

451/1 PAPER 1

COMPUTER STUDIES

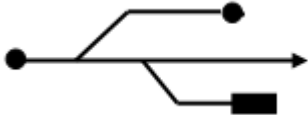
MARKING SCHEME

SECTION A

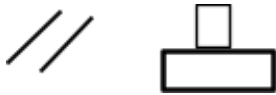
1. (i) Desktop computer
(ii) Laptop computer
(iii) Palmtop computer
(iv) iPad computer (3 mks)
2. (i) Has icons representing commands
(ii) Provide help
(iii) Meet all user's requirements
(iv) Free from bugs
(v) Does not keep user for long without explanation
(vi) Has common menu like file, view etc (2mks)
3. (a) – Since impact printers produce characters through physical contact between the paper and the printing mechanism, it is possible to place a sheet of paper or inked ribbon is placed between two sheets of paper during printing.
- The pressure applied by the print head element causes the characters to be printed on all papers, the top paper being the original copy while the other papers carbon copies. (2 mks)
- (b) (i) Print quality is good and neat.
(ii) Printing speed is high as it prints one page at a time.
(iii) Most models are relatively light weight and compact.
(iv) Cost per page of toner cartridges is lower than other printers. (2 mks)
4. (i) DRAM memory chip offer more capacity and are cheap but lower than SRAM
(ii) SRAM cost more than DRAM but has higher level of performance. (2mks)
5. (a) (i) Master files – Main file containing permanent records.
(ii) Transaction files – Contain individual data about transactions.
(iii) Reference file – Used for look – up purpose.
(iv) Backup file – Hold duplicate copies for security.
(v) Sort files – Created from existing files by arranging data. (2mks)
- (b) – Sequential
- Random
- Serial
- Indexed – sequential
6. - To increase records of books and other library materials much faster.
- Keep updated records of books and materials in the library
- Search titles of books for someone to borrow.
- Carry out research incases where there is connectivity. (2 mks)
7. (i) Displays all files in drive D whose names begin with P and have extension EXE. (1mk)
(ii) Format drive A
8. - Be comfortable: Adjust your chair and screen to find the most comfortable position for your work.
- Using your keyboard: Adjust your keyboard for the best typing position.
- Reading the computer screen: Adjust the brightness and contrast controls on the screen to suit the lighting conditions in the room.
- Posture and breaks: Don't sit in the same position for long periods. (2 mks)
9. (a) – Ruler guides ½ mk
- Column guides ½ mk
- Margin guides
(b) - Ruler guides: Lines that are used to align text and graphics in the correct position on printable area.
- Column guides: Helps to divide a given page into a number of columns e.g. as used in a newspaper.
- Margin guides: They define the printable area such that any text or graphics outside the margin guides will not be printed.

10. (a) – It is a type of input where a microphone connected to a computer system is used to enter data in form of spoken words into the computer.
- (b) Advantages
- Voice input is fast.
 - Its suitable for people with special needs.
 - Can used in emergency.
- Disadvantages
- Voice input is complex to develop.
 - Voice input does not take care speech related problems.
 - Cannot differentiate words that have same sounds.
 - Response rate of speech input devices are relatively slow (2 mks)
11. (a) Pressing and releasing left mouse button once. (1 mk)
- (b) Pressing and releasing left mouse button twice in a quick succession. (1 mk)
12. (a) Measure changes in that occur in quantities like speed temperature. (1mk)
- (b) - Thermoter
- Speedometer
 - Weighing machin
 - Hydrometer (1mk)
13. (a) Where a particular task holds a resource and refuses to release it for the other task to use. (1mk)
- (b) A program file contains instructions of a given program while a data file contain data or information to be the program.
14. – The user may intend to install more than one operating system on the same disk.
- For the purpose of backup on the same disk but different partitions. (2 mks)

