IT passport exam

By
Nuttha Otanasap
Computer Science Dept.,
South-east Asia University
Bangkok 10160 THA

auisuke@gmail.com
www.auisuke.com
Facebook.com/auisuke

IT passport exam

- Overview of the IT passport exam
- Technology
- Management
- Strategy

Overview of the IT passport exam

- Information Technology Passport Examination (Level 1)
  - covers a wide range of fields in strategy, management, and technology
  - same scope as the Morning Exam of the current Systems Administrator Examination
  - basic knowledge that all business workers should possess
  - focuses on testing the understanding of fundamental terminology and concepts in the fields of strategy, management, and technology

Technology

Scope

- Basic Theory
- Algorithms and Programming
- Computer system
  1 Computer components
  2 System components
  3 Software
  4 Hardware
- Technical element (Human interface, Multimedia, Database, Network, Security)

Technology

Basic Theory: Examine

- concepts of the characteristics and operation of binary numbers as well as radix.
- understanding of sets such as in Venn diagrams as well as the meaning of probability and statistics.
- the concept of information quantities such as bits and bytes.

Technology

Basic Theory:

Ask about the fundamental concepts

- radix including the characteristics and operations of binary numbers.
- sets, such as Venn diagrams, probability, and statistics.
- how to express information content, such as bits and bytes, and of digitization.

Sample questions: Basic Theory

What is the value representing 3 times of the binary number 10110?

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

Shifting left by n bits will make the binary number by 2n times

Left shift by 1 gives 101100

Adding the original value gives 3 times

101100 + 10110 = 1000010

Answer c

Technology

Algorithms and Programming

Examine understanding of

- algorithms and data structures as well as flow charts.
- roles, purposes and principles of programming.
- characteristics of markup languages such as HTML and XML.

Technology

Algorithms and Programming

Ask about

- the fundamental concepts of algorithms and data structures, and how to draw flow charts.
- the roles of programming.
- the types and fundamental usage of markup languages, such as HTML and XML.

Sample questions:
Algorithms and Programming

Choose the appropriate description for HTML

a) It is used in FTP to transfer text.

b) It is the basis of SGML syntax.

c) It is used to describe Web pages, and logical structure of documents by tags.

d) It was developed to simplify the XML features

Answer c

Technology

Computer system

1 Computer components

2 System components

3 Software

4 Hardware

Technology

Computer system: 1 Computer components

Examine

- configuration of computers.
- basic mechanism and performance of processors, and the types and characteristics of memory.
- types and characteristics of recording media.
- types and characteristics of input and output interfaces, etc.

Technology

Computer system: 1 Computer components

Ask about

- fundamental configuration and roles of computers.
- performance and fundamental mechanism of processors, and the types and characteristics of memory.
- types and characteristics of storage media.
- types and characteristics of input/output interfaces, device drivers, etc.

Sample questions: Computer system

1 Computer components

What is the intended use of the cache memory in a processor?

a) To retain the contents of a PC when it is in a power off state.

b) To retain information that does not need rewriting and to record the any trouble reports

c) To reduce the access time of the main memory and CPU efficiency

d) For users to record important information and confidential information and passwords.

Answer c

Technology

Computer system: 2 System components

Examine

- characteristics of system configuration, processing modes, and use modes.
- characteristics of client server systems.
- characteristics of web systems.
- concepts of system performance, reliability, and economy.

Technology

Computer system: 2 System components

Ask about

- characteristics of system configurations, of the types of processing, and of the types of usage.
- characteristics of client/server systems.
- characteristics of Web systems.
- concepts of system performance, reliability, and economic efficiency.

Sample questions: Computer system

2 System components

There are 2 processing units in a system. The system will fail if either of the units fail.

Each of the system has an availability of 90%. What is the total availability of the system?

a) 0.81

b) 0.90

c) 0.95

d) 0.99

Answer a

The 2 units are ins serial since either of the units failing will result in the system failing.

Technology

Computer system: 3 Software

Examine

- the necessity, functions, types and characteristics of OSs.
- concepts and characteristics of file management such as access methods, search methods.
- understanding related to the characteristics of software packages such as office tools.

Technology

Computer system: 3 Software

Ask about

- the necessity, functions, types, and characteristics of OSs.
- the concepts and use of basic functions of file management, such as access methods and search methods, and the fundamental concepts of backups.
- the characteristics and fundamental operations of software packages, such as office tools.
- the characteristics of OSS (Open Source Software).

Sample questions: Computer system

3 Software

What is the appropriate description for Open source software.

a) It can be used free of charge during a trial period but there is a need to pay the price for continual usage .
b) The source code is published and available and changes can be made
c) Copyright has been abandoned
d) Industry will not receive support service unless they pay for it

Answer: b

Technology

Computer system: 4 Hardware

Examine

- types of computers.
- types and characteristics of intelligent home appliances and input/output devices, etc.

