

October 2025

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

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**Q1.** Which of the following is always true for two (2) sets  $A$  and  $B$ ? Here,  $(X \cap Y)$  represents the set that contains only the elements that are in both  $X$  and  $Y$  (intersection set), and  $(X \cup Y)$  represents the set that contains all of the elements that are in at least one of  $X$  or  $Y$  (union set).

- a)  $(A \cup B)$  is a subset of the complement of  $(A \cap B)$ .
- b)  $(A \cup B)$  is a subset of  $A$ .
- c)  $(A \cap B)$  is a subset of  $(A \cup B)$ .
- d)  $(A \cap B)$  is a subset of the complement of  $A$ .

**Q2.** 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

**Q3.** Which of the following is the combination of the mean and median of the data?

[Data]

10, 20, 20, 20, 40, 50, 100, 440, 2000

	Mean	Median
a)	20	40
b)	40	20
c)	300	20
d)	300	40

**Q4.** Which of the following is the appropriate description concerning the prefix of the International System of Units (SI) that is used to indicate CPU clock frequency, communication speed, and other such things?

- a) G multiplied by 10 to the power of 6 is T.
- b) M multiplied by 10 to the power of 3 is G.
- c) M multiplied by 10 to the power of 6 is G.
- d) T multiplied by 10 to the power of 3 is G.

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

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

**Q6.** At a certain company, employees get a medical allowance equal to 5% of their monthly base salary in addition to their monthly base salary. If the total of the monthly base salary and medical allowance is more than 5,000, a 20% tax is deducted from the total. In the program below, the function `calculateTotalSal` receives the monthly base salary as an argument and returns the monthly total salary after tax deduction. Which of the following is the correct combination of pieces of code to be inserted into A and B in the program? Here, the monthly base salary is a multiple of 100.

[Program]

```

integer: calculateTotalSal(integer: monthlyBaseSal)
integer: monthlyTotalSal

monthlyTotalSal ← integer part of (monthlyBaseSal × 1.05)
if (monthlyTotalSal > A)
    monthlyTotalSal ← integer part of (monthlyTotalSal × B)
endif

return monthlyTotalSal

```

	A	B
a)	5000	0.2
b)	5000	0.8
c)	5250	0.2
d)	5250	0.8

**Q7.** Which of the following is the appropriate way for extracting data from a stack that stores multiple data?

- a) Data is extracted from an arbitrary location that is specified, regardless of the sequence that data is stored in.
- b) Data that was stored last is extracted first.
- c) Data that was stored first is extracted first.
- d) Data has a key, and it is extracted according to the priority of the key.

**Q8.** In the program below, the function `subTotal` receives an integer array `inputarr` as an argument, returns an array `arr` in which the sum of all elements of original array `inputarr` up to that location is stored in the same location. Which of the following is the correct combination of pieces of code to be inserted into A and B in the program. Here, the size of the array `inputarr` is greater than 1, and elements outside the bounds of the array must not be accessed, and the array index starts at 1.

[Program]

```

O integer []:subTotal(integer []: inputarr)
  integer: i
  integer: n ← the number of elements in inputarr
  integer []: arr ← {0, ..., 0} // Number of elements is n.
                                // All the elements of the array are 0.

  arr[1] ← inputarr[1]
  for (increase i from A to n by 1)
    arr[i] ← inputarr[i] + B
  endfor
  return arr

```

	A	B
a)	1	arr[i + 1]
b)	1	arr[i - 1]
c)	2	arr[i + 1]
d)	2	arr[i - 1]

**Q9.** Which of the following is the explanation of a characteristic of hypertext?

- a) It has a function for the creation and editing of a range of expressions.
- b) It has a function for the creation and editing of a range of shapes.
- c) It provides a range of templates, and enables their use.
- d) It has a mechanism that enables relevant information to be accessed by embedding a link in any position in a text.

**Q10.** 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

**Q11.** Which of the following is the most appropriate description concerning a compatible CPU?

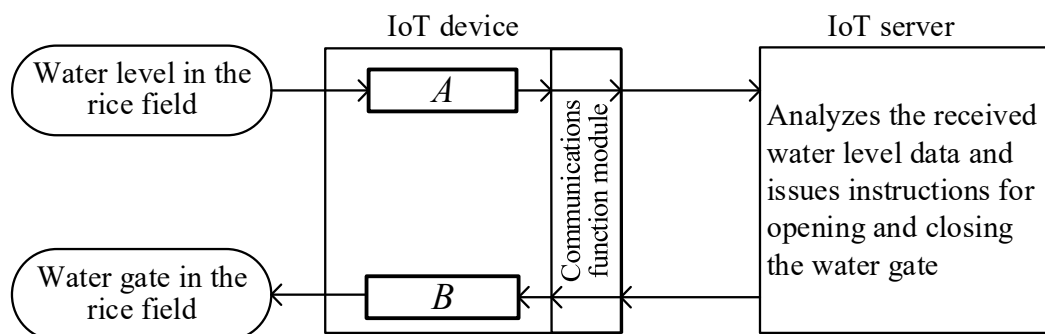
- a) It can run the same OS or the application software that can be run on the original CPU.
- b) It must not be developed nor manufactured as long as the patents of the original CPU are valid.
- c) A compatible CPU for single-core CPU has been developed, while one for multi-core CPU does not exist.
- d) It is a CPU that is intended to improve the performance of an outdated PC, and is not adopted for a new model of PC.

