



**UNIVERSITY OF COLOMBO, SRI LANKA**

**UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING**



**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)**

*Academic Year 2009/2010 – 3<sup>rd</sup> Year Examination – Semester 5*

***IT5103 - Professional Issues in IT***  
***Structured Question Paper with Model Answers***

**27<sup>th</sup> March, 2010**  
**(TWO HOURS)**

**To be completed by the candidate**

BIT Examination Index No: .....

**Important Instructions:**

- The duration of the paper is **2 (two) hours**.
- The medium of instruction and questions is English.
- This paper has **4 questions** and **16 pages**.
- **Answer all questions.**
- All questions will 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. 

X
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) the numbers of the **four** questions answered.

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

1)

**CASE STUDY**

INFOMIND is a private company involved in IT related activities. The main function of this company is software development and marketing of computer hardware. The software company consists of two subdivisions. One subdivision (local division) caters to the local software market and the other subdivision (foreign division) acts as an agent (subsidiary) to a foreign software development company called ITGlobe which is located in a western country. INFOMIND has a total number of 130 employees out of whom 45 are females. A fixed amount as transport allowance is paid to all employees regardless of the distance to their residence from the company.

Normal working hours of INFOMIND are from 8.30 a.m. to 4.30 p.m. with a 45 minutes lunch break. In the two software development subdivisions, working hours depend on the nature and the deadline of the projects in hand. Generally, software developers and system analysts are required to work overtime. Overtime work is paid at special rates. After several complaints, the company adopted a policy to provide transport at the company's cost for those who leave the company premises after 7.00 p.m. This free transport is provided to the door step for all female employees and for the male employees of the foreign division. For the male employees of local software division who are the majority of late leavers, transport is provided to the nearest major town. The male employees of the local software division have expressed their displeasure for discriminating against them over those in the foreign software division. The company's explanation for this distinction was the limited availability of resources.

- (a) (i) Briefly discuss the positive and negative aspects of the transport policy in INFOMID company with respect to fairness and gender discrimination?

**(15 marks)****ANSWER IN THIS BOX**

Positive aspects:

**A fixed amount of transport allowance is paid to all employees regardless of their position and gender.**

**The free transport facility is given for the employees regardless of their position.**

Negative aspects:

**Male employees at the local division are discriminated against even though they are the majority of the late leavers.**

**[Related to Ref 1: pg. 137-139]**

- (ii) What are your recommendations to resolve the negative aspects you identified in (i) as a senior manager of the Human Resource Department?

(15 marks)

**ANSWER IN THIS BOX**

Discussion with employees about the relevant incident and get their suggestions especially from the male employees in the local division

After analyzing the situation, transport allowance can be paid according to the distance between the office and the home and hence save some money.

This saved amount of money can be used to give transport facility to male employees as well.

If it is not possible to identify a good solution Company must get ready to discuss the complaints of male employees and their concerns.

- (b) Even though discrimination is unfair and against the law, there can be some obvious exceptions where we need to allow some form of discrimination. List three such exceptions with examples when applicable.

(15 marks)

**ANSWER IN THIS BOX**

Three of the following:

There can be a genuine occupational requirement for a person of a specific sex.

e.g. recruiting actors to play specific roles of a specific sex.

Some charity organizations like to serve specific group of people

who are all of the same sex. e.g. single mothers.

Some job descriptions imply that such jobs cannot be performed by disabled persons.

e.g. a blind person to work as a bus driver.

Restrict certain age groups in order to protect them.

e.g. not allowing children under a certain age to be employed.

[Ref 1: pg. 138-140, 143]

- (c) Information systems professionals have a direct responsibility in avoiding discrimination on grounds of disability from the way information systems are designed. Comment on the above sentence with relevant examples.

(10 marks)

**ANSWER IN THIS BOX**

Information system designers should consider making reasonable adjustments to information systems so that they can be used by disabled employees (e.g. blind or partially blind), provided such adjustments can be done at a reasonable cost.

[Ref 1: pg. 141]

- (d) One of the tasks which an HR Department in an organization ensures is that recruitment, selection and promotion procedures comply with anti discrimination legislation. There is a wide range of selection techniques available in making professional appointments. Give two of the most suitable selection procedures for appointing a software developer? Justify your answer.

(20 marks)

**ANSWER IN THIS BOX**

Interview by a panel:

Panel will be able to judge the personality of the candidate and ask questions about work experience and expectations.

