressed as positive 8-bit values.

a) 00110001   b) 01111011   c) 10000100   d) 11000101

Q4. Which of the following is the combination of terms or phrases to be inserted into blanks *A* through *C* in the description below concerning a method for representing information?

Data that represents information by using a continuous, variable physical volume (length, angle, voltage, etc.) is called [*A*] data, and data that represents information by using discrete numerical values is called [*B*] data. A CD that is used for the distribution of music and songs is an optical disc medium that stores information as [*C*] data.

	A	*B*	*C*
a)	analog	digital	analog
b)	analog	digital	digital
c)	digital	analog	analog
d)	digital	analog	digital

Q5. The procedure described below is sequentially performed for two (2) variables *x* and *y*, starting with step (1). When the procedure is completed, 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, complete the procedure. Otherwise, return to step (2).

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

Q6. Which of the following is the method for describing the logical structure of a sentence in XML?

a) Enclosing the sentence, clauses, and other elements by using double quotes ("")
b) Separating the sentence, clauses, and other elements by using commas
c) Enclosing the sentence, clauses, and other elements by using tags
d) Separating the sentence, clauses, and other elements by using tab characters

Q7. A stack is a first-in last-out data structure. By using a stack, a device receives data from the right side, changes their order and sends them to the left side, as shown in the figure below. There are three (3) types of operations available on the device, as described below.

(1) Data received from the right side is sent to the left side without using the stack.
(2) Data received from the right side is pushed into the top of the stack.
(3) Data popped out of the top of the stack is sent to the left side.

When the device receives X, Y, and Z in this order from the right side, which of the following is the order in which the device **cannot** send them to the left side even if the operations (1) to (3) are combined?
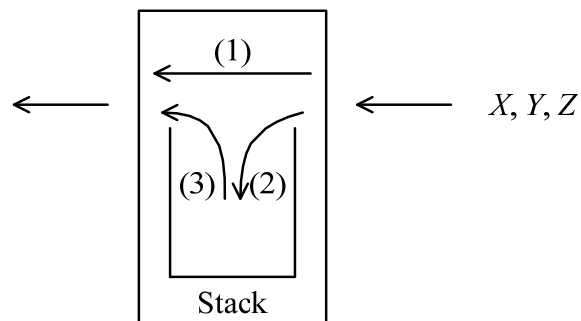
a) X, Z, Y b) Y, Z, X c) Z, X, Y d) Z, Y, X

Q8. There exist four (4) states numbered 1 through 4. The four (4) states are connected as shown in the figure below, and the state transition occurs in a clockwise or counter-clockwise direction.
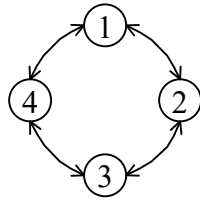
If the current state is 1, which of the following is the state that is reached after the procedure below is performed twice?

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

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

Q9. 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*

Q10. 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.

Q11. Which of the following is an appropriate description concerning the cache memory of a CPU?

a) The size of cache memory is greater than or equal to the size of main memory.
b) Cache memory is used to reduce the effective access time of main memory.
c) On computers with a large main memory, there is no effect of cache memory.
d) In order to increase the hit rate, the user specifies the frequently used programs to be resident in cache memory.

Q12. Which of the following is an appropriate description concerning NFC?

a) It provides communications across a short distance of approximately 10 cm, and is used for reading and writing data on an IC card or IC tag.
b) It can provide communications across an area of tens of meters, and is used in wireless LANs.
c) It provides communications by using infrared rays, and is used for data exchange on mobile phones.
d) It can receive electromagnetic waves from multiple artificial satellites, and is used for positioning on a car navigation system.

Q13. Which of the following storage units has the shortest access time?

a) HDD
b) SSD
c) Cache memory
d) Main memory

Q14. Which of the following is an appropriate explanation of the hot standby system?

a) It is a system configuration where a collection of various types of hardware, software, and data on the Internet is provided to the user.
b) It is a system configuration where a high level of reliability can be obtained by simultaneously operating the two (2) sets of equipment and by always performing the same processing while cross-checking the results.
c) It is a system configuration where a backup machine is always kept ready in an operable state and is immediately switched into operation at the occurrence of a failure.
d) It is a system configuration where a backup machine is arranged, and at the occurrence of a failure, the operator in charge starts up the backup machine and switches it into operation.

Q15. 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 that is causing the problem?

a) Throughput
b) Defragmentation
c) Flowchart
d) Bottleneck

Q16. The life cycle of a device is divided in terms of failures into three (3) periods, namely, the initial failure period, the random failure period, and the wear-out failure period, as time goes by. In the first initial failure period, the failure rate decreases as time goes by. Then, the device reaches a stable state, and the failure rate is effectively constant in the subsequent random failure period while time goes by. In the final wear-out failure period, the failure rate increases as time goes by, and the life of the device eventually ends. Which of the following is a representation of the relation between the failure rate and time?

a) Gantt chart
b) Reliability growth curve
c) Bathtub curve
d) Radar chart

Q17. Which of the following is an appropriate explanation of multitasking?

a) Several computers connected via a network work together to achieve a high-performance system.
b) Several processor cores composed of arithmetic circuits and other control circuits are implemented in a single CPU.
c) The CPU processing time is allocated to several processes in turn so that the processes can be executed simultaneously.
d) The same processing is performed for multiple data items by executing a single instruction.