**Q12.** In the description below concerning the connection between a PC and a peripheral device, which of the following is the appropriate combination of words to be inserted into blanks A and B?

The connection of a new peripheral device to a PC requires (a) A, but if a peripheral device that supports B function is connected, the A is installed automatically and the device can be used.

	<i>A</i>	<i>B</i>
a)	device driver	plug and play
b)	device driver	plugin
c)	malware	plug and play
d)	malware	plugin

**Q13.** There is an IoT system that automatically opens and closes the water gate for a rice field by measuring the water level in the rice field. Which of the following is the appropriate combination of terms to be inserted into blanks A and B in the figure?

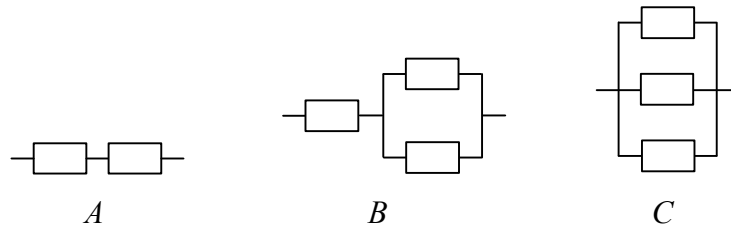


Legend

→ : Direction of transmission of data and signal

	<i>A</i>	<i>B</i>
a)	Actuator	IoT gateway
b)	Actuator	Sensor
c)	Sensor	IoT gateway
d)	Sensor	Actuator

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



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

**Q15.** 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 the term for the component that is causing the problem?

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

**Q16.** Among the descriptions *A* through *C* below concerning the effects that are obtained by simultaneously running multiple virtual servers on one (1) physical computer, which of the following lists all and only the appropriate descriptions?

- A:* Each virtual server can run an OS with a different version, and the resources of the physical computer can be utilized effectively.
- B:* The throughput that is gained when the number of virtual servers is increased is the same as when the number of physical computers is increased by the same number.
- C:* A volume of data that is the same as the capacity of the HDD on the physical computer can be simultaneously recorded on all of the virtual servers.

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



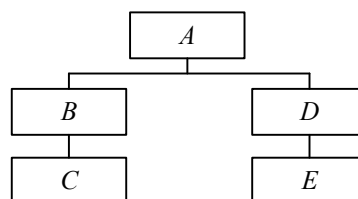
**Q17.** Which of the following is the appropriate explanation of a deadlock?

- a) It is a state in which the processes of a computer are prohibited from getting any access including accidental access to information that must not be accessed.
- b) It is a state in which, if the login attempt of a user fails more than a predefined number of times, the user is prohibited from logging in to the computer for a predefined time period or until the system administrator resets the user account.
- c) It is a state in which, when common resources are exclusively used, two or more processes are endlessly waiting for each other to release the resources they are occupying.
- d) It is a state in which processes in the ready state under a multi-programming environment have used up the CPU time allocated by the OS.

**Q18.** In a web server, five (5) directories have a hierarchical structure as shown in the figure below. In an HTML document stored in directory *B*, which of the following references the file *img.jpg* stored in the directory *E*? Here, directories and files are referenced using the method described below.

[Method of referencing directories and files]

- (1) A file is referenced as “directory name/ ... /directory name/file name”, where the directory names on the path are listed and separated with “/” in sequence, followed by the file name.
- (2) The current directory is represented by “.” (a period).
- (3) The directory one level above is represented by “..” (two (2) periods).
- (4) When a reference begins with a “/”, it is assumed that the root directory has been omitted from the beginning of the reference.
- (5) When a reference does not start with “/”, “.” (a period), or “..” (two (2) periods), it is assumed that “./” for the current directory has been omitted from the beginning of the reference.



- a) `../A/D/E/img.jpg`
- b) `../D/E/img.jpg`
- c) `./A/D/E/img.jpg`
- d) `./D/E/img.jpg`

**Q19.** There is a system where a full backup is made after closing time every Sunday, and an incremental backup is made after closing time on Monday through Saturday. On a Wednesday, a failure happened during business hours, so a decision was made to restore data to the state at the closing time on Tuesday by using backup files. Which of the following lists all and only the necessary backup files for restoring data? Here, an incremental backup file means a backup file that contains only the data that has been modified since the previous backup (a full backup or an incremental backup) was made.

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

**Q20.** Which of the following is the appropriate description concerning Open Source Software (OSS)?

- a) Source code can be edited and then redistributed.
- b) Source code is free of charge, but maintenance and support are charged.
- c) Copyrights are waived, so it can be used without permission.
- d) If the copyright is not waived, the operability must be warranted.

