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IFS112E

EXAMINATIONS – PAPER 1

NOVEMBER 2019

Time: 2½ hours
Subject: Essentials of Information Technology

Marks: 100

This paper consists of 22 pages including the cover page

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GENERAL INSTRUCTIONS

- Answer all questions (unless instructed otherwise in a specific question).
- Label all questions carefully.
- Start each section on a new page, and label it clearly.
- Questions that have been marked "Cancelled" will not be marked.
- At the end of the examination place your answer sheets inside your answer book. Be sure to label all answer sheets clearly. Remember to fill in the covers of all books submitted.

University of Fort Hare examination rules are in force for the duration of this examination.

DO NOT TURN THE PAGE BEFORE TOLD TO DO SO

QUESTION 1**80 Marks**

For the following questions, choose the letter of the answer that is the correct or best answer. This section must be answered on the answer sheet at the end of this question paper. Therefore, remove the answer sheet, write your name, student number and answers on it and place it inside your answer book.

- 1.1 A user inputs data into a computer, and then the computer _____ it.
- a) embeds
 - b) serves
 - c) boots
 - d) processes
 - e) None of the above
- (1)
- 1.2 Communications hardware includes modems, network _____ and routers.
- a) domains
 - b) projectors
 - c) adaptors
 - d) hyperlinks
 - e) None of the above
- (1)
- 1.3 The set of computer programs that manages the hardware of a computer is called
- a) application software.
 - b) an operating system.
 - c) database software.
 - d) a network application.
 - e) None of the above
- (1)
- 1.4 Which one of the following is not classified as an application program?
- a) Microsoft Excel
 - b) Windows 10
 - c) Microsoft Word
 - d) database software
 - e) None of the above
- (1)
- 1.5 Jamie's mother is a computer programmer and would like Jamie to follow in her footsteps by also becoming a computer programmer. Which course would she most likely suggest for Jamie to take in college/university?
- a) Systems Analysis
 - b) History of Computing
 - c) Computer Literacy
 - d) C#
 - e) None of the above
- (1)

- 1.6 Which one of the following is a very large centralized computer found in large enterprises?
- a) mainframe
 - b) portable computer
 - c) workstation
 - d) desktop computer
 - e) None of the above
- (1)
- 1.7 Which one of the following is not a mobile device?
- a) laptop
 - b) tablet PC
 - c) handheld gaming device
 - d) smart phone
 - e) None of the above
- (1)
- 1.8 The _____ is the largest and most well-known computer network in the world.
- a) ISP
 - b) Extranet
 - c) Internet
 - d) WAN
 - e) Web
- (1)
- 1.9 What is the purpose of an IP address?
- a) It physically connects a computer to a network.
 - b) It provides a permanent address to a computer.
 - c) It identifies the network that a computer is connected to.
 - d) It provides a unique address to a computer on a network.
 - e) It identifies the device that a computer uses to access the Internet or another network.
- (1)
- 1.10 When you enter a Web address such as **learn.ufh.ac.za** in your browser, what device is used to translate the domain name into an IP address?
- a) a NAT
 - b) a URL
 - c) a DNS server
 - d) an FTP server
 - e) a network redirector server
- (1)
- 1.11 For the e-mail address **info@parliament.gov.za**, which part is the domain name?
- a) info
 - b) parliament.gov.za
 - c) gov.za
 - d) gov
 - e) za
- (1)

