



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)
Academic Year 2016 – 1st Year Examination – Semester 1

IT1105 - Information Systems & Technology
Multiple Choice Question Paper

28th May, 2016
(TWO HOURS)

Important Instructions :

- The duration of the paper is 2 **(two) hours**.
- The medium of instruction and questions is English.
- The paper has **50 questions** and **11 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 (*All the incorrect choices are marked & no correct choices are marked*) 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 database product(s)?
- | | | |
|---------------|--------------|----------|
| a) MySQL | b) MS Access | c) Flash |
| d) IBM AS 400 | e) Oracle | |
- 2) Use of a DBMS helps organisations to
- | |
|--------------------------------------------------------------------|
| a) restrict employee access to data. |
| b) request for user authentication when accessing the database. |
| c) reduce data integrity. |
| d) manipulate data and produce reports based on user requirements. |
| e) store data to be used later. |
- 3) Which of the following can be considered as Application Software?
- | | | |
|-------------------------|---------------|------------|
| a) MS Paint | b) Linux | c) MS Word |
| d) Windows media player | e) MS Outlook | |
- 4) Input and output devices are some components of a Computer Based Information Systems (CBIS) and are used for various purposes. Consider the following scenarios related to the use of these devices.
- (i) Produce Computer Aided Design (CAD) drawings as an output
(ii) Enable non IT literate farmers to input data to a system and get the output
(iii) Sending a photograph through an e-mail
- Which of the following devices are more appropriate to carry out the above activities in the correct order?
- | | | |
|------------------|-------------------|---------------|
| (a) (i) plotter | (ii) keyboard | (iii) printer |
| (b) (i) plotter | (ii) touch screen | (iii) printer |
| (c) (i) keyboard | (ii) scanner | (iii) plotter |
| (d) (i) plotter | (ii) touch screen | (iii) scanner |
| (e) (i) printer | (ii) scanner | (iii) plotter |
- 5) Consider the following statements regarding the security of an organisation.
- (i) Internal security threats are always less than external threats.
(ii) Implementing an IS security policy may help to reduce potential security threats.
(iii) Intruder Detection Systems cannot be used to identify threats caused due to the use of a network.
- Which of the above statements is/are **TRUE**?
- | | | |
|----------------|-----------------------|------------------------|
| (a) Only (i) | (b) Only (ii) | (c) Only (i) and (iii) |
| (d) Only (iii) | (e) Only (ii) & (iii) | |
- 6) Consider the following statements.

- (i) The raw data which is input to a CBIS can directly support decision making without further processing.
- (ii) Processing is carried out on output data.
- (iii) Examples of processing could be applying mathematical formulas on input data.

Which of the statements is/are **TRUE** of components of a CBIS?

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

- 7) Sunimal owns a hotel, with a staff of about 400, including permanent and contract staff. Which of the following systems would be useful to him to provide benefits to the staff based on their performance?

- | | |
|----------------------------------------|-----------------------|
| (a) Purchasing TPS | (b) Manufacturing MIS |
| (c) Expert System | (d) HR MIS |
| (e) Natural Language Processing System | |

- 8) BPR

- | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) helps to improve business processes.
(b) is different to continuous improvement in some ways.
(c) means Business Process Re-structuring.
(d) is also practiced in the government sector.
(e) can lead to changes in the organizational structure of an organization. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- 9) In systems development, the traditional waterfall method

- | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) is useful to develop systems quickly with less documentation.
(b) uses prototypes extensively to speed up the development process.
(c) requires less effort to capture user requirements.
(d) is not practiced in organisations.
(e) enables one to track the changes done to the system through the documentation. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- 10) Consider the following statements related to databases.

- (i) Relational databases are used least in organisations compared to Hierarchical databases.
- (ii) Past data collected in databases could make up a data warehouse.
- (iii) Through data mining reports, faults in a database could be identified.

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

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

- 11) Transaction Processing Systems (TPS)

- (a) are mostly used at the operational level of an organization.
- (b) outputs are used as inputs to MIS.
- (c) help to apply mathematical models to derive an output.
- (d) can help to improve labour efficiency.
- (e) cannot help organisations to achieve competitive advantage.

12) Which of the following type(s) of system(s) is/are defined as (a) system(s) that undergo very little change over time?

- | | | |
|------------|-------------|------------------|
| (a) Open | (b) Closed | (c) Non-Adaptive |
| (d) Stable | (e) Dynamic | |

13) Consider the following statements about hardware of a CBIS.

- (i) Some devices can be used as input as well as output devices.
- (ii) The capacity of the RAM of a computer has an effect on the processing speed of instructions.
- (iii) ALU of a CPU helps to store data only.

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

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

14) Which of the following can be considered as an input device of a computer based information system?