**Q21.** Spreadsheet software is used to predict sales according to the weather. The probability for the weather type (sunny, cloudy, rainy) on the day to be predicted and the predicted sales amount by weather type for each product are entered into the worksheet below. An expression is entered in cell E4 to calculate the predicted sales amount on the day for Product A, and this is copied to cells E5 through E6 and used. Under these conditions, which of the following is the appropriate expression to be entered in cell E4? Here, to obtain the predicted sales amount on the day for each product, the probability for each weather type is multiplied by the predicted sales amount for each of weather type, and then these values are added up.

	A	B	C	D	E
1	Weather type	Sunny	Cloudy	Rainy	
2	Probability of weather type	0.5	0.3	0.2	
3	Product name	Predicted sales amount when sunny	Predicted sales amount when cloudy	Predicted sales amount when rainy	Predicted sales amount on the day
4	Product A	300,000	100,000	80,000	
5	Product B	250,000	280,000	300,000	
6	Product C	100,000	250,000	350,000	

- a)  $B2*B4+C2*C4+D2*D4$
- b)  $B\$2*B4+C\$2*C4+D\$2*D4$
- c)  $\$B2*\$B4+\$C2*\$C4+\$D2*\$D4$
- d)  $\$B\$2*\$B\$4+\$C\$2*\$C\$4+\$D\$2*\$D\$4$

**Q22.** Which of the following is the appropriate description of multithreading?

- a) Equipping a CPU with multiple cores (arithmetic circuits)
- b) Using a hard disk or another external storage unit and providing a storage space with a capacity larger than that of the main memory
- c) Dividing one (1) application program into multiple process units and processing them in parallel
- d) Dividing one (1) piece of data and writing it to multiple hard disks in parallel

**Q23.** Which of the following is the appropriate role of OCR?

- a) Performing wireless communication between devices that are close together at a distance of approximately 10cm
- b) Recognizing printed and handwritten characters, and transforming them to text data
- c) Creating an artificial voice through digital signal processing
- d) Detecting the position on a panel that was touched by a user's fingertip, etc.

**Q24.** Which of the following is the function that aids keyboard input and lessens the trouble of entering characters, by looking up past input history for characters being entered and displaying a list of candidate character strings?

- a) Indentation
- b) Autocomplete
- c) Autofilter
- d) Hyperlink

**Q25.** When the process for a smart speaker to provide a voice response to the content of a user speaking to a smart speaker is as in (1) through (4), which of the following is the process that corresponds to voice recognition?

- (1) The voice of the user is transformed into text data.
- (2) Text data is analyzed, and the meaning is understood.
- (3) The content of the response is decided, and text data is created.
- (4) The created text data is read out.

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

**Q26.** When an activity for building a relational database is divided into steps *A* through *C* below, which of the following is the appropriate order of the steps?

- A* Identifying the data items to be used in the business operation
- B* Creating tables
- C* Inserting records

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

**Q27.** The “Purchase\_list” table in a relational database manages the purchases of products. This table should be normalized and divided into a “Purchase” table and a “Product” table. Which of the following is the most appropriate field that should be contained in common in the two divided tables? Here, each purchase includes only one product, and can be uniquely identified by Purchase\_number. Also, each product can be uniquely identified by Product\_number.

Purchase\_list

Purchase_ number	Product_ number	Product_ name	Count	Unit_ price	Payment_ method	Delivery_ date
---------------------	--------------------	------------------	-------	----------------	--------------------	-------------------

- a) Purchase\_number
- b) Payment\_method
- c) Product\_number
- d) Product\_name

**Q28.** Which of the following is the appropriate description of a rollback in transaction processing?

- a) When a transaction attempts to update shared data, it prohibits another transaction from updating that data.
- b) When a transaction has been successfully processed, it commits an update to the database.
- c) When a transaction failed for some reason, it reverts the database to the state before the transaction was started.
- d) It combines multiple tables into one (1) table by using mutually related columns as keys.

**Q29.** Which of the following is the appropriate purpose of exclusive control in a database management system?

- a) To ensure that data is not accidentally modified nor intentionally tampered with
- b) To make system maintenance management easy by making data and programs independent of each other
- c) To prevent access to data except by certain persons according to the confidentiality of the data
- d) To prevent the occurrence of inconsistencies in data when multiple programs simultaneously access the same data

**Q30.** Which of the following is the 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.

**Q31.** Which of the following is the file storage on the Internet that can be freely written to and read from over the Internet and can be used for saving files in place of USB memory or other such media?

- a) Cookie
- b) RAID
- c) Online storage
- d) Crawler

**Q32.** Which of the following is the appropriate description of a SIM card?

- a) A card-type device that is used for the purpose of ensuring security in Internet banking and generates a password that can be used only once when a password is required
- b) An IC card that is inserted into a mobile phone for its use and that the phone number and subscriber ID, etc. are recorded on
- c) A large-capacity memory card that is used in digital music players or digital cameras for storing contents
- d) A card that is packaged with a receiver for digital broadcasting and is used for decoding scrambled digital broadcasting

**Q33.** Which of the following mobile communication systems not only offers higher communication speed than LTE, but also allows more devices to connect and has less lag time?