Ask about

- the types and characteristics of computers.
- the types and characteristics of input/output devices.

Sample questions: Computer system

4 Hardware

Select the appropriate definition of the following.

It has overall performance of the two computers. It cuts over to another machine if failure occurs on the other machine. The machine can be replaced without the need
to stop the system.

a) cluster system
b) Duplex system
c) dual system
d) Multiprocessor system

Answer a

Technology

Technical element: Human interface

Examine & Ask about

- concept and characteristics of interface design, such as GUI and menus.
- concepts of Web design.
- concepts of universal design.

Sample questions: Technology

Technical element: Human interface

In screen design, in which of the following situations would it be better to select an option from a list of candidates than enter data directly?

a) In the situation where each input item must be checked or corrected
b) In the situation where large amounts of data such as sentences are entered
c) In the situation where many different values are valid as input data
d) In the situation where the types and content of input data are limited

Answer d

Technology

Technical element: Multimedia

- Examine
  - types and characteristics of encodings such as JPEG, MPEG, and MP3.
  - characteristics of graphic processing such as Virtual Reality (VR) and Computer Graphics (CG).
  - characteristics of media, and compression and decompression of information data.

Technology

Technical element: Multimedia

- Ask about
  - types and characteristics of encodings such as JPEG, MPEG, and MP3.
  - purpose and characteristics of application of multimedia technology, such as VR (Virtual Reality) and CG (Computer Graphics).
  - characteristics of media, and compression and decompression of information data.

Sample questions: Technology

Technical element: Multimedia

Choose the appropriate description for the multimedia file format MP3.

a) file compression format for G4 facsimile communication data
b) File compression format for audio data
c) File compression format for color image data
d) File compression format for digital video data

Answer b

Technology

Technical element: Database

Examine

- concepts of data analysis and design as well as the characteristics of database models.
- concepts of database processing methods such as exclusive control and recovery processing.
- significance, purpose and concepts of database management systems (DBMS).
- manipulation methods such as data extraction.

Technology

Technical element: Database

Ask about

- significance, purpose, and concepts of database management systems (DBMS).
- concepts of data analysis and design, and the characteristics of database models.
- manipulation methods such as data extraction.
- database processing methods such as exclusive control and recovery processing.

Sample questions: Technology

Technical element: Database

Which of the following product groups can be found when searching the “Product Inventory” table for products with a sales price of 500 dollars or more per unit and an inventory of less than 10 units?

Product Inventory

Product Code	Product Name	Manufacturer	Sale Price	Inventory	Inspector
100	Large refrigerator	AAA	3,000	10	Smith
110	Medium refrigerator	AAA	2,000	6	Smith
120	Small refrigerator	BBB	1,000	8	Smith
130	Portable refrigerator	BBB	400	3	Smith
200	Air purifier	CCC	600	22	Miller
210	Air ionizer	DDD	450	18	Miller
300	Coffee maker	EEE	150	5	Johnson
400	Air conditioner	FFF	1,200	7	Brown

a) Large refrigerator, medium refrigerator, small refrigerator, air purifier, and air conditioner

b) Large refrigerator, medium refrigerator, small refrigerator, portable refrigerator, air purifier, coffee maker, and air conditioner

c) Medium refrigerator, small refrigerator, and air conditioner

d) Medium refrigerator, small refrigerator, portable refrigerator, coffee maker, and air conditioner

Answer c

Technology

Technical element: Network

Examine

- characteristics and mechanism of the Internet.
- characteristics of email and Internet services.
- types and configurations of LAN and WAN, and outline of Internet and LAN connection devices.
- types and characteristics of communication services such as mobiles and IP phones and understanding of accounting and transmission rates, etc.

Technology

Technical element: Network

Ask about

- types and configurations of LAN and WAN regarding networks, and the roles of Internet and LAN connection devices.
- necessity of communication protocols, and the roles of typical protocols.
- characteristics and fundamental mechanism of the Internet.
- characteristics of e-mail and Internet services.
- understanding of the types and characteristics, accounting, and transmission rates of communication services, such as mobile communication and IP phones.

Sample questions: Technology

Technical element: Network

What is the appropriate description for IP network routers?

a) domain name and IP address mapping.

b) To allow the route to be chosen for the IP packet forwarding address

c) To convert between analog and digital signals

d) Receiving a request from another computer, execute the request and provide the data.

