2910108 Information systems: the foundations of e-business

Examination paper: Zone B

Time allowed: three hours

There are six questions on this paper. Answer four questions. Full marks will be awarded for complete answers to four questions. Candidates must not attempt more than the required number of questions. Calculators are not allowed.

QUESTION 1

(a) Describe the difference between a system and a subsystem and explain why an information system is a special type of work system.

[5 Marks]

(b) Describe the differences between a firm's value chain and its supply chain and provide an example of each.

[5 Marks]

(c) Define the Information Systems term *business process* and explain the distinction between business processes that cross functional areas of business and those that are specific to functional areas.

[5 Marks]

(d) Compare and contrast the Information Systems terms *e-business* and *e-commerce*.

[5 Marks]

(e) Discuss how businesses implementing information systems can suffer from organisational inertia.

[5 Marks]

QUESTION 2

(a) Describe the problems that a business might face if it operated through functional silos.

[5 Marks]

(b) Define the information systems terms *framework*, *model* and a *work system* and provide an example of each.

[5 Marks]

(c) The *work system framework* identifies a set of elements needed to understand a work system. Identify each of these elements in a work system for providing technical support on PCs to a company. From a customer's viewpoint, identify the product of the work system and explain how you would evaluate that product.

[5 Marks]

(d) In the context of the work system framework, explain the difference between efficiency and effectiveness.

[5 Marks]

(e) When conducting systems analysis explain why it is important for business professionals to understand constraints and priorities.

[5 Marks]

QUESTION 3

(a) Describe the process of project management, and explain why goals, deliverables, and schedules are important in project management.

[5 Marks]

(b) Describe five characteristics of information system projects with minimal risks.

[5 Marks]

(c) Explain the differences between tangible and intangible information system costs, and provide an example of each.

[5 Marks]

(d) Describe some of the problems that often arise when information systems span two countries or are moved from one country to another.

[5 Marks]

(e) Explain why the effectiveness of Gantt charts and other project management methods are limited when used to estimate the scope of IS projects.

[5 Marks]

QUESTION 4

(a) Define Michael Porter's three basic competitive strategies and provide an example of a company that does one of each.

[6 Marks]

(b) Discuss the performance differences between twisted pair, coaxial cable, and fibre optic cable.

[4 Marks]

(c) Define the OSI reference model and describe what the first five of its layers represent.

[5 Marks]

(d) Discuss the important differences between star, ring, and bus topologies. Which topology uses token passing?

[5 Marks]

(e) Define a value added network (VAN) and list two advantages and two disadvantages of using a VAN.

[5 Marks]

QUESTION 5

(a) Explain the differences between machine language, assembly language and fourth generation languages. Provide examples of two fourth generation languages.

[5 Marks]

(b) Compare and contrast the two types of errors that can be found by debugging a program. Provide an example of each type of error.

[5 Marks]

(c) Compare and contrast procedural and nonprocedural programming languages.

[5 Marks]

(d) Define machine independence, and explain why it is important when selecting an information system.

[5 Marks]

(e) Explain the difference between "application software" and "system software" and provide an example of each.

[5 Marks]

QUESTION 6

(a) Discuss three characteristics of a healthy job and explain how information systems are related to these characteristics.

[5 Marks]

(b) Compare machine-centred design and human-centred design and provide an example of a product that was originally designed to be machine centred but you would now consider human centred in its design.

[5 Marks]

(c) Explain why intellectual property is different from other types of property in terms of the ethical issues it raises.

[5 Marks]

(d) Discuss why access to data held on computer is often an ethical issue.

[5 Marks]

(e) Compare the strengths and weaknesses of people versus computers and provide an example of a task in which people perform better that computers.

[5 Marks]