Tutorial Letter 101/3/2017

Structure Systems Analysis and Design

ICT2621

Semesters 1 and 2

School of Computing

IMPORTANT INFORMATION

This tutorial letter contains important information about your module.

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1 INTRODUCTION

Dear Student

We, the module lecturers, welcome you to ICT2621. This is a semester module that is presented by the School of Computing.

This module provides you with the knowledge and the skills necessary to analyse information systems according to the structured/traditional approach using the tools, techniques and methodologies of systems development. When you have completed the module, you should be able to apply this knowledge in practical, real-life systems development environments.

Qualified learners who are credited with this module are able to, in teams:

Analyse and design potential computerised information systems according to the structured/traditional approach, demonstrating the ability to apply the correct methodology, tools and techniques to the gathered information, to solve client problems according to specific criteria, or according to specific standards of reliability, cost effectiveness, timeousness, applicability, client satisfaction and efficiency.

If you put an honest effort into trying to do the self-assessment exercises and assignments, we believe you will achieve the outcomes of this module. We hope that this module will open up a whole new world for you.

This is partially an online module, and therefore some learning content and all tutorial letters are available on myUnisa. However, in order to support you in your learning process, you will also receive some study materials in printed format. You need to go online to see your study materials and read what to do for the module. Go to the website here: https://my.unisa.ac.za and login with your student number and password. You will find ICT2621-2017-S1, for first semester, and ICT2621-2017-S2 for the second semester in the row of modules in the orange blocks across the top of the webpage. Remember to also check in the -More- tab if you cannot find it in the orange blocks. Click on the module you want to open. Click on **Learning Units** on the left menu for most of the information about this module including prescribed textbook and all assignments.

We hope this module will open up a whole new world for you. We bid you a hearty welcome and wish you everything of the best for your studies this semester.

2 PURPOSE AND OUTCOMES

2.1 Purpose

The purpose of this module is to enable an intermediate-level systems analyst to analyse information systems, and design computerised solutions using structured analyses and design techniques.

This module provides an intermediate systems analyst and programmer with the knowledge, skills and values needed to understand the analysis and design of an information system according to the structured/traditional approach using the tools, techniques and methodologies of systems development.

2.2 Outcomes

A range of tasks (in the textbook, tutorial letters, assignments and examinations) will show that students have achieved the following outcomes.

Specific outcome 1
Learners have a sound knowledge of the components of a systems development methodology.

Associated assessment criteria

- Evidence demonstrates that learners can identify the various components of a development methodology.
- Evidence demonstrates that learners can describe each component of a systems development methodology and the differences between them (systems development life cycle (SDLC), models, techniques, tools).

Range

- The descriptions of the components are correct and according to the theory
- Graphical illustrations (e.g. diagrams, screen dumps, pictures) are used to augment the descriptions
- Computer tools (diagram drawing tools) are used to demonstrate understanding

Specific outcome 2
Gather information about the client's system, its additional stakeholders, and its requirements as an activity of the SDLC

Associated assessment criteria

- Evidence demonstrates that learners can use a variety of data gathering techniques

Range

- The techniques include at least documentation, interviews, observation, questionnaires and vendor research.
- Each technique is clearly documented according to the techniques requirements.
- Any topic is acceptable for applying these techniques.
- Case studies provide a variety of contexts.

Specific outcome 3
Analyse client needs and interpret and document them according to the system's functional requirements, applying the structured/traditional approach, as part of the systems analysis phase of the SDLC.

Associated assessment criteria

- Evidence demonstrates that learners can analyse, interpret and document the client's needs.

Range

- The documentation of the analysis and interpretation include at least a data flow diagram (DFD).
- Computer tools (diagram drawing tools) are used to demonstrate understanding.

Specific outcome 4
Develop information from the analysis phase into Design Models.

Associated assessment criteria
- Evidence demonstrates that learners can develop information from the analysis phase into Design Models.

Range
- The Design Models include at least a conceptual model or Entity Relationship Diagram (ERD).
- Computer tools (diagram drawing tools) are used to demonstrate understanding

Specific outcome 5
Design normalised database models from conceptual Data Models.

Associated assessment criteria
- Evidence demonstrates that learners can design a normalised database from a conceptual model.

Range
- The normalised database is at least in 3rd normal form (3NF).
- The normalised database clearly indicates primary keys and attributes for each entity.
- Relationships between entities/tables are clearly indicated.

Specific outcome 6
Identify system interfaces, design user interfaces, system inputs and outputs and integrity and security controls.

Associated assessment criteria
- Evidence demonstrates that learners can identify system interfaces and design user interfaces, system inputs and outputs and integrity and security controls.

Range
- The identification of system interfaces includes at least a list of categories of system interfaces.
- Diagrams are used to aid in defining inputs and outputs.
- Inputs and outputs are based on the system requirements in the case study.
- Integrity controls contain at least input, database and output integrity controls.
- Security controls contain at least security for access to systems and data security.

Specific outcome 7
Ensure that implementation requirements are defined and support activities are planned/structured.

Associated assessment criteria
- Evidence demonstrates that learners can ensure that implementation requirements are defined and support activities are planned/structured.

Range

- Implementation requirements contain at least data conversion, installation, documentation and training.
- Maintenance and support enhancement activities at least ensure that the system functions at peak efficiency and that needed changes are implemented with minimal disruption to the organisation.

Syllabus

The syllabus is covered by Chapters 1, 2, 4, 5, 7, 8, 9, 11 and 12 of the prescribed textbook (see Section 4.1) and the contents of all the tutorial letters some of which may only be available online.

The following topics are covered in the prescribed book:

Topic	Assignment	Chapters
Introduction to Systems Analysis and design	1	Chapter 1 – Examinable
Analysing the business case	1	Chapter 2 – Examinable
Requirements modelling	1	Chapter 4 – Examinable
Data and Process modelling	2	Chapter 5 – Examinable
Development strategies	1	Chapter 7 – Examinable
User Interface design	2	Chapter 8 – Examinable
Data design	2	Chapter 9 – Examinable
Managing system implementation	2	Chapter 11 – Examinable
Managing systems support and implementation	2	Chapter 12 – Examinable

The following pages that specifically relate to object-oriented analysis and design (OOAD) **should be omitted** when studying for this module.

Chapter	Pages (NOT to be studied)
11	371-374

In the School of Computing, all students must have access to the internet in order to access myUnisa and other internet-based resources.

3 LECTURER(S) AND CONTACT DETAILS

3.1 Lecturer(s)

The best means to contact your lecturers is by e-mail. The e-mail address to use for Semester 1 is **ICT2621-17-S1@unisa.ac.za** and for Semester 2 **ICT2621-15-S2@unisa.ac.za.**

You can find the names of your lecturers, their contact details (including e-mail addresses) and School of Computing contact information on myUnisa in Tutorial Letter COSALLF for 2017.

You can also obtain the contact information for lecturers and the school on http://osprey.unisa.ac.za.

The ICT2621 discussion forum on myUnisa gives you the opportunity to discuss ideas and problems with fellow students. This forum is for your benefit and the lecturers do not necessarily play an active part in the discussions. You can post queries regarding this module on the ICT2621 discussion forum.