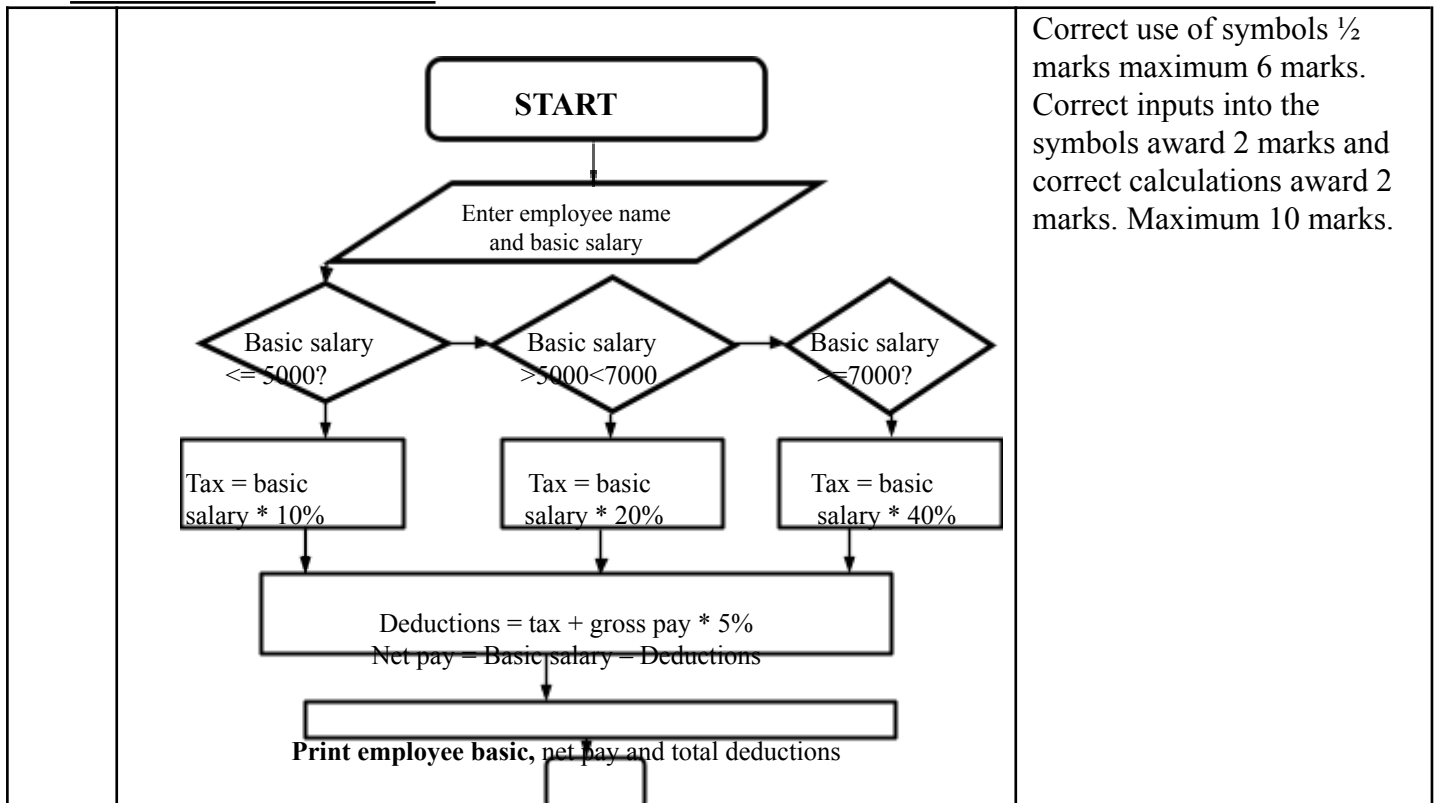
15. (i)



(ii)



15. SECTION B – 60 MARKS



	STOP	
--	-------------	--

```

16. (a) Start
    Print Employee name, basic pay
    Input Employee name, basic pay
    IF basic pay <=5000 THEN
        Tax = 10% * Basic pay
    ELSE
        IF (Basic pay <=5000 THEN
            Tax = 10% * basic pay
        ELSE
            IF (basic pay > 5000) and (basic pay < 7000) THEN
                Tax = 20% * basic pay
            ELSE
                IF basic pay >= 7000
                    Tax 40% * basic pay
            END IF
        END IF
    ENDIF

    Gross pay = basic pay
    Net pay = gross pay – (5% * gross pay)
    Total deductions = Tax + (5% * gross pay)
    Total deductions = Tax + (5% * gross pay)

    Print Employee gross pay, net pay, total deductions, Employee name
  
```

17. (a) (i) $48_{10} - 14_{10}$

	48	Rem		14	Rem
2	24	0	2	7	0
2	12	0	2	3	1
2	6	0	2	1	1
2	3	1	2	0	1
2	1	1			
2	0	1			

$$\begin{aligned}
 48_{10} &\Rightarrow 110000_2 \\
 &\Rightarrow 00110000 \text{ 1mk} \\
 14_{10} &\Rightarrow 11102 \text{ 1mk} \\
 &\Rightarrow 0000111102 \\
 1_s^c &\Rightarrow 11110001_2 \\
 &\quad \quad \quad +1 \\
 2_s^c &\quad \quad \quad \underline{11110010_2 \text{ 1mk}} \\
 &\quad \quad \quad 00110000 \\
 &\quad \quad \quad +11110010 \\
 &\quad \quad \quad \underline{100100010 \text{ 1mk}}
 \end{aligned}$$