- 1.12 To navigate to a new Web page for which you know the URL, type that URL in the browser's _____ bar and press *Enter*.
- a) address
 - b) domain
 - c) data
 - d) menu
 - e) tool
- (1)
- 1.13 _____ refers to harmful programs that can be installed on our computers without our knowledge.
- a) Spam
 - b) Blogs
 - c) Cookies
 - d) Malware
 - e) Phishes
- (1)
- 1.14 If you type your entire e-mail message or online post using capital letters, you are
- a) spamming.
 - b) phishing.
 - c) calling.
 - d) shouting.
 - e) miming.
- (1)
- 1.15 Illustrations of faces showing smiles, frowns, and other expressions that are created with keyboard symbols are called
- a) spams.
 - b) phishes.
 - c) emoticons.
 - d) Trojan horses.
 - e) cookies.
- (1)
- 1.16 Which one of the following represents the largest amount of data?
- a) 1 kilobyte (KB)
 - b) 1 terabyte (TB)
 - c) 1 byte
 - d) 1 megabyte (MB)
 - e) 1 gigabyte (GB)
- (1)
- 1.17 Each pixel in a monochrome graphic can be only one of _____ possible colours.
- a) 2
 - b) 4
 - c) 8
 - d) 256
 - e) None of the above
- (1)

- 1.18 Video data, such as for home movies, feature films, video clips, and television shows, is displayed using a collection of _____.
- a) slides
 - b) pixels
 - c) vectors
 - d) frames
 - e) None of the above
- (1)
- 1.19 One measurement of the speed of a CPU is the _____, which is rated in megahertz (MHz) or gigahertz (GHz).
- a) system speed
 - b) CPU clock speed
 - c) system rpm
 - d) CPU rpm
 - e) None of the above
- (1)
- 1.20 _____, also called main memory or system memory, is/are used to store the essential parts of the operating system while the computer is running.
- a) ROM
 - b) The hard disk
 - c) Registers
 - d) RAM
 - e) None of the above
- (1)
- 1.21 An RJ-45 port is used to
- a) connect a computer to a phone outlet via a telephone line.
 - b) connect USB devices to a computer.
 - c) connect a computer to a computer network.
 - d) connect speakers, headphones, or a microphone to a computer.
 - e) None of the above
- (1)
- 1.22 The approximate download time for a 512KB photo over a 1Mbps connection is
- a) 4 seconds.
 - b) 8 seconds.
 - c) 16 seconds.
 - d) 32 seconds.
 - e) None of the above
- (2)
- 1.23 The more applications that need to run simultaneously on one computer, the more _____ the computer needs.
- a) RAM
 - b) video drivers
 - c) hard drive space
 - d) operating systems
- (1)

- 1.24 The technique where multiple processors or processing cores simultaneously (i.e. at the same time) process a single job as fast as possible is called
- a) pipelining.
 - b) multiprocessing.
 - c) nanotechnology.
 - d) parallel processing.
 - e) None of the above
- (1)
- 1.25 Which one of the following is not a safety and best practice to follow when opening and working inside a computer?
- a) Never drop screws on a motherboard when the computer is on.
 - b) Before opening the system case to install a hot-swappable component, always switch off the computer and unplug the cable.
 - c) Never force components.
 - d) Always wear a grounding strap to prevent damage from ESD.
 - e) None of these options
- (1)
- 1.26 Which two computer components should never be opened, except by trained technicians? (Choose two)
- a) computer case
 - b) monitor
 - c) power supply
 - d) mouse
 - e) None of the above
- (2)
- 1.27 A small piece of a hard disk track is called a
- a) cluster.
 - b) cylinder.
 - c) partition.
 - d) cache.
 - e) None of the above
- (1)
- 1.28 SSDs
- a) use flash memory technology to store data.
 - b) are subject to mechanical failures like magnetic hard drives.
 - c) are slower than magnetic hard drives.
 - d) are vulnerable to shock and vibration.
 - e) require a different file system type on each partition.
- (1)
- 1.29 Which two statements are true about drive partitions? (Choose two)
- a) Partitions are necessary in multi-boot installations.
 - b) A hard drive can be divided into an operation system partition and a data partition.
 - c) User data is never overwritten when a drive is partitioned.
 - d) A disk partition is a defined section of an operating system.
 - e) Each partition requires a different file system type.
- (2)

1.30 Remote storage services accessed via the Internet are often referred to as

- a) SAN.
 - b) archival storage.
 - c) NAS.
 - d) cloud storage.
 - e) None of the above
- (1)

