



INFORMATICS

OXFORD BROOKES UNIVERSITY
BACHELOR OF SCIENCE (HONS)

AUGUST 2002 EXAMINATION

13 AUGUST 2002

M7011 MANAGEMENT INFORMATION SYSTEMS

TIME: 2 HOURS + 10 MINUTES READING

INSTRUCTIONS:

- ☐ All Questions in Section A are Compulsory and choose any 3 questions in Section B.
- ☐ Section A carries 25 marks.
- ☐ All questions in Section B carry 25 marks each.
- ☐ Please start every question on a new page.
- ☐ Answers will not be marked if they are illegible.
- ☐ Enter the question numbers (in the order you have attempted) in the boxes provided in the answer script.
- ☐ Write your **INDEX NUMBER** and **MODULE NUMBER** on the cover page of the answer script.

SECTION A

(Answer all questions)

(Total: 25 Marks)

For parts 1a - 1f and 1h - 1j, write the Qn. No. and the most suitable answer (e.g. a or b or c or d) only.

For part 1g, write the Qn. No. and the most suitable answer (there may be more than one).

(Qn. No.1a to Qn. No.1j → 1 mark each.)

1a) The objective of EDP auditing is:

- a. The control of loss of assets
- b. To ensure of the integrity and reliability of the data.
- c. To improve the efficiency of information systems applications.
- d. All of the above.

1b) Which is not fall into broadband category:

- a. FDDI
- b. SONET.
- c. ISDN.
- d. SMDS.

1c) Fast Packet technologies transfer rate of data packets per second at least :

- a. 10,000 packets/sec.
- b. 30,000 packets/sec.
- c. 50,000 packets/sec.
- d. 70,000 packets/sec.

1d) Non switched lines offer users several cost alternatives. The alternatives are

- a. Flat rate.
- b. Measured rate.
- c. Tapered rate
- d. All of the above.

Please turn over

1e) DSS (Decision support system) can be categorized into two basic categories

- a. Personal and group DSSs.
- b. Personal and Distributed DSSs.
- c. Group and functional DSSs.
- d. Personal and corporate DSSs.

1f) Fiber optics cables can carry unrepeat signals without the aid of repeaters over :

- a. 150 Kilometres.
- b. 160 Kilometres.
- c. 190 Kilometres.
- d. 120 Kilometres.

1g) Risk of DSS are [choose more than one]:

- a. Lack of quality assurance.
- b. Lack of data security.
- c. Failure of specifies correct requirements.
- d. Failure to understand to design alternatives.

1h) An ANN (Active Neural Network) learns from its experience. The usual process of learning involves are:

- a. 2.
- b. 3.
- c. 4.
- d. 5.

1i) Which one does not fall into machine learning method:

- a. Neural computing.
- b. Conductive learning.
- c. Inductive learning.
- d. Genetic algorithm.

1j) Active DSS is also called :

- a. Symbolic.
- b. Symbiotic.
- c. Semantic.
- d. None of the above.

Please turn over

(Qn. No.2a to Qn. No.2e → 1 mark each.)

2a) A 20-fiber cable can provide nine full-duplex transmission channels.

- a. TRUE
- b. FALSE

2b) A group decision support system (GDSS) is an interactive computer-based system that facilitates the solution of semistructured problems.

- a. TRUE
- b. FALSE

2c) In business, brainstorming refers to the process of a group of colleagues meeting and working collaboratively to generate creative solutions and new ideas.

- a. TRUE
- b. FALSE

2d) Neural network does not involve parallel processing.

- a. TRUE
- b. FALSE

2e) The data transfer speed for T4 is 100 mbps.

- a. TRUE
- b. FALSE

3 Explain the following (Minimum 4 to 5 sentences each) :-

[Maximum 10 marks]

- 3 a) SMDS (Switched Multimegabit Data Services).
- 3 b) VAN (Value Added Network)
- 3 c) Extranet

Please turn over

Section B

(Answer any 3 questions)

Qn. 4 Answer the questions (Qn. 4a to Qn. 4e) based on the application scenario.

Household International, with headquarters in Prospect Heights, Illinois, is a major provider of consumer lending, banking, insurance, and commercial financial services in the United States. The company also provides similar services in the United Kingdom, Canada, and Australia through subsidiaries.

The core of its consumer finance business is serviced by some seven hundred consumer lending branches and sixty bank branches throughout the United States. Household is also a large credit card issuer in the United States and operates a major credit card service centre in Salinas, California. Household's major data centre is in its corporate offices. The centre is linked to the branch network via leased lines, with regional connections to more than ten thousand remote devices and terminals.

Typical of large financial services institutions, Household justified its disaster recovery planning based on legal and regulatory requirements and the need to maintain uninterrupted customer service. The centralized design of its data network simplified recovery planning but made the headquarters data centre critical to recovery.

The company established a full-time staff to prepare, maintain, and "exercise" (test out) disaster recovery plans. After exploring several alternatives, including adding reserve processing capacity to their network, Household decided to rely on Comdisco Disaster Recovery Services [18]. Comdisco is a major supplier of alternative site data processing services in North America.