This will help the company to see if candidate would fit in with the other employees and perform expected duties.

Task assessment:

Candidates are asked to carry out some of the tasks which they will be required to do in the job (e.g. write a program).

Contd.

**This will ensure that the candidates have some basic skills without the need for further training.**

**[Ref 1: pg. 114-115]**

- (e) List five tasks which are expected to be undertaken by an HR Department in a company other than that identified in part (d).

**(15 marks)**

**ANSWER IN THIS BOX**

**List five from among the following**

**Staff training and development**

**Setting up and monitoring remuneration policy**

**Setting up and monitoring appraisal procedures**

**Administering dismissal and redundancy procedures**

**Dealing with contracts of employment  
Workforce planning**

**Administering grievance procedures**

**Being aware of new legislation affecting employment rights and advising  
management of what the organisation must to do comply with it**

**Dealing with health and safety**

**Administering consultative committees**

**[Ref 1: pg. 113]**

- (f) Nimal is a highly competent designer at INFOMID and after the job evaluation Nimal is promoted to a managerial position in the company. Nimal could not perform well as a manager compared with his previous position. Briefly explain the weaknesses in the job evaluation procedure followed by the company based on the above incident

**(15 marks)**

**ANSWER IN THIS BOX**

**They have considered that giving promotions is the way of evaluation and because of that, they have thought that promoting him to a managerial position is better.**

**Contd.**

It has been the case in some companies in the IT industry that the only way in which highly competent designers could be rewarded adequately was by promoting them to managerial positions to which they were unsuitable.

That makes good designers into bad managers

It is better to allow the pay structure to be made in a way that salary of the staff is to be increased without changing their roles.

[Ref 1: pg. 118]

- 2) (a) (i) What is a professional body? Which types of people usually start it?

(15 marks)

**ANSWER IN THIS BOX**

A professional body is a non-profit organization seeking to further a particular profession, the interests of individuals engaged in that profession and the public interest.

It is usually started by a group of people coming together because of a shared interest in a particular type of activity.

It can also be started by people engaged in the same type of activity, who want to protect their profession against others who may be trying to enter it without having the proper knowledge or who may be practising it dishonestly.

[Ref 1: pg. 12]

(ii) List the main functions of a professional body.

(15 marks)

**ANSWER IN THIS BOX**

Establish a code of conduct to regulate the behaviour of its members.

Implement disciplinary procedures to discipline members who breach this code.

Establish mechanisms for disseminating knowledge of good practice and new developments to its members, typically through publications and conferences but increasingly also through the use of the worldwide web.

Set standards of education and experience that must be met by members.

Advise the government and regulatory bodies about matters within its area of expertise.

[Ref 1: pg. 12]

(b) List three different ways to promote education through a professional body. Give an example for each proposed method.

(30 marks)

**ANSWER IN THIS BOX**

Conduct own professional examinations and grant approval to suitable organisations to provide courses for such examinations.

E.g. BCS conducts Certificate, Diploma and Professional Graduate Diploma examinations.

Accredit degree programmes offered by institutions of higher education.

Contd.

**E.g. BCS has accredited the degree programme of several UK and other universities worldwide.**

**Set the syllabus for a range of vocational qualifications and accredit training organisations to provide the associated short courses.**

**E.g. BCS manages and promotes the European Computer Driving Licence.**

**[Ref 1: pg. 29-31]**

- (c) The professional standards which shall be adhered to the BCS membership are described in the code of conduct of the BCS UK. Describe the code of conduct for the two areas identified below.

- (i) The public interest

**(20 marks)**

**ANSWER IN THIS BOX**

**Carry out work or study with due care and diligence in accordance with the relevant authority's requirements and the interests of system users.**

**If professional judgement is overruled, indicate the likely risks and consequences.**

**Have regard for the public health, safety and environment.**

**Have regard to the legitimate rights of third parties.**

**Have the knowledge and understanding of relevant legislation, regulations and standards and comply with them.**

Contd.