1.31 RAID disk mirroring

- a) spreads files over two or more hard drives.
 - b) is a process that transfers data to memory whenever disk data is read, to help speed up access time.
 - c) duplicates data across two hard drives at the same time.
 - d) stores data on plastic tape coated with a magnetizable substance.
 - e) None of the above
- (1)

1.32 The printer connected to your computer was working last week but is no longer working. All other hardware seems to be working. What two things should you do first to try to solve the problem? (Choose two)

- a) Re-install the operating system.
 - b) Check that all cables are properly connected and that the device has power.
 - c) Replace the printer.
 - d) Disconnect all cables connected to the computer except those connected to the printer.
 - e) Use the testing feature on the printer to test it.
- (2)

1.33 Which one of the following is not a pointing device?

- a) mouse
 - b) trackball
 - c) barcode reader
 - d) pen/stylus
 - e) touch pad
- (1)

1.34 Automating the data entry process is referred to as

- a) source data automation.
 - b) input capture
 - c) touch input
 - d) data recognition
 - e) None of the above
- (1)

1.35 Images need to be scanned on a scanner at a _____ resolution if the image will be enlarged significantly.

- a) lower
 - b) higher
- (1)

- 1.36 _____ input data from special forms to score or tally exams, questionnaires, ballots, and so forth.
- a) Optical character recognition (OCR) devices
 - b) Optical mark readers (OMRs)
 - c) Magnetic ink character recognition (MICR) readers
 - d) Biometric readers
 - e) None of the above
- (1)
- 1.37 One factor affecting digital camera quality is the number of pixels, measured in _____, used to store the data for each image.
- a) kilopixels
 - b) megapixels
 - c) gigapixels
 - d) terapixels
 - e) None of the above
- (1)
- 1.38 The number of bits used to store colour information about each pixel is called _____.
- a) bit depth
 - b) colour concentration
 - c) pixel depth
 - d) byte resolution
 - e) None of the above
- (1)
- 1.39 Which one of the following is not a function of an operating system?
- a) It controls the local hardware resources.
 - b) It works with one user at a time.
 - c) It enables the user to multitask.
 - d) It performs a specific function that is useful to users (e.g. word processing).
 - e) It keeps track of which resources are used by which application.
- (1)
- 1.40 What special software is needed by certain computer components to allow them to work in a computer?
- a) bus
 - b) driver
 - c) cache
 - d) window
 - e) None of the above
- (1)
- 1.41 What are two ways that a user can interact with an operating system? (Choose two)
- a) CLI
 - b) NIC
 - c) buffer
 - d) GUI
 - e) kernel
- (2)

- 1.42 To restore a file or folder deleted from your computer's hard drive, open the _____ and restore the file.
- a) Recycle Bin
 - b) Windows Explorer
 - c) System Restore program
 - d) Recycle Menu
 - e) Disaster Recovery program (1)
- 1.43 What type of programs reduce the size of files so they take up less storage space on a storage medium or can be transmitted faster over the Internet?
- a) diagnostic programs
 - b) cleanup utilities
 - c) compression programs
 - d) backup programs
 - e) firewalls (1)
- 1.44 A software program purchased by an accountant to help him/her complete tax returns for clients is called (Choose two)
- a) hardware
 - b) application software
 - c) an operating system
 - d) commercial software
 - e) freeware (2)
- 1.45 _____ software is not copyrighted; instead, it is free and can be used, copied, modified and distributed to others without restriction.
- a) Commercial software
 - b) Public domain software
 - c) Freeware
 - d) Shareware
 - e) None of the above (1)
- 1.46 Which one of the following true about cloud software?
- a) It must be installed on the device being used before it is run.
 - b) It does not require an Internet connection.
 - c) It is usually downloaded via an app store.
 - d) It is delivered on-demand via the Web.
 - e) None of the above (1)
- 1.47 Font size is measured in
- a) points.
 - b) dpi.
 - c) cm.
 - d) cells.
 - e) None of the above (1)

1.48 Which one of the following is an example of database software?

- a) Microsoft Word
 - b) Microsoft Excel
 - c) Microsoft Access
 - d) Microsoft PowerPoint
 - e) None of the above
- (1)