Q18. The types of programs that are running when a PC is started are broadly classified into three (3) categories, namely BIOS (Basic Input Output System), OS, and resident application programs. Which of the following is the order of execution of the programs?

a) BIOS, OS, resident application programs
b) OS, BIOS, resident application programs
c) OS, resident application programs, BIOS
d) Resident application programs, BIOS, OS

Q19. When a record in a file is modified, which of the following is an appropriate way of identifying the modified contents?

a) Keeping a record of the size and the modified date of a file
b) Keeping a copy of a file and comparing it to the modified one later
c) Keeping a record of the number of records into the file
d) Keeping records sorted in ascending order of the key field

Q20. Which of the following is an appropriate combination of software that includes only OSS (Open Source Software)?

a) Microsoft Word, Linux, PostgreSQL
b) Microsoft Word, PostgreSQL, Windows
c) Firefox, Linux, Thunderbird
d) Firefox, Thunderbird, Windows

Q21. Which of the following is a term that means the validation of a software license by using the product ID and the user's hardware information, in order to prevent unauthorized use of the software?

a) Activation
b) Cloud computing
c) Streaming
d) Fragmentation

Q22. Sales data by month for each branch is evaluated. In the "Evaluation" field for each branch by month, if the amount of sales at the branch is below the average sales amount of branches *A* through *C* for the month, the symbol "X" is to be displayed, and if the amount is above or equal to the average, the symbol "O" is to be displayed. Which of the following is an appropriate expression to be entered in cell C3? Here, the expression that is entered in cell C3 is copied and used in cell D3, cell E3, cells C5 through E5, and cells C7 through E7.

Unit: million yen

	A	B	C	D	E
	Month	Item	Branch *A*	Branch *B*	Branch *C*
1	Month	Item	Branch *A*	Branch *B*	Branch *C*
2	July	Sales amount	1,500	1,000	3,000
3	July	Evaluation			
4	August	Sales amount	1,200	1,000	1,000
5	August	Evaluation			
6	September	Sales amount	1,700	1,500	1,300
7	September	Evaluation			

a) IF($C2 < AVERAGE(C2 : E2) , 'O' , 'X')

b) IF($C2 < AVERAGE(C2 : E2) , 'X' , 'O')

c) IF(C2 < AVERAGE($C2 : $E2) , 'O' , 'X')

d) IF(C2 < AVERAGE($C2 : $E2) , 'X' , 'O')

Q23. Which of the following is an appropriate typical example of a system operating on a super computer?

a) An SCM system that is required for linkage between enterprises

b) A global climate change prediction system that requires large-scale scientific and technical computing

c) A banking system that requires a high reliability

d) An engine control system of a vehicle that requires advanced real-time control

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 live video 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 activity 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. In DBMS, which of the following is a function for maintaining consistency of data by preventing the occurrence of conflicts due to simultaneous access to the data ?

a) Normalization　　　　　b) Deadlock

c) Exclusive control　　　　　d) Restore

Q27. By joining tables "Employees in charge", "Regions", and "Customers" that are managed in a relational database, the table *A* that is shown below is obtained. Which of the following is the table "Customers" that is used for the joining? Here, a solid underline indicates a primary key and a dotted underline indicates a foreign key.

Employees in charge

Employee code	Employee name

Regions

Region code	Region name

A

Customer code	Customer name	Employee name	Region name	Representative name

a)

Customer code	Customer name	Representative name

b)

Customer code	Customer name	Representative name	Employee code

c)

Customer code	Customer name	Representative name	Region code

d)

Customer code	Customer name	Representative name	Employee code	Region code

Q28. A customer name and his or her address, a product name and its unit price, the products and quantities ordered by the customer, and the date of order are managed by using a relational database. Which of the following is an appropriate table after normalization? Here, the underline represents primary keys, and there are same customer names and product names.

a) CUSTOMER

CustomerNumber	CustomerName	Address

PRODUCT

ProductNumber	ProductName	UnitPrice

ORDER

OrderNumber	CustomerNumber	ProductNumber	Quantity	Date

b) CUSTOMER

CustomerNumber	CustomerName	Address

PRODUCT

ProductNumber	ProductName	UnitPrice

ORDER

OrderNumber	CustomerName	ProductName	Quantity	Date

c) CUSTOMER

CustomerNumber	CustomerName	Address	Date

ORDER

OrderNumber	CustomerName	ProductName	UnitPrice	Quantity

d) PRODUCT

ProductNumber	ProductName	UnitPrice	Quantity

ORDER

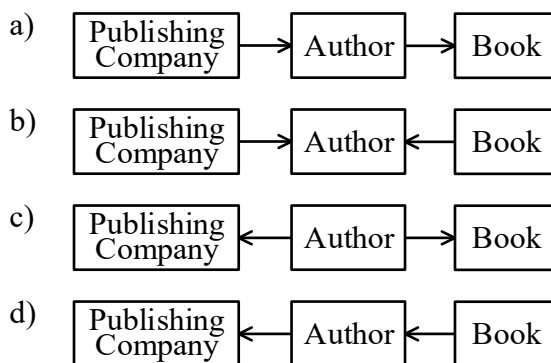| OrderNumber	ProductNumber	CustomerName	Address	Date