- a) Block chain
- b) MVNO
- c) 8K
- d) 5G

**Q34.** Which of the following is the most appropriate description of edge computing in an IoT system?

- a) In order to reduce the load on IoT servers caused by an increase in IoT devices, it performs as much data processing as possible close to an IoT device.
- b) It creates a sequence of data that compiles multiple transactions at certain time intervals, and increases the reliability of the data by embedding in an item of data a hash value of the previous item of data to associate items of data with each other and ensure the data is difficult to tamper with.
- c) Computer resources are aggregated in a data center, and used from a remote location via the network.
- d) It enables a computer to acquire new knowledge, rules, and other such things from input data without explicit programming.

**Q35.** Which of the following is the appropriate description concerning virus infection?

- a) Infection may affect not only the OS and applications, but also the firmware embedded in a device.
- b) If only an external storage medium is used for exchanging data with other computers without connecting a computer to the network, the computer will not be infected.
- c) The computer where infection is detected should be kept connected to the network, and the OS and the security software should be immediately updated.
- d) If e-mail attachments are not opened, the computer will not be infected.

**Q36.** Which of the following is the appropriate combination of the descriptions (i) through (iii) about threats in information security and the terms below?

- (i) An attack in which a malicious script injected to a web site that displays data that a visitor enters as it is, is executed on the visitor's web browser, and data such as cookies are stolen by a third party
- (ii) A program that infects numerous PCs, executes malicious operations on the PCs by following instructions received via a network, and conducts a coordinated attack
- (iii) A program that is disguised as a useful program, but once installed and executed, performs unauthorized data destruction or leakage

	(i)	(ii)	(iii)
a)	Cross-site scripting	Trojan horse	Bot
b)	Cross-site scripting	Bot	Trojan horse
c)	Targeted attack	Cross-site scripting	Trojan horse
d)	Targeted attack	Trojan horse	Cross-site scripting

**Q37.** A document file that is stored on a file server is directly edited on a PC and then an attempt is made to overwrite the file, but the message “You do not have permission, so the file cannot be saved” is displayed. Which of the following is the appropriate combination of permissions that were set for the document file and the folder that it is stored in?

	File read permission	File write permission	Folder read permission
a)	Yes	Yes	No
b)	Yes	No	Yes
c)	No	Yes	No
d)	No	No	Yes

**Q38.** When a digital signature is attached to an e-mail and the e-mail is sent, in comparison to the use of a digital certificate that is issued by a trusted certificate authority, which of the following is the risk on the receiver's side that is caused by the use of a digital certificate created by the sender themselves?

- a) It becomes impossible to check that the e-mail is sent by the correct counterpart.
- b) The danger increases for the e-mail to be spied on while being transmitted.
- c) The danger increases for the e-mail to be lost while being transmitted.
- d) The e-mail content becomes prone to becoming corrupted while being transmitted.



**Q39.** In risk management for information security, the categories that include risk transfer, risk avoidance, risk mitigation, and risk retention are sometimes used. Which of the following is the appropriate description concerning these?

- a) In risk treatment, measures for the treatment of a risk are categorized, and the purchase of insurance in preparation for the risk to cause an actual problem is categorized as risk transfer.
- b) In risk identification, the purposes of use of held assets are categorized, and anti-malware software and other such assets that are used for information security measures are categorized as risk mitigation.
- c) In risk evaluation, risk evaluation methodologies are categorized, and the evaluation of whether risks that the assets to be managed have can be avoided or not is classified as risk avoidance.
- d) In risk analysis, analysis methods for risk are categorized, and methods for quantifying the vulnerabilities that the assets to be managed have are classified as risk retention.

**Q40.** In a wireless LAN router, which of the following is the appropriate explanation of a function that is set up for devices brought in from external locations and is called a “guest port” or a “guest SSID” or other such names?

- a) It is possible to connect a device only to the Internet, but not to the internal network.
- b) It is possible to check whether a device is infected with malware or not, and only allow connections from devices that are confirmed to be safe.
- c) It is possible to configure the connection from a device to a wireless LAN router with button operations alone on the device and wireless LAN router.
- d) If the device’s SSID setting field is left blank, it is possible to connect to the wireless LAN router even if the SSID is not known.

**Q41.** Which of the following is the appropriate combination of damage by incidents (i) through (iii), and confidentiality, integrity, and availability in information security?

- (i) A website is taken down by a DDoS attack.
- (ii) Inaccurate data is entered because of a typing mistake on a keyboard.
- (iii) Personal information is leaked because a PC is infected with malware.

	(i)	(ii)	(iii)
a)	Availability	Integrity	Confidentiality
b)	Availability	Confidentiality	Integrity
c)	Integrity	Availability	Confidentiality
d)	Integrity	Confidentiality	Availability

**Q42.** A business PC that was connected to a company's internal wireless LAN network was used to view a website on the Internet. Immediately after this, the web browser crashed and unknown files were created, and other such events occurred that indicated the possibility of infection with malware. Which of the following is the appropriate action that the user of this PC should take first?