Answer: b

Technology

Technical element: Security

Examine

- concept of information security policy and the purpose of management of information assets and risks.
- concept, types and characteristics of technology security such as anti-virus measures.
- concept, types and characteristics of physical and human security such as controlling room entry, exit, and access.
- types and characteristics of authentication technologies such as ID, passwords, call back, digital signatures, and biometric authentication technologies.
- mechanisms and characteristics of encryptions technologies such as public keys and private keys.

Technology

Technical element: Security

Ask about

- fundamentals of information security from the viewpoint of safe and secure activities in a network society.
- information assets, the purpose of risk management, and the concepts of information security policy.
- concepts, types, and characteristics of technological security measures, such as measures against computer viruses.
- concepts, types, and characteristics of physical and human security measures, such as entrance/exit control and access control.
- types and characteristics of authentication technologies such as ID, password, callback, digital signature, and biometric authentication.
- mechanisms and characteristics of encryption technology such as public keys and private keys.

Sample questions: Technology

Technical element: Security

Q. What is the appropriate description for biometric authentication?

a) Authentication based on personal characteristics such as a fingerprint or iris

b) Authentication based on personal knowledge

c) Personal authentication based on the ability to recognize patterns

d) Authentication based on personal ability to solve problems

Answer a

Management

Scope

1. Software Development techniques
2. Project management
3. Service management
4. System audit

Management

1. Software Development techniques

- Software Development Techniques
  - Examine understanding and significance of software development processes such as system requirements definitions, design, review, development, and testing, and system maintenance.

Management

1. Software Development techniques

- Software Development Techniques

  Ask about

  – fundamental flow of the process of software development such as requirements definition, system design, programming , testing, and software maintenance.

  – concepts of the estimate in software development.

Management

1. Software Development techniques

- Software Development Management Techniques
  - Examine the significance and purpose of typical development methodologies.
  - Ask about the significance and purpose of typical development methods.

Sample questions: Management

Software Development Techniques

Q. Which of the following is the appropriate sequence of program development?

a) Design, programming, and testing
b) Design, testing, and programming
c) Programming, design, and testing
d) Testing, design, and programming

Answer a

Management

2. Project management
   - Examine the significance, purpose, concepts, processes, and methodologies of project management.
   - Ask about the significance, purpose, concepts, processes, and methods of project management.

Sample questions: Management

2. Project management

Q. Choose the appropriate description that can be classified as a milestone in Project Management?

a) combined test process
b) coding
c) Design Review Start Date
d) maintenance

Answer c

Management

3. Service management
   - Examine
   - significance, purpose, and concepts of IT service management.
   - understanding of related matters such as help desks.
   - basic understanding of matters related to system environment preparations of computers, networks, etc.

Management

3. Service management

Ask about

- significance, purpose, and concepts of IT service management.
- understanding of related matters such as help desks.
- concepts about system environment maintenance, such as computers and networks.

Sample questions: Management

3. Service management

Q. Choose the appropriate description for the main purpose of the Service Desk?

a) Analysis of the system usage to the evaluate IT service levels

b) To investigate the causes of the bug in software applications in order to improve the

quality of the applications

c) To investigate the system requirements for planning of the future system

d) To respond to inquiries or problems from the user in order to facilitate their solution

Answer d

Management

4. System audit

Examine

- significance, purpose, and concepts of corporate internal control and IT governance.
- significance, purpose, concepts, and target of system audits.
- flow of system audits such as planning, investigating, and reporting.

Management

4. System audit

Ask about

- significance, purpose, concepts, and target of system audit.
- flow of system audit, such as planning, investigating, and reporting.
- significance, purpose, and concepts of internal control and IT governance.

Sample questions: Management

4. System audit

Which of the following is the role of system auditors?

a) Advising audited departments about recommendations and measures for improvements
b) Appointing auditors
c) Determining security policies
d) Requesting audited departments to make improvements

Answer a

Strategy

Scope

- Corporate and Legal Affairs
  - Corporate Activities
  - Legal Affairs
- Management Strategy
  - Management Strategy
  - Technology Strategy Management
  - Business Industry
- System Strategy
  - System Strategy
  - System Planning

Strategy

Corporate and Legal Affairs:

Corporate Activities

Examine

- basic understanding of matters related to corporate activities and management such as financial statements and breakeven points.
- methodologies to resolve issues through analysis of familiar tasks, the concept of PDCA, work planning, and methodologies such as Pareto charts.
- visual expressions that are used for understanding tasks, such as task workflow charts.

Strategy

Corporate and Legal Affairs:

Corporate Activities

Ask about

- fundamental concepts about corporate activities and business management.
- techniques for analyzing familiar business tasks and resolving issues, the concept of PDCA, and operational planning using techniques such as Pareto charts.
- visual expressions used for understanding business tasks, such as workflow.
- fundamental concepts of accounting and financial affairs, such as financial statements and break-even points.