**Conduct professional activities without discrimination against clients or colleagues.**

**Reject and not make any offer of bribery or inducement.**

**[Ref 1: pg. 26-27, 217-218]**

(ii) Professional competence and integrity

**(20 marks)**

**ANSWER IN THIS BOX**

**Upgrade professional knowledge and skill and maintain awareness of technological developments, procedures and standards in the field, and encourage your subordinates to do likewise.**

**Do not claim any level of competence that you do not possess.**

**Only offer to do work or provide a service that is within your professional competence.**

**Observe clauses relevant from the BCS Code of Good Practice and any other relevant standards and encourage colleagues to do likewise.**

**Accept professional responsibility for your work and for the work of colleagues working under your supervision.**

**[Ref 1: pg. 28, 219-220]**

- 3) (a) Producing Software for a client is usually not a matter of handing over the text of a programme which does what is required. It is important therefore that the contract signed by the client and the developer (supplier) describes clearly what precisely are to be delivered by the developer (supplier). List down the possible deliverables.

(20 marks)

**ANSWER IN THIS BOX**

Source code

Command files for building the executable code from the source and for installing it

Documentation of the design and of the code

Reference manuals, training manuals and operation manuals

Software tools to help maintain the code

User training

Training for the client's maintenance staff

Test data and test results

*[Ref 1: pg. 147]*

- (b) In most of the cases where work is being carried out for a specific client, the client will have to fulfill certain obligations if the contract is to be completed successfully. List the possible obligations.

(20 marks)

**ANSWER IN THIS BOX**

Provide documentation on the aspects of the client activities or  
the environment in which the system will run.

Contd.

**Provide access to appropriate members of staff.**

**Provide machine facilities for development and testing.**

**Provide accommodation, communication and secretarial facilities for the company's staff when working on the client's premises.**

**Provide data communication facilities to the site.**

**[Ref 1: pg. 150]**

- (c) Consultancy is defined as an up-market version of contract hire and Consultancy projects are very much simpler than other fixed price contracts and are usually undertaken for a fixed price. What are the main aspects of a Consultancy contract? Briefly explain them.

**(20 marks)**

**ANSWER IN THIS BOX**

**Confidentiality: Consultants have access to sensitive information of the organization.**

**They could misuse this information for their own profit.**

**Terms of reference: Well defined terms of reference at the very outset of the consultancy contract and provisions for flexibility during the progress of the consultancy will avoid misunderstandings and issues between the client and the Consultant.**

**Liability: Most consultants will prefer to have minimum liability for consequences faced by their clients by abiding by their recommendations.**

**Customers may not prefer this and may want the consultant to share**

**Contd.**

reasonable level of responsibility for any negative consequences arising as a result of their recommendations/advice.

**Control over the final version of the report:** It is a common practice for the contract to require that a draft version of the final report be given to the client and any possible changes suggested by the client to be made to the report by the consultant and the final version to be given to the client.

[Ref 1: pg. 153]

- (d) (i) When customers buy some software, they are buying a copy of the software together with the right to use it in certain ways. There are many different types of restrictions which license agreements may place on the extent to which a customer can use the software. State the main restrictions which are imposed by a license agreement on a customer.

(10 marks)

**ANSWER IN THIS BOX**

Allow one copy of the Software to be used.

Allow the buyer (licensee) to run the software on a server so that it could be used by any number of simultaneous users.

Allow the user to run as many copies of the Software as he/she wishes on computers at specified premises only, which is known as site license.

[Ref 1: pg. 156]

- (ii) On the other hand, the software vendor may be concerned with several things when providing a customer with a license to use one of his products or software. List some of such concerns

(10 marks)

**ANSWER IN THIS BOX**

Making sure that the license is not giving away any of its own rights in the software

Contd.

**Limiting the extent to which the customer can use the software, so that if the customer wants to use it more extensively, he must pay an additional license fee**

**Ensuring a regular income from support activities, possibly as an annual maintenance charge or fee for consultancy services**

**Ensuring that as far as possible, it will not be liable for any defects in the software**

**[Ref 1: pg 156]**

- (e) In the table below **Column I** contains four expressions (labelled A to D) related to Intellectual Property Rights. **Column II** contains different aspects of Intellectual Property Rights (labelled 1 to 4).

	<b>Column I</b>		<b>Column II</b>
A	Breach of any of the exclusive rights of the copyright owner	1	Patent
B	A temporary right given by the state, enabling an inventor to prevent other people from exploiting his innovation without his permission	2	Intellectual Property
C	A sign capable of being represented graphically which is capable of distinguishing goods or services of one undertaking from those of other undertakings	3	Primary Infringement
D	Property that cannot be touched (intangible)	4	Trade Mark

Examine the content of the two columns and match accurately each expression from **Column I** to one from **Column II** and write the matching number next to each letter.

