UNIVERSITY EXAMINATIONS

UNIVERSITEITSEKSAMENS

UNISA university of south africa

COS1521 (472483) October/November 2013
RCO1521 (492649)

COMPUTER SYSTEMS: FUNDAMENTAL CONCEPTS

Duration 2 Hours

100 Marks

EXAMINERS

FIRST MR S SSEMUGABI
SECOND MRS D BECKER

Closed book examination

This examination question paper remains the property of the University of South Africa and may not be removed from the examination venue

This paper consists of 27 pages and the instructions for the completion of a mark-reading sheet

Please complete the attendance register on the back page, tear it off and hand it to the invigilator

Instructions:

1 All the questions in this paper are **multiple-choice**
2 There are 80 questions in total Your total mark out of 80 will be converted to a final exam mark out of 100
3 Answer all the questions There is also space for rough work
4 Using a pencil, answer all the questions on the **mark-reading sheet**
5 Remember to fill in the **unique number** (see top of page) on the mark-reading sheet
6 You are **not** allowed to use a calculator

EVERYTHING OF THE BEST!

[TURN OVER]

This paper consists of 80 multiple-choice questions.
Each question is worth 1 mark.
Your total out of 80 will be converted to give a final exam mark out of 100.

Mark only one alternative per question with a pencil on the mark-reading sheet.
(Remember to fill in the unique number.)

Section A: Computer background, number systems, data storage, operations on data and logic (27 marks)

QUESTION 1
Which subsystem of a computer is responsible for the sending of signals to other subsystems?

1 ALU
2 Input/output
3 Memory
4 Control unit

QUESTION 2
During which computer *generation* were integrated circuits first used?

1 First
2 Second
3 Third
4 Fourth

QUESTION 3
Convert $(75)_{10}$ to an octal number

1 $(76)_8$
2 $(67)_8$
3 $(131)_8$
4 $(113)_8$

QUESTION 4
Convert $(52\ 4)_8$ to a hexadecimal number

1 $(29\ 6)_{16}$
2 $(2A\ 8)_8$
3 $(33\ B)_8$
4 $(23\ C)_{16}$

QUESTION 5

What decimal integer is stored in memory (8 bits) as 11010010 in 2's complement representation?

1 -114
2 114
3 -46
4 46

QUESTION 6

What is the normalised form of $(101110\ 101)_2$?

1 $(1\ 01110101)_2 \times (2^5)_{10}$
2 $(0\ 101110101)_2 \times (2^6)_{10}$
3 $(1\ 01110101)_2 \times (2^3)_{10}$
4 $(0\ 101110101)_2 \times (2^{-6})_{10}$

Rough work

QUESTION 7
Which one of the following statements regarding unsigned integers is TRUE?

1 The biggest unsigned integer defined by most computers has the value 2^n
2 If *n* bits are allocated for a given number, but its unsigned binary representative only occupies *n*-2 bits, then two zeros are added to the right of the binary number
3 An unsigned integer can only take on 0 (zero) or positive values
4 The decimal number 8 can be stored as an unsigned binary number in 3 binary positions

QUESTION 8
Sampling is a process in which a finite number of points on an analog signal are measured and recorded A number of samples per second are needed so that a replica of the original signal can be retrieved The number of samples needed per second _____

1 is a standard number of 20,000 samples that has been proven to be sufficient
2 is determined by quantization
3 is determined by the length of the signal
4 depends on the maximum number of changes in the analog signal

QUESTION 9
What does the word *pixel* stand for in image storage technology?

1 Picture elements
2 Resolution
3 Colour depth
4 True-colour

QUESTION 10
A mask is used to unset bits of the bit pattern 1010 0110 (input) What is the output if the mask 0010 0100 is applied?

1 0101 1001
2 0010 0100
3 1011 0101
4 1010 0110

QUESTION 11
Consider the expression F = xy' + [x + y]'
If x = 0 and y = 1, what are the values of xy', [x + y]' and F?

1 xy' = 1, [x + y]' = [1] and F = 0
2 xy' = 1, [x + y]' = [0] and F = 1
3 xy' = 0, [x + y]' = [0] and F = 0
4 xy' = 0, [x + y]' = [1] and F = 0

Rough work

Apply Boolean algebra rules to determine the simplest forms of the given Boolean expressions in the following THREE questions.

QUESTION 12

What is the simplest form of the Boolean function (x′yw) + (x′yw)′ z?

1 x′yw + z
2 x+ y + w + z
3 z
4 x′yw

QUESTION 13

What is the simplest form of the Boolean function xy′z + xy′x′?

