Form 6 Computer Studies Prescription[1]

Topic 1: Personal Computer Systems and Management

1.1	Describe, operate and maintain the hardware components of a personal computer		*Students should be able to*
		1.1.1	Give a simple definition of each component, and
		1.1.2	Describe the interactions between the components
			❑ Central Processing Unit
			❑ Memory
			❑ Keyboard
			❑ Mouse
			❑ Disk Drive
			❑ Video Display
		1.1.3	Describe and maintain the environmental conditions required by the computer system
		1.1.4	Identify simple hardware faults
			❑ Power loss
			❑ Loose or disconnected pugs
		1.1.5	Discuss power supply problems in their country, the possible effects on personal computers, and steps that can be taken to overcome the problems
			❑ Power Surge
			❑ Spikes
			❑ Brown Out
			❑ UPS
		1.1.6	Describe the use of keys on a QWERTY keyboard (in particular identify major keyboard areas.)
			❑ ENTER (Return)
			❑ TAB
			❑ SPACE
			❑ BACKSPACE
			❑ Esc
			❑ Control Keys
			❑ Shift
			❑ Alt
			❑ Function Keys; F1, ...
			❑ Numeric keypad;
			❑ Alphanumeric keys, and
			❑ Document keys
1.2	Operate a personal computer printer		*Students should be able to*
		1.2.1	Describe the interaction between the printer and cpu
		1.2.2	Print data from an application software package
		1.2.3	Explain simple printer error messages
			❑ Printer Out of Paper
			❑ Printer Offline
		1.2.4	Replace printer consumables according to manufacturer's instruction
			❑ Paper
			❑ Ribbon, Toner
		1.2.5	Identify simple hardware problems
			❑ Power off
			❑ Loose or disconnected plugs

---

[1] This Prescription takes effect from February, 1997

1.3	Describe the purpose of an operating system		*Students should be able to*
		1.3.1	Describe the personal computer's operating system
		1.3.2	Describe and compare disk-based and chip-based operating systems
1.4	Describe how computer data is stored		*Students should be able to*
		1.4.1	Describe memory (RAM) and disk storage, their purpose and the flow of information between them
		1.4.2	Describe the technology employed with memory and disk storage, their advantages and disadvantages
		1.4.3	Explain storage concepts
			❑ Bit
			❑ Byte
		1.4.4	Describe the relation between bit and byte in terms of simple ASCII code and binary numbers.

Topic 1: Common Assessment Task 1

1.5	Perform operating system operations and system configurations		*Students should be able to*:-
		1.5.1	Turn the computer on and off:
			❑ *define/demonstrate cold start*
			❑ *define/demonstrate warm start*
			❑ *define/demonstrate shutdown process*
		1.5.2	Perform simple OS operations.
		1.5.3	Explain simple operating system error messages
			❑ *Printer not online*
			❑ *Printer out of paper*
			❑ *Disk not in drive, disk not ready*
			❑ *Moving a System File*
			❑ *Effects on applications*
		1.5.4	Alter simple basic configurations
			❑ *Date*
			❑ *Time*
		1.5.5	Format a floppy disk
		1.5.6	❑ *Create a system floppy disk and*
			❑ *boot the* computer from it.
		1.5.7	Change an active disk drive
		1.5.8	Copy files to and from a floppy disk
		1.5.9	Perform print screen operations
1.6	Describe personal computer software		*Students should be able to*
		1.6.1	Describe system and application software and their relationships
		1.6.2	Describe common applications and their purposes
			❑ *Word-processing*
			❑ *Spreadsheet*
			❑ *Database*
			❑ *Desktop Publishing*
			❑ *Graphics*
			❑ *Communications*
		1.6.3	Run a menu driven program and quit it
		1.6.4	Describe a computer program as a sequence of coded instructions which the computer interprets

		1.6.5	Name at least two common programming languages ❑ *BASIC, Visual Basic* ❑ *Java* ❑ *C, C++*
1.7	Manage and Protect Computer Files		*Students should be able to*
		1.7.1	❑ *Create,* ❑ *locate, and* ❑ *display the contents of directories (folders)*
		1.7.2	Use a simple text editor to ❑ *view and* ❑ *print system text documents*
		1.7.3	Locate and view the contents of a file using an appropriate software application
		1.7.4	Be able to perform the following file management tasks ❑ *Copy,* ❑ *rename, and* ❑ *move files to different directories (folders), and* ❑ *delete a file*
		1.7.5	❑ *Back-up files*
		1.7.6	Demonstrate they handle floppy disks appropriately so as to avoid damage
		1.7.7	Demonstrate they can protect a personal computer against viruses using anti-virus procedures
1.8	Locate computer files using file management procedures		*Students should be able to*
		1.8.1	Explain the use of meaningfully labelled directories (folders) and the advantages of grouping files within them
		1.8.2	Navigate along a directory tree (folder hierarchy)
		1.8.3	Locate files using available file name search utilities
1.9	Perform automated operations		*Students should be able to*
		1.9.1	Describe automated operations
		1.9.2	Develop and run three automated operations
1.10	Explore Ethical issues related to accessing data held in computer systems		*Students should be able to*:
		1.10.1	Identify and discuss ethical issues ❑ *Individual Privacy* ❑ *Corporate Confidentiality* ❑ *Piracy* ❑ *Copyright*
		1.10.2	Demonstrate their responsibility to other people's data at all times