- | | | |
|--------------------|-------------|----------------------|
| (a) Webcam | (b) Speaker | (c) Bar code scanner |
| (d) Digital camera | (e) Plotter | |

15) Which of the following is a System software and an Application Software respectively?

- | | |
|----------------------------|-------------------------|
| (a) MS Windows, Coral Draw | (b) Adobe Reader, Linux |
| (c) Unix, Linux | (d) Linux, Flash |
| (e) MS Powerpoint, Unix | |

16) Privacy

- (i) of customers are protected by ethical organisations.
- (ii) means the right to be left alone.
- (iii) violation is not a legal offence in many countries in the west such as USA.

Which of the above statements is/are **TRUE** about privacy?

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

17) Which of the following can be used as Personal Application Software?

- | | | |
|------------------|-----------------------|---------|
| (a) SCM | (b) ERP | (c) CRM |
| (d) Adobe Reader | (e) Internet Explorer | |
- 18) Which of the following activity/ies is/are carried out during the 'Systems Implementation phase' and the 'Review and maintenance' phase respectively, of the traditional systems development life cycle?
- | | |
|------------------------------------------------------------------------|-----------------------------------------|
| (a) Hardware acquisition, Data preparation | (b) Data preparation, Feasibility study |
| (c) User training, Unit testing | (d) Feasibility study, User training |
| (e) Hardware/Software acquisition, Checking whether objectives are met | |
- 19) A hospital is using a web based electronic Patient Record Keeping System. In order to protect the sensitivity of patient data which of the following could be used?
- | | | |
|---------------------------|---------------------------------|--------------------|
| (a) Provide access rights | (b) Use of a firewall | (c) Use of patents |
| (d) Develop using RAD | (e) Provide password protection | |
- 20) Consider the following statements related to software development.
- (i) RAD method can produce software much faster than the Waterfall method of application development.
 - (ii) In the Waterfall method, Systems Review phase is followed by the Systems Implementation phase.
 - (iii) When requirements are not clear, prototypes are useful to clarify the requirements.
- Which of the above statements is/are **TRUE**?
- | | | |
|----------------|-----------------------|------------------------|
| (a) Only (i) | (b) Only (ii) | (c) Only (i) and (iii) |
| (d) Only (iii) | (e) Only (ii) & (iii) | |
- 21) Transaction Processing Systems (TPS)
- | |
|---------------------------------------------------------------------------------------------|
| (a) are very useful to capture daily transactions of an organization. |
| (b) can perform complex analysis on available data. |
| (c) can produce documents related to transactions. |
| (d) can perform complex mathematical operations better than Decision Support Systems (DSS). |
| (e) inputs include only the data taken from internal (organizational) databases. |
- 22) Consider the following statements about Decision Support Systems (DSS).
- (i) The Dialogue manager and the model base are some components of a DSS.
 - (ii) DSS are primarily useful to generate reports for middle level managers.
 - (iii) Outputs of DSS are used as inputs to a MIS.
- Which of the above statements is/are **TRUE**?
- | | | |
|----------------|-----------------------|------------------------|
| (a) Only (i) | (b) Only (ii) | (c) Only (i) and (iii) |
| (d) Only (iii) | (e) Only (ii) & (iii) | |
- 23) Which of the following statements is/are **TRUE** about computer hardware?
- | |
|----------------------------------------------------------------------------------------|
| (a) Computer hardware facilitates communication between the software and the end user. |
| (b) Input and output devices are also considered as hardware. |

- (c) Storage devices are not considered as hardware.
 (d) The control unit, ALU, registers and RAM are part of the CPU of a computer.
 (e) Without hardware, the computer cannot process data.
- 24) Ramesh owns a Business Process Outsourcing organization which employs about 200 staff. As an ethical business professional, he would
- (a) monitor employees remotely without informing.
 (b) consider 'Ergonomics' when designing the office space.
 (c) not violate copyright laws when using software.
 (d) protect the privacy of customers.
 (e) allow reasonable free time (breaks) for employees during working hours.
- 25) ACTION is a garment manufacturing organization. It has a few selected suppliers locally and globally. Which of the following application software will enable the organization to maintain a good relationship with its suppliers so that raw materials arrive on time for production?
- (a) CRM (b) Adobe Reader (c) MySQL
 (d) ERP (e) SCM
- 26) Following statements are related to competitive advantage. Which of the following is/are **TRUE**?
- (a) Matrix organizational structures enable access to quality human resources dispersed globally and therefore will help organisations to compete effectively.
 (b) Porter's value chain concept is useful to think about how to use IT/IS systems strategically to gain competitive advantage.
 (c) The internet could help organisations to build relationships with new suppliers which could contribute to producing improved products and services.
 (d) Organisations in the garment manufacturing industries could use CAD/CAM technology to reduce production costs.
 (e) Forming alliances with other competing organisations will not allow to increase competitive advantage.
- 27) Which of the following is a/are secondary storage(s)?
- (a) Flash memory (b) Random Access Memory (c) Magnetic disk
 (d) CD optical disk (e) Hard disk
- 28) The following statements are related to databases.
- (i) The primary role of the Database Administrator is to enter data to the database.
 (ii) The Relational Model is a database model that is used in organisations more than the Network Model.
 (iii) A primary key is a field that uniquely identifies a record a database.
- Identify the **TRUE** statement/s.
- (a) Only (i) (b) Only (ii) (c) Only (i) and (iii)
 (d) Only (iii) (e) Only (ii) & (iii)
- 29) The following statements are about Information Systems Development.