1 xy′(z + x′)
2 1
3 xy′z
4 0

QUESTION 14

What is the simplest form of the Boolean function yw′v + yy(w′v)′?

1 yw′v + y(w′v)′
2 y(w′v + w + v′)
3 y
4 1

QUESTION 15

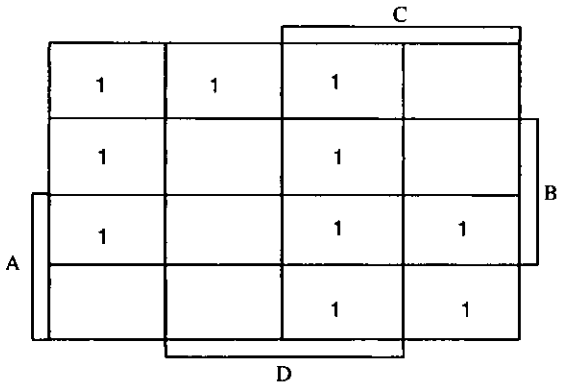
Which one of the following Boolean expressions is in the correct sum of minterms form?

1 F(A,B,C) = AB + BC
2 F(A,B,C) = ABC + A'B'C
3 F(A,B,C) = AB′C′ + BC′A′
4 F(A,B,C) = ABC + AB

Rough work

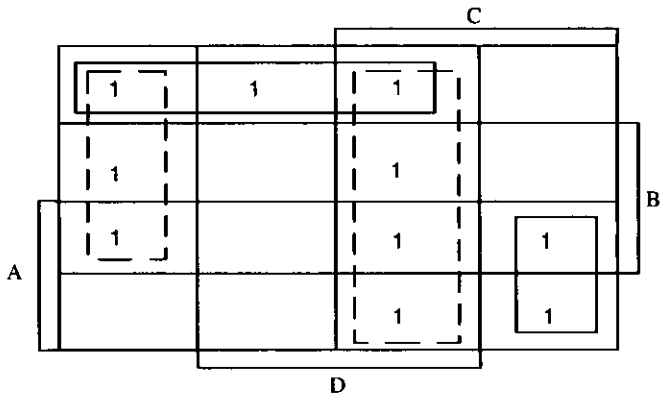
QUESTION 16

Consider the following Karnaugh map



Which one of the following four Karnaugh maps reflects the correct forming of groups?

1



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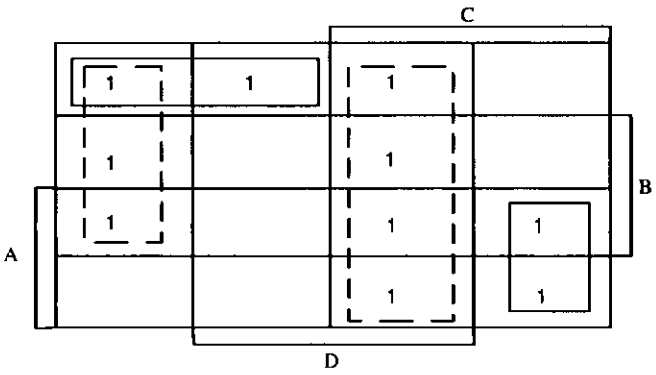

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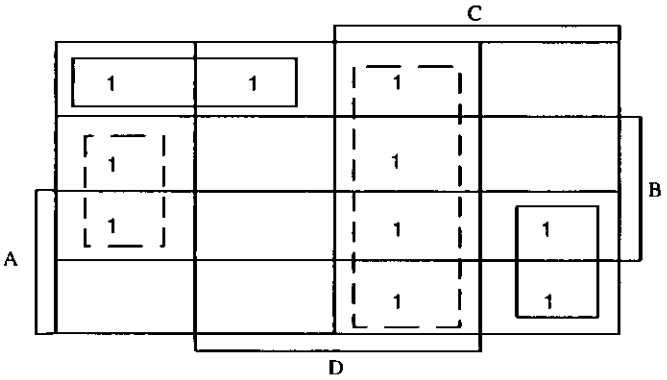