1.49 Which type of software is used to create or modify images (also called digital imaging software)?

- a) database software
 - b) spreadsheet software
 - c) word processing software
 - d) desktop publishing software
 - e) None of the above
- (1)

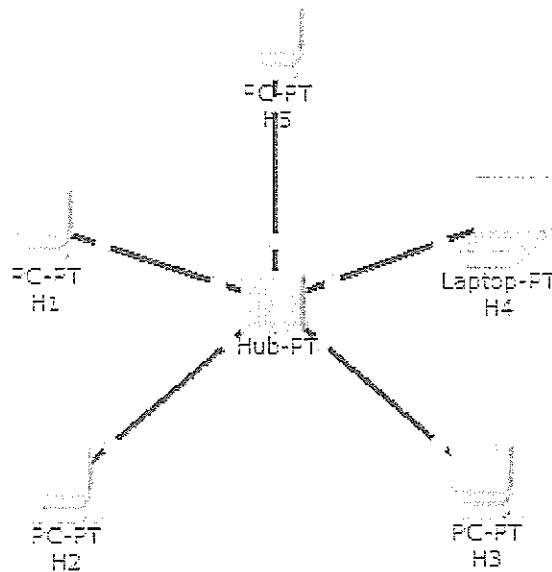
1.50 Vuyo is a DJ and in his spare time he creates podcasts (i.e. recorded audio files of interviews and discussions with guests) that he uploads onto the Web. To allow him to remove parts of these audio files and include special effects before he uploads them, he needs a(n) _____ program.

- a) video capture
 - b) image editing
 - c) media player
 - d) audio editing
 - e) None of the above
- (1)

1.51 John creates and prints a monthly newsletter for his local church. Which type of software does he use to create these newsletters?

- a) reference software
 - b) desktop publishing software
 - c) Web publishing software
 - d) CAD software
 - e) entertainment software
- (1)

1.52 In the following figure, five PCs are connected through a hub. If host H1 wants to reply to a message sent from host H3, which statement is correct?



- H1 sends a message to H3, but the hub forwards it to all devices.
- H1 sends a message to H3, and the hub forwards it directly to H3.
- H1 sends a broadcast message to H3, and the hub forwards it to all devices.
- H1 sends a message to H3, but the message will not be delivered to H3 because a hub is used.
- None of the above

(1)

1.53 What is the purpose of having a router in a network?

- It provides a connection point for end-user devices.
- It increases efficiency by sending every message to all hosts on the network.
- It directs traffic based on the message's destination IP address.
- It allows hosts to communicate over telephone lines.
- It controls which hosts have access to the network.

(1)

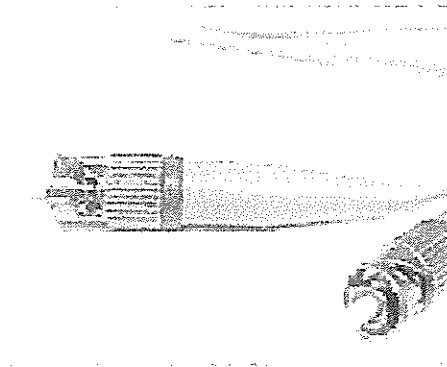
1.54 Determine which network component is necessary to accomplish the following task (Choose one answer):

Jacob shares a file on his hard disk with another user on the same local network.

- shared peripheral
- modem
- router
- hub/switch
- None of the above

(1)

1.55 Refer to the graphic. What type of cabling is shown?



- a) fiber optic
 - b) UTP
 - c) coax
 - d) Cat 3 twisted pair
- (1)

1.56 Which connector is used to terminate Ethernet unshielded twisted pair (UTP) cabling?

- a) ST
 - b) BNC
 - c) RJ-11
 - d) RJ-45
- (1)

1.57 Which type of server would use SMTP?

- a) DNS
 - b) DHCP
 - c) E-mail
 - d) FTP
 - e) Web
- (1)