- (i) Prototypes may be used in the RAD method and not in the Waterfall systems development method.
- (ii) Information Systems Planning helps to achieve business goals through systems development.
- (iii) In traditional systems development, the *feasibility study* is carried out during the systems development phase.

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

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

30) Following statements are related to the role of an IS Manager.

As an IS Manager of a bank in Sri Lanka,

- (i) it is important to consider disaster recovery and business continuity plans.
- (ii) customer information could be shared with other companies without the consent of the customers.
- (iii) it is important to implement an IS Security Policy and monitor it periodically.

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

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

31) In order for information to be valuable,

- (a) it should be produced on time.
- (b) costs of producing it should not exceed the benefits.
- (c) it should be available on time without any delays.
- (d) it should not be simple to be understood by all the stakeholders.
- (e) accurate data should be input to the system.

32) Each of the blanks labeled P,Q,R given in the following sentences need to be filled with most appropriate words/phrases.

- (i)P..... help organisations to achieve competitive advantage.
- (ii) The ...Q..... of an organization will help to utilize organizational resources effectively.
- (iii) TheR..... of an organization consists of norms, beliefs, customs and traditions of an organization.

Which of the following gives the most appropriate way of filling?

(a) P - organizational structure	Q - TPS,	R- organizational culture
(b) P- TPS	Q - organizational culture	R - organizational structure
(c) P - organizational structure	Q - organizational culture	R - TPS
(d) P – TPS	Q - organizational structure	R - organizational culture
(e) P - organizational culture	Q - TPS	R - organizational structure

Questions 33 to 36 are based on the following scenario.

- 33) Mr. Shanmugum wishes to set up a garment factory with latest technology in the Northern part of Sri Lanka. They have local as well as foreign buyers and suppliers. The head office is to be located in Kandy.
- The use of Local Area Networks (LAN) and Wide Area Networks (WAN) appropriately will enable the Jaffna plant to
- | |
|------------------------------------------------------------------------------|
| (a) reduce communication costs between suppliers and the organisation. |
| (b) recruit more staff to the organization. |
| (c) share resources such as printers between departments within the factory. |
| (d) facilitate effective communication between the factory and the office. |
| (e) eliminate security threats to information completely. |
- 34) Which of the following applications would facilitate improved communication across the different internal departments, enable to inform suppliers the status of the raw material immediately and help to understand the customer requirements better, in the correct order?
- | | | |
|-------------------|-------------------|-------------------|
| (a) SCM, ERP, CRM | (b) CRM, ERP, SCM | (c) ERP, CRM, SCM |
| (d) ERP, SCM, CRM | (e) SCM, CRM, ERP | |
- 35) Mr. Shanmugum wishes to set up an Accounting/Finance MIS for the organization. Through these systems it is possible to
- | |
|------------------------------------------------|
| (a) manage the assets of the organization. |
| (b) process the orders efficiently. |
| (c) generate payroll information. |
| (d) prepare budgeting information. |
| (e) identify human resource improvement areas. |
- 36) An HR MIS will enable Mr. Shanmugam's organization to
- | |
|---------------------------------------------------------------------|
| (a) generate reports on employee appraisals. |
| (b) support recruitment and selection. |
| (c) promote sales. |
| (d) facilitate improved communication with customers and suppliers. |
| (e) Select suitable employees for training programs. |
- 37) Even if an in-house systems development unit exists, some organisations may outsource its software development needs because outsourcing
- (i) will always help to gain competitive advantage.
(ii) may help to find better expertise to handle the project.
(iii) may reduce costs compared to in-house development.
- Identify the **TRUE** statement/s.
- | | | |
|----------------|-------------------------|-----------------------|
| (a) Only (i) | (b) Only (ii) | (c) Only (i) and (ii) |
| (d) Only (iii) | (e) Only (ii) and (iii) | |
- 38) The component of a CBIS which acts as an interface between user requests and the hardware of the computer system is known as

- (a) application software.
- (b) systems software.
- (c) databases.
- (d) memory.
- (e) networks.