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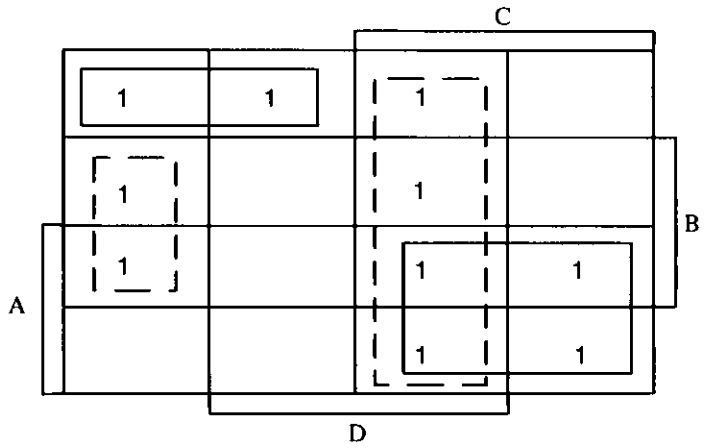
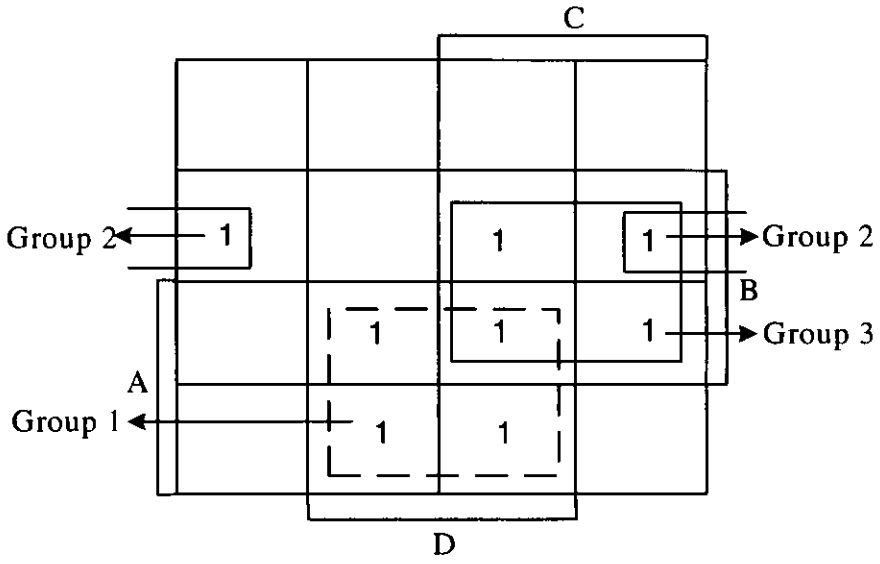


Rough work

The following THREE questions refer to the Karnaugh map beneath:



QUESTION 17
Which term represents Group 1?

1 AD
2 ABD
3 DC′
4 AC′

QUESTION 18
Which term represents Group 2?

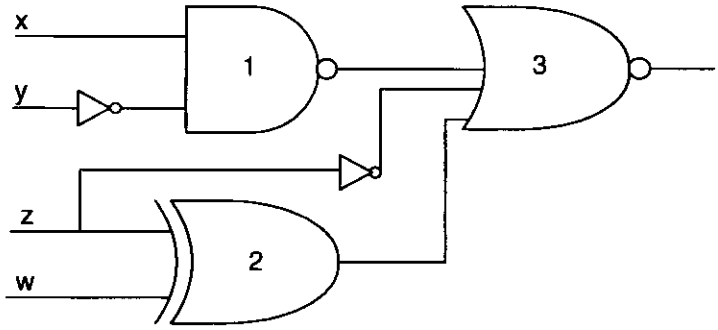
1 B
2 A′BD′
3 A′BC
4 BD′

QUESTION 19
Which term represents Group 3?

1 A′B
2 D′B
3 BC
4 CBD

Rough work

The following THREE questions refer to the following combinational logic circuit:



QUESTION 20
What is the output of Gate 1?

1 $x' + y'$
2 $(x + y')'$
3 $(xy')'$
4 xy'

QUESTION 21
What is the output of Gate 2?

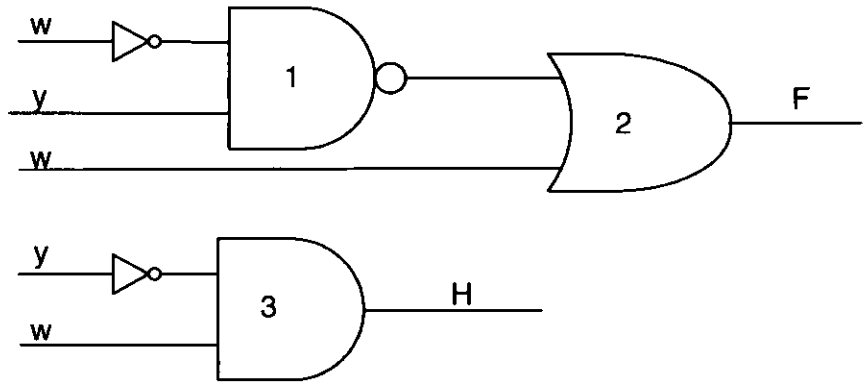
1 $z' \oplus w$
2 $z \oplus w$
3 $z + w$
4 $zw' + z'w$

QUESTION 22
What is the output of Gate 3?