1.58 For the IP address 192.168.1.5 and subnet mask 255.255.255.0, which is the host portion?

- a) 192
 - b) 192.168.
 - c) 192.168.1
 - d) 5
- (1)

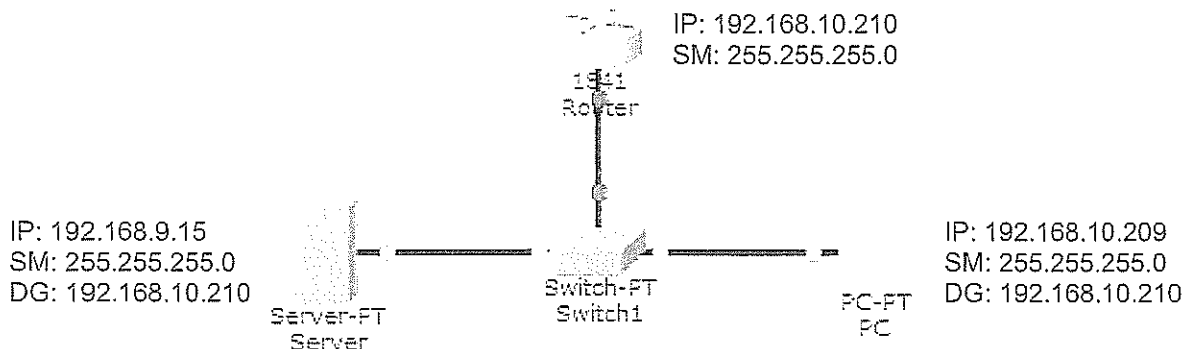
1.59 If a PC is removed from one network and added to another remote network that has a different subnet mask, what setting on the PC would need to be changed on the PC by the network administrator?

- a) IP address and default gateway
 - b) IP address only
 - c) NIC
 - d) IP address, subnet mask and default gateway
 - e) IP address, subnet mask, default gateway and NIC
- (1)

1.60 What does the ping command test?

- a) NIC functionality
- b) the ISP bandwidth
- c) the network path to a destination
- d) the destination application functionality (1)

1.61 Refer to the figure below. A user at the PC is unable to connect to the server. She has found that she can't even ping the server. All cables have been tested and are working and all devices have IP addresses. What is causing this problem?



- a) The router interface does not have a default gateway.
- b) The switch does not have an IP address and default gateway.
- c) The PC and server are on different logical networks.
- d) The PC and server IP addresses should be the same.
- e) The PC does not know the IP address of the switch. (1)

1.62 Which default subnet mask allows for the most hosts on a network (i.e. provides the most host bits)?

- a) 255.0.0.0
- b) 255.255.0.0
- c) 255.255.255.0
- d) 255.255.255.252 (1)

1.63 Which definition describes the term "Internet"?

- a) group of PCs connected together on a LAN
- b) group of PCs connected together by an ISP
- c) network of networks that connects countries around the world
- d) worldwide collection of networks controlled by a single organization
- e) None of the above (1)

- 1.64 Which two elements are required to successfully connect to the Internet?
(Choose two)
- a) an IP address
 - b) file sharing enabled
 - c) a hub
 - d) server services enabled
 - e) access to an Internet service provider
 - f) hotspot
- (2)
- 1.65 A company that manages and distributes Web-based software services (e.g. SaaS and Web services) over the Internet is a(n)
- a) Internet service provider (ISP).
 - b) Internet content provider.
 - c) Application service provider (ASP).
 - d) Infrastructure company.
 - e) None of the above
- (1)
- 1.66 A collaborative Web page designed to be edited and republished by a variety of people is called a(n)
- a) wiki.
 - b) e-portfolio.
 - c) blog.
 - d) podcast.
 - e) None of the above
- (1)
- 1.67 Which computer component is designed to only remove voltage spikes from a power line?
- a) power supply
 - b) UPS
 - c) surge suppressor
 - d) modem
- (1)
- 1.68 Which term describes the use of hardware or software to create a barrier between a computer network and the Internet to protect against unauthorised access?
- a) encryption
 - b) war driving
 - c) botnet
 - d) firewall
 - e) None of the above
- (1)

1.69 Siya has just set up a small wireless network for his home business. Which one of the following is not a best practice that he should follow to protect against unauthorised access to the network?