You are more than welcome to phone us, but please consult your tutorial letters or the relevant websites first to see whether we have not already answered your queries. Since most students encounter the same problems, we answer the most common problems in the tutorial letters or on the websites.
Remember, you may phone the lecturers directly. However, sometimes we are not available due to other school or university duties. The names and telephone numbers of the lecturers will be given in COSALLF tutorial letter that you will receive early in the semester. Should you have difficulty in contacting the lecturers, you are welcome to phone the secretary of the School of Computing to leave a message. The contact number to call is also given in COSALL. **Note that the school has moved from the Mucklenuek campus in Pretoria to the UNISA Science campus in Florida in Roodepoort, Johannesburg.**

For **all administrative enquiries such as registrations, fees, assignment submission, examination matters such as aegrotat and special exams,** the contact details are provided in the *my Studies @ Unisa brochure* or on the Unisa website.

Note that the first point of contact for academic queries should be your e-tutor as explained in section 4.5.

3.2 Department

The School of Computing can be contacted as follows:

Telephone number: 011 670 9200

E-mail: computing@unisa.ac.za

3.3 University

To contact the University, you should follow the instructions in the ***myStudies @ Unisa*** brochure. Remember to have your student number available when you contact the University.

When you contact anybody in the university, please do not forget to always include your student number. This will help that person to assist you.

If you need to contact the university about administrative matters via e-mail, you should send your queries to the specific department whose contact details are provided in the brochure *my Studies @ Unisa* that you received in your study package. This brochure also contains other important information about Unisa.

4 RESOURCES

4.1 Prescribed book

This module is based on a prescribed book, which you must purchase as soon as possible. The book is:

Author: Tilley, S. and Rosenblatt, H.J.
Title: Systems Analysis and Design
Edition: 11th
Year: 2017
ISBN: 978-1-305-49460-2

This prescribed book is **not** included with your study material. To obtain a copy of the prescribed book, please refer to the list of official booksellers and their addresses in the *my Studies @ Unisa* brochure. The older edition will not be sufficient for use.

Prescribed books can be obtained from the University's official booksellers. If you have difficulty in locating your book(s) at these booksellers, please contact the Prescribed Book Section at Tel: 012 429-4152, e-mail vospresc@unisa.ac.za or refer to the *my Studies @ Unisa* brochure.

4.2 Recommended books

There are no recommended books for this module. However, there are several books in the university library on systems analysis and design, and some on database design, that include sections of the content covered by this module.

4.3 Electronic reserves (e-reserves)

There are no e-Reserves for this module.

4.4 Library services and resources information

For brief information, go to www.unisa.ac.za/brochures/studies
For detailed information, go to the Unisa website at http://www.unisa.ac.za/ and click on **Library**.
For research support and services of personal librarians, go to http://www.unisa.ac.za/Default.asp?Cmd=ViewContent&ContentID=7102.

The Library has compiled numerous library guides:

- finding recommended reading in the print collection and e-reserves – http://libguides.unisa.ac.za/request/undergrad
- requesting material – http://libguides.unisa.ac.za/request/request
- postgraduate information services – http://libguides.unisa.ac.za/request/postgrad
- finding , obtaining and using library resources and tools to assist in doing research – http://libguides.unisa.ac.za/Research_Skills

- how to contact the library/finding us on social media/frequently asked questions – http://libguides.unisa.ac.za/ask

4.5 Information on tutorial offerings at Unisa

Please be informed that, with effect from 2013, Unisa offers online tutorials (e-tutoring) to students registered for modules at NQF level 5 and 6, this means qualifying first year and second year modules.

Once you have been registered for a qualifying module, you will be allocated to a group of students with whom you will be interacting during the tuition period as well as an e-tutor who will be your tutorial facilitator. Thereafter you will receive an sms informing you about your group, the name of your e-tutor and instructions on how to log onto MyUnisa in order to receive further information on the e-tutoring process.

Online tutorials are conducted by qualified E-Tutors who are appointed by Unisa and are offered free of charge. All you need to be able to participate in e-tutoring is a computer with internet connection. If you live close to a Unisa regional Centre or a Telecentre contracted with Unisa, please feel free to visit any of these to access the internet. E-tutoring takes place on MyUnisa where you are expected to connect with other students in your allocated group. It is the role of the e-tutor to guide you through your study material during this interaction process. For your to get the most out of online tutoring, you need to participate in the online discussions that the e-tutor will be facilitating.

There are modules which students have been found to repeatedly fail, these modules are allocated face-to-face tutors and tutorials for these modules take place at the Unisa regional centres. These tutorials are also offered free of charge, however, it is important for you to register at your nearest Unisa Regional Centre to secure attendance of these classes.

5 STUDENT SUPPORT SERVICES

Important information is provided in the *my Studies @ Unisa* brochure. For example, the tutorial services information is found in this brochure. Please constantly refer to this brochure. **Each student will be allocated a tutor who he/she can contact in case of any difficulties or queries related to the content of the module**. Please refer all such queries to them. The details of the tutors and their contact information will be provided to you or will appear on the home page of the module's page on myUnisa.

6 STUDY PLAN

Use the *my Studies @ Unisa* brochure for general time management and planning skills.

[You will find the programmes for the semesters on the next two pages.]

FIRST SEMESTER STUDY PROGRAMME

for 2017 ICT2621

Week	Date (Mondays)	Activities	Textbook Chapter (s)
1	30 January	Start Assignment 01	Chapter 1
2	6 February		Chapter 2
3	13 February	**Finish assignment 01 and start submitting**	Chapters 1 & 2
4	20 February	Start Assignment 02	Chapter 4
5	27 February	**Complete Assignment 01 (Due date: 28 February) Unique assign number: 818814** **Then start Chapter 7**	Chapter 7
6	6 March	**Complete Assignment 02 (Due date: 10 March) Unique assign number: 716612**	Chapters 4 & 7
		7/3/17: Start Assignment 03	Chapter 8
7	13 March		Chapter 8 and 5
8	20 March		Chapter 9
9	27 March		Chapters 11 & 12
10	3 April	**Complete Assignment 03 (Due date: 7 April) Unique assign number: 891612**	Chapters 5, 8, 9, 11 & 12
11	10 April	Start revision	*Chapters 1 & 2, and assignment 1
12	17 April	Revision	*Chapters 4 & 7, and Review other assignments and past papers
13 - 14	24 Apr. up to examination date	Revision	*Chapters 5, 8, 9, 11 & 12, and Review assignments and past papers
		Examinations	
			* You can design your own revision programme

SECOND SEMESTER STUDY PROGRAMME

for 2017 ICT2621

Week	Date (Mondays)	Activities	Textbook Chapter (s)
1	17 July	Start Assignment 01	Chapter 1
2	24 July		Chapter 2
3	31 July	**Finish assignment 01 and start submitting**	Chapters 1 & 2
4	7 August	Start Assignment 02	Chapter 4
5	14 August	**Complete Assignment 01 (Due date: <u>15 August</u>) Unique assign number: 577611** **Then start Chapter 7**	Chapter 7
6	21 August	**Complete Assignment 02 (Due date: <u>25 August</u>) Unique assign number: 653124**	Chapters 4 & 7
		26/08/17: Start Assignment 03	Chapter 8
7	28 August		Chapter 8 and 5
8	4 September		Chapter 9
9	11 September		Chapters 11 & 12
10	18 September	**Complete Assignment 03 (Due date: <u>22 September</u>) Unique assign number: 833745**	Chapters 5, 8, 9, 11 & 12
11	25 September	Start revision	*Chapters 1 & 2, and assignment 1
12	2 October	Revision	*Chapters 4 & 7, and Review other assignments and past papers
13 - 14	9 October up to examination date	Revision	*Chapters 5, 8, 9, 11 & 12, and Review assignments and past papers
		Examinations	

* You can design your own revision programme

7 PRACTICAL WORK AND WORK-INTEGRATED LEARNING

None

8 ASSESSMENT

We realise that it might be difficult to keep to given schedules, but once assignment dates are set, they are captured by the Unisa system and cannot be changed by anyone, including the lecturer. We, therefore, have to adhere to these dates. Please do not contact us for extension of assignments submissions.