Q29. When conditions (i) through (iv) are all fulfilled, which of the following is the E-R diagram that indicates the relationship between publishing companies, authors, and books? Here, the notation for the E-R diagram is as below.

[Notation]

| A | ⟶ | B | This indicates that A and B have a one-to-many relationship.
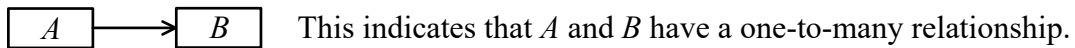
[Conditions]

(i) A publishing company has contracts with multiple authors.
(ii) An author has a contract with only one (1) publishing company.
(iii) An author writes multiple books.
(iv) One (1) book is written by one (1) author.

a) | Publishing Company | ⟶ | Author | ⟶ | Book |

b) | Publishing Company | ⟶ | Author | ⟵ | Book |

c) | Publishing Company | ⟵ | Author | ⟶ | Book |

d) | Publishing Company | ⟵ | Author | ⟵ | Book |

Q30. 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 when communication is relayed between an internal network and the Internet
d) Associating a domain name of destination with an IP address

Q31. 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.

Q32. Which of the following is a WAN?

    a) A network that uses a company's own communication lines, and connects buildings within the same premises
    b) A network that connects the floors in a company's building
    c) A network that uses a communications service provider's communication lines, and connects a head office with branch offices.
    d) A network that connects the PCs on one floor

Q33. When setting up PC1 for connecting it to the Internet, an IP address is set in "default gateway" that is one of the network settings of PC1. Which of the following devices has this IP address?
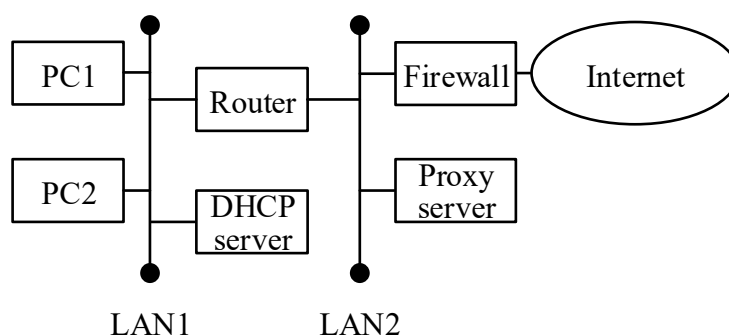
    a) Router   b) Firewall
    c) DHCP server   d) Proxy server

Q34. Which of the following is used for communication in activities such as the gathering of data from IoT devices, and has long range and power saving characteristics that enable wireless communication over a distance of tens of kilometers?

a) BLE   b) LPWA   c) MDM   d) MVNO

Q35. Among the following lists consisting of the information security terms availability, integrity, confidentiality, and vulnerability, which is a complete list of properties of information that information security is to preserve?

a) Availability, Integrity
b) Availability, Integrity, Confidentiality
c) Integrity, Confidentiality
d) Integrity, Confidentiality, Vulnerability

Q36. 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?

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

Q37. Among the threats and vulnerabilities in information security, which of the following is a vulnerability?

a) Computer virus
b) Social engineering
c) Tapping of communications data
d) Inappropriate password management

Q38. Which of the following is an appropriate description concerning a scheme for authenticating a user of a system?

a) A scheme where authentication is accomplished by utilizing a password that can be used only once is called a single sign-on.

b) A scheme where the use of multiple servers or applications is authorized by being authenticated once is called a one time password.

c) A scheme where a sequence of numbers or characters that are placed on positions that the user remembers within a table on the screen is entered as a password is called a matrix authentication.

d) A scheme where authentication of the user is accomplished by using fingerprints, voiceprint, or other physical characteristics is called a challenge-response authentication.

Q39. Which of the following is the list that contains all appropriate features of chain mail?

A: It is used for the purposes of communication and information sharing within a group.

B: It places a wasteful load on network servers.

C: The same e-mail is repeatedly replied to.

D: The text of the e-mail encourages forwarding of the e-mail to many people.