- a) Change the default password of the router.
 - b) Use MAC address filtering to specify the devices that are allowed to access the network.
 - c) Enable SSID broadcast on the router.
 - d) Never change the default password on the router.
 - e) Secure network routers.
 - f) None of the above
- (1)

1.70 A flood of packets with invalid source-IP addresses requests Web pages from your company's Web server. The server busily tries to respond but it is overloaded with requests, resulting in valid requests being ignored. What type of attack has occurred?

- a) Trojan horse
 - b) ping of death
 - c) DoS
 - d) spamming
 - e) brute force
- (1)

1.71 Identify three techniques that are used to obtain personal information to commit identity theft. (Choose three)

- a) fishing
 - b) spamming
 - c) spear phishing
 - d) phishing
 - e) pharming
 - f) DoS
- (3)

QUESTION 2

16 Marks

This section must be answered on the Question 2 answer sheet at the end of this question paper. Therefore, remove the answer sheet, write your name, student number and answers on it and place it inside your answer book.

2.1. For each of the items listed on the left in the table, place one or more crosses in the columns to indicate the type/characteristics of the item. The columns are as follows:

- **Internal** – is it an internal device (i.e. found inside the system unit)?
- **External** - is it an external device (i.e. found outside the system unit)?
- **Input** – is it primarily (mainly) an input device?
- **Processing** – is it primarily (mainly) a processing device?
- **Output** – is it primarily (mainly) an output device?
- **Storage** – is it primarily (mainly) a storage device?

Item	Internal	External	Input	Processing	Output	Storage
CPU						
Stylus						
Laser printer						

Use answer sheet

(3)

2.2. For each of the items listed on the left in the table, place one or more crosses in the columns to indicate the type/characteristics of the item. The columns are as follows:

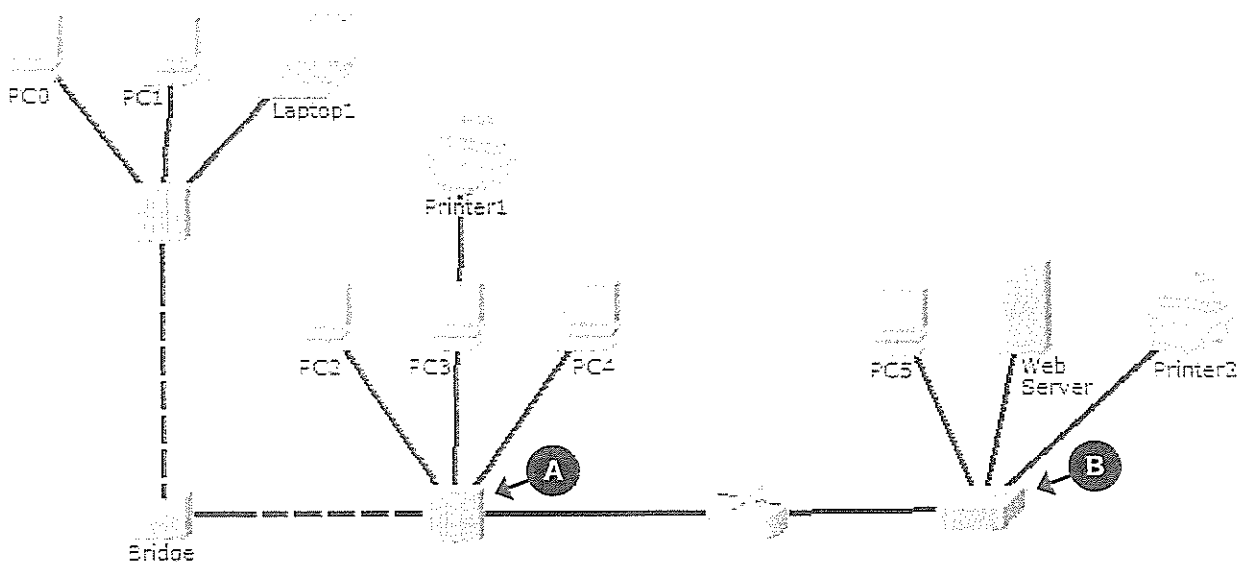
- **Storage media** – is it classified as storage media?
- **Storage device** - is it classified as a storage device?
- **Volatile** – is it volatile storage?
- **Magnetic storage** – is it classified as magnetic storage?
- **Optical storage** – is it classified as optical storage?
- **Electron-based storage** – does it store data using electrons?
- **Network storage** – is it a network storage system?
- **Cloud storage** – is it cloud storage?