In the School of Computing all students must have access to the internet. Study material can therefore be downloaded if for some reason there is a delay in the sending of tutorial matter. Note that some study materials such as tutorial letters will only be available online but in print format. The following URL can be accessed if you want to download tutorial matter: https://my.unisa.ac.za.

8.1 Assessment criteria

See section 2.2, for the assessment criteria for each outcome.

8.2 Assessment plan

NO ASSIGNMENTS WILL BE ACCEPTED AFTER THE DUE DATES.

There are three assignments for the semester:

Assignments 01 and 02: A multiple-choice assignment that will be marked electronically; and
Assignment 03: A written (typed) assignment that will be marked by us, online. It must be in pdf format

All multiple-choice assignments, such as Assignments 01 and 02, are marked electronically by the Assignments Department. This means that this department has a specific date by which they feed all the submitted assignments are processed at once (batch processing). For this procedure to be successful, **no multiple-choice assignment received after the due date can be accepted**.

You will get a ***semester mark*** based on the percentages you achieve for Assignments 01, 02 and 03. The semester mark will contribute 20% towards your final mark for this module. A semester mark does not contribute to the result of a student writing a supplementary examination. It will contribute in the case of an aegrotat examination. A weight of 20% towards the year mark is allocated to assignment 01, 20% to assignment 02 and a weight of 60% to assignment 03. A discussion of the way in which the semester mark is calculated follows. We use an example to explain:

Suppose you obtained the following marks for your assignments:

Assignment 01: 65%
Assignment 02: 41%
Assignment 03 77%

Your semester mark will be calculated as follows:

(65 × 0.2) + (44 × 0.2) + (77 × 0.6)% = 68%, where 0.2 (20%), 0.2 (20%) and 0.6 (60%) are the weights associated with Assignments 01, 02 and 03 respectively.

Suppose you achieve an ***exam mark*** of *78*%. Your ***final mark*** will be calculated as follows:
(68 × 0.20) + (78 × 0.80)% = (13.6 + 62.8)% = 76.4% that will be rounded off to 76%.

Due dates are given for Assignments 01, 02 and 03. Please do not contact us for an extension of any of the submission dates. **You are strongly advised to submit all assignment via myUnisa.** Please convert Assignment 03 to pdf format by converting your typed assignment to pdf or by scanning your written assignment to pdf. Then, upload the assignment to myUnisa. Please note that it is your responsibility to make sure that your assignments are received by the University. Also make sure that your marks for Assignments 01, 02 and 03 are incorporated into your semester mark before you write the examination. Note that MS Word has an option to save a document as a pdf. If your version cannot do this, there are a number of free shareware applications on the internet that you can use.

To avoid last-minute disappointment, we advise that you submit your assignments **before** the due dates. However, you are free to submit on the actual due date.

Note that if myUnisa is down on the last submission date, the Directorate of Student Assessment Administration (DSAA) and lecturers will be notified. Try to resubmit the assignment as soon as myUnisa is running again. Please do not contact lecturers if any of these problems occur, because any problem situation will automatically be taken into consideration. Queries with regard to the submission of assignment should be directed to the Assignment section of DSAA.

You are welcome to work together in small groups because it can be very useful and stimulating. However, it is important that you complete your own assignment; it is dishonest and unethical to submit the work of somebody else as your own.

Plagiarism is the act of taking words, ideas and thoughts of others and passing them off as your own. It is a form of theft which involves a number of dishonest academic activities. Students are advised to study the Disciplinary Code for Students (2004) that is given to all students who register. Take note of Sections 2.1.13 and 2.1.14 (2004: 3-4). Also take note of the University's Policy on Copyright Infringement and Plagiarism. If plagiarism is seen to have been committed, you may be awarded a mark of zero for the assignment.

8.3 General assignment numbers

8.3.1 Unique assignment numbers

Semester 1	
Assignment	**Unique assignment number**
01	**818814**
02	**716612**
03	**891612**

Semester 2	
Assignment	**Unique assignment number**
01	**577611**
02	**653124**
03	**833745**

8.3.2 Due dates for assignments

First semester		
Assignment	Due date	Weight towards semester mark
01	28 February	20%
02	10 March	20%
03	10 April	60%
Second semester		
Assignment	Due date	Weight towards semester mark
01	15 August	20%
02	25 August	20%
03	22 September	60%

8.4 Submission of assignments

We **strongly recommend** that you submit all three assignments via myUnisa, with assignment 03 in pdf format. No hand written assignment please.

For detailed information on assignments, please refer to the *my Studies @ Unisa* brochure, which you received with your study package.

To submit an assignment via *my*Unisa:

- Go to *my*Unisa.
- Log in with your student number and password.
- Select the module.
- Click on assignments in the menu on the left-hand side of the screen.
- Click on the assignment number you wish to submit.
- Follow the instructions.

Assignments may not be submitted by fax or e-mail.

Note: Administrative enquiries about assignments should be addressed to an email address provided in the *my Studies @ Unisa* brochure.

8.5 The assignments

There are three assignments:

Assignments 01, 02 and 03 are to be submitted. See all the assignments in Section 12.

8.6 Other assessment methods

There are no other assessment methods for this module.

8.7 The examination

FIRST SEMESTER: In order to be considered for the first semester examination admission in ICT2621, a student must submit Assignment 01 or Assignment 02 by their due dates. Assignment 01 is due on **28 February 2017** and Assignment 02 is due by **10 March 2017**.

SECOND SEMESTER: In order to be considered for the second semester examination admission in ICT2621, a student must submit Assignment 01 or Assignment 02 by their due dates. Assignment 01 is due on **15 August 2017** and Assignment 02 is due by **25 August 2017.**

The lecturer or any other person in the university cannot help you if you do not fulfil the above condition.

There will be a two-hour examination at the end of the semester. The format of the exam and its scope will be sent to you during the semester. Supplementary exams will be done at the end the semester following the semester in which you sat for the exam. This is the case with aegrotat examination. Please do not contact the lecturer for supplementary or aegrotat exams rather refer to the *my Studies @ Unisa* brochure for guidelines. Read the *my Studies @ Unisa* brochure for general examination guidelines and examination preparation guidelines.

Some past exam papers for this module are provided on myUnisa. If you are a student who cares about his/her work you should be able to answer these questions using the tutorial materials, including the textbook. We therefore request you not to contact the lecturers of this module for past examination paper solutions. The lecturers will not provide solutions to the past exam papers on myUnisa. It is not advisable to just memorise answers to past exam paper questions. Rather try to understand all the subject content. Since the prescribed textbook has changed, some questions are likely to be obsolete (outdated).

Note that the examination mark contributes 80% towards your final mark and the semester mark contributes the other 20%. See Section 8.1 for a calculation of the final mark. If you fail the examination with less than 40%, the year mark will **not** count to pass you.

We advise that you download all Additional Resources files on the myUnisa ICT2621 site to your computer/flash disk in case you need to use them for a supplementary exam at the end of the next semester.

Note: Examination related enquiries should be addressed to an email provided in the *my Studies @ Unisa* brochure

9 FREQUENTLY ASKED QUESTIONS

The *my Studies @ Unisa* brochure contains an A-Z guide of the most relevant study information. Please refer to this brochure.

