



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (*EXTERNAL*)

Academic Year 2007/2008 – 1st Year Examination – Semester 1

IT1103 – Information Systems & Technologies
Multiple Choice Question Paper

01st March, 2008
(TWO HOURS)

Important Instructions:

- The duration of the paper is **2 (Two) hours**.
- The medium of instruction and questions is English.
- The paper has **45 questions** and **9 pages**.
- All questions are of the MCQ (Multiple Choice Questions) type.
- All questions should be answered.
- Each question will have 5 (five) choices with **one or more** correct answers.
- All questions will carry equal marks.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from 0 to +1 (*All the correct choices are marked & no incorrect choices are marked*).
- Answers should be marked on the special answer sheet provided.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. **Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices.**

1) Which of the following is a/are phase(s) of the traditional system development life cycle?

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|--------------------------|---------------------------|
| (a) System Investigation | (b) System Implementation |
| (c) Documentation | (d) Systems Analysis |
| (e) System Maintenance | |

2) Which of the following statements is/are **true** about data modeling?

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| (a) Data modeling helps to create a shared understanding of the data in the system. |
| (b) The basic tool used for data modeling is known as Data Flow Diagrams. |
| (c) Data modelling is the process of defining what data is used or produced in an information system and how that data is organised. |
| (d) It is a structured collection of electronically stored data that is controlled and accessed through computers. |
| (e) Data modelling is the process of creating a graphical model identifying the types of entities in a situation, as well as the relationship between those entities. |

3) Which of the following is/are a set of logically related tasks performed to achieve a defined outcome?

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|-------------|--------------|-------------|
| (a) Input | (b) Output | (c) Process |
| (d) Control | (e) Feedback | |

4) Information accuracy means

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| (a) the correctness of meta data attached to data. |
| (b) amount of time that has elapsed since the information was produced. |
| (c) the extent to which data represents what it is suppose to represent. |
| (d) the extent to which necessary information exists. |
| (e) the extent to which information can be accessed by people who need it. |

5) Following statements are related to databases.

- (i) Often, distinct yet related databases are linked to provide enterprisewide databases.
- (ii) SQL is an industry standard programming language for expressing data access and manipulation in relational databases.
- (iii) Once data has been placed into a relational database, users can make inquires and analyze them.

Identify the **correct** statement(s).

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|-----------------------|----------------------|
| (a) Only (i) & (ii) | (b) Only (i) & (iii) |
| (c) Only (ii) & (iii) | (d) All |
| (e) Only (i) | |

6) The following statements are about software.

- (i) Application software is a form of software used to merge and sort sets of data, keep track of computer jobs being run, compress files of data before they are stored or transmitted over a network and perform other important tasks.
- (ii) An operating system is a set of computer programs which control the computer hardware and act as an interface with application programs.
- (iii) Systems software enables their users to improve their personal effectiveness, increasing the amount of work they can do and its quality.

Identify the **correct** statement(s).

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|-----------------------|------------------------|---------------|
| (a) Only (i) and (ii) | (b) Only (i) and (iii) | (c) Only (ii) |
| (d) Only (iii) | (e) All | |

- 7) Which of the following is a/are function(s) of a DBMS?
- (a) Data dictionary management
 - (b) Data storage management
 - (c) Security Management
 - (d) Backup and recovery management
 - (e) Multiuser access control
- 8) Which of the following can be considered as information produced by processing raw data in a supermarket?
- (a) Brand name of a toothpaste available in store
 - (b) Price of a pack of toothpaste named 'X'
 - (c) Total sales revenue from toothpaste for a given month
 - (d) Product number of each toothpaste brand available in store
 - (e) Total unit sales of toothpaste and soap for a given month
- 9) Which of the following statements is/are **NOT true** about computer data storage?
- (a) Secondary storage is a form of non volatile memory.
 - (b) Secondary storage differs from primary storage in that it is directly accessible by the CPU.
 - (c) RAM is directly accessible to the CPU.
 - (d) Sequential access method is used to access the Random Access Memory (RAM).
 - (e) Floppy disk and magnetic tape are secondary storage devices.
- 10) The following statements are based on terms related to databases. Identify the **true** statement(s).
- (a) The repetition of data in separate files is known as data integrity.
 - (b) The schema describes the objects which are represented in the database and the relationships among them.
 - (c) A situation where programs and data developed and organized for one application are incompatible with programs and data organized differently for another application is called data redundancy.
 - (d) A key is a field which uniquely identifies the person, thing or event described by the record.
 - (e) Database normalization is a technique for designing relational database tables to minimize duplication of information.
- 11) Which of the following is a/are network(s) which link(s) selected resources of a company's intranet with its customers, suppliers or other business partners. This network is built on Web technologies.
- (a) LAN
 - (b) Internet
 - (c) Extranet
 - (d) WAN
 - (e) MAN
- 12) The following statements are about databases or data management. Identify the **incorrect** statement(s).
- (a) The traditional approach is an approach to data management whereby separate data files are created and stored for each application program.
 - (b) The most widely used database model is the hierarchical model.
 - (c) A database approach is an approach to data management whereby separate data files are created and stored for each application program.
 - (d) To use the database approach to data management, additional software called a database management system is required.
 - (e) There are no disadvantages associated with the use of databases.

