higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

COMPUTER PRINCIPLES N4

13 APRIL 2018

This marking guideline consists of 5 pages.

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QUESTION 1

1.1
1.1.1 A
1.1.2 A
1.1.3 B
1.1.4 A
1.1.5 C
1.1.6 C

(6 × 1) (6)

1.2
- Step-by-step definition
- Less training needed (2)

1.3
- Bits
- Bytes
- Kilobytes (KB)
- Megabytes (MB)
- Gigabytes (GB)
- Terabytes (TB) (Any 2 × 1) (2)

[10]

QUESTION 2

2.1 American Standard Code for Information Interchange (2)

2.2
- Central processing unit (CPU)
- Main memory
- Auxiliary storage
- INPUT
- OUTPUT (5)

2.3 Computer hardware is the collection of physical parts of a computer system. This includes the computer case, monitor, keyboard and mouse. It also includes all the parts inside the computer case, such as the hard disk drive, motherboard, video card and many others. Computer hardware can be physically touched. (2)

2.4 An output device is any device used to send data from a computer to another device or user, e.g. monitors, projectors, speakers, headphones and printers. (4)

[13]

QUESTION 3

3.1
- Peripheral devices are hardware that make up the computer system and can be seen and touched.
- Software is the programs that can be executed by the computer. (4)

3.2
- RAM
- DRAM
- SRAM
- SDRAM (4)

3.3
- Content is normally permanent and cannot be altered.
- Content is not lost in a power failure. (2)

[10]

QUESTION 4

4.1 Controls the operation of the peripheral based on the information supplied by the software

4.2 Serves as an isolation device between the various peripheral devices and the computer system, compensating for speed differences between the various devices

4.3 Monitors the operating status of the peripheral devices and stores the information as status data, such as READY, DONE and ERROR which are acted upon when the CPU checks the device

4.4 Performs the required data conversion (parallel to serial or serial to parallel) so data transfer between the devices can take place

4.5 Performs specialised functions such as updating byte counters and address registers when necessary

4.6 Issues an interrupt to the CPU when an action is required from software to notify the CPU that, for example, an error has occurred

(6 × 2) **[12]**

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QUESTION 5

5.1
- Reliable
- Not for their own gain
- Loyal
- Up to date with technology
- Information confidential (5)

5.2
- Three- to five-year plan
- Cables stacked away, false floors
- Double doors
- Allows for easy movement of staff
- Acceptable noise level and vibration in computer room (5)

5.3
- Upper and lower limits
- Controlled by A/C
- Computers are sensitive to high humidity and may rust
- Humidity can cause computers to short-circuit
- Relative humidity levels between 45% and 60% are best for computing environments (5)

[15]

QUESTION 6

6.1
6.1.1 Manual input
6.1.2 Display
6.1.3 Terminator
6.1.4 Punched tape
6.1.5 Sequential access storage
6.1.6 Direct access storage

(6 × 1) (6)

6.2
- Standard symbols
- May be understood by someone without a programming background
- Can be used to divide the entire project into subtasks
- Can be examined to measure overall progress
- Shows the sequence of operations and therefore can aid in locating the source of errors
- Technique well-known in other areas besides programming
- Useful as program documentation
- Helpful technique which should not be extended too far (Any 5 × 1) (5)

[11]

QUESTION 7

7.1 Show the end user what action to take when a thing goes wrong when using the software.✓✓ When data is entered into a database the message can indicate to the end user if the content is correct or not in a specific format as required by the software.✓✓ (4)

7.2
- Target dates
- Many programmers
- Better program design
- Error correction simpler
- Program in smaller modules, work together at the end when combined

(5 × 2) (10)
[14]

QUESTION 8

9.1 10 SUM = J – K + L (3)

9.2 10 PRINT TAB(10); 'Computer Principles N4'

OR

10 PRINT 'Computer Principles N4' (2)

9.3
- 10 IF A = B THEN 10 (2)
- 20 INPUT J (1)
- 30 PRINT J (1)
- 40 GOTO 10 (1)

9.4
```
10 FOR J = 1 TO 5
20 FOR K = 1 TO 5
30 PRINT J,K
40 NEXT K
50 PRINT
60 NEXT K
70 END
```
(5)
[15]

TOTAL: 100

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