10 SOURCES CONSULTED

See section 4.1

11 CONCLUSION

Do not hesitate to contact any of your lecturers (**ICT2621-17-S1@unisa.ac.za for semester 1 or ICT2621-17-S2@unisa.ac.za for semester 2)** or tutors by email if you are experiencing problems with the **content** of this tutorial letter or any aspect of the module.

We wish you a fascinating and satisfying journey through the learning material and trust that you will complete the module successfully.

Enjoy the journey!

ICT2621 lecturers

12 ADDENDUM

FIRST SEMESTER ASSIGNMENTS

12.1 FIRST SEMESTER: ASSIGNMENT 01

Due date: 28 February 2017

Study material: Prescribed book chapters 1 & 2

Submission procedure: Via myUnisa (see Section 8.3)

Year-mark weight: 20%

Unique assignment number: 818814

Compulsory and contributes towards year marks.

- Each multiple-choice question has four possible answers. You should select the alternative you consider to be the most appropriate.
- Submit your assignment via myUnisa by the due date. Do not be concerned if myUnisa is down on the last submission date. We are notified when this happens, and will take this type of delay into consideration. Try to resubmit the assignment as soon as myUnisa is running again.
- The mark that you achieve from a possible 20 marks will be converted to a **percentage** and will contribute 20% towards your semester mark.

FIRST SEMESTER ASSIGNMENT 01 2017, Total: 20 marks

Identify the choice that best completes the statement or answers the question.

1. When using a _____ to investigate the causes of a problem, an analyst first states the problem and then draws a main bone with sub-bones that represent possible causes of the problem.
   1. causebone diagram
   2. fishbone diagram
   3. jawbone diagram
   4. crossbone diagram

2. Many large IT departments use a(n) _____ team that reviews and tests all applications and systems changes to verify specifications and software quality standards.
   1. beta testing
   2. quality assurance
   3. alpha testing
   4. acceptance verifier

3. A large concentration of servers working together is called a _____.
   1. server window
   2. server application
   3. server ranch
   4. server farm

4. The _____, named after a nineteenth-century economist, is a widely used tool for visualizing issues that need attention and is drawn as a vertical bar graph.
   1. Pareto chart
   2. Gantt chart
   3. Scatter chart
   4. XY chart

5. When planning an information system, a company must consider how a new system will interface with older systems, which are called _____.
   1. enterprise applications
   2. network operating systems (NOS)
   3. operating applications

4. legacy systems

6. The overall aim of a _____ is to avoid seeking goals that are unrealistic, unprofitable, or unachievable.

1. SWOT (Strength, Weakness, Opportunities, and Threats) analysis

2. CSF (Critical Success Factor) analysis

3. BCF (Business Case Factor) analysis

4. SWCT (Strategy, Weakness, Cost, and Technology) analysis

7. The objective of a _____ is to use the combined judgement and experience of several analysts to evaluate systems projects.

1. computer resources committee

2. data storage committee

3. system networking committee

4. topology identification committee

8. Projects where management has no choice in implementing them are called _____ projects.

1. discretionary

2. nondiscretionary

3. appended

4. concatenated

9. Agile methods typically use a(n) _____ , which represents a series of iterations based on user feedback.

1. incremental model

2. extreme model

3. spiral model

4. evaluative model

10. The _____ method of developing systems produces code that is modular and reusable.

1. object-oriented analysis

2. adaptive

3. structured analysis

4. rapid application development

11. The systems implementation phase of the systems development life cycle (SDLC) includes an assessment, called a _____, to determine whether the system operates properly and if costs and benefits are within expectation.
    1. systems estimation
    2. systems verification
    3. systems validation
    4. systems evaluation

12. In a typical organizational model, top managers _____.
    1. develop long-range plans, called strategic plans, which define a company's overall mission and goals
    2. provide direction, necessary resources, and performance feedback to supervisors and team leaders
    3. oversee operation employees and carry out day-to-day functions, coordinating operational tasks and people
    4. include users who rely on transaction processing (TP) systems to enter and receive the data they need to perform their jobs

13. For complex models, analysts can choose computer-based modelling tools that use _____, which includes standard shapes and symbols to represent events, processes, workflows, and more.
    1. electronic data interchange (EDI)
    2. joint application development (JAD)
    3. business process modelling notation (BPMN)
    4. rapid application development (RAD)

14. Using _____, a supplier can use radio frequency identification (RFID) tags on each crate, case, or shipping unit to create a digital shipping list.
    1. EPOD (Electronic proof of delivery)
    2. PPOD (Physical proof of delivery)
    3. RPS (Radio positioning system)
    4. RDS (Radar detection system)

15. A _____ is a requirement or condition that a system must satisfy or an outcome that a system must achieve.
    1. trigger
    2. constraint
    3. query

4. key

16. When assessing _____, a systems analyst must consider the interaction between time and costs.
1. resource feasibility

2. technical feasibility

3. schedule feasibility

4. market feasibility

17. Many hardware and software companies offer _____ for IT professionals, which verifies that an individual demonstrated a certain level of knowledge and skill on a standardized test.
1. spot identification

2. certification

3. education

4. accreditation

18. A _____ is a summary of a project request and a specific recommendation.
1. case for action

2. routine report

3. breakdown report

4. case for approval

19. _____ controls the flow of data, provides data security, and manages network operations.
1. Enterprise software

2. System software

3. Application software

4. Legacy software

20. Which of the following is an example of a tangible benefit?
1. A user-friendly system that improves employee job satisfaction

2. A sales tracking system that supplies better information for marketing decisions

3. A new website that enhances a company's image

4. An online package tracking system that improves service and decreases the need for clerical staff

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12.2 FIRST SEMESTER: ASSIGNMENT 02

Due date: 10 March 2017

Study material: Prescribed book chapters 4 & 7

Submission procedure: Via myUnisa (see Section 8.3)

Year-mark weight: 20%

Unique assignment number: **716612**

Compulsory and contributes towards year marks.

- Each multiple-choice question has four possible answers. You should select the alternative you consider to be the most appropriate.
- Submit your assignment via myUnisa by the due date. Do not be concerned if myUnisa is down on the last submission date. We are notified when this happens, and will take this type of delay into consideration. Try to resubmit the assignment as soon as myUnisa is running again.
- The mark that you achieve from a possible 20 marks will be converted to a **percentage** and will contribute 20% towards your semester mark.

FIRST SEMESTER ASSIGNMENT 02 2017, Total: 20 marks

Identify the choice that best completes the statement or answers the question.

1. A _____ is a document that describes a company, lists the IT services or products needed, and specifies the features required.
    1. request for quotation (RFQ)
    2. present net value (PNV)
    3. request for proposal (RFP)
    4. return on investment (ROI)

2. Regardless of the topics of interest, there are one or more _____, where people gather to meet, offer support, and exchange ideas.
    1. newsgroups
    2. benchmarks
    3. report generators
    4. service desks

3. Which of the following is a typical example of a system requirement for the output category?

1. Manufacturing employees must swipe their ID cards into data collection terminals that record labour costs.
2. The contact management system must generate a daily reminder list for all sales reps.
3. All transactions must have audit trails.
4. As the final step in year-end processing, the payroll system must update employee salaries, bonuses, and benefits and produce tax data required by the IRS.

4. In addition to joint application development, another popular user-oriented method is _____, which resembles a condensed version of the entire SDLC with users involved every step of the way.

1. agile method
2. sampling
3. rapid application development
4. brainstorming

5. The _____ environment enhances interactive experiences, including wikis and blogs, and social networking applications.

