## Major category 8: Business Strategy
## Middle category 21: Business Industry

# 1. Business system

**[Goal]**

- Understand the types and characteristics of typical information systems used in business areas.

### (1) Internal operations support system

Understand the types and characteristics of typical information systems used for internal operations.

Sample terms: bookkeeping/accounting/financial system, XBRL, human resource/payroll system, SFA (Sales Force Automation), groupware, workflow system, web conference system

### (2) Mission-critical task support systems and business packages

Understand the types and characteristics of typical software packages for information systems and business systems intended for supporting business operations.

Sample terms: distribution information system, logistics information system, over-the-counter sales management, sales management, ordering management, inventory control, customer management, financial information system, medical information system, POS system, production management system, CDN (Contents Delivery Network), ERP package, operations-specific package, industry-specific package, ubiquitous computing, IoT (Internet of Things)

### (3) Administration system and public information system

Understand the types and characteristics of typical information systems used for administrative activities and public information systems.

Sample terms: e-Japan initiative, e-Gov, electronic government, LGWAN (Local Government Wide Area Network), Basic Resident Register Network, EDINET (Electronic Disclosure for Investors' Network), public information system, smart grid, EMS (Energy Management System), GPS (Global Positioning System) application system, emergency alert, My Number (Social Security and Tax number), universal design, digital divide

## 2. Engineering system

**[Goal]**

- Understand the purpose and basic concept of engineering system development and design.
- Understand the purposes and basic mechanisms of automatic production control, production systems, production management, and computer-aided systems.

### (1) Purpose and concept of engineering systems

Understand the purpose and basic concept of using information technology in development and design.

### (2) Automatic production control

Understand the purpose and basic mechanism of automatic control of production processes.

Sample terms production system, production line organization, JIT (Just In Time), NC (Numerical Control), automatic monitoring equipment, automated guided vehicle, automatic warehouse

### (3) Production system

Understand that as a system intended for automating production processes, an FA (Factory Automation) system efficiently automates processes ranging from equipment control to factory management by incorporating a production management system and the tools that support production planning for the purpose of streamlining such processes as design, assembly, inspection, shipment, and inventory control.

Sample terms CAP (Computer Aided Planning), CAPP (Computer Aided Process Planning), MRP, FMS (Flexible Manufacturing System), FMC (Flexible Manufacturing Cell), productivity indicator

### (4) Computer-aided system

Understand the overview of computer-aided systems for computer-based analyses, design, and development; support systems for supporting project planning and management for the purpose of improving the productivity; and systems for providing integrated management of production, distribution, and the supply and distribution of products.

Sample terms CAD, CAE, CAM, PDM (Product Data Management), CIM

## 3. e-business

**[Goal]**

- Understand the mechanism and characteristics of e-business, including EC and EDI, performed over the Internet.
- Understand typical standards for data exchange.

### (1) EC (Electronic Commerce)

(a) Electronic ordering system

Understand the mechanisms and characteristics of electronic ordering and procurement systems.

Sample terms on-line mall, on-line shopping, electronic bidding

(b) Electronic payment system

Understand the mechanism and characteristics of electronic payment systems. In addition, understand the electronic money types and the relationships to financial trading.

Sample terms financial trading, Internet banking, EFT (Electronic Fund Transfer), smart card, IC card/RFID application system

(c) How to promote e-business

Understand the concept of promoting e-business

Sample terms internet business, BtoB (Business to Business), BtoC (Business to Consumer), CtoC (Consumer to Consumer), GtoB (Government to Business), GtoC (Government to Citizen), OtoO (Online to Offline), e-marketplace, SEO (Search Engine Optimization), recommendation system, long tail, affiliate advertising, listing advertisement (search advertising)

### (2) EDI

(a) Mechanism and characteristics of EDI

Understand the system configuration for EDI and the ordering and settlement mechanisms of EDI along with their characteristics.

Sample term web-EDI

(b) Standards used in data exchange

Understand typical standards associated with data exchange, which are intended to efficiently support a variety of transaction forms and several slip formats in interchanging electronic transaction data.

Sample terms JIS X 7011-1, JIS X 7012-1, STEP (Standard for the Exchange of Product Model Data), Japanese Bankers Association protocol, XML-EDI, XBRL, information communication protocol, information representation convention, task operation convention, basic transaction convention, JCA (Japan Chain

Stores Association) protocols

### (3) Social media

Understand the concepts, types, and technical background of social media.

Sample terms SNS, electronic bulletin board, blog, mini-blog, CGM (Consumer Generated Media)

## 4. Consumer appliances

**[Goal]**

- Understand the overview of embedded systems.
- Understand the characteristics, trends, and typical examples of consumer appliances.

### (1) Embedded system

Understand that computers are embedded into consumer appliances and industrial devices. In addition, understand the mechanism for controlling these appliances and devices along with the overview of embedded systems.

Sample terms microcomputer, embedded OS, real-time OS, real-time control, event, sensor, robotics, firmware

### (2) Consumer appliances

(a) Characteristics and trends of consumer appliances

Understand that computers are embedded into a wide range of products, which provides exacting control and functions. In addition, understand the trends in recent years, including downsizing, weight reduction, networking, personalization of information equipment, and enhanced interactivity.

Sample terms intelligent home appliance, ubiquitous computing, IoT (Internet of Things)

(b) Examples of consumer appliances

Understand that examples of consumer appliances are household electrical appliances, such as rice cookers, washing machines, and air conditioners; audio and visual equipment, such as digital TV sets, and DVD players; personal information appliances, such as cell phones and smartphones; and industrial terminal equipment, such as educational/entertainment devices, POS terminals, handy terminals, and banking terminals.

Sample terms computer peripheral/OA equipment, consumer communications terminal, home network, wearable computer, sensor network, DLNA, HEMS (Home Energy Management System)

## 5. Industrial devices

**[Goal]**

- Understand the characteristics, trends, and typical examples of industrial electronic devices.

### (1) Industrial devices

(a) Characteristics and trends of industrial devices

Understand that computers are embedded into a wide range of products, which provides exacting analyses, measurements, and control based on the embedded systems. In addition, understand the trends in recent years, including labor saving, automation, networking, and enhanced interactivity.

Sample terms MtoM (Machine to Machine)

(b) Examples of industrial devices

Understand that examples of industrial devices are communications devices such as routers, transport equipment such as vessels, analytical/measurement instruments for detecting drugs, and equipment items such as air conditioners.

Sample terms industrial robots, automated warehouse, vending machines, ATM (Automated Teller Machine), medical devices, patient monitoring equipment