Item	Storage media	Storage device	Volatile	Magnetic storage	Optical storage	Electron-based storage	Network storage	Cloud storage
SSD								
CD-RW drive								
SAN								

Use answer sheet

(3)

2.3. Examine the figure below and then answer the questions that follow.



- 2.3.1. You have learnt about three types of network topologies. Which type of network topology is shown in the figure? (1)
- 2.3.2. Based on this figure, how many separate, independent local networks are shown in this LAN (excluding the Internet)? (1)
- 2.3.3. What is the purpose of the **Web Server** in the figure? Be specific. (1)
- 2.3.4. **PC2** sends a message to the **Web Server**. List the host(s) that will receive this message? (1)
- 2.3.5. Assume that the following IP configuration is given:

IP Configuration for a PC0:

IP address: 192.168.3.2

Subnet mask: 255.255.255.0

IP Configuration for a PC2:

IP address: 192.168.3.9

Subnet mask: 255.255.255.0

IP Configuration for the Web Server:

IP address: 192.168.100.30

Subnet mask: 255.255.255.0

Write down a suitable IP address for **PC5**. (1)

- 2.3.6. You have learnt about the four main categories of network components. For each of the following items in the figure, identify the item (be specific), briefly describe its purpose, and name the network component category that the item belongs to. Remember to write your answers in the table provided on the answer sheet.

- a) The device labeled **A**
- b) The device labeled **B**
- c) The device labeled **PC1**
- d) The line between the **Web server** and the device labeled **B**.
- e) The device labeled **Printer1** (5)

Item	What is it?	What is its purpose?	What network category does it belong to?
a)			
b)			
c)			
d)			
e)			

Use answer sheet

QUESTION 3**4 Marks**

This section must be answered on the Question 3 answer sheet at the end of this question paper.

Read the following extract from a news article and answer the question that follows:

How to choose the right software for your company

2018-04-17 - IT News Africa Staff Writer

Technology has made a significant difference to the way that we build and run our businesses in the digital age. The sheer number of tools, resources, and software available can be incredibly daunting, and very often we're not even sure what's available.

Sometimes, what seems to be the best resource for businesses is not going to help

you due to your business sector, so it's important to be aware of what's available and what it can be used for. By making the right decisions now, you could be streamlining your company and making more of the time you spend making money. However, choosing unsuitable software that is not fit for the task is one of the fastest ways to slow your business down and reduce your profit-making abilities.

System software and application software are two types of software that businesses need to choose carefully. Explain the difference between **system software** and **application software** and give an example of each one used by businesses. (4)

TOTAL MARKS: 100

Surname and initials: _____ Student no.: _____

QUESTION 2 ANSWER SHEET

Instructions:

- Write your surname, initials and student number in the spaces above.
- Write your answers neatly and clearly.
- At the end of the examination, place this sheet firmly into your answer book.

2.1.

Item	Internal	External	Input	Processing	Output	Storage
CPU						
Stylus						
Laser printer						

(3)

2.2.

Item	Storage media	Storage device	Volatile	Magnetic storage	Optical storage	Electron-based storage	Network storage	Cloud storage
SSD								
CD-RW drive								
SAN								

(3)

2.3.

2.3.1
2.3.2
2.3.3
2.3.4
2.3.5