Services provided by Comdisco include use of facilities at one or more of their several recovery centres throughout North America, and "hot site" equipment and software to provide immediate operational support on request. In addition, Comdisco provides technical assistance in disaster planning, testing, and the use of recovery centres. Household viewed the monthly cost of these services as their most economical recovery alternative.

After six months, all critical banking applications had been tested at the alternative site and contingency procedures had been developed for the bank branches. Household had also begun developing contingency plans for the consumer lending operation and testing application programs at the alternative site. In addition, they had begun developing business recovery priorities and operating procedures for end users.

In the midst of this effort, nature intervened. At 9:00 A.M. on a Friday, after meeting with key personnel, Household declared a disaster. More than nine inches of rain had fallen on the Chicago area in twelve hours. Widespread flooding had closed major highways, leaving thousands of homes and businesses without power or telephone service. A retention pond at corporate headquarters had overflowed, causing an overnight runoff into the basement of the headquarters building where the data centre was located. By 10:30 A.M. the water had risen to

thirty-one inches – nine inches above the twenty-two-inch false floor – and it rose further before the disaster ended.

With telephone lines down in the area and the company PBX out of service, the recovery coordinator relied on plans made early in the year. Computer operations were transferred to the Comdisco alternative site in Wood Dale, Illinois, which was twenty miles away. Fortunately, he made his call to Comdisco early; other clients who called later were relocated to sites as far away as New Jersey—some eight hundred miles (thirteen hundred kilometres) away. Since five Chicago area businesses declared disasters, Comdisco's hot site resources in Illinois were quickly saturated.

At the backup site, work began on restoring vital bank and check processing systems. Critical processing for most bank branches resumed within twenty-four hours. Teller systems at bank branches used local computers, so they operated without interruption. However, on-line information on the current status of customer accounts was not available until the following Monday.

After pumping out the flooded data centre, the data processing staff found extensive damage to disk drive motors and circuit boards below the high water mark. However, they were able to restore the communication control units quickly. They were then able to use these units as the links for all communications between the backup-site computers and the remote terminals installed in the branches. Illinois Bell – the local telephone company – used a central switch to establish a link between the disaster recovery alternative site and the Household home office.

By the third day, all the important work that had been moved to key Household locations was up and running, and communication links among these locations were working. Communication links to all offices were available by the sixth day.

A few days after the disaster, more than 220 analysts and programmers were assigned to work at the alternative site on a twenty-four-hour schedule. The disaster recovery coordinator arranged for special food service, dressing facilities, and rest areas at the alternative site. And workstations were created using rented furniture and equipment.

Special meetings were held with senior management to establish recovery priorities for the consumer lending operation. Nearly all managers attended daily meetings, chaired by the executive vice president of information systems, and vendors affected by the disaster – some forty to fifty people in all. These meetings became the day-to-day means for reporting status, handling special problems, and developing recovery schedules. The meetings turned out to be the best means for communicating quickly and making decisions using the existing organization. The meetings lasted several hours each day and covered a wide range of topics. Thus, no special organizational structure was used for managing the disaster; however, the disaster recovery manager played a key role in coordinating the recovery.

The company left the backup site on the fifteenth day. Eighteen days after the disaster, normal operations had been fully restored.

Source: "Management Information System in Practice", Randolph 1st edition, New York, 1997.

Qn. 4 a) Identify and describe briefly the risks of a natural disaster in selecting a data center location. [Areas with high exposures to flooding, heavy rainfall, fire hazards, or earthquakes will be more costly to protect against these risks. Consider the budget carefully]

[5 Marks]

Qn. 4 b) Describe a plan to return to the primary site after the disaster to restore or recovery the system (this plan is just as important as a plan to move to an alternative site)

[5 Marks]

Qn. 4 c) How would you Plan for alternative telecommunications routing for multiple-site operations during a Disaster?

[5 Marks]

Qn. 4 d) How would you maintain your critical data at the alternative site or at another nearby location for fast recover.

[5 Marks]

Qn. 4 e) Do not expect damaged equipment, disks and tapes to always be replaced in kind or restores to original condition. Therefore how do you plan for new configurations, providing new resources of equipment for replacements?

[5 marks]

Qn. 5 a) What is Distributed systems. Discuss the reasons for implementing the Distributed Systems. (at least 5 reasons).

[13 Marks]

Qn. 5 b) What do you understand by System entropy.

[2 Marks]

Qn.5 c) Michael Hammer presents seven principles for business reengineering. Discuss at least 5 principles for guiding business process reengineering.

[10 Marks]

Qn. 6 a) Discuss 5 types of MIS and their purposes and characteristics.

[15 Marks]

Qn. 6 b) Define DSS by contrasting them with traditional EDP systems on five dimensions.

[5 Marks]

Qn. 6 c) What are the major areas where Expert Systems might be used.?

[5 Marks]

Qn. 7 a) Biometrics is a technology that has been used widely for security purposes to control access to the sensitive area. Identify and Discuss at least 5 types of various methods (e. g. retina scan, finger print) used in this technology that provide highest security.

[15 Marks]

Qn. 7 b) Discuss its advantages and economic feasibility and applications (Biometrics). [above 5 methods]

[10 marks]

- END OF PAPER -