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

Q40. One of the methods of cracking a password is a brute force attack that involves attempting all character combinations. When the number of characters of a password that is composed of 26 types of characters from *A* through *Z* is increased from four (4) to six (6) characters, by what factor is the maximum number of attempts to decode the password with the brute force attack increased?

a) 2   b) 24   c) 52   d) 676

Q41. In e-commerce transactions, which of the following is the most appropriate request to be made to the other party in order to prevent denial of the fact of order placement and details thereof?

a) Letting the other party set the login password of the OS in the computer used by the other party for conducting the transaction
b) Letting the other party take measures against virus in the intranet of the other party
c) Letting the other party add a digital signature to the order data
d) Letting the other party send the order data after encrypting it

Q42. Which of the following is an appropriate example of ransomware?

a) It is a software program that encrypts the files in a computer, makes them unusable, and demands money in exchange for a key with which to decrypt them.
b) It is a software program that records keyboard input illegally.
c) It is a software program that makes itself difficult to find by altering the system log.
d) It is a software program that has the function of spreading by itself via networks.

Q43. Which of the following is the most appropriate combination of the measures against password theft and brute force attack respectively on websites having a login function?

	Password theft	Brute force attack
a)	Sending password via encrypted communication	Using single sign-on
b)	Sending password via encrypted communication	Limiting the number of attempts at entering the password
c)	Setting a string that is difficult to guess as the password	Using single sign-on
d)	Setting a string that is difficult to guess as the password	Limiting the number of attempts at entering the password

Q44. Which of the following is the appropriate combination of terms or phrases to be inserted into blanks *A* and *B* in the description below concerning authentication accuracy in biometric authentication?

In biometric authentication, the probability of incorrectly rejecting the relevant person is called the false rejection rate, and the probability of incorrectly accepting another person is called the false acceptance rate. The rate that an authentication device or algorithm cannot recognize biometric information is called the unsupported rate.

In the settings for authentication accuracy, setting the ☐ *A* ☐ lower increases convenience, and setting ☐ *B* ☐ lower increases security.

	A	*B*
a)	false acceptance rate	false rejection rate
b)	false acceptance rate	unsupported rate
c)	false rejection rate	false acceptance rate
d)	unsupported rate	false rejection rate

Q45. In ISMS risk assessment, which of the following is performed first?

a) Risk treatment

b) Risk identification

c) Risk evaluation

d) Risk analysis

Q46. A system migration plan was created for the migration from an existing system to a new system. Which of the following is an appropriate item to be described in the system migration plan?

a) System selection policy
b) Schedule for parallel operation of the old and new systems
c) Evaluation criteria for the quality of the deliverables
d) The work history of project members

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 developers deploy the software for which development is complete to the production environment.
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.

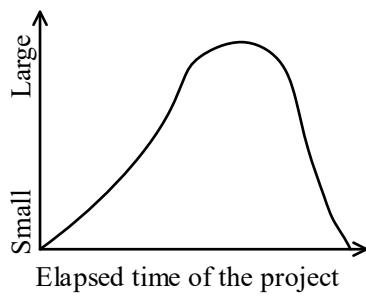**Q48.** Which of the following corresponds to software maintenance?

a) A response time that was measured in a system test did not satisfy the requirement, so tuning was performed on the software.
b) As a result of a software acceptance test, a fault was found, so the orderer requested the developer to fix the software.
c) A function was found missing in a unit test of a program, so the function was added to the program.
d) A defect was reported on software that is running on a production system, so the software was modified.

Q49. It has been decided that a department will participate in the test of a newly developed business system as the user department. Which of the following is an appropriate matter that should be confirmed by the user department?
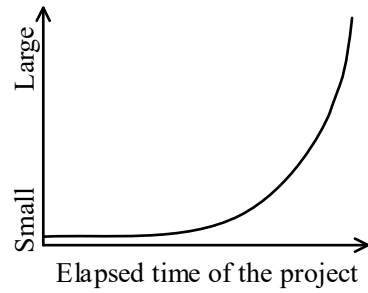
a) Business requirements are satisfied.
b) Individual programs run according to the program specifications.
c) The network that is used by the system can be monitored according to the predetermined procedure.
d) Data is exchanged between the programs as specified in the design document.

Q50. In a project where a general waterfall model is used for the development, graphs are drawn below regarding the number of staff members required as the project progresses, and regarding the cost of each correction work required for a change or error. Which of the following is an appropriate combination?

I

Elapsed time of the project

II
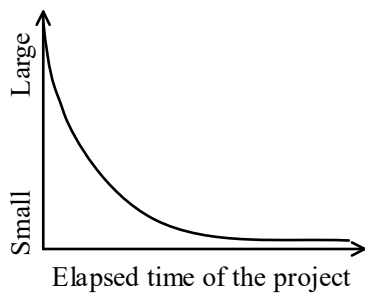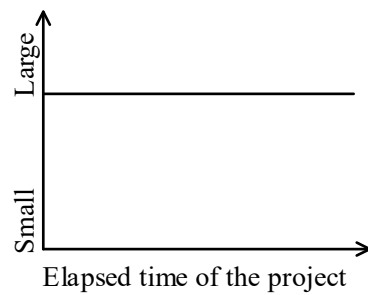