- a) Reinstalling the web browser
- b) Updating the malware definition file of the anti-malware software
- c) Cutting off connection with the wireless LAN, and isolating the PC from the network
- d) Changing the encryption method for wireless communication

**Q43.** Which of the following is the appropriate combination of terms or phrases inserted into *A* through *D* in the table that describes the characteristics of encryption methods?

Encryption method	Key characteristics	Safe distribution of keys	Encryption/decryption relative processing speed
<div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div>	The encryption key and the decryption key are different	Easy	<div style="border: 1px solid black; padding: 2px; display: inline-block;">C</div>
<div style="border: 1px solid black; padding: 2px; display: inline-block;">B</div>	The encryption key and the decryption key are the same	Difficult	<div style="border: 1px solid black; padding: 2px; display: inline-block;">D</div>

	A	B	C	D
a)	Common key cryptography	Public key cryptography	Slow	Fast
b)	Common key cryptography	Public key cryptography	Fast	Slow
c)	Public key cryptography	Common key cryptography	Slow	Fast
d)	Public key cryptography	Common key cryptography	Fast	Slow

**Q44.** Which of the following is the appropriate example of activities performed in C (Check) in the organizations that operate ISMS on the basis of the PDCA model?

- a) Changing the server monitoring method as a corrective action that is based on the audit results of the business operations
- b) Identifying the information assets in the server room in order to decide specific measures and objectives
- c) Objectively evaluating the server administrator's work details by a third party
- d) Monitoring the behavior of the server according to the defined operational procedure

**Q45.** Which of the following is the most appropriate description of ransomware?

- a) It secretly establishes a route for intrusion in order to perform unauthorized login to a PC from an external network.
- b) It unilaterally encrypts the files of a PC, and demanding money for provision of the decryption key, etc.
- c) It hijacks a web browser and intervenes in the communication for online banking, etc., and performs a fraudulent money transfer.
- d) It has a function to spread itself over a network to become widespread.

**Q46.** In the process of system requirements definition, which of the following is the appropriate evaluation criteria for system requirements?

- a) Consistency with results of system integration test
- b) Consistency with needs of the customer
- c) Appropriateness of the design method used
- d) Coverage of test cases

**Q47.** Estimation methods for system development include the analogous method, the bottom-up method, and the FP (Function Point) method. Which of the following is the appropriate explanation of the FP method?

- a) It is a method for the estimation of person-hours for an overall system on the basis of an estimation of person-hours for each activity identified with WBS.
- b) It is a method for the estimation of system scale by measurement of the number of functions on the basis of factors such as number of input screens, output reports and files that are processed by the system.
- c) It is a method for the estimation of the total person-hours for development from the standard lines of code to be developed per person per month after the estimation of the lines of code of a system's programs.
- d) It is a method for the estimation of the person-hours for system development that takes into account the differences from similar systems developed in the past.

**Q48.** Which of the following is the activity in software maintenance?

- a) Program modifications that are requested by an ordering party to a developer as a result of an acceptance test for software
- b) Creation of additional code for the functions that are discovered to be lacking in the unit test of a program
- c) Fixing of bugs that are discovered in the unit test of a program
- d) Program modifications to handle a system failure that occurs in actual operation

**Q49.** Which of the following is the appropriate description concerning the black box test?

- a) The test is performed for all branches of the program.
- b) The test is performed for all instructions of the program.
- c) The test is performed on the basis of the internal structure of the program.
- d) The test is performed by focusing on the input and the output of the program.

**Q50.** Which of the following is the most appropriate description concerning DevOps in software development?

- a) In order to get a clear image of the layout of the screens that will be used on the operation side, the development side creates a prototype at the requirements definition phase.
- b) The development side carries out the design, development, and testing processes in order, and hands the system over to the operations side after the required functions are ready with required quality.
- c) The development side and the operation side work together closely, and deal with requests for specification change and other such things swiftly and flexibly by incorporating automation tools, etc.
- d) Productivity and reliability are increased by two (2) developers jointly developing one (1) program.

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

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

**Q52.** In a system development project, a flowchart of the development process is created to perform quality management. Which of the following is the appropriate purpose of using such a flowchart?

- a) To consider where and what kind of problem is likely to occur in the work processes
- b) To determine whether the usage rate of the system is within the expected range
- c) To identify the relationships between major problems in project execution and latent causes of the problems
- d) To assess the frequency of problem occurrence on a per-cause basis in order to resolve the causes of the most problems

**Q53.** 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

**Q54.** Which of the following is the hierarchical decomposition for the activities of creating project deliverables?

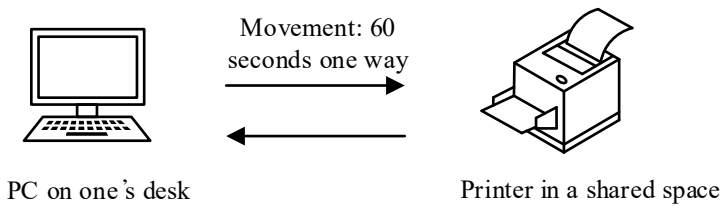
- a) EVM
- b) RFP
- c) SLA
- d) WBS

**Q55.** 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.

**Q56.** 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. Each operation/processing needs to be performed sequentially, but during automatic processing of one device, it is possible for the person to move or operate the other device in parallel. What is the minimum time required (in seconds) for the person to start the PC startup at his/her desk, then move, start and end the printer startup, return to his/her desk, and end the PC startup?