1. outsourcing
2. Software as a Service
3. Web 2.0
4. command-line

6. When companies acquire web-based software as a(n) _____, they can limit in-house involvement to a minimum.

1. product
2. process
3. service
4. outsource

7. Building an application in a _____ environment can offer greater benefits, and sometimes greater risks, when compared to a traditional environment.

1. GUI
2. web-based
3. cloud
4. multinational

8. A(n) _____ is a technique that uses a common yardstick to measure and compare vendor ratings.

1. fixed fee model

2. usage model

3. evaluation model

4. subscription model

9. _____ determines how long it takes an information system to spend for itself through reduced costs and increased benefits.

1. Net present value (NPV)

2. Acquisition process

3. Return on investment (ROI)

4. Payback analysis

10. Some firms offer _____, which provide powerful web-based support for transactions such as order processing, billing, and customer relationship management.

1. application service provider (ASP)

2. internet business services (IBS)

3. outsource hosting provider (OHP)

4. fixed outsourcing services (FOS)

11. A firm that offers outsourcing solutions is called a _____.

1. subscription provider

2. software provider

3. service provider

4. resource provider

12. A software package that can be used by many different types of organizations is called a(n) _____.

1. vertical application

2. symmetric application

3. horizontal application

4. asymmetric application

13. The _____ is a widely used method of visualizing and documenting software systems design.

1. Unified Modeling Language (UML)

2. total cost of ownership (TCO)

3. functional decomposition diagram (FDD)

4. Rapid Economic Justification (REJ)

14. A _____ defines what must take place, not how it will be accomplished.

1. logical design

2. physical design

3. quantitative design

4. qualitative design

15. In addition to configuring software, the IT staff can create a _____, which includes screens, commands, controls, and features that enable users to interact more effectively with the application.

1. user manual

2. user story

3. user interface

4. user agent

16. When preparing a representative sample from a list of 200 customers who complained about errors in their statements, a _____ might select every tenth customer for review.

1. systematic sample

2. stratified sample

3. random sample

4. comprehensive sample

17. The main reason for offshore outsourcing is to _____.

1. lower bottom-line costs

2. manage operations only in one country

3. manage operations only in one country

4. ship bulky raw materials

18. _____ enable a systems analyst to identify a problem, evaluate the key elements, and develop a useful solution.

1. Analytical skills

2. Artistic skills

3. Interpersonal skills

4. Confrontational skills

19. When studying an information system, illustrations of actual documents should be collected using a process called _____.

1. stratification

2. randomization

3. indexing

4. sampling

20. _____ reduces the customer's need for software maintenance, operation, and support.

1. Hardware as a Help

2. Software as a Service

3. Processing as a Product

4. Storage as a Solution

II@@@@@---oooOooo---@@@@@II

12.3 FIRST SEMESTER: ASSIGNMENT 03

Due date:	7 April 2017
Study material:	Prescribed book chapters 5, 8, 9, 11 and 12
Excluded:	Objected-oriented analysis and design sections
Assignment type:	Written
Submission procedure:	Via myUnisa in pdf format (see section 8.3)
Year-mark weight:	60%

Unique assignment number: **891612**

Compulsory: It contributes towards the year mark.

- Submit your assignment via *myUnisa* by the due date. Do not be concerned if *myUnisa* is down on the last submission date. We are notified when this happens, and will take this type of delay into consideration.
- Provide detailed solutions to all the questions. The solutions for the questions will be made available on the modules site on *myUnisa*.
- The mark that you achieve will contribute 60% towards your semester mark.

FIRST SEMESTER ASSIGNMENT 03 2017, Total: 100 marks

Chapter 5 – Data and Process Modelling

Question 1 **[27]**

NB: *When drawing data flow diagrams (DFDs), use the Gane and Sarson symbols/notation set*.

1.1 Draw, name and describe the four symbols used in a data flow diagram (DFD). You may use a table to present your answer. (12)

1.2 Briefly describe the following with respect to DFDs:

1.2.1 Levelling (2)

1.2.2 Balancing (2)

1.2.3 Data dictionary (2)

1.3 Draw a diagram of an example of each of the following showing the process, and the input(s) and output (s), where applicable. You should name each process, input or output used. Do not use the examples from the prescribed test book; rather use them as guidelines.

1.3.1 Spontaneous generation (3)

1.3.2 Black hole (3)

1.3.3 Gray hole (3)

NB: *Questions 1.4 to 1.7 below are self-assessment exercises. Attempt the questions but DO NOT submit answers for marking. Solutions to these questions will appear in Tutorial Letter 202.*

1.4 What are the six guidelines for drawing DFDs? (--)

1.5 Define Structured English and list its guidelines. (--)

1.6 *Draw the context diagram of the Order System provided in Figure 5-11 on page 152 of your prescribed book. Using this diagram, explain what the system does. In your explanation, include what the Order System sends or receives from each of the external entities.* (--)

1.7 *Use the two diagrams in Figure 5-12 on page 153 of the prescribed book to explain the difference and similarities between a context diagram and diagram 0. Here we are interested in the general differences or similarities between the a context diagram and diagram 0; you can use Figure 5-12 as the point of reference, if you need to provide an example.* (--)

Chapter 8 – User Interface Design

Question 2 **[12]**

2.1 The goal of system design is to build systems that are effective, reliable and maintainable. Identify and briefly describe any four basic principles of system design for a project. (8)

2.2 Use the internet to find the *ISO 9241-11* standard meaning of *usability* with respect to computer interfaces. (2)

2.3 How is usability related to Human-Computer Interaction (HCI)? (2)

NB: *Questions 2.4 and 2.5 below are self-assessment exercises. Attempt the questions but DO NOT submit answers for marking. The solutions to these questions will appear together with the solution for this assignment.*

2.4 When designing a user interface you should follow eight basic guidelines suggested by the textbook authors. List these guidelines? (--)

(NB: Please study these in detail.)

2.5 The most used forms of output technology for business systems is still in form of screen displays and printed matter. List other current other output types and technologies currently available. (--)

(NB: Please study these in detail.)

*<u>Food for thought:</u> How would you describe the input and output technology of **Pokemon Go**? (Optional and not examinable).*

Chapter 9 – Data Design

Question 3 **[15]**

According to the prescribed textbook, *normalisation* is "the process of creating table designs by assigning specific fields or attributes to each table in the database". Refer to the ERD for the Reliable Pharmaceutical Service provided on the next page and develop a normalised database schema in 3NF. Clearly indicate all keys. All tables should be in 3NF. **Underline all primary keys,** and **use the letters FK to indicate foreign key**, for example …, Product-code (FK),….

A *schema* is simply a list of each table name and its fields/attributes in a database as in the example below.