Elapsed time of the project

III

Elapsed time of the project

IV

Elapsed time of the project

	Number of staff members	Cost of each correction work
a)	I	II
b)	I	III
c)	II	IV
d)	IV	III

Q51. Which of the following is appropriate to be prepared in order to select the delivering party for a product or service?

  a) A communication management plan
  b) A test case
  c) Evaluation standards
  d) A project charter

Q52. Which of the following is a method that organizes all of the activities that need to be performed in the project in a hierarchical structure, and clarifies the work units to be managed in the project?

  a) CRM   b) ERP   c) PPM   d) WBS

Q53. In a project team that is required to communicate information on a one-to-one basis, when the members increase from six (6) people to ten (10) people, by how many times does the number of paths that are required for communicating information increase?

  a) 1.5   b) 2.5   c) 3   d) 6

Q54. Which of the following is the most appropriate description of stakeholders in a system development project?

  a) They are individuals and organizations such as users of the developed system and managers in the development division.
  b) They are sponsors who bear the cost of system development.
  c) They are events that may negatively affect the project and other events that may positively affect the project.
  d) They are project deliverables and tasks that are performed to create the deliverables.

Q55. When a system development project is started, it is foreseen that the progress of the project may be affected by a large number of requests for specification change that come from users during the course of development. Which of the following is the most appropriate measure for ensuring that there is no deterioration in quality or delay in delivery date?

a) Declaring to the customer that requests for change cannot be accepted after the completion of design
b) Shortening the test period by skipping tests when a delay occurs during the course of the project
c) Including in the plan that the implementation of a function will be called off if there are a large number of requests for change
d) Reaching an agreement with the customer concerning the priority scheduling method of requests for change and their scope of handling

Q56. The processes of project management include project cost management, project communications management, project resources management, project schedule management, and the like. In a system development project, which of the following is the most appropriate activity in project cost management when members are added for implementing a test?

a) Updating the mailing list, etc. so that information can be efficiently transmitted to the newly participating members
b) Requesting a vendor to provide training on the testing tool to the newly participating members
c) Adding tasks to be handled by the newly participating members, and changing the schedule
d) Estimating the personnel expenses of the newly participating members, and changing the planning

Q57. The PC on one's desk and the printer in a shared space are started by a single person under the conditions shown in the figure below. It is only possible for the operations and processing of the PC and printer and the movement of the person to be performed sequentially, but during automatic processing of one device, it is possible for the person to move or operate the other device, or for the other device to perform automatic processing. What is the required time (in seconds) for the person to start the PC startup at his/her desk, then move and start and end the printer startup, return to his/her desk, and end the PC startup?

[Conditions]

Movement: 60 seconds one way

PC on one's desk　　　　　　　　　Printer in a shared space
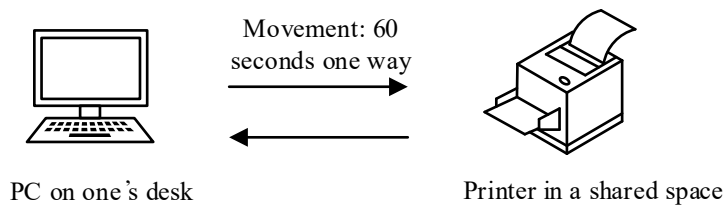
Flow of PC startup

Operation/processing	Time required	Processing type
(Start of startup)		
A: Turn on the power	3 seconds	Manual operation
B: Login screen startup	150 seconds	Automatic processing
C: Login operation	10 seconds	Manual operation
D: Application startup after login	60 seconds	Automatic processing
(End of startup)		

Flow of printer startup

Operation/processing	Time required	Processing type
(Start of startup)		
E: Turn on the power	3 seconds	Manual operation
F: Startup	60 seconds	Automatic processing
(End of startup)		

a)　223　　　　　b)　256　　　　　c)　286　　　　　d)　406

Q58. Which of the following is an appropriate management system that improves the efficiency of the management of IT operations and the quality of services including availability?

a) IT technical strategy management
b) IT service management
c) IT project scope management
d) IT project time management

Q59. In IT service management, which of the following is an appropriate process for resolving the fundamental causes of incidents and preventing their recurrence?

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

Q60. Which of the following is an activity that is performed by a service provider and is effective for the improvement of availability?

a) Measurement of response time
b) Monitoring of failure occurrence
c) Management of the server configuration used by the organization
d) Recording of the modification history of a program

Q61. When service desk, reliability, and data management are among the items of an SLA of an application hosting and operation service, which of the following is the appropriate combination of the indexes *A* through *C* of the service level, and the items of the SLA?