1 $[(x' + y) + z'(z + w)]'$
2 $(x + y')' + (z' + zw' + z'w)'$
3 $[(xy')' + z' + (z \oplus w)]'$
4 $[(xy') + z'(z' \oplus w)]'$

QUESTION 23

Consider the following two logic circuits



These two logic circuits are not equivalent $F = (w'y)' + w$ and $H = y'w$ One of the three gates can be changed so that the circuits can become equivalent Which gate can be changed and what kind of gate must it become?

1 Gate 3 must change to a NOR gate

2 Gate 1 must change to an OR gate

3 Gate 2 must change to a NAND gate

4 Gate 3 must change to an OR gate

Rough work

Consider the following scenario:
Three people (A, B and C) are to board a ferry boat to cross a river

A weighs 40 kg; B weighs 65 kg; C weighs 25 kg.

If a person boards the boat, then the output for that person is 1 For example, if A = 0, B = 1 and C = 1, it means that only B and C boarded the boat

A Boolean function F(A,B,C) is defined as follows **F(A,B,C) = 1 when the total weight of the people who have boarded the ferry boat is more than 65 kg.** If this is not the case then F (A,B,C) = 0 Apart from any of these three people, it is assumed that no other parson can be on the boat

Different combination inputs for A, B and C are given in the tables provided in the following FOUR questions. The question to be answered in each case is: Which alternative shows the correct outputs for F?

QUESTION 24

			Alternative 1	Alternative 2	Alternative 3	Alternative 4
A	**B**	**C**	**F**	**F**	**F**	**F**
0	0	0	0	1	0	1
0	0	1	0	1	1	0

QUESTION 25

			Alternative 1	Alternative 2	Alternative 3	Alternative 4
A	**B**	**C**	**F**	**F**	**F**	**F**
0	1	0	0	1	0	1
0	1	1	0	1	1	0

QUESTION 26

			Alternative 1	Alternative 2	Alternative 3	Alternative 4
A	**B**	**C**	**F**	**F**	**F**	**F**
1	0	0	0	1	0	1
1	0	1	0	1	1	0

QUESTION 27

			Alternative 1	Alternative 2	Alternative 3	Alternative 4
A	**B**	**C**	**F**	**F**	**F**	**F**
1	1	0	0	1	0	1
1	1	1	0	1	1	0

Rough work

Section B: Computer systems, organisation and networks (18 marks)

QUESTION 28

Which one of the following is among the three main operations performed by the arithmetic logic unit (ALU) of a computer?

1 Encode
2 Search
3 Scan
4 Shift

QUESTION 29

What is the *second* step in the procedure when the CPU needs to access a word in main memory?

1 The CPU checks the cache
2 The CPU checks the registers
3 The CPU accesses the memory and copies the word if it is there
4 The CPU accesses the cache and copies the word if it is there

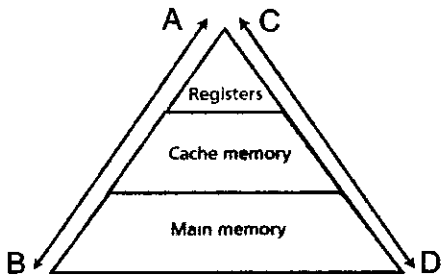
QUESTION 30

Which one of the following statements is NOT TRUE about auxiliary storage devices?

1 They are volatile
2 They can be magnetic
3 They are considered to be I/O devices
4 They can be optical

QUESTION 31

In the following figure the hierarchical levels of memory are provided The costliness (A and B) and speed (C and D) with regard to the memory hierarchy are indicated by the arrowed lines in the figure Choose the alternative that gives the correct information for A, B, C and D



1	A less costly,	B more costly,	C slowest,	D fastest
2	A more costly,	B less costly,	C fastest,	D slowest
3	A less costly,	B more costly,	C fastest,	D slowest
4	A more costly,	B less costly,	C slowest,	D fastest

QUESTION 32
In the decode phase of the machine cycle, an instruction in an instruction register is decoded by the _____

1 ALU
2 control unit
3 memory
4 programmed I/O

QUESTION 33
Why is it easier to program CISC-based computers than other designs?