**(20 marks)**

**ANSWER IN THIS BOX**

A – 3

B – 1

C – 4

D – 2

**[Ref 1: pg. 161, 164, 167, 173]**

- 4) (a) Which law provides the owner /author of a particular work with certain exclusive right such as the right to adapt the work?

(05 marks)

**ANSWER IN THIS BOX**

Copyright law

[Ref 1: pg. 163]

- (b) "Patents Encourage Inventions" – Give two (02) reasons to support this statement.

(10 marks)

**ANSWER IN THIS BOX**

A patent is a well defined asset that allows shareholders and in particular venture capitalists to be confident that their investment is producing something of value.

Patents ensure that the benefit of research and development accrues to the people who financed it.

[Ref 1: pg. 170]

- (c) (i) In the table below **Column I** contains 4 instances (labelled A to D) of violations of Data Protection Principles. **Column II** contains some Data Protection Principles (labelled 1 to 4) from the UK 1998 Data Protection Act.

	<b>Column I</b>		<b>Column II</b>
A	Shops which demand customers' address when goods are not delivered	1	Personal data shall be accurate.
B	Universities find it difficult to maintain the correct addresses of their students	2	Personal data shall be processed in accordance with the rights of data subjects under the 1998 UK Data Protection Act.
C	Procedures to ensure that all data is erased (including backup copies) at the appropriate time	3	Personal data shall be adequate, relevant and not excessive in relation to the purposes for which they are processed.
D	Data subjects have the right to prevent processing of data which is likely to cause damage & distress to themselves	4	Personal data processed for any purpose(s) shall not be kept for longer than is necessary for that purpose or those purposes.

Examine the content of the two columns and match accurately each instance from **Column I** to one from **Column II** and write the matching number next to each letter.

**ANSWER IN THIS BOX**

A – 3

B – 1

C – 4

D – 2

[Ref 1: pg. 184-185]

- (d) The paragraph below contains blanks labelled A to E.

..... **A** ..... means making statements that will damage someone's reputation, bring them into contempt or make them disliked. Concerning the publication of ..... **B** ..... material, action will be taken under the ..... **C** ..... law and will be initiated by the state prosecution services on the information provided by the ..... **D** ..... Internet users find ..... **E** ..... irritating and often offensive.

The above blanks are to be filled with the most appropriate words selected from the list of words given below.

Civil, Common, Copyright, Criminal, Data Protection, Defamation, Discrimination, Employer, Internet Service Providers, Outsourcing, Patents, Police, Pornographic, Spam, Viruses.

Write the appropriate word next to each letter.

(30 marks)

**ANSWER IN THIS BOX**

A – Defamation

B – Pornographic

C – Criminal

D – Police

E – Spam

[Ref 1: pg. 197,200,205]

- (e) List the criminal offences listed in the UK Computer Misuse Act 1990.

(15 marks)

**ANSWER IN THIS BOX**

Unauthorized access to a computer

Unauthorized access to a computer with intention to create a serious crime

Contd.

**Unauthorized modification of the contents of a computer**

**[Ref 1: pg. 209]**

- (f) The examples given below may be offences under the Computer Misuse Act or a Computer fraud. Identify to which offence of the Computer Misuse Act/Computer fraud each of the following instance belongs to.

- (i) Gaining access to financial or administrative records with intent to create a serious crime.

**(05 marks)**

**ANSWER IN THIS BOX**

**Unauthorized access to a computer with intention to create a serious crime**

**[Ref 1: pg. 210]**

- (ii) Using another person's identifier (ID) and password without proper authority in order to use a program and simply to output data to a printer.

**(05 marks)**

**ANSWER IN THIS BOX**

**Unauthorized access of a computer**

**[Ref 1: pg. 210]**

- (iii) Destroying another user's files by intentionally introducing a local virus or deliberately generating information to cause a complete system malfunction.

**(05 marks)**

**ANSWER IN THIS BOX**

**Unauthorized modification of the contents of a computer**

**[Ref 1: pg. 211]**

- (iv) Manipulating a computer dishonestly in order to obtain money, property or services or to cause loss.

**(05 marks)**

**ANSWER IN THIS BOX**

**Computer fraud**

**[Ref 1: pg. 212]**

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