A   The average time from the occurrence of a failure until the completion of recovery
B   Reception hours for queries
C   The retention period of backup media

	A	*B*	*C*
a)	Service desk	Reliability	Data management
b)	Service desk	Data management	Reliability
c)	Reliability	Service desk	Data management
d)	Data management	Reliability	Service desk

Q62. Which of the following is the most appropriate example of implementation of agile development?

a)   Conducting a trial before undertaking development in order to verify the prediction accuracy of an AI system, and selecting an effective algorithm
b)   Outsourcing development to vendors who have the technology in order to widely adopt various technologies of IoT
c)   Proceeding with the development of a large-scale IoT system in a sequential manner while approving the completion in each process from the upstream processes up to the downstream processes
d)   Adding the functions of an analysis program while repeating fixed short-period cycles in order to improve the accuracy of analysis in the development of an analysis system

Q63. Which of the following is an appropriate measure to implement internal controls function?

a) Avoiding creating a job description indicating the scope of work and roles

b) Avoiding creating a work handover document for a successor

c) Avoiding processing purchasing and payment by the same person

d) Avoiding separating team members for system development and system operation

Q64. Which of the following is the appropriate combination of terms or phrases to be inserted into blanks *A* and *B* in the description below concerning the purpose of system audits?

With regard to the appropriate design and operation of the control for risks concerning information systems, the system auditor ⬚ *A* contributes to the realization of IT governance by performing ⬚ *B* .

	A	*B*
a)	of the responsible department having a thorough knowledge of business operations	implementation
b)	of the responsible department having a thorough knowledge of business operations	evaluation
c)	having an independent and professional standpoint	implementation
d)	having an independent and professional standpoint	evaluation

Q65. Among the activities *A* through *D* concerning the information system of a company, which of the following is the list that contains all and only the appropriate activities that are performed from the viewpoint of the business continuity plan (BCP)?

A: Periodically taking a backup of important data
B: Securing a generator and fuel for emergencies
C: Securing multiple communication networks
D: Implementing training for recovery procedures

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

Q66. Which of the following is a concept that forms the basis of corporate activities and perceives and tackles social issues such as contribution to society and protection of the global environment, rather than simply pursues profit?

a) BCP   b) CSR   c) M&A   d) MBO

Q67. Which of the following examples of capacity building and guidance for subordinates is classified as OJT?

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

Q68. An implementation plan for a company-wide information system that is consistent with the business strategy is to be created. Which of the following is the most appropriate person to take responsibility for this activity?

a) CIO
b) CTO
c) Head of the core business department
d) Person in charge of planning in the information systems department

Q69. Which of the following is an appropriate way to brainstorm?

    a) Asking participants to present feasible ideas and refrain from generating unrestrained ideas

    b) Proceeding with the session without blaming any member who creates an improved idea that takes advantage of another member's idea

    c) Proceeding with the session while selecting the ideas that are suitable to the theme

    d) Encouraging the criticism of ideas to pursue quality rather than quantity of ideas

Q70. The operating profit when the sales quantity of a product is 700 units is as shown in the table below. When the unit sales price is reduced by 20% to expand sales, the sales quantity increases by 20%. How much, in yen, is the operating profit at this time? Here, the variable cost per one (1) unit of the product does not change.

Unit: Yen

Total sales		700,000
Cost		
Variable cost		140,000
Fixed cost		300,000
Operating profit		260,000

    a) 200,000   b) 204,000   c) 260,000   d) 320,000

Q71. Company *A* is a large company with multiple offices nationwide, and it created BCP that envisaged the total destruction of the head office building in a large natural disaster. In consideration of the purpose of the BCP, which of the following is Company *A*'s most appropriate BCP?

    a) In order to prevent damage by a fire that occurs after a disaster, replacing curtains and other such things with flame-resistant products and planning regular checks of fire prevention equipment

    b) In order to swiftly respond to instructions from the head office when a disaster occurs, establishing a procedure to completely halting work at all offices and have all employees standby until an instruction is received from the head office

    c) In order to continue business after a natural disaster, specifying an office to take over the functions of the head office, narrowing down the important work that needs to be dealt with, and establishing an implementation procedure for this work

    d) Incorporating insurance premiums for the head office building into the annual budget, and preparing for a relocation to a building with the same scale as the current head office

Q72. Which of the following is the most appropriate terminology for referring to a method that uses AI, IoT, and other such IT for personnel-related work such as personnel evaluations and recruitment with aims including the improvement of a company's personnel functions and achieving reform in working styles?

    a) e-Learning   b) Fintech

    c) HR Tech   d) Competency

Q73. Which of the following is the right that belongs to a purchaser of a PC software package provided by means of CD-ROM?

    a) Right to use the program stored in the CD-ROM

    b) Copyright of the program stored in the CD-ROM

    c) Design right of the CD-ROM storing the program

    d) Copyright of the CD-ROM storing the program

Q74. Among actions concerning the creation of a computer program, which of the following is a copyright violation?

a) Creating another Web page by using the source of HTML that was downloaded from the Internet
b) Creating a program based on an idea that was discussed on a bulletin board on the Internet
c) Creating a program to increase a company's operational efficiency by using a program that was created during one's school days
d) Creating a program based on a flowchart in a purchased book