[Conditions]



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

**Q57.** Which of the following is the appropriate explanation concerning the approach for project management?

- a) Development is performed in the order of planning, requirements definition, system development, and maintenance.
- b) IT services are maintained according to the lifecycle of strategy, design, migration, operation, and improvement.
- c) A plan for achieving the objectives is created, and the quality, progress, cost, etc. are controlled during the implementation, thus leading to achievement of the objectives.
- d) Whether the identification of risks and control are being implemented appropriately is checked in the order of preliminary investigation, main audit, evaluation, and conclusion.

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

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

**Q59.** Which of the following is the appropriate activity for planning and implementing the points described below in order to maintain the project room and equipment used for system development?

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

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



**Q60.** Which of the following is the purpose of incident management?

- a) Ensuring that activities are performed for migrating new software that is used in an IT service to a production environment
- b) Managing a series of activities for handling a change request about an IT service
- c) Recovering an IT service immediately when any disruption to the IT service occurs, and making the impact to business as small as possible
- d) Managing the information on the items that are required for providing an IT service and on their combinations

**Q61.** Which of the following is the most appropriate department for setting up a service desk that is a single point of contact for queries on the usage method of the internal system?

- a) Department in charge of incident management
- b) Department in charge of configuration management
- c) Department in charge of change management
- d) Department in charge of release management

**Q62.** Which of the following is the appropriate description concerning SLM in an IT service?

- a) In SLM, maintaining the service level that is agreed upon in the SLA is the highest-priority issue. Therefore, improving the service quality becomes a secondary activity.
- b) In SLM, in order to measure the level of achievement of the quantitative targets agreed upon in the SLA, the service performance is monitored and reviewed.
- c) The objective of SLM is to obtain a common understanding of the service, the level of requirements, and other details with customers, and the creation of an SLA is the final objective of the activity.
- d) In order to make SLM an effective activity, it is important to set the service level agreed upon in the SLA to an easily-attainable level.

**Q63.** Which of the following is the appropriate explanation of a system audit?

- a) It is a framework for the implementation of IT service management.
- b) It is verification of whether or not controls against risks concerning information systems are implemented and operated appropriately.
- c) It is technology and techniques for the efficient development of good quality software.
- d) It is the application of knowledge, skills, tools, and techniques to project activities in order to meet project requirements.

**Q64.** Regarding the roles (i) through (iv) below for establishing appropriate IT governance, which of the following is the appropriate combination of the roles of the company executive responsible for it and the person responsible for the information system department?

- (i) Defining the IT governance policy
- (ii) Formulating principles for decisions on investment in computerization
- (iii) Deciding the roles and the rights within the information system department
- (iv) Performing progress management in system development on the basis of a project plan

	The company executive	The person responsible for the information system department
a)	(i), (ii)	(iii), (iv)
b)	(i), (iii)	(ii), (iv)
c)	(ii), (iii)	(i), (iv)
d)	(ii), (iv)	(i), (iii)

**Q65.** Which of the following is the initiative that is composed of control environment, risk assessment, control activities, information and communication, and monitoring activities, and has compliance with laws and regulations relating to the business activities as one of its objectives?

- a) CMMI
- b) ITIL
- c) Internal control
- d) Risk management

**Q66.** In order to manufacture one (1) unit of a product, 10 kg of the raw material *A* and 5 kg of the raw material *B* are needed. If the amount of raw material that can be used in one (1) month is 60 kg of raw material *A* and 40 kg of raw material *B*, what is the maximum number of units of the product that can be manufactured in one (1) month?

- a) 4                                      b) 6                                      c) 8                                      d) 10

**Q67.** Among company rules, which of the following is the rule that describes segregation of duties?

- a) Rule that defines the management organization and job classification that are the foundation of the company  
b) Rule that defines the role, responsibilities, and authority of each department and each employee  
c) Rule that defines employees' working conditions and other matters related to employment  
d) Rule that defines proper conduct in terms of laws, regulations, and social norms

**Q68.** The entire inventory of Warehouse *A* and Warehouse *B* is to be sent to Store *C* and Store *D*. The number of items in the inventory of Warehouse *A* and Warehouse *B* is 35 and 15 respectively, and the required number of items for Store *C* and Store *D* is 20 and 30 respectively. The shipment cost for each item from warehouse to store is as shown in the table. Under these conditions, what is the minimum total shipment cost in dollars?

Unit: dollars/item		
	Store <i>C</i>	Store <i>D</i>
Warehouse <i>A</i>	400	200
Warehouse <i>B</i>	200	100

- a) 8,500                                      b) 10,000                                      c) 11,000                                      d) 12,500

**Q69.** Which of the following is the appropriate term that refers to a variety of individuals with different sex, age, nationality, experience, etc.?

- a) Glass ceiling                                      b) Diversity  
c) White collar exemption                                      d) Work-life balance

**Q70.** At company *X*, the possibility of a launch being delayed for a new product *Y* under development and its impact on future performance were analyzed and evaluated. Which of the following corresponds to this initiative?

