



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year 2005/2006 – 3rd Year Examination – Semester 6

IT6302: E-Commerce

**20th August, 2006
(THREE HOURS)**

To be completed by the candidate

BIT Examination Index No: _____

Important Instructions:

- The duration of the paper is **3 (Three) hours**.
- The medium of instruction and questions is English.
- This paper has **4 questions** and **15 pages**.
- **Answer all 4 questions**. All questions carry **equal marks**.
- **Write your answers** in English using the space provided **in this question paper**.
- Do not tear off any part of this answer book.
- Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.

Questions Answered

Indicate by a cross (x), (e.g.) the numbers of the questions answered.

To be completed by the candidate by marking a cross (x).	1	2	3	4
To be completed by the examiners:				

1) (a) Getting into e-Business has several advantages. List down six (6) such advantages.

(04 marks)

<p><u>ANSWER IN THIS BOX</u></p> <p>Any six of the following:</p> <ul style="list-style-type: none">• Global accessibility and sales reach• Closer relationships• Free samples• Reduced costs• Media breaks• Time to market• Customer loyalty
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(b) Attracting visitors to your e-commerce website is a precondition for the success of your business. List down six (6) facts you would consider when fulfilling this need.

(04 marks)

<p><u>ANSWER IN THIS BOX</u></p> <p>Any six of the following:</p> <ul style="list-style-type: none">• Offer real-time up-to-date information• Offer free information about the products and services• Offer free give-away, like screen savers for registered users• Personalization and discounts for registered users• Online and offline reading facility for the content• Cross-marketing and cross-selling (related products and services)• Be faster than your customer (fast searching of information, help facility, navigation aids)• Event marketing (subscribe to mailing lists)

(c) What is a *Decision Support System (DSS)*? What is the typical information that a DSS would gather and present?

(05 marks)

ANSWER IN THIS BOX

A DSS is a set of programs and related data that supports business and organizational decision-making activities.

The typical information consists of:

- Access all the current information assets
- Comparative sales figures between time durations
- Projected revenue figures based on new assumptions
- Consequences of different decision alternatives

(d) What is *Enterprise Resource Planning (ERP)*? List down four (4) topics you would consider when you select ERP software for your company.

(05 marks)

ANSWER IN THIS BOX

Enterprise resource planning systems (ERPs) are management information systems which integrate and automate many of the business practices associated with the operations or production aspects of a company.

Any four of the following:

- Business processes
- Component integration
- Flexibility
- Internet connectivity
- Multi-state support
- Quick implementation
- User friendliness

Continued...

- (e) List down four (4) ways in which Information and Communication Technology (ICT) would be used to improve the efficiency of a business process.

(04 marks)

<u>ANSWER IN THIS BOX</u>
Any four of the following:
<ul style="list-style-type: none">• No need to enter data manually into computer systems• High accuracy• Easy access from anywhere in the world• Faster data communication• Facilitate to take immediate decisions

- (f) Going into online business has many concerns for people. List down six (6) of them.

(03 marks)

<u>ANSWER IN THIS BOX</u>
Any six of the following:
<ul style="list-style-type: none">• Channel conflict• Competition• Copyright• Customer acceptance• Legal issues• Loyalty• Pricing• Security• Service• Viability

Continued...

2) ***This question is based on the following CASE STUDY.***

The Free Software Foundation (FSF), started in 1985, intended the word 'free' to mean "free as in free speech" and not "free as in free beer." Since a great deal of free software already was (and still is) free of charge, such free software became associated with zero cost, which seemed anti-commercial.

The Open Source Initiative (OSI) was formed in February 1998 by Eric S. Raymond and Bruce Perens. With at least 20 years of evidence from case histories of closed development versus open development already provided by the Internet, the OSI presented the 'open source' case to commercial businesses, like Netscape. OSI hoped that the usage of the label "open source," a term suggested by Peterson of the Foresight Institute at the strategy session, would eliminate ambiguity, particularly for individuals who perceive "free software" as anti-commercial. They sought to bring a higher profile to the practical benefits of freely available source code, and they wanted to bring major software businesses and other high-tech industries into open source. Perens attempted to register "open source" as a service mark for OSI, but that attempt was impractical by trademark standards. Meanwhile, thanks to the presentation of Raymond's paper to the upper management at Netscape (Raymond only discovered when he read the Press Release, and was called by Netscape CEO Jim Barksdale's PA later in the day), Netscape released its Navigator source code as open source, with favourable results.