Strategy

Corporate and Legal Affairs: Legal Affairs

Examine

- familiar law of workplaces such as intellectual property rights (copyright, industrial property rights, etc.), the Private Information Protection Act, Labor Standards Act, and Worker Dispatch Act.
- software licensing concepts and characteristics including license types and license management.
- concepts of corporate norms such as compliance and corporate governance.

Strategy

Corporate and Legal Affairs: Legal Affairs

Ask about the

- familiar laws of workplaces, such as intellectual property rights (copyright, industrial property rights, etc.), Act on the Protection of Personal Information, Labor Standards Act, and Act for Securing the Proper Operation of Worker Dispatching Undertakings and Improved Working Conditions for Dispatched Workers.
- concepts and characteristics of software license, such as license types and license management.
- concepts of corporate rules and regulations, such as compliance and corporate governance.
- significance of standardization.

Strategy

Management Strategy: Management Strategy

Examine

- understanding of basic terminology such as SWOT analysis, product portfolio management (PPM), customer satisfaction level, CRM, and SCM.
- concepts of information utilization including data collection and analysis.
- understanding the use of office tools (software packages) such as spreadsheet software, database software, etc.

Strategy

Management Strategy: Management Strategy

Ask about

- fundamental concepts about typical management information analysis techniques and business management systems, such as SWOT analysis, PPM (Product Portfolio Management), customer satisfaction, CRM, and SCM.
- fundamental concepts relevant to marketing.
- typical information analysis techniques for planning business strategies.
- understanding of the use of office tools (software packages) such as spreadsheet software, database software, etc.

Strategy

Management Strategy:

Technology Strategy Management

- Examine understanding of significance, purpose, etc. of technology development strategies
- Ask about the understanding of the significance and purpose of technology development strategy.

Strategy

Management Strategy: Business Industry

Examine

- characteristics of typical systems in various business fields such as e-commerce, POS systems, IC cards, and RFID application systems.
- characteristics and trends, etc. of intelligent home appliances and embedded systems.

Strategy

Management Strategy: Business Industry

Ask about

- characteristics of typical systems in various business fields such as e-commerce, POS systems, IC cards, and RFID application systems.
- characteristics of typical systems in the engineering filed and e-business.
- characteristics and trends of intelligent home appliances and embedded systems.

Strategy

System Strategy: System Strategy

Examine

- concepts of significance and purpose of system strategies, strategy goals, process improvement, and problem solving, etc.
- concept of business models as well as concepts of typical modeling approaches of work models.
- knowledge of effective use of groupware and office tools, etc. for communication.
- purposes and concepts of business efficiencyimprovements through the use of computers and networks.

Strategy

System Strategy: System Strategy

Ask about

- significance and purpose of information system strategies and the concepts of strategic goals, business improvement, and problem solving.
- concepts of typical modeling in business models.
- effective use of groupware for communication and of office tools.
- purpose and concepts of increasing operational efficiency by using computers and networks.
- concepts of solutions through typical services.
- significance and purpose of the promotion and evaluation activities of system utilization.

Strategy

System Strategy: System Planning

- Examine knowledge of task requirements definition based on current state analysis, etc.
- Examine knowledge of the flow of procurement such as quotations, RFPs (Request For Proposal) and proposals.

Strategy

System Strategy: System Planning

Ask about

- purpose of computerization planning.
- purpose of the operational requirements definition based on the analysis of current state.
- fundamental flow of procurement, such as estimates, RFPs, and proposals.

Sample questions: Strategy

Q1: Select the appropriate description for compliance management,

a) To monitor whether the management is done correctly in order to preserve the legitimacy of a business to shareholders

b) Manage activities and accept accountability for results to shareholders and other stakeholders

c) To check that business is compliant to the law based on business ethics, rules and manuals

d) To provide timely and accurate management information necessary for investment decisions for investors and analysts

Answer c

Sample questions: Strategy

Choose the appropriate option representing "personal information" as defined in the Privacy Act,.

a) company name, phone number, address, information that can identify specific companies

b) Summary of answers obtained from a questionaire

c) Name, date of birth and address is filled in the customer file

d) A table showing the amount and age distribution by number of customers

Answer c

Sample questions: Strategy

Choose the appropriate option regarding the RFP (Request For Proposal)

a) Document from the information systems department to the CIO

b) Document from the information system department to vendors

c) Document from the information system department to the end user departments

d) document from the vendor to the CIO

Answer b

Sample questions: Strategy

Select the appropriate option for the following.

Information is collected about customers and information technology is used to analyze this in order to build relationships with customers from a long-term approach for the increase of revenue.

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

Answer CRM

Thank You

Q & A