Q75. From the viewpoint of corporate governance, which of the following is the most appropriate method of strengthening the functions of monitoring and supervising the decision-making process of the management?

a) Installing a camera for monitoring the entry and exit of the president's office
b) Periodically requesting a private detective to investigate the conduct of the management
c) Appointing some outside directors
d) Employing law school graduates as members of the internal audit department

Q76. Which of the following is the most appropriate as an example of an enhancement activity for compliance?

a) Expansion of a program to support the community service activities of employees
b) Education for employees concerning laws and rules that must be followed
c) Acquisition of another company's business for swift business deployment
d) Withdrawal from businesses where it is difficult to make profit

Q77. Which of the following is an international standardization organization that engages in standardization of information security management systems and quality management systems?

a) ANSI   b) CEN   c) ISO   d) JIS

Q78. Which of the following is a code that stores information in a vertical and horizontal two-dimensional pattern?

a) ASCII code   b) G-code
c) EAN code   d) QR code

Q79. The business operations of the entire company, such as production, sale, procurement, accounting, and human resources are to be managed in an integrated manner, and the management resources of the entire enterprise are to be optimized. Which of the following is an appropriate information system for implementing this objective?

a) CRM system   b) ERP system
c) HRM system   d) MRP system

Q80. Which of the following is an appropriate description concerning the Balanced Scorecard (BSC)?

a) It analyzes what activities generate the value of products and services that are provided to customers.
b) It creates strategy and evaluates performance from four (4) viewpoints: financial, customer, internal business processes, and learning and growth.
c) It records entries in a ledger in order to ensure that the amounts of credits and debits are always in balance.
d) It scores and evaluates the creditworthiness of business partners through such means as financial indicators.

Q81. A middle-sized electrical manufacturer company *A* divides the products into groups in accordance with their potential and competitive strength in order to determine the priority of investing funds among their lineup. Which of the following is the most appropriate method of analysis for this purpose?

a) Cluster analysis regarding the prices and the customer bases of the company's products

b) RFM analysis regarding the customers that purchase the company's products

c) PPM analysis regarding the shares and the market growth rates of the company's products

d) Principal component analysis regarding the cause of faults in the company's products

Q82. Which of the following is a system that centrally manages the process from materials procurement to product sales, and aims for the optimization of supply?

a) ASP b) CRM c) ERP d) SCM

Q83. Which of the following is the appropriate explanation of benchmarking used for corporate management?

a) It refers to the promotion of continual improvement of business processes by applying the PDCA cycle.

b) It refers to the best sample for comparison and analysis when improvements are to be made.

c) It refers to the unique skills and technologies for securing superiority over competitors.

d) It refers to the measurement of the products and services of one's company, and their comparison with other superior competitors.

Q84. Several companies want to collaborate on research and development to develop a new business. Which of the following is an appropriate organization for a new company that is formed through collaborative investment?

a) M&A
b) Cross-license
c) Joint venture
d) Spin-off

Q85. Which of the following is the appropriate explanation of a technology road map?

a) It is a description of the required technology for the implementation of the shortest route search function that is used in systems such as a car navigation system.
b) It is a list of software technology that is used in the development process for a business system.
c) It is a description of the technology that the human resources of an information system department should learn for each career path.
d) It is a description of technology in the relevant field that is anticipated to be implemented and its implementation timeline.

Q86. Which of the following systems can be realized through the use of RFID?

a) Providing medical care by transmitting images and voice data of patients from a remote site via a network
b) Depositing and withdrawing money from a bank ATM by using an ATM card
c) Reading product information from the barcodes on products, and performing sales management and order processing at the time of sale in stores
d) Setting an electronic tag on a delivery parcel, and checking information related to the shipping record of the parcel

Q87. When build-to-order production is compared to build-to-stock production, which of the following is an appropriate characteristic of build-to-order production?

a) Shipment is not possible immediately when an order is received, but there is no risk of an excessive number of products in the inventory.

b) It is required to increase the accuracy of order forecast, and maintain the optimum inventory volume of products.

c) It brings the risk of the loss of sales opportunities through insufficient product inventory.

d) Products are produced according to a production plan that is proposed on the basis of order forecast.

Q88. 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

Q89. Which of the following goal can be expected to be achieved by the introduction of Just In Time?

a) Improving the productivity of the sales department
b) Building a long-term relationship with customers
c) Understanding the sales status for each individual product unit
d) Reducing semi-manufactured goods and the number of components in inventory

Q90. Which of the following is an appropriate explanation of CAD?

    a) It is a circuit that converts an analog signal into a digital signal.

    b) It refers to the use of computers in the design of buildings and industrial products.

    c) It is an imaging element that converts light to an electrical signal.

    d) It refers to the combination of characters, images, audio, and other data in order to create a single piece of content.