1 A small set of instructions do a minimum number of simple operations
2 There is a single instruction for both simple and complex tasks
3 Complex instructions are simulated by using a subset of simple instructions
4 Programming is done on one level

QUESTION 34
Network reliability can be measured by its _____

1 accuracy of delivery
2 performance
3 transit time
4 response time

QUESTION 35
There are four basic network topologies Which network topology has the following advantage and disadvantage?
Disadvantage The large amount of cabling and number of input/output ports required
Advantage If one link becomes faulty, it does not put the entire network out of action

1 Mesh
2 Star
3 Bus
4 Ring

QUESTION 36
There are several layers in the Internet TCP/IP protocol suite What is the transport layer responsible for?

1 Node-to-node delivery of frames
2 Delivery of individual packets from the source host to the destination host
3 Providing services to the user
4 Logical delivery of a message between client and server processes

QUESTION 37

Error and flow control can be applied by some data-link layer protocols in the data-link layer of the Internet TCP/IP protocol suite However, error checking at this layer does not cover errors that might happen inside routers At which other layer will error control detect router errors?

1 Application
2 Network
3 Physical
4 Transport

QUESTION 38

In the basic model for FTP (file transfer protocol), the client does NOT have a _____ component

1 user interface
2 control process
3 decoding process
4 data transfer process

QUESTION 39

Hypertext is a concept used by the World Wide Web (WWW) whereby information is stored in a set of documents that are connected together by using the concept of _____

1 multiplexing
2 links
3 port addresses
4 IP addresses

QUESTION 40

An operating system (OS) is an interface between the hardware of a computer and the user The word 'user' in this definition refers to _____

1 humans only
2 programs only
3 programs or humans
4 software applications only

QUESTION 41

Which one of the following statements is FALSE about monoprogramming?

1 A technique called partitioning can be used in this scheme
2 The entire program must fit into memory
3 When one program is running, no other program can be executed
4 It is an inefficient memory management system

QUESTION 42

Which form of memory management is described as follows A program is divided into pages, loaded into memory one by one, executed and replaced by another page In addition, the whole program does not need to be in memory

1 Demand paging
2 Demand segmentation
3 Segmentation
4 Paging

QUESTION 43

Modern operating systems use three different terms that refer to a set of instructions program, job and process Which one of the following statements is NOT TRUE about these terms?

1 A program is an active set of instructions stored on a storage medium such as a disk
2 A process is a program in execution
3 A program might or might not become a job
4 A program becomes a job when is selected for execution

QUESTION 44

A deadlock can occur when an operating system (OS) does not put resource restrictions on processes There are four necessary conditions for a deadlock to occur Which one of the following is the correct description for the *mutual exclusion* condition?

1 A process holds a resource even though it cannot use it until other resources are available
2 The OS cannot temporarily relocate a resource
3 All processes and resources involved form a loop
4 Only one process can hold a resource

QUESTION 45

An OS can be designed in such way that it has a modular architecture with several layers This property refers to the _____ of the OS

1 extensibility
2 reliability
3 compatibility
4 portability

Section C: Computer algorithms, programming and software development
(18 marks)

QUESTION 46
A list contains the following elements

7 10 17 19 35 40 48 69 76 81 83 98 110 125 200

At the beginning, first = 1, mid = 8 and last = 15 What are the values of first, mid and last respectively after two more iterations of the binary search algorithm if the goal is 110?

1 13, 14, 15
2 9, 12, 15
3 1, 8, 15
4 1, 9, 15

QUESTION 47
Suppose a list contains the following elements

31 36 42 21 63 14 130 18

What is the order of the elements in the list after three passes when selection sort is used?

1 14 18 21 31 36 42 63 130
2 14 18 42 21 63 31 130 36
3 14 18 21 42 63 31 130 36
4 14 18 21 31 42 63 130 36

QUESTION 48
Certain constructs are needed for a structured program Which of the following is a construct that tests a *condition*?

1 Sequence
2 Looping
3 Decision
4 Repetition

QUESTION 49

Which one of the following statements regarding search algorithms is TRUE?

1 A sequential search is usually used for big lists
2 A binary search requires the list to be unsorted
3 A sequential search is usually very slow
4 A binary search starts at the beginning of the list

QUESTION 50

A natural language-like representation of a step-by-step solution that expresses a logical solution to a particular problem of interest is best described as a _____

1 procedure
2 module
3 program code
4 pseudocode

QUESTION 51

Which one of the following statements is NOT TRUE about subalgorithms?