(Extracted from http://en.wikipedia.org/wiki/Open_Source_Software)

- (a) What is *Open Source*? List down five (5) criteria which should be satisfied in order to qualify a program as an open source project.

(06 marks)

ANSWER IN THIS BOX

Open source means access to source code

Any five of the following:

- **Free re-distribution**
- **Include the source code**
- **Allow modifications**
- **Protect the integrity of the original version**
- **No discrimination against persons, groups or fields of endeavour**

Continued...

- **Distribution of license**
- **License must not be specific to a product**
- **License must not restrict other software**
- **License must be technology neutral**

(b) Which of the following are open source projects?

Linux, Windows XP, MySQL, Perl, Microsoft Office 2000, Netscape Browser, Internet Explorer Browser, Mozilla Browser, KDE Desktop, Apache, Adobe Acrobat Reader, OpenOffice

(04 marks)

ANSWER IN THIS BOX

Linux

MySQL

Perl

Netscape Browser

Mozilla Browser

KDE Desktop

Apache

OpenOffice

(c) List down four (4) benefits one would receive from open source software.

(04 marks)

ANSWER IN THIS BOX

Any four of the following:

- Encourages software reuse as a result of minimal legal obligations
- Increased code quality and security as a result of community of software developers
- Decreased vendor lock-ins
- Reduced cost of acquisition with a minimal risk
- Increased customizability
- Meritocratic community where a programmer's status and fame solely depend on programming skills and is, independent of the organization the programmer is working for

(d) List down three (3) facts that make an open source project successful.

(03 marks)

ANSWER IN THIS BOX

Any three of the following:

- Modular design approach
- Coordination of the efforts with a flat hierarchy
- A good leader who has technical and people skills
- The project should solve a general problem
- A website, news groups, mailing lists and other general discussion areas

- (e) List down three (3) types of OSI certified licenses.

(03 marks)

ANSWER IN THIS BOX

Any three of the following:

- GNU General Public License (GPL)
- MIT License
- Apache Software License
- Common Public License
- Mozilla Public License
- Or other OSI certified licenses listed under
<http://www.opensource.org/licenses/>

- (f) The Sri Lanka Software Foundation (LSF) is a non-profit foundation whose mission is to encourage Sri Lankan developers to participate in global Free and Open-Source Software (FOSS) projects.

- (i) List down six (6) objectives of this foundation.

(03 marks)

ANSWER IN THIS BOX

Any six of the following:

- Support free/open source software developers and projects with infrastructure, funding, motivation, research, development, consultancy, training and other enabling facilities
- Create an identity to the Sri Lankan free/open source software developer community and provide for worldwide interaction, co-operation and co-ordination of FOSS developers
- Provide bursaries, scholarships, grants, financial assistance and other facilities to students, teachers and lecturers for academic and research studies with respect to free/open source software and related fields
- Initiate, establish and implement free/open software projects

Continued...

- Undertake to provide free/open source software services
- Liaise with external agencies and act as a medium to obtain and receive resources, facilities and funds for the development and enhancement of knowledge, education and research with respect to free/open source software and related fields
- Organize and promote seminars, workshops, conferences and exhibitions for the purpose of training and dissemination of knowledge
- Establish a FOSS network consisting of developers and their employers, universities, professional organizations, university-hosted development labs and other international open-source organizations

(ii) List down four (4) such projects currently handled by the LSF.

(02 marks)

ANSWER IN THIS BOX

Any four of the following:

- Apache Axis C++
- Apache Axis Java 2.0
- Axis Mora
- WS-Reliable Messaging (Sandesha)
- WS-SecureConversation & WS-Trust (under Apache WS-FX)
- WS-Atomic Transactions (Kandula)
- WS-Security (WSS4C)
- WS-Addressing
- JSR 172
- Multimedia Messaging Service Center (MMSC)
- Sahana
- BSF
- WSDL-WS

3) (a) List down four (4) advantages of XML over HTML.