Q91. Which of the following is a term that refers to something that is modeled on the mechanism of a human brain and imitated with a computer program?

    a) Social network   b) Digital transformation

    c) Neural network   d) Brainstorming

Q92. Which of the following is the most appropriate description concerning deep learning?

    a) It is a mechanism that integrates information and the workflow between departments that are involved with customers, such as sales, marketing, and after-sales service.

    b) It is a form of education, learning, and training that is implemented by using digital devices such as computers, and communication networks.

    c) It is a mechanism for the knowledge and knowhow possessed by each individual in an organization to be shared and effectively utilized by the organization as a whole.

    d) It is a technology where a computer itself identifies and learns the characteristics of data by analyzing a large volume of data with a model that imitates the neural circuits of a human being.

Q93. Which of the following corresponds to information literacy?

a) Knowledge of new PC products and each model's performance
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

Q94. Which of the following is the most appropriate purpose of implementing gamification by taking full advantage of the game elements such as points and badges?

a) Deciding one's own strategy in a game according to the strategy of the opponent
b) Providing motivation to help achieve the goals of the customers and employees
c) Collecting user evaluation concerning new network games
d) Analyzing large volume of data to detect useful facts and relationships

Q95. When a guest arrives at a certain restaurant, their name is registered in a visitor list. When the guest is allocated a seat, both the guest list and seating availability are referenced. Which of the following is the most appropriate DFD to represent this series of actions?
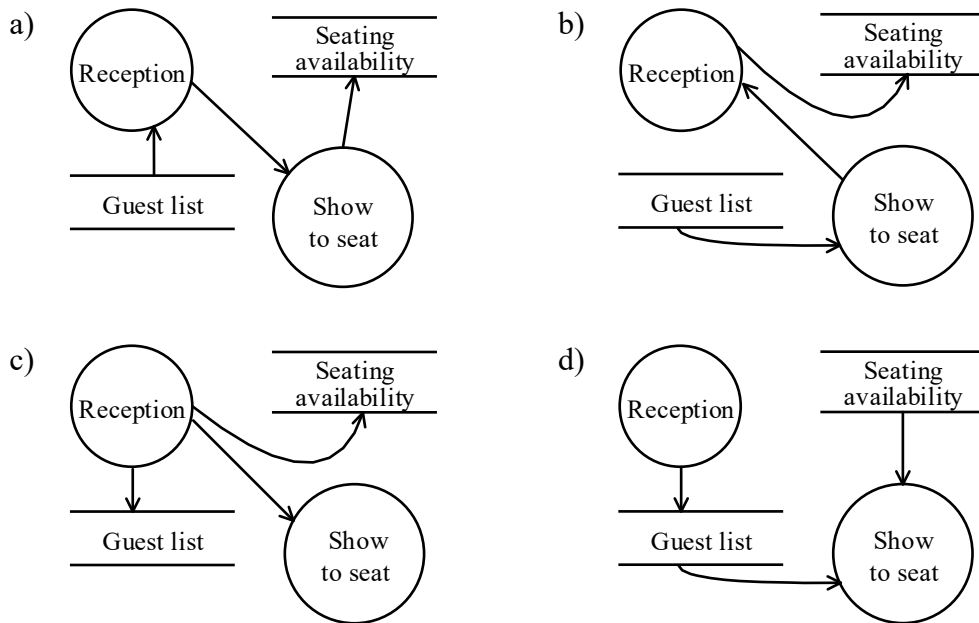
Q96. Which of the following is the most appropriate description of teleworking?

a) It is a flexible way of working that uses IT and is not restricted by location.
b) It is an increase in the number of people assigned to a certain task, and the division of the task into smaller subtasks for allocation.
c) It is the use of an individual's own PC or smart device for work at an office with the permission of the company.
d) It is an attempt to balance working time with non-working time.

Q97. Which of the following is an appropriate procedure for selecting a contractor for system development?

A: Issuance of RFP   *B*: Conclusion of contracting agreement
C: Selection of contractor   *D*: Evaluation of proposals

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

Q98. Which of the following is the most appropriate description of IoT?

a) It is a learning mechanism in artificial intelligence.
b) It is a mechanism where devices or control units equipped with a sensor connect directly to the Internet and exchange a variety of information via the Internet.
c) It is a group of functions and procedures that are made public in order to enable some of the features of a piece of software to be used by other programs.
d) It is a tool that uses a software robot to streamline routine work.

Q99. Which of the following is the appropriate combination of terms or phrases to be inserted into blanks *A* through *C* in the description below concerning a request for proposal?

A request for proposal concerning system development is a document by which generally ⬚ *A* presents to ⬚ *B* the ⬚ *C* , procurement conditions, etc.

	A	*B*	*C*
a)	an information system department	vendors	system requirements
b)	an information system department	user departments	system requirements
c)	a vendor	an information system department	system installation result
d)	a vendor	a user department	system installation result

Q100. When the software lifecycle is divided into the planning process, the requirements definition process, the development process, and the operation process, which of the following is the process where the system functions that users and stakeholders require are clarified and consensus is built on the basis of a computerization plan?

a) Planning process
b) Requirements definition process
c) Development process
d) Operation process