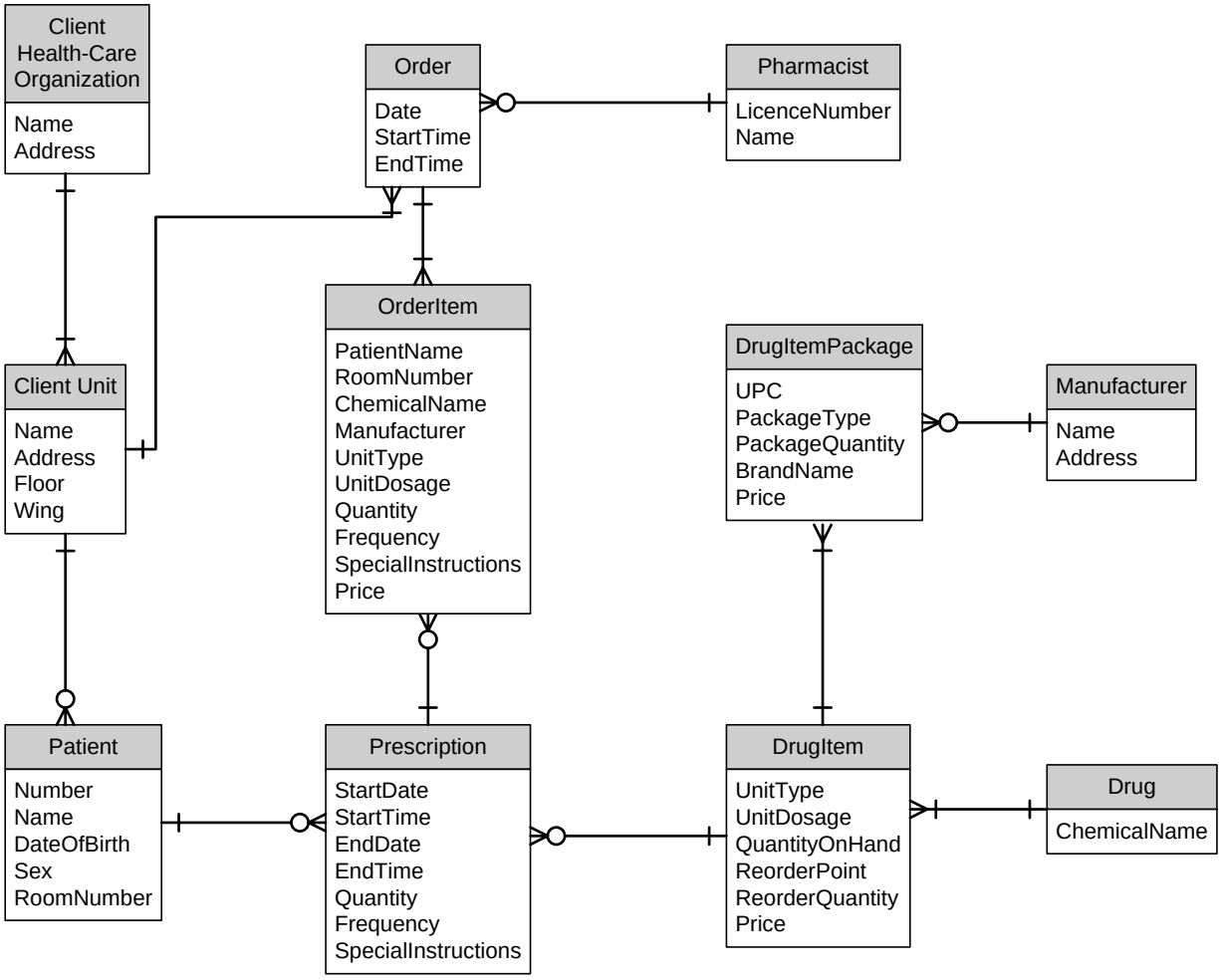
Product (<u>Product-Code</u>, Product-name, …)

Customer (<u>Customer-ID</u>, Customer-name,…)

etc …

<u>Note that, in the given ERD:</u>

- Not all fields are provided for each entity.
- Some fields may not be necessary for some tables.
- Primary keys and FKs are not shown.



Question 4 [17]

Scenario: In a university registration system, such as that of Unisa, a student can register for one or more subjects, and a subject may have a number of students. A course may be offered to a number of students. A student has to register for one course only at a time. A course consists of a number of subjects and a subject must belong to at least one course.

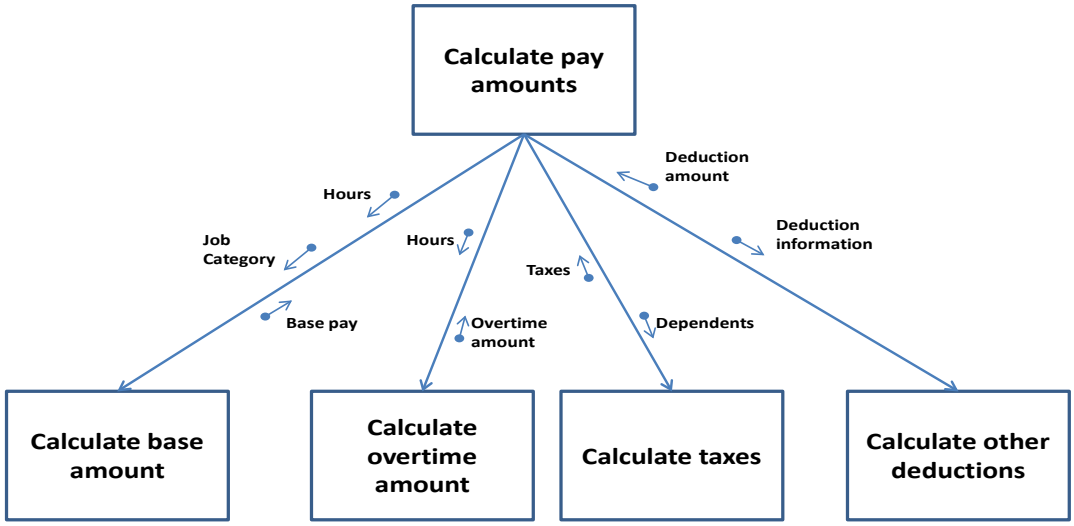
4.1 Draw an entity relationship diagram (ERD) for this registration system. The ERD should not contain any many-to-many relationships. No attributes/fields are required in this section. (10)

4.2 Create a relational database schema from the ERD showing all tables in 3NF. Each table should include at least three fields/attributes. Appropriate primary keys should be used. Primary keys must be underlined and each foreign key should have the letters FK in brackets after it, for instance xyz (FK). (7)

Chapter 11 – Managing Systems Implementation

Question 5 **[11]**

The following diagram shows a simple structured chart for a Calculate pay amounts module of a payroll system.



5.1 Explain in detail how this module works. Your explanation should mention each of the inputs into and outputs from each of the submodules / functions. (9)

5.2 Write a formula for the Net pay, using only the variable given in the diagram (i.e. Net pay = _____). (2)

Question 6 **[10]**

6.1 What guidelines should you be aware of when designing training programmes? (4)

6.2 Identify and briefly describe any three system changeover methods. (6)

Chapter 12 – Systems Support and Security

Question 7 **[8]**

Briefly describe each of the following with respect to system support and security.

7.1 Preventive maintenance (2)

7.2 Version control (2)

7.3 Identity management (2)

7.4 Incremental backup (2)

II@@@@@---oooOooo---@@@@@II

SECOND SEMESTER ASSIGNMENTS

12.4 SECOND SEMESTER: ASSIGNMENT 01

Due date: 15 August 2017

Study material: Prescribed book chapters 1 & 2

Submission procedure: Via myUnisa (see Section 8.3)

Year-mark weight: 20%

Unique assignment number: **577611**

Compulsory and contributes towards year marks.

- Each multiple-choice question has four possible answers. You should select the alternative you consider to be the most appropriate.
- Submit your assignment via *myUnisa* by the due date. Do not be concerned if *myUnisa* is down on the last submission date. We are notified when this happens, and will take this type of delay into consideration. Try to resubmit the assignment as soon as myUnisa is running again.
- The mark that you achieve from a possible 20 marks will be converted to a **percentage** and will contribute 20% towards your semester mark.

SECOND SEMESTER ASSIGNMENT 01 2017, Total: 20 marks

Identify the choice that best completes the statement or answers the question.