1 They are subunits of main algorithms
2 They are can be called many times by the main algorithm
3 They are more difficult to understand than the main algorithm
4 They can be broken down into other subalgorithms

QUESTION 52

An assembler is used to translate code from (i) _____ language into (ii) _____ language

1 (i) symbolical (ii) assembly
2 (i) machine (ii) assembly
3 (i) any natural language (ii) machine
4 (i) assembly (ii) machine

QUESTION 53

An interpreter is used to translate the (i) _____ program into the (ii) _____ program

1 (i) compiled (ii) assembler
2 (i) source (ii) compiled
3 (i) object (ii) source
4 (i) source (ii) object

QUESTION 54

The two methods that are used for translating a program to machine language both follow the same translation process What is the FIRST step in the process?

1 semantic analysis
2 syntax analysis
3 lexical analysis
4 code generation

QUESTION 55

Which one of the following statements regarding functional programming languages is NOT TRUE?

1 A program is considered a mathematical function
2 Scheme is an example of a functional language
3 A functional language makes use of inheritance
4 A functional language allows a programmer to combine basic functions to create other functions

QUESTION 56

Which computer programming language is known for using *polymorphism*?

1 Declarative
2 Object-oriented
3 Functional
4 Procedural

QUESTION 57

In the Scheme version of LISP, if S = (15 20 25 30 35 40 45), then (car (cdr (cdr S))) would give a result of

1 15
2 30
3 35
4 25

QUESTION 58

Which one of the following is the correct sequence of the phases of the waterfall model when it is used during software development?

1 Analysis, design, testing, implementation
2 Design, analysis, implementation, testing
3 Analysis, design, implementation, testing
4 Design, analysis, testing, implementation

QUESTION 59

Which one of the following analysis process is DIFFERENT from the other three?

1 Procedure-oriented analysis
2 Object-oriented analysis
3 Structured analysis
4 Classical analysis

QUESTION 60

During the testing phase of the software development lifecycle (SDLC), errors are located What type of testing is used if the internal structure of the software is known by the tester?

1 Basis
2 Glass-box
3 Control
4 Black-box

QUESTION 61

_____ between modules in a software system must be minimised

1 Cohesion
2 Coupling
3 Modularity
4 Procedures

QUESTION 62

Which one of the following software testing methods is used in glass-box testing?

1 Exhaustive
2 Random
3 Boundary-value
4 Basis path

QUESTION 63

Documentation in the software lifecycle is an ongoing process Which one of the following statements regarding documentation is NOT TRUE?

1 System documentation describes the servicing of a software system
2 User documentation shows step by step how to use the software
3 System documentation defines software
4 Technical documentation describes the installation of a software system

Section D: Computer data and file structure, and databases (17 marks)

QUESTION 64

In an array, SCORE [4] (for example) refer to the fourth _____ of the array

1 name
2 index
3 field
4 element

QUESTION 65

Which of the following statements best describes an *Array*?

1 It is a collection of fields that are all related to one object
2 It can only be two-dimensional
3 It is a sequenced collection of elements, normally of the same data type
4 It is a collection of elements called fields

QUESTION 66

Which of the following operations CANNOT be defined on an array data structure?

1 Addition
2 Searching
3 Insertion
4 Retrieval

QUESTION 67

Before inserting a new node in a linked list, _____ algorithm is applied

1 an insertion
2 a deletion
3 a searching
4 a retrieving

QUESTION 68

The first step in traversing a linked list is to _____

1 create a walking pointer to the first node
2 check for the last node
3 allocate a node
4 set up a loop

QUESTION 69
Which one of the following statements regarding linked lists is NOT TRUE?

1 A linked list is a suitable structure if a large number of insertions and deletions are needed
2 A linked list can grow infinitely and shrink to an empty list
3 The name of a linked list is the name of the head pointer that points to the first node of the list
4 Each node in a linked list has a unique name

QUESTION 70
In which file structure are records only accessed one after another from beginning to the end?

1 Random
2 Indexed
3 Hashed
4 Sequential

QUESTION 71
Which one of the following is NOT a collision-resolution method for hashed files?

1 Prime area hashing
2 Open addressing
3 Linked list resolution
4 Bucket hashing

QUESTION 72
When a collision occurs, the address produced by a hashing algorithm is called the _____ address

1 prime
2 synonym
3 index
4 home

QUESTION 73
Which collision resolution method for hashed files uses a node that can accommodate more than one record?

1 Bucket hashing
2 Prime area hashing
3 Open addressing
4 Linked list resolution

QUESTION 74

Which one of the following is the name given to the directory at the highest level of a file system hierarchy?