13) The following statements are based on the components of a computer based information system.

- (i) Procedures include strategies, policies, methods and rules for using Computer Based Information Systems.
- (ii) A database is a group of related records.
- (iii) Application software is a set of computer programs which control the computer hardware.

Identify the **correct** statement(s).

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|---------------|-----------------------|---------|
| (a) Only (i) | (b) Only (iii) | (c) All |
| (d) Only (ii) | (e) Only (i) and (ii) | |

14) The following statements are based on the systems design phase of a systems development life cycle. Identify **false** statement(s).

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| (a) Physical design specifies the characteristics of the system components necessary to put the logical design into action. |
| (b) During physical design stage, backups and their frequencies have to be determined and documented. |
| (c) The requirement which specifies that the entering of the customer name will automatically search for address information and display that data so that the user would not have to enter so much information is a logical design specification. |
| (d) The physical design describes the functional requirements of a system and conceptualises what the system will do to solve the problems identified through earlier analysis. |
| (e) If instant database updating is specified in the logical design, then the physical design must specify a database management system that allows this to occur. |

15) Which of the following transmissions requires line-of-sight transmission and short distances (under a few hundred yards) to connect various devices and computers.

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| (a) Microwave | (b) Twisted pairs |
| (c) Cellular | (d) Infrared |
| (e) Fiber-optics | |

16) Which of the following statement can be associated with end-user development?

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| (a) End-user development are used when the precise requirements are difficult to visualise and define. |
| (b) IS professionals develop programs which are then tested by end-users. |
| (c) It enforces tight controls to ensure that the resulting IS performs according to requirements and is maintainable. |
| (d) End-user development divides the project into a series of steps, each of which has distinct variables. |
| (e) It can be considered as a partial solution to a severe overload of work in IS departments. |

17) Following statements refer to the hardware of a computer. Identify the **incorrect** statement(s).

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| (a) Secondary storage is NOT an element associated with the central processing unit. |
| (b) Cache memory is a type of high-speed memory that a processor can access more rapidly than main memory. |
| (c) SAN is a form of non-volatile memory that can be easily modified and is popular for use in computers, cell phones and other products |
| (d) Scanning devices are used with special software to convert handwritten or typed documents into digital data. |
| (e) Magnetic disks can be operated in sequential mode. |

18) Which of the following statements is **NOT true** about the building and use of an intranet?

- (a) The foundation for an intranet involves a network that uses the Intranet's TCP/IP protocol and computers with web browser software.
- (b) Use of an intranet can lead to a substantial reduction in paper based work.
- (c) An intranet can pull corporate computers, software and databases into a single system that enables employees to find information wherever it resides.
- (d) Intranet enables communication with customers, suppliers and other business partners.
- (e) It is a public network which enables e-commerce.

19) Which of these is **NOT** an element associated with the central processing unit?

- (a) arithmetic/logic unit
- (b) secondary storage
- (c) RAM
- (d) registers
- (e) control unit

20) Which of the following statements is/are **true** about system controls?

- (a) The overall purpose of input controls is to reduce errors while protecting the computer system from improper or fraudulent input.
- (b) Personnel controls make sure that only authorized people have access to certain systems.
- (c) Preventing and detecting problems related to system controls is an important part of system implementation.
- (d) Systems controls can help prevent computer misuse, crime and fraud by managers, employees and others.
- (e) The purpose of output controls is to ensure that output arrives at the proper destination and is accurate, current and complete.

21) Which of the following is/are the practice of convincing a person into providing a critical computer password?

- (a) Identity theft
- (b) Sending chain mail
- (c) Phishing
- (d) Dumpster diving
- (e) Social engineering

22) Identify the **false** statement(s) regarding Transaction Processing Systems (TPS).

- (a) Helping to maintain customer loyalty and achieving competitive advantage are benefits usually associated with TPS.
- (b) As we move from TPS to MIS and DSS, we see less routine, more decision support and more complex processing and analysis.
- (c) A TPS greatly reduces the amount of manual effort required to record and process business transactions.
- (d) TPS help managers make decisions that are unique, rapidly changing, and not easily specified in advance.
- (e) TPS provide tools for analyzing data and building models.

23) The following statements are related to computer networks. Identify the **correct** statement(s).