1. During the _____ of the systems development life cycle (SDLC), a new system is constructed.
    1. systems planning phase
    2. systems support and security phase
    3. systems design phase
    4. systems implementation phase

2. Transaction processing (TP) systems _____.
    1. provide job-related information to users at all levels of a company
    2. simulate human reasoning by combining a knowledge base and inference rules that determine how the knowledge is applied

3. process data generated by day-to-day business operations

4. include email, voice mail, fax, video conferencing, word processing, automated calendars, database management, spreadsheets, and integrated mobile computing systems

3. Knowledge management systems use a large database called a(n) _____ that allows users to find information by entering keywords or questions in normal English phrases.

1. inference engine

2. knowledge base

3. knowledge database management system

4. inference manager

4. A _____ describes the information that a system must provide.

1. process model

2. data model

3. business model

4. network model

5. Projects that provide the _____ are assigned the highest priority when setting priorities for systems requests.

1. greatest benefit, at the lowest cost, in the shortest period of time

2. greatest benefit, at the highest cost, in the shortest period of time

3. least benefit, at the lowest cost, in the longest period of time

4. least benefit, at the highest cost, in the longest period of time

6. During the _____ of the systems development life cycle (SDLC), the IT staff maintains, enhances, and protects the system.

1. systems support and security phase
2. systems implementation phase

3. systems analysis phase

4. systems planning phase

7. Projects with very general scope definitions are at risk of expanding gradually, without specific authorization, in a process called _____.

1. project dilation

2. project creep

3. project expansion

4. project drift

8. _____ components can provide automated response to sales inquiries, online order processing, and inventory tracking.
    1. Just-in-time (JIT)

    2. Customer relationship management (CRM)

    3. Automatic teller machine (ATM)

    4. Total cost of ownership (TCO)

9. _____ means that a project can be implemented in an acceptable time frame.
    1. Operational feasibility
    2. Technical feasibility

    3. Schedule feasibility

    4. Economic feasibility

10. Hardware-based security controls include _____.
    1. password fields

    2. online forms

    3. system patterns

    4. biometric devices

11. In a preliminary investigation report, the _____ section contains the results of the preliminary investigation, including a description of the project's scope, constraints, and feasibility.
    1. appendix

    2. introduction

    3. recommendations

    4. findings

12. In a typical company organizational model, middle managers _____.
    1. develop long-range plans, called strategic plans, which define the company's overall mission and goals

    2. provide direction, necessary resources, and performance feedback to supervisors and team leaders

    3. oversee operation employees and carry out day-to-day functions, coordinating operational tasks and people

    4. include users who rely on transaction processing (TP) systems to enter and receive the data they need to perform their jobs

13. _____ planning is the process of identifying long-term organizational goals, strategies, and resources.

1. Prospect

2. Pilot

3. Strategic

4. Vertical

14. A(n) _____ investigates, analyses, designs, develops, installs, evaluates, and maintains a company's information systems.

1. application developer

2. database administrator

3. network administrator

4. systems analyst

15. Strategic planning starts with a _____ that reflects a firm's vision, purpose, and values.

1. relationship diagram

2. feasibility study

3. performance assessment

4. mission statement

16. A _____ answers questions, troubleshoots problems, and serves as a clearinghouse for user problems and solutions.

1. user support specialist

2. database administrator

3. web support specialist

4. network administrator

17. _____ technology uses radio frequency identification (RFID) tags to identify and monitor the movement of each individual product, from a factory floor to the retail checkout counter.

1. EPC (Electronic product code)

2. EPOD (Electronic proof of delivery)

3. MCC (Magnetic character code)

4. RTPD (Real-time product delivery)

18. Business support systems _____.
    1. provide job-related information support to users at all levels of a company

    2. simulate human reasoning by combining a knowledge base and inference rules that determine how the knowledge is applied

    3. process data generated by day-to-day business operations

    4. include email, voice mail, fax, video conferencing, word processing, automated calendars, database management, spreadsheets, and integrated mobile computing systems

19. In a preliminary investigation report, the _____ section contains a brief description of the system, the name of the person or group performing the investigation, and the name of the person or group who initiated the investigation.
    1. introduction

    2. recommendations

    3. expected benefits

    4. time and costs estimates

20. A _____ is an analysis tool that represents the possible causes of a problem as a graphical outline.
    1. causebone diagram

    2. fishbone diagram

    3. jawbone diagram

    4. crossbone diagram

II@@@@@---oooOooo---@@@@@II

12.5 SECOND SEMESTER: ASSIGNMENT 02

Due date:	25 August 2017
Study material:	Prescribed book chapters 4 & 7
Submission procedure:	Via myUnisa (see Section 8.3)
Year-mark weight:	20%

Unique assignment number: **653124**

Compulsory and contributes towards year marks.

- Each multiple-choice question has four possible answers. You should select the alternative you consider to be the most appropriate.
- Submit your assignment via *myUnisa* by the due date. Do not be concerned if *myUnisa* is down on the last submission date. We are notified when this happens, and will take this type of delay into consideration. Try to resubmit the assignment as soon as myUnisa is running again.
- The mark that you achieve from a possible 20 marks will be converted to a **percentage** and will contribute 20% towards your semester mark.

SECOND SEMESTER ASSIGNMENT 02 2017, Total: 20 marks

Identify the choice that best completes the statement or answers the question.

1. In the rapid application development (RAD) model in the accompanying figure, the _____ phase focuses on program and application development tasks similar to the SDLC.
   1. requirements planning
   2. user design
   3. construction
   4. cutover

2. In an interview, _____ limit or restrict the response.
   1. open-ended questions
   2. closed-ended questions
   3. leading questions
   4. range-of-response questions

3. Which of the following is a typical example of a system requirement for the process category?

1. The website must report online volume statistics every four hours and hourly during peak periods.
2. The system must be operated seven days a week, 365 days a year.
3. The equipment rental system must not execute new rental transactions for customers who have overdue accounts.
4. All transactions must have audit trails.

4. _____ is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction.

1. Utility computing
2. Mainframe computing
3. Grid computing
4. Cloud computing

5. The _____ must include users, who will participate in the selection process and feel a sense of ownership in the new system.

1. development and testing team
2. evaluation and selection team
3. maintenance team
4. quality audit team

6. The kind of document shown in the accompanying figure starts with a heading, which should include all except _____.

1. a brief statement of purpose
2. your suggestions
3. your signature
4. your observations

7. Greater user involvement in the system development process usually results in ____.

1. poorer communication
2. more satisfied users
3. slower development times
4. lower quality deliverable

8. In most large and medium-sized companies, a(n) _____ within the IT department is responsible for providing user support.

1. service desk
2. evaluation team
3. planning centre
4. planning centre

9. A software package developed to handle information requirements for a specific type of business is called a(n) _____.

1. vertical application
2. symmetric application
3. horizontal application
4. asymmetric application

10. Software such as Microsoft OneNote is a type of _____ software.

1. personal information manager (PIM)
2. personal data management
3. project data management
4. personal digital assistant (PDA)

11. Which of the following is true of a web-based systems development environment?

1. Scalability of web-based systems can be affected by network limitations and constraints.
2. Internet-based development treats the web only as a communication channel.
3. Web-based solutions do not open complex security issues that should be addressed.
4. Web-based software treats the software application as a service that is less dependent on desktop computing power and resources.

12. Web-based software usually requires additional layers, called _____, to communicate with existing software and legacy systems.

1. freeware
2. shareware
3. middleware
4. public domain software

13. When preparing a representative sample from a list of 200 customers who complained about errors in their statements, a _____ might select any 20 customers.