Igno = 00100010₂

(ii) $0.375 \times 2 = 0.750$ 0
 $0.750 \times 2 = 1.500$ 1
 $0.500 \times 2 = 1.000$ 1
 $0.37510 \Rightarrow 0.011_2$ 1mk

(iii) 1011000011
 111
 1011001010, 1mk

(iv)

<u>31</u>		Rem
2	15	1
2	7	1
2	3	1
2	1	1
2	0	1

<u>17</u>		Rem
2	8	1
2	4	0
2	2	0
2	1	0
2	0	1

$31_{10} \Rightarrow 11111_2$
 $1^c_s = 01110_2$ 1mk

11111
01110
 101101

$17_{10} \Rightarrow 10001_2$ 1mk

01101
 1
 01110₂ 1mk

Igno

- (b) (i) Firewall – It can be a device or a software system that filters the data and information interchange between different networks by enforcing the host networks access control policy.
 (ii) Log file – These are special system files that keep a record of events on the use of the computers and resources of information system.
 (iii) Encryption – Data is mixed up into a form that only the sender and the receiver can understand by reconstructing the original.

(c) Student ID

Reason: Primary key should be unique identifier hence there no any one time you will find more than one student having like the same identification number.

18. (a) Functions are predefined formula that can be used quickly instead of having to create a new one each time a calculation has to be carried out. (1 mk) – Formulas are user defined Mathematical expressions that create relationship between cells and return a value in chosen cells. (1mk)

(b) It contains the number of occurrences of the word “orange” in the range A5:DB (2 mks)

(c)

Formula in C: 10	FORMULA IN F15
= A5 * B5	= D10 * E10
= A S 5	= D S 5
= 4 * B S 6	= 4 * E S 6

(d) (i) This is where database are created for different departments in an organizations in different computers that are networked. (2 mks)

(ii) - Searching of items is fast

- No interference of other departments data

(1 mk)

(e) – Used to enter data into tables

(1mk)

- Display data from tables and queries

(1mk)

- (f) - MS Excel
 - Super Calc
 - Lotus 1-2-3
 - Visicalc

19. (a) - Data and information should be secured against loss or exposure.
- Data should not be transferred to other countries without owner's permission.
 - Data and information should be accurate and upto date.
 - Data and information to be collected for use should be kept for specified lawful purpose. (3 mks)
- (b) – Virus: Destructive programs that attaches itself to other files and installs itself without owner's permission.
- Unauthorized access: Gaining access to data or information without permission intentionally or accidentally.
 - Compiler errors: Caused by people making mistakes when using a program or developing a program.
 - Theft: Stealing of data and information or computer hardware for a gain. (3 mks)
- (c) – Check mails
- Compose message
 - Send mail
 - Saving message
 - Printing mails (3 mks)
- (d) – Fraud
- Spread of malicious software
 - Cultural erosion (3 mks)
20. (a) Classification of operating systems.
- Classification according to tasks handled concurrently single tasking, multitasking.
 - Classified according to number of users single user, multi user.
 - Classification according to interface command line, menu driven.
- (b) (i) Formatting is the process of preparing a new disk for use by imprinting empty tracks and sectors. Partitioning is the process of dividing a large physical disk into two or more partitions.
- (ii) File is a collection of related data or information stored in one location and given a unique name that enables the operating system to identify it during storage and retrieval process.
- Folder or a directory is a named storage area where the user can store related files to enable easy access.
- (iii) - System file contain information that is critical for the operation of the computer.
- Application files are also called program files because they hold programs or application files.
- (c) Functions of an operating system
- Job scheduling
 - Resource control and allocation
 - Input/output handling
 - Memory management
 - Error handling
 - Job sequencing
 - Interrupt handling
- (d) Factors to consider when acquiring an operating system.
- Hardware configuration or provision of the computer eg memory size, hard disk capacity, type of processor etc
 - Basic design of the computer e.g. is it an IBM or IBM – compatible.
 - Applications intended for the computer

- User friendliness or human computer interface.
- (e) Why the operating system should be installed before other softwares.
 - It gives initial life to the computer hardware.
 - It is the main program that controls the execution of user applications.
 - It enables the user to access the hardware and software resources.