1 Parent directory
2 Top directory
3 Home directory
4 Root directory

QUESTION 75

The database system has the following advantages compared to the flat-file system EXCEPT

1 Less data redundancy
2 More data consistency
3 Less data validation
4 More data integrity

QUESTION 76

Which of the following is NOT a part of a database management system(DBMS)?

1 Procedures
2 Software
3 Users
4 Sponsors

QUESTION 77

In a database architecture hierarchy model, which one of the following would be placed BETWEEN the *conceptual level* and the actual *hardware*?

1 User level
2 External level
3 Internal level
4 software level

QUESTION 78

Structured Query Language (SQL) is a programming language used to retrieve information from relational databases Which one of the following organisations would you NOT associate with the development of SQL? Select the most appropriate answer

1 Intel
2 ANSI
3 ISO
4 Oracle

QUESTION 79

In a fragmented distributed database, _____

1 each site holds an exact replica of another site
2 data are localised
3 objects and their relations are defined
4 any modification to data stored in one site is repeated exactly at every site

QUESTION 80

Which one of the following statements regarding an object-oriented database is NOT TRUE?

1 It keeps the advantages of the relational model
2 It allows applications to access structured data
3 Each object can have attributes that can be expressed as fields
4 Relations of objects are not defined

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EXAMINATION MARK READING SHEET — EKSAMEN-MERKLEESBLAD

PART 1 (GENERAL/ALGEMEEN) DEEL 1

STUDY UNIT e g PSY100 X
STUDIE EENHEID bv PSY100 X ❶

INITIALS AND SURNAME
VOORLETTERS EN VAN ❸

DATE OF EXAMINATION
DATUM VAN EKSAMEN ❹

PAPER NUMBER
VRAESTELNOMMER ❷

EXAMINATION CENTRE (E G PRETORIA)
EKSAMENSENTRUM (BV PRETORIA) ❺

STUDENT NUMBER
STUDENTENOMMER ❻ ❼

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4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

UNIQUE PAPER NO
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6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

For use by examination invigilator
Vir gebruik deur eksamenopsiener
◆

IMPORTANT

1 USE ONLY AN HB PENCIL TO COMPLETE THIS SHEET
2 MARK LIKE THIS ▬2▬
3 CHECK THAT YOUR INITIALS AND SURNAME HAS BEEN FILLED IN CORRECTLY
4 ENTER YOUR STUDENT NUMBER FROM LEFT TO RIGHT
5 CHECK THAT YOUR STUDENT NUMBER HAS BEEN FILLED IN CORRECTLY
6 CHECK THAT THE UNIQUE NUMBER HAS BEEN FILLED IN CORRECTLY
7 CHECK THAT ONLY ONE ANSWER PER QUESTION HAS BEEN MARKED
8 DO NOT FOLD

BELANGRIK

1 GEBRUIK SLEGS N HB-POTLOOD OM HIERDIE BLAD TE VOLTOOI
2 MERK AS VOLG ▬2▬
3 KONTROLEER DAT U VOORLETTERS EN VAN REG INGEVUL IS
4 VUL U STUDENTENOMMER VAN LINKS NA REGS IN
5 KONTROLEER DAT U DIE KORREKTE STUDENTENOMMER VERSTREK HET
6 KONTROLEER DAT DIE UNIEKE NOMMER REG INGEVUL IS
7 MAAK SEKER DAT NET EEN ALTERNATIEF PER VRAAG GEMERK IS
8 MOENIE VOU NIE