1. systematic sample

2. stratified sample

3. random sample

4. comprehensive sample

14. A(n) _____ is a firm that delivers a software application, or access to an application, by charging a usage or subscription fee.

1. software delivery service

2. manufacturer outsourcing

3. manufacturer outsourcing

4. application service provider

15. Using _____, an analyst can show business functions and break them down into lower-level functions and processes.

1. Unified Modeling Language (UML)

2. total cost of ownership (TCO)

3. functional decomposition diagrams (FDD)

4. Rapid Economic Justification (REJ)

16. The _____ of a project is the total value of the benefits minus the total value of the costs, with both costs and benefits adjusted to reflect the point in time at which they occur.

1. net present value (NPV)

2. acquisition process

3. return on investment (ROI)

4. payback analysis

17. Which of the following is an example of a horizontal application?

1. College applications

2. Construction companies

3. Accounting packages

4. Real estate firms

18. _____ is a percentage rate that compares the total net benefits received from a project to the total costs of the project.

1. Net present value (NPV)

2. Acquisition process

3. Return on investment (ROI)

4. Payback analysis

19. A(n) _____ is an outsourcing fee model that charges a variable fee based on the volume of transactions or operations performed by the application.

1. method model

2. administrative model

3. usage model

4. interpolated model

20. A(n) _____ is a characteristic or feature that must be included in an information system to satisfy business needs and be acceptable to users.

1. system requirement

2. property

3. questionnaire

4. object

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12.6 SECOND SEMESTER: ASSIGNMENT 03

Due date:	22 September 2017
Study material:	Prescribed book chapters 5, 8, 9, 11 and 12
Excluded:	Objected-oriented analysis and design sections
Assignment type:	Written
Submission procedure:	Via myUnisa (see section 8.3)
Year-mark weight:	60%

Unique assignment number: **833745**

Compulsory: It contributes towards the year mark.

- Submit your assignment via *myUnisa* by the due date. Do not be concerned if *myUnisa* is down on the last submission date. We are notified when this happens, and will take this type of delay into consideration.
- Provide detailed solutions to all the questions. The solutions for the questions will be sent to you in Tutorial Letter 202 and will also be available on *myUnisa*.
- The mark that you achieve will contribute 60% towards your semester mark.

SECOND SEMESTER ASSIGNMENT 03 2017, Total: 100 marks

Chapter 5 – Data and process modelling

Question 1 [28]

NB: *When drawing data flow diagrams (DFDs), use the Gane and Sarson symbols/notation*.

Read pages 143 to 160 of the prescribed text book. Then answer the questions 1.1 to 1.5 that follow here below:

1.1 Name the four main symbols used to draw data flow diagrams (DFDs). (4)

1.2 Draw *Diagram 1 DFD* that shows the details of the FILL ORDER process in the ORDER SYSTEM (of Figure 5-13 on page 155) found on page 156 in Figure 5-14 of your prescribed book. NB: Only draw figure 5-14. (4)

1.3 Define each of the symbols you named in 1.1 and give any two names of examples of each using the diagram you drew in 1.2. Use a table, such as the one below to present your answer. (8)

Symbol name	Definition	Examples

1.4 Describe, in some details, what *Levelling* is in terms drawing DFDs. Then use Figures 5-13 and 5-14 on pages 155 and 156 respectively, to give an example of how this technique can be done. Do not draw the two figures. (5)

1.5 Describe in some details what *Balancing* is in terms drawing DFDs. Then use Figures 5-13 and 5-14 on pages 155 and 156 respectively, to give an example of how this technique can be done. Do not draw the two figures. It is intentional that you do not use Figures 5-15 or 5-16 to answer this question though the textbook uses these to explain the concept. (3)

1.6 Briefly describe the following with respect to DFDs:

1.6.1 Structured English (2)

1.6.2 Decision tree (2)

NB: *Questions 1.7 & 1.8 below are self-assessment exercises. Attempt the questions but DO NOT submit answers for marking. Solutions to these questions will appear together with the solutions to this assignment.*

1.7 Draw a diagram of an example of each of the following showing the process, and the input(s) and output (s), where applicable. You should name each process, input or output used. Do not use the examples from the prescribed test book rather use them as guidelines.

1.7.1 Spontaneous generation (--)

1.7.2 Black hole (--)

1.7.3 Gray hole (--)

1.8 What are the six guidelines for drawing DFDs? (--)

Chapter 8 – User Interface design

Question 2 **[22]**

2.4 The goal of system design is to build systems that are effective, reliable and maintainable. Briefly explain each of these three factors. (6)

2.5 What is Human-Computer Interaction (HCI)? (2)

2.6 What are the seven habits of successful interface designers? (4)

2.7 Use the internet to find the *ISO 9241-11* standard definition of *usability* with respect to computer interfaces. (2)

2.8 Why is prototyping important for users during system design? (2)

2.9 When designing a user interface you should follow eight basic guidelines suggested by the textbook authors. List these guidelines? (8)

NB: *Questions 2.10 below is a self-assessment exercise. Attempt the question but DO NOT submit answers for marking. The solution to this question will appear together with the solution for this assignment.* (--)

(NB: Please study these in detail.)

2.10 The most used forms of output technology for business systems is still in form of screen displays and printed matter. List other current other output types and technologies currently available. (--)

(NB: Please study these in detail.)

Food for thought: How would you describe the input and output technology of ***Pokemon Go****? (Optional and not examinable).*

Chapter 9 – Data design

Question 4 **[16]**

Scenario: In any of the finals of the African Cup of Nations soccer tournament, there are a number of countries involved. Each country has a number of players that compete in the tournament. The Federation of International Football Association (FIFA) rules stipulate that a person can only play for one country. Each player has a number of specialists, such as a doctor, financial adviser, etc. to cater for his different needs. A speciality may provide his or her service to one or more players.

3.1 Draw an entity relationship diagram (ERD) for this scenario. The ERD should not contain any many-to-many relationships. Do not include entities that are not in the scope (scenario) provided above. No attributes/fields are required in this section. (8)

3.2 Create a relational database schema from the ERD in 3.1 showing all tables in 3NF. Each table should include at least three fields. Appropriate primary keys should be used. Primary keys must be underlined and each foreign key should have the letters FK in brackets after it, for instance xyz (FK). There is no need to show all the steps involved in this process since only the final relational schema will be marked. (8)

NB: A *schema* is simply a list of each table name and its fields/attributes in a database as in the example below.

Product (Product-Code, Product-name, …)

Customer (Customer-ID, Customer-name,…)

etc …

Chapter 11 – Managing Systems Implementation

Question 4 [10]

Draw Figure 11-10 found on page 368 of your prescribed book then explain how the main and sub-modules of this structured chart work together, i.e. what each module/sub-module does and how data is interchanged. Note that you are NOT asked to explain this modules in terms of a *control couple* as used in the text book. What is needed is general explanation of how structured charts modules and sub-modules work together and how data is exchanged, using this diagram. (10)

Question 5 [10]

For sections 6.1 and 6.2, briefly describe each with respect to managing systems implementation.

6.1 System testing (2)

6.2 Operational documentation (2)

Explain in, some details, each of the following. You may use the internet for more detailed information. Then, show how each can be used to train users of a software package purchased from a vendor.

6.3 Webinar (3)

6.4 Tutorial (3)

Chapter 12 – Systems Support and Security

Question 8 **[14]**

Briefly describe each of the following with respect to managing system support and security.

7.1 Perfective maintenance (2)

7.2 Configuration management (2)

7.3 Fault management (2)

7.4 Incremental backup (2)

7.5 The three interactive tasks of risk management (briefly describe each) (6)

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