- a) ABC analysis
- b) SWOT analysis
- c) Environmental assessment
- d) Risk assessment

**Q71.** Which of the following is the expression that calculates operating profit?

- a) (Sales) – (Cost of sales)
- b) (Gross profit) – (Selling, general, and administrative expenses)
- c) (Ordinary profit) + (Extraordinary profit) – (Extraordinary loss)
- d) (Profit before tax) – (Corporate tax, residential tax, and business tax)

**Q72.** The sales and the costs for a certain product for this month are as shown in the table below. When the unit sales price is changed from 1,000 yen to 800 yen, in order to avoid making a loss, at least how many units need to be sold each month? Here, the fixed cost and the variable cost per unit of the product do not change.

Sales amount	2,000,000 yen
Unit sales price	1,000 yen
Units sold	2,000
Fixed cost	600,000 yen
Variable cost per unit	700 yen

- a) 2,400
- b) 2,500
- c) 4,800
- d) 6,000

**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.** Which of the following is free software that can be copied or modified freely without permission from the author?

- a) Shareware
- b) Package software
- c) Public domain software
- d) Utility software

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

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

**Q76.** Which of the following is appropriate as a characteristic of the QR code?

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

**Q77.** 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 for whistle blowing

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

**Q78.** Which of the following is the international standardization organization that engages in standardization of information security management systems and quality management systems?

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

**Q79.** Which of the following is the appropriate example of vertical integration in corporate business development?

- a) An apparel manufacturer outsources product inspection at factories to a partner company.  
b) A major trading company makes a major retailer its subsidiary with the aim of expanding sales of products that it purchases overseas.  
c) A bank acquires another bank through an M&A with the aim of increasing its size.  
d) Many PC assembling companies use the semiconductors and OS of a specific manufacturer.

**Q80.** Which of the following is the appropriate combination of the management themes and techniques for achieving them?

[Management themes]

- A:* A company wants to develop efficient business processes that span from procurement of components to sales.  
*B:* A company wants to understand customers' preferences and other information, and use them in product planning and sales promotion.  
*C:* A company wants 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

	<i>A</i>	<i>B</i>	<i>C</i>
a)	SCM	CRM	POS
b)	POS	CRM	SCM
c)	CRM	SCM	POS
d)	SCM	POS	CRM

**Q81.** The elements seen from the seller's standpoint in the marketing mix are called "the 4Ps." Which of the following are the corresponding elements as seen from the buyer's standpoint?

- a) the 4Cs                      b) the 4Ss                      c) AIDMA                      d) SWOT

**Q82.** As a method for a company to utilize the business resources of another company, there is a corporate acquisition and a corporate alliance. Which of the following lists all and only the general disadvantages of a corporate alliance in comparison with a corporate acquisition?

- I It is required to reform the other company's organization or business process.
- II The participation in decision making of the other company regarding the utilization of business resources is limited.
- III The required investment is large and has an impact on the financial status.

- a) I                      b) I, II, III                      c) I, III                      d) II

**Q83.** A middle-sized consumer electronics 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

**Q84.** Which of the following is the appropriate means of complementing the technologies and know-how of one's company with those of other companies in a short period of time?

- a) BPR                      b) Alliance  
c) Incubation                      d) Benchmarking

**Q85.** Which of the following is the most appropriate description of the API economy?

- a) It is a mechanism where services with a higher added value are provided over the Internet by linking the services that are provided by a range of providers.
- b) It is a mechanism for a copyright holder to release the source code for software for free via the Internet, etc.
- c) It is a mechanism for streamlining work such as routine administrative work by using a software robot.
- d) It is a mechanism for the distributed management of transaction history with multiple systems.

**Q86.** Which of the following is the appropriate explanation of an ERP package?

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

**Q87.** When build-to-order production is compared to build-to-stock production, which of the following is the 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.** Which of the following is the appropriate example of a function that uses an IC tag?

- a) Scanning barcode at a POS register
- b) Sending images from a remote medical system
- c) Identifying current location with a car navigation system
- d) Monitoring at theft prevention gate in a library

**Q89.** Which of the following terminologies refers to an initiative to develop unprecedented and innovative services by utilizing IT in the field of finance, such as a service provided by a bank where AI manages depositors' assets automatically?