- (a) A basic processing strategy where all processing occurs in a single location or facility is called multiprocessing.
- (b) A 'bus network' has a central hub with devices located at the end of the communications lines which originate from the central hub.
- (c) A network operating system is systems software that controls access by multiple users to network resources such as files.
- (d) In the centralized computing architecture, the entire file is downloaded from the host computer to the user's computer in response to a request for data.
- (e) By enabling online collaboration with customers, intranets enable interactive and customer focused product development and marketing.

24) Identify the **correct** statement(s) related to Business Information Systems.

- (a) A budget is used by financial managers at the operational level to monitor and control pay to individual employees.
- (b) ERP is a set of integrated programs which manage a company's vital business operations for an entire multi-site, global organization. Its scope typically includes manufacturing and finance related business functions.
- (c) With the batch transaction processing form of data processing, each transaction is processed immediately.
- (d) EDI is an approach to data collection in which the data is captured at its source, recorded accurately in a timely fashion with minimal effort and in a form that can be directly input to the computer.
- (e) CRM system is a collection of people, processes, software and Internet capabilities which helps an enterprise to manage customer relationships effectively and systematically.

25) Maintaining privacy, authentication, integrity and nonrepudation are requirements for Web based transactions. Which of the following methods can be used to achieve these requirements (select the correct order)?

- (a) Encryption, Certification Authority, Digital Certificate, Digital Signature
- (b) Digital Certificate, Digital Signature, Certification Authority, Encryption
- (c) Digital Certificate, Certification Authority, Digital Signature, Encryption
- (d) Encryption, Digital Certificate, Digital Signature, Certification Authority
- (e) Encryption, Digital Certificate, Certification Authority, Digital Signature

26) Which of the following is an/are organizational structure(s) centered on major products or services?

- (a) Matrix
- (b) Virtual
- (c) Hierarchical
- (d) Team
- (e) Project

27) The following statements are about computer viruses, worms or trojan horses. Identify the **false** statement(s).

- (a) Without any user intervention, a worm can use a network to send copies of itself to other computers on the network.
- (b) Viruses always corrupt or modify files in a targeted computer.
- (c) A worm can only spread from one computer to another when its host is taken to the uninfected computer, for instance by a user sending it over a network or the Internet.
- (d) Trojan horses propagate by self-replication and they do not rely on the exploitation of an end-user.
- (e) Worms can harm the network by consuming bandwidth.

28) The following statement(s) is/are about market forces and the value chain.

- (i) Rivalry among existing suppliers is one of the five forces of Micheal Porters model.
- (ii) Organizational culture refers to organizational subunits and the way they relate to the overall organization.
- (iii) The supply chain is a concept first described by Michael Porter that includes a series of activities directed at increasing the value perceived by a customer.

Identify the **incorrect** statement(s).

- (a) Only (i)
- (b) Only (ii)
- (c) Only (iii)
- (d) Only (ii) & (iii)
- (e) All

29) It is a well known factor that a team effort is required for a successful systems development. Identify the members of a typical system development team.

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|------------------------------------|-----------------|
| (a) Users | (b) Managers |
| (c) Systems Analysts and Designers | (d) Programmers |
| (e) Customers | |

30) Which of the following statements is/are **correct** regarding prototyping?

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| (a) It is an iterative approach to the systems development process. |
| (b) Users cannot experiment the system and provide constructive feedback during development. |
| (c) An operational prototype can be produced in 1-3 weeks. |
| (d) Prototyping enables early detection of errors and omissions. |
| (e) Prototyping is one of the phases in the traditional system development life cycle |

31) The following statements are based on computer crime. Identify the **correct** statement(s)?

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| (a) A sniffer is a type of eavesdropping program that monitors information traveling over a network. |
| (b) A hacker is an individual who intends to gain unauthorised access to a computer system. |
| (c) Denial of Service attacks can destroy information of a company, but cannot cause a Web site to shut down. |
| (d) Spoofing can involve redirecting a Web link to an address different to the intended one. |
| (e) The term cracker is used to denote a hacker with criminal intent. |

32) Which of the following items is/are included in a typical system design report?

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| (a) input and output of user interfaces | (b) Hardware and software organisation |
| (c) Human resources | (d) Maintenance plan |
| (e) Test cases | |

33) Which of the following can be used to simplify and shorten data entry?

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| (a) Menus |
| (b) A help facility |
| (c) Function Keys |
| (d) Restart procedures |
| (e) Lookup tables |

34) Which of the following is/are **incorrect** about computer software?

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| (a) Proprietary software is a software program which has been developed for a general market and can be purchased in a store. |
| (b) Personal productivity software enables their users to improve their personal effectiveness, increasing the amount of work they can do and its quality. |
| (c) Groupware helps groups of people work together more efficiently and effectively. |
| (d) System software are customised for company specific requirements. |
| (e) Systems software enables their users to improve their personal effectiveness, increasing the amount of work they can do and its quality. |

35) Which of the following is an organizational structure which employs individuals, groups or complete business units in geographically dispersed areas who may never meet face to face in the same room?