39) Which of the following statements is/are **TRUE** about software?

- (a) Organisations have a choice either to purchase off the shelf software to support its requirements or to develop bespoke software.
- (b) Due to the cost effectiveness, Open Source software has become a popular choice for software development related work among students in the IT field.
- (c) Linux is an example of Open Source Software, whereas MySQL is not an example of Open Source Software.
- (d) System software is primarily designed to support the communication among a group who are working on collaborative projects.
- (e) Outsourcing of software development should only be considered when internal staff is not capable enough to do the development.

40) Which of the following reports could be outputs of a Marketing MIS?

- (a) Sales by salesperson report
- (b) Raw material status report
- (c) Asset management report
- (d) Regional sales report
- (e) Report on production schedule

41) Which of the following does **NOT** act as an interface between the hardware and application software?

- | | | |
|------------|------------------|----------------|
| (a) Linux | (b) C++ | (c) MS Windows |
| (d) Python | (e) Visual Basic | |

42) Which of the following statements is/are **TRUE** about traditional software development lifecycle?

- (a) In the system design phase, the newly built systems are thoroughly tested.
- (b) Based on the feedback collected during systems analysis, modifications to the existing system or a new system are proposed.
- (c) System review is the process of gathering requirements to build a new system.
- (d) A time driven system review is initiated when a problem with the existing system is identified.
- (e) During the systems analysis, a feasibility study can be carried out.

43) Following statements are related to types of information systems.

- (i) DSS are used mainly by the strategic level and operational level employees, whereas MIS are used mainly by the middle/tactical level management.
- (ii) Routine tasks of an organization are supported by the TPS.
- (iii) TPS can be used to improve customer loyalty.

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

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

- 44) Which of the following is **NOT** a mechanism that can be used by a networked organization to prevent external security threats?

- | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> (a) Use Virtual Private Network (b) Use firewalls appropriately (c) Sending encrypted messages across the network (d) Enable guests to login to systems without authentication for ease of use (e) Upgrade anti-virus software regularly |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- 45) Following statements are about Computer Based Information Systems (CBIS). Identify the **TRUE** statement/s.

- | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> (a) The choice of input/output devices of a CBIS should match the requirements of the user. (b) If the software requirements of an organization have to be met quickly, the most appropriate choice would be to use bespoke software. (c) At present, Hierarchical database type is less commonly used than the Relational database type. (d) Application software can support personal level, organizational level requirements as well as work group level requirements. (e) Through the use of IS related organizational procedures it is possible to develop software which are able to achieve competitive advantage. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- 46) The following statements are based on different types of information systems.

- (i) Expert systems are only used in the medical field for diagnosis of diseases.
- (ii) An advantage of using of Artificial Intelligence (AI) such as Robotics, is the ability to automate repetitive and dangerous tasks.
- (iii) DSS and MIS may use external databases as inputs whereas TPS use internal data sources only.

Identify the **TRUE** statement/s.

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

- 47) Following statements are about different information systems. Identify the **TRUE** statement/s.

- (a) Typically, DSS support structured problems.
- (b) The system linked to the Point of Sales of a supermarket, can be considered as an example of a TPS.
- (c) External databases may provide inputs to TPS.
- (d) The model base and the model base management system of a DSS help to perform mathematical data modeling.
- (e) By providing the correct answer to a question, DSS help to eliminate the human decision maker.

48) The following statements are related to data management/data manipulation. Identify the **TRUE** statement/s.

- (a) Data Warehousing is a technique used to discover patterns and relationships among data in a data warehouse.
- (b) Business Intelligence applications are used to maintain and improve the competitive position of an organisation.
- (c) Use of relational databases will not allow users to manipulate data to eliminate rows in a table according to certain criteria.
- (d) A data mart can contain historical data of an organization.
- (e) Joining is manipulating data to combine two or more tables.

49) Which of the following systems generate 'Schedule' and 'Key indicator' reports?

- (a) Transaction Processing Systems
- (b) Expert Systems
- (c) Knowledge Management Systems
- (d) Management Information Systems
- (e) Decision Support System

50) The following statements are related to the **security of computer based systems** and **ethics** of an organization. Identify the **TRUE** statement/s.

- (a) Security threats to an organization can be posed by 'internal' as well as 'external' sources.
- (b) Some organisations use 'employee monitoring' as a technique to maintain security of computer based systems.
- (c) The health and safety of the employees should be a concern of an IS manager and precautions should be taken to minimize the damage caused.
- (d) Use of Virtual Private Networks could be considered as an option to eliminate threats posed by internal employees.
- (e) Discarding of components of a computer should be carried out with minimal damage to the environment.