- a) FA
- b) Fintech
- c) OA
- d) Sharing economy

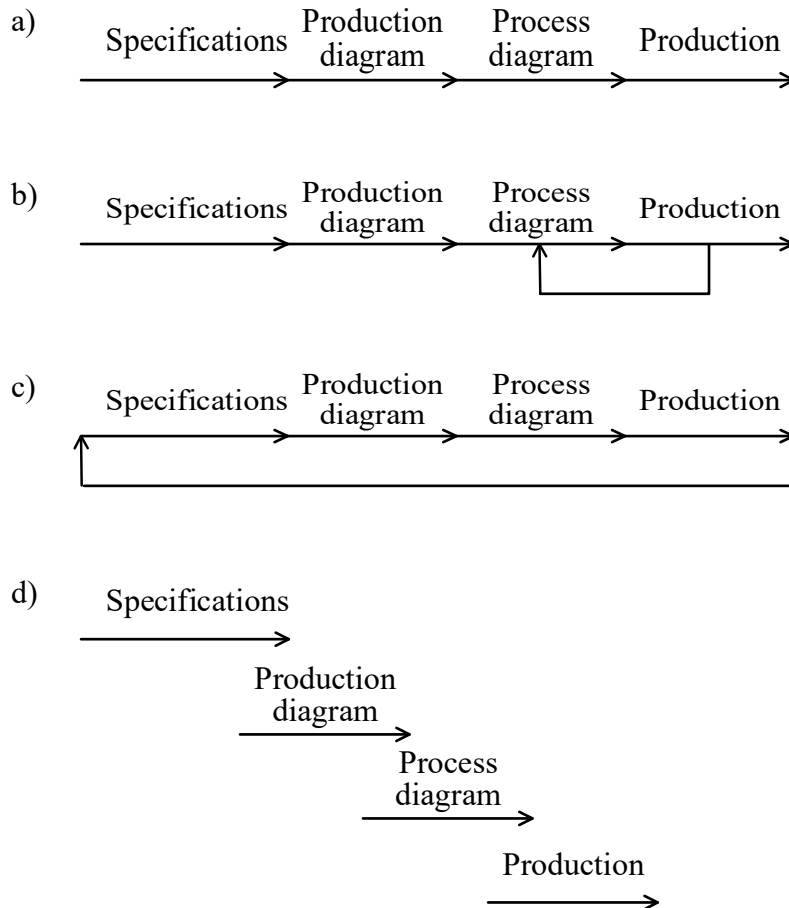
**Q90.** Which of the following is one of the technologies used in deep learning, and represents a mathematical model of the circuits in the human brain?

- a) Content delivery network
- b) Storage area network
- c) Neural network
- d) Ubiquitous network

**Q91.** Which of the following is the production system that minimizes the inventory between processes through the procurement of raw materials and components at the required timing and in the required quantity?

- a) BPO
- b) CIM
- c) JIT
- d) OEM

**Q92.** Which of the following is the most appropriate diagram representing the flow of business operations after concurrent engineering is applied? Here, the arrows in the diagram show the flow of business operations, and each activity name is displayed on top.



**Q93.** Which of the following is the general name of software that has various functions such as communication via e-mail and chat, information sharing, and video conferencing?

- |              |              |
|--------------|--------------|
| a) Groupware | b) Shareware |
| c) Firmware  | d) Freeware  |

**Q94.** Which of the following is the 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 appropriate term that represents a method for achieving automation and improved efficiency by replacing humans with a software robot to perform routine office work?

- a) ROA                      b) RPA                      c) SFA                      d) SOA

**Q96.** In the upstream processes of system development, which of the following is the most appropriate objective of performing business process modelling?

- a) To analyze a large volume of data that is handled in a business process by using statistical techniques and AI techniques, and discover correlations between data and hidden patterns, etc.
- b) To visualize a business process in order to establish the information that will form the base of appropriate system design and enable the sharing of interpretations between parties
- c) To share the knowledge, experience, and know-how of work of each individual employee within the whole company, and produce creative ideas
- d) To procure the required staff members for a project and organize them as a team, and to have them work together toward the achievement of the objective of the project

**Q97.** The table below shows the evaluated scores of the proposals of four (4) vendors from the viewpoints of management, technology, and price. When each score of the management viewpoint, technology viewpoint, and price viewpoint is weighted, and the vendor with the highest total score is selected as the supplier, which of the following vendors is selected?

Evaluation item	Weight	Vendor <i>A</i>	Vendor <i>B</i>	Vendor <i>C</i>	Vendor <i>D</i>
Management viewpoint	2	2	4	3	3
Technology viewpoint	3	3	4	2	3
Price viewpoint	5	4	2	4	3

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

**Q98.** When the system life cycle is divided into the planning process, requirements definition process, development process, and operation/maintenance process, which of the following is the appropriate process to clarify the functions of the system for the implementation of business operations?

- a) Planning process
- b) Requirements definition process
- c) Development process
- d) Operation/maintenance process

**Q99.** Which of the following is the appropriate combination of words or phrases to be inserted into blanks *A* and *B* in the description below concerning documentation that is created in the procurement of an information system?

The document that sets out the overview, what is being asked for, procurement conditions, and other such information for an information system to be procured and asks for a proposal to be submitted is the *A*. And the document that asks for the provision of relevant information by indicating the computerization purpose, a business overview, and other such information is the *B*.

	<i>A</i>	<i>B</i>
a)	RFI	RFP
b)	RFI	SLA
c)	RFP	RFI
d)	RFP	SLA

**Q100.** In an online service, a website with a newly created design and a website with a conventional design were run in parallel experimentally to compare them and find out the one that makes its users more likely to apply for paid services. Which of the following is the most appropriate technique used at this time?

- a) A/B test
- b) ABC analysis
- c) Cluster analysis
- d) Regression test