(04 marks)

ANSWER IN THIS BOX

Any four of the following:

- Browser presentation
- Information accessibility
- Richer content
- SGML compatibility
- Tailored document types

(b) Name three (3) types of payment systems available over the Internet. Give two (2) examples for each system.

(06 marks)

ANSWER IN THIS BOX

Any two examples for each of the following payment systems:

- Pre-paid system: Electronic Cash {DigiCash, NetCash, CyberCoins, IBM Micro Payment, MilliCent}, Smart Cards {Mondex, GeldKarte, VisaCash}
- Instant-paid system: Debit Cards, Direct Debit
- Post-paid system: Credit card solutions {SET, WireCard, CyberCash, First Virtual}, Invoice, Internet Cheques {NetCheque, PayNow, echeck}, Cash on Delivery (COD)

- (c) What is a *Web Service (WS)*? What is the most popular message format used in web service architecture?

(04 marks)

ANSWER IN THIS BOX

A web service is any piece of software that uses a standardized XML messaging system.

The most popular message format is Simple Object Access Protocol (SOAP)

- (d) List down four (4) customer identification methods available over the web.

(04marks)

ANSWER IN THIS BOX

Any four of the following:

- Basic authentication (user name and password)
- Cookies
- Domain name
- IP address
- Personalized URLs
- Strong authentication (digital certificates)

- (e) How does one make sure that sending his credit card number to someone over the web is secure and confidential?

(03 marks)

ANSWER IN THIS BOX

- The URL starts with https instead of http
- Closed padlock appears at the bottom part of the browser
- Warning message is given saying that it is going to make a connection with a secure site.

- (f) List down five (5) advantages of implementing an e-learning system for your organization.

(04 marks)

ANSWER IN THIS BOX

Any five of the following:

- Reduced overall cost
- Reduced time for training
- Just-in-time training
- Consistent delivery
- Minimum time-away
- Centralized training
- Availability

4) (a) What is *Computer Forensics*?

(03 marks)

ANSWER IN THIS BOX

Computer Forensics is the use of specialized techniques for recovery, authentication and analysis of electronic data when a case involves issues relating to reconstruction of computer usage, examination of residual data, authentication of data by technical analysis or explanation of technical features of data and computer usage.

(b) List down six (6) different types of cyber crimes.

(06 marks)

ANSWER IN THIS BOX

Any six of the following:

- Interception
- Modification
- Theft
- Interference
- Sabotage
- Hacking
- Virus distribution
- Aiding and abetting cyber criminals
- Computer fraud
- Computer forgery

(c) Name one piece of legislation which has been drafted in any country in order to protect the on line privacy of children.

(02 marks)

ANSWER IN THIS BOX

The Children's Online Privacy Protection Act (COPPA)

- (d) What is the name of the government agency in Sri Lanka that is involved in implementing ICT policy and directions for the nation? List down four (4) services carried out by the above government agency.

(06 marks)

ANSWER IN THIS BOX

Information and Communication Technology Agency of Sri Lanka

(ICTA)

Any four of the following:

- **Develop the information infrastructure of the country**
- **Helps to enable laws for e-government and e-commerce**
- **ICT human resource development**
- **Re-engineering the government**
- **ICT promotion, investment and private sector development**
- **Bridge the digital divide**

- (e) What is *Creative Commons (CC)*?

(02 marks)

ANSWER IN THIS BOX

The Creative Commons (CC) is a non-profit organization devoted to expanding the range of creative work available for others to legally build upon and share.

- (f) Someone wants to get information about a certain government ministry of Sri Lanka. What is the website address of the government of Sri Lanka official web portal where that person can find the website address of that ministry?

(02 marks)

ANSWER IN THIS BOX

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http://www.gov.lk

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- (g) The International Information Technology Conference (IITC) is a major event organized by the Infotel Lanka Society and the UCSC each year with a gathering of researchers, technological experts, industry personnel and general public, both local and international. List down four (4) benefits of organizing such an event in the country.

(04 marks)

ANSWER IN THIS BOX

Any four of the following:

- **Researchers are given an opportunity to present their work to the public.**
- **Public gets aware of up-to-date emerging technologies**
- **Enhance industry-research partnerships and collaborations both locally and with potential international partners**
- **More research work will be initiated**
- **Public would get a chance to meet and discuss with experts in the areas**

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