PART 2 (ANSWERS/ANTWOORDE) DEEL 2 ❿

1	[1] [2] [3] [4] [5]	36	[1] [2] [3] [4] [5]	71	[1] [2] [3] [4] [5]	106	[1] [2] [3] [4] [5]
2	[1] [2] [3] [4] [5]	37	[1] [2] [3] [4] [5]	72	[1] [2] [3] [4] [5]	107	[1] [2] [3] [4] [5]
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7	[1] [2] [3] [4] [5]	42	[1] [2] [3] [4] [5]	77	[1] [2] [3] [4] [5]	112	[1] [2] [3] [4] [5]
8	[1] [2] [3] [4] [5]	43	[1] [2] [3] [4] [5]	78	[1] [2] [3] [4] [5]	113	[1] [2] [3] [4] [5]
9	[1] [2] [3] [4] [5]	44	[1] [2] [3] [4] [5]	79	[1] [2] [3] [4] [5]	114	[1] [2] [3] [4] [5]
10	[1] [2] [3] [4] [5]	45	[1] [2] [3] [4] [5]	80	[1] [2] [3] [4] [5]	115	[1] [2] [3] [4] [5]
11	[1] [2] [3] [4] [5]	46	[1] [2] [3] [4] [5]	81	[1] [2] [3] [4] [5]	116	[1] [2] [3] [4] [5]
12	[1] [2] [3] [4] [5]	47	[1] [2] [3] [4] [5]	82	[1] [2] [3] [4] [5]	117	[1] [2] [3] [4] [5]
13	[1] [2] [3] [4] [5]	48	[1] [2] [3] [4] [5]	83	[1] [2] [3] [4] [5]	118	[1] [2] [3] [4] [5]
14	[1] [2] [3] [4] [5]	49	[1] [2] [3] [4] [5]	84	[1] [2] [3] [4] [5]	119	[1] [2] [3] [4] [5]
15	[1] [2] [3] [4] [5]	50	[1] [2] [3] [4] [5]	85	[1] [2] [3] [4] [5]	120	[1] [2] [3] [4] [5]
16	[1] [2] [3] [4] [5]	51	[1] [2] [3] [4] [5]	86	[1] [2] [3] [4] [5]	121	[1] [2] [3] [4] [5]
17	[1] [2] [3] [4] [5]	52	[1] [2] [3] [4] [5]	87	[1] [2] [3] [4] [5]	122	[1] [2] [3] [4] [5]
18	[1] [2] [3] [4] [5]	53	[1] [2] [3] [4] [5]	88	[1] [2] [3] [4] [5]	123	[1] [2] [3] [4] [5]
19	[1] [2] [3] [4] [5]	54	[1] [2] [3] [4] [5]	89	[1] [2] [3] [4] [5]	124	[1] [2] [3] [4] [5]
20	[1] [2] [3] [4] [5]	55	[1] [2] [3] [4] [5]	90	[1] [2] [3] [4] [5]	125	[1] [2] [3] [4] [5]
21	[1] [2] [3] [4] [5]	56	[1] [2] [3] [4] [5]	91	[1] [2] [3] [4] [5]	126	[1] [2] [3] [4] [5]
22	[1] [2] [3] [4] [5]	57	[1] [2] [3] [4] [5]	92	[1] [2] [3] [4] [5]	127	[1] [2] [3] [4] [5]
23	[1] [2] [3] [4] [5]	58	[1] [2] [3] [4] [5]	93	[1] [2] [3] [4] [5]	128	[1] [2] [3] [4] [5]
24	[1] [2] [3] [4] [5]	59	[1] [2] [3] [4] [5]	94	[1] [2] [3] [4] [5]	129	[1] [2] [3] [4] [5]
25	[1] [2] [3] [4] [5]	60	[1] [2] [3] [4] [5]	95	[1] [2] [3] [4] [5]	130	[1] [2] [3] [4] [5]
26	[1] [2] [3] [4] [5]	61	[1] [2] [3] [4] [5]	96	[1] [2] [3] [4] [5]	131	[1] [2] [3] [4] [5]
27	[1] [2] [3] [4] [5]	62	[1] [2] [3] [4] [5]	97	[1] [2] [3] [4] [5]	132	[1] [2] [3] [4] [5]
28	[1] [2] [3] [4] [5]	63	[1] [2] [3] [4] [5]	98	[1] [2] [3] [4] [5]	133	[1] [2] [3] [4] [5]
29	[1] [2] [3] [4] [5]	64	[1] [2] [3] [4] [5]	99	[1] [2] [3] [4] [5]	134	[1] [2] [3] [4] [5]
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31	[1] [2] [3] [4] [5]	66	[1] [2] [3] [4] [5]	101	[1] [2] [3] [4] [5]	136	[1] [2] [3] [4] [5]
32	[1] [2] [3] [4] [5]	67	[1] [2] [3] [4] [5]	102	[1] [2] [3] [4] [5]	137	[1] [2] [3] [4] [5]
33	[1] [2] [3] [4] [5]	68	[1] [2] [3] [4] [5]	103	[1] [2] [3] [4] [5]	138	[1] [2] [3] [4] [5]
34	[1] [2] [3] [4] [5]	69	[1] [2] [3] [4] [5]	104	[1] [2] [3] [4] [5]	139	[1] [2] [3] [4] [5]
35	[1] [2] [3] [4] [5]	70	[1] [2] [3] [4] [5]	105	[1] [2] [3] [4] [5]	140	[1] [2] [3] [4] [5]