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|------------------|-------------|
| (a) Hierarchical | (b) Network |
| (c) Matrix | (d) Virtual |
| (e) Project | |

36) The following statements are based on specialized information systems. Identify the **correct** statement(s).

- (a) The knowledge base is the component of an expert system that delivers the expert advice.
- (b) A virtual reality system enables one or more users to move and react to what their senses perceive in a computer-simulated environment.
- (c) Expert systems are not capable of acquiring knowledge directly.
- (d) A neural network is a form of artificial intelligence that allows a computer to change how it functions or reacts to situations based on feedback it receives.
- (e) Neural networks are useful for finding patterns and relationships in massive amounts of data that would be difficult to analyze by a human being.

37) The following statements are based on Group Decision Support Systems (GDSS). Identify the **incorrect** statement(s).

- (a) Another name for GDSS is “computerized collaborative work systems”.
- (b) Group decision making can be enhanced by incorporating anonymous input feature.
- (c) MS Access is an example of a group decision support software package.
- (d) A GDSS is a form of system that provides managers with information, typically in reports, that supports effective decision making and provides feedback on daily operations.
- (e) A GDSS is an interactive computer based system used to facilitate the solution of unstructured problems by a set of decision makers working together as a group.

38) The following statements are based on Decision Support Systems (DSS).

- (i) The model base is the component of a DSS that enables managers and decision makers to perform qualitative analysis on both external and internal data.
- (ii) The Dialogue Manager component assists with all aspects of communications between the user and the hardware and software that constitute the DSS
- (iii) The component of a decision support system that provides decision makers access to variety of models and assists them in decision making is called the knowledge base.

Which of the above statement is/are **correct**?

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| (a) Only (i) | (b) Only (i) & (ii) | (c) Only (i) & (iii) |
| (d) Only (ii) | (e) All | |

39) Which of the following statements about MIS is/are not **true**?

- (a) Internal source of data for an MIS can include the organisation’s various TPS and ERP systems.
- (b) External sources of data can include customers, suppliers, competitors and share holders, whose data is not already captured by the TPS.
- (c) Many companies use the Internet to access important sources of data for their MIS systems.
- (d) A scheduled report is a type of report that summarizes the previous day’s critical activities and is typically available at the beginning of each work day.
- (e) A MIS developed for a manufacturing environment supports managerial activities in product development, distribution, pricing decisions, promotional effectiveness and sales forecasting.

40) Consider the following descriptions about Gantt charts.

- (i) It is a simple vertical bar chart that shows project tasks against a calendar.
- (ii) Each bar represents one task in the project.
- (iii) It is used for planning, monitoring, and coordinating projects.

Which of the above statements is/are **correct**?

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|-----------------------|---------------------|----------------------|
| (a) Only (iii) | (b) Only (i) & (ii) | (c) Only (i) & (iii) |
| (d) Only (ii) & (iii) | (e) All | |

41) Identify the diagram(s) which show(s) the flow of data through a system and the processing performed by that system.

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|---------|---------|
| (a) ERD | (b) FHD |
| (c) DSR | (d) DFD |
| (e) STD | |

42) Which of the following is a/are hidden program(s) in a network or a computer system which capture(s) identification numbers and passwords.

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|--------------------|----------------------|
| (a) Identity thief | (b) Macro virus |
| (b) Logic bomb | (d) Password sniffer |
| (e) Worm | |

43) Which of the following statements is/are **correct** regarding different system development approaches?

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| (a) Prototyping is useful when requirements are uncertain. |
| (b) Systems Development Life Cycle approach creates massive paperwork to manage. |
| (c) End-user development systems may not always meet quality assurance standards. |
| (d) Outsourcing can produce systems when internal resources are not available or technically deficient. |
| (e) End-user development can lead to proliferation of uncontrolled information systems and data. |

44) The following statements are based on the different stages in the system development life cycle.

- i. The physical design specifies the characteristics of the system components necessary to put the logical design into action.
- ii. The systems development phase that immediately follows system design is called testing.
- iii. During the analysis phase, it is determined how the information system will solve the problem.

Which of the above statements is/are **correct**?

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|-----------------------|---------------------|
| (a) Only (ii) & (iii) | (b) Only (i) & (ii) |
| (c) Only (i) & (iii) | (d) Only (ii) |
| (e) All | |

45) Which of the following statements is/are **true** about the use of RFPs?

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| (a) It is advisable to discard the original RFP when developing the final contract and start afresh. |
| (b) RFP stands for "Request For Proposal". |
| (c) The RFP specifies in detail, the required resources for the proposed system, such as hardware and software. |
| (d) RFP stands for "Requirements for Project". |
| (e) The process to generate RFP can be automated. |