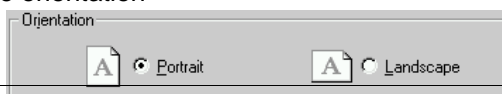| 2.1	Demonstrate an understanding of word-processing principles and terminology		*Students should be able to*:
		2.1.1	The principles of word-processing
			❑ Document creation
			❑ Retrieval/Open editing
			❑ Formatting
			❑ Sorting
			❑ Printing
		2.1.2	Current word-processing terms, and be able to correctly interpret them
			❑ Mail-merge
			❑ Spellcheck
			❑ Thesaurus
			❑ WYSIWYG
			❑ Macros
		2.1.3	Word-processing software applications, and be able to identify equipment options
			❑ Separate and integrated software applications
			❑ Business and personal use applications
			❑ Chip-based electronic typewriters
		2.1.4	Font terminology and definition
			❑ Font / *font-family*
			❑ Type / *typeface*
			❑ Size (point)
			❑ Style {normal, **bold**, *italic*, ***bolditalic***}
			❑ Proportional and fixed spacing
2.2	Access and exit from a word-processing program and make equipment adjustments		*Students should be able to*:
		2.2.1	Access and exit files
		2.2.2	Customise application to personal requirements
		2.2.3	Identify the menu options correctly
			❑ Retrieve
			❑ Edit
			❑ Format
			❑ Save
			❑ Print
2.3	Use word-processing principles and functions to enter, edit and format text		*Students should be able to*
		2.3.1	Demonstrate their ability to use the cursor (navigation keys) and insert/type-over functions
		2.3.2	Enter and edit text
			❑ Format text
			❑ Save to a file
			❑ Retrieve
		2.3.3	Select appropriate fonts
2.4	Use word-processing principles and functions to operate system features and produce files		*Students should be able to*
		2.4.1	Use the Help facility
		2.4.2	Produce files that incorporate text manipulation required by 2.3
		2.4.3	Format the document using line and paragraph options
		2.4.4	Block/Select, move, and copy text
		2.4.5	Use search, find and replace options
		2.4.6	Use tabulation options
		2.4.7	Use spell checking and dictionary options

2.5	Use word-processing data security procedures	2.5.1	*Students should be able to* Make back up files to a floppy disk and identify other system back up options ❑ Tape drive ❑ Network (ia)
		2.5.2 (ia)	Understand that files should be regularly saved while working Password protect a file
2.6	Use word-processing file manipulation techniques	2.6.1	*Students should be able to*: Carry out a range of file manipulation procedures ❑ Create a new document ❑ Save ❑ Edit ❑ Rename ❑ Copy ❑ Delete ❑ Import external word-processing file into current work file/document
		2.6.2	Operate file management systems within the application
		2.6.3	Establish file naming conventions
2.7	Preview and print word-processing files	2.7.1 2.7.2 2.7.3	*Students should be able to* Use the Print Screen facility Use a print preview if available ❑ Print selected text ❑ Print Selected pages ❑ And Print the document

Topic 2.8 – Spreadsheets Common Assessment Task 3

2.8	Demonstrate knowledge and uses of spreadsheets (s/s)	2.8.1 2.8.2	*Students should be able to*: Describe the advantages of a spreadsheet; Reference a cell ❑ Absolute Reference ❑ Relative Reference
		2.8.3	Identify Cell Types Labels, values, formulas
		2.8.4	Demonstrate the ability to move the cursor about the s/s
		2.8.5	Name s/s programs ❑ Microsoft Excel ❑ IBM Lotus 123 ❑ Corel Quattro Pro
2.9	Produce a simple spreadsheet file containing labels, values and mathematical formulae	2.9.1 2.9.2 2.9.3	*Students should be able to*: Load and quit a s/s program Use online help where available Use s/s functions to enter, edit and calculate values *Function: SUM, AVERAGE, COUNT, IF, MAX, MIN* *Operators: addition, subtraction, multiplication, division* *Formula: absolute and relative cell addresses;* *Format: cell width, alignment, text and number format (decimal & dollar)*

		Students should be able to
2.10 Manage spreadsheet files	2.10.1	Demonstrate ability to manage files
		❑ Create
		❑ Name
		❑ Save
		❑ Copy
		❑ Rename
		❑ Abandon Changes
		❑ Locate directories (folders)
		❑ Display directory (folder) contents
		❑ Locate files
	2.10.2	Demonstrate data-integrity practises
		❑ Compare data with source
		❑ Use check totals
	2.10.3	Print a page using appropriate orientation
		❑ Portrait
		❑ Landscape
2.11 Manipulate the data in the spreadsheet		Students should be able to
	2.11.1	Graph cell ranges within a s/s using default settings
	2.11.2	Apply "what if" queries to a spreadsheet
	2.11.3	Sort a range of data on a given column

Topic 2.12 – Databases Common Assessment Task 4

		Students should be able to:
2.12 Demonstrate knowledge of the uses and features of databases.	2.12.1	Describe the advantages of using databases;
	2.12.2	Describe a flat-file as a table of rows (records) and columns (fields)
	2.12.3	Identify field size and type
		❑ Text
		❑ Number
		❑ Formula
		❑ Date
	2.12.4	Identify examples of database programs
		❑ Microsoft Access
		❑ Lotus Approach
		❑ Corel Paradox
2.13 Manipulate data in a database		Students should be able to
	2.13.1	Use on-line help
	2.13.2	Sort a database alphabetically and numerically
	2.13.3	Apply a query using database logic functions
		❑ AND, OR,
		❑ Simple statement
		❑ Double compound statement
	2.13.4	Delete records and use other delete related commands
		❑ Undelete
		❑ Zap
		❑ Pack
2.14 Create a database using text numbers and arithmetic formulae		Students should be able to
	2.14.1	Load and quit a database program
	2.14.2	Apply database functions
		❑ Create and edit records
		❑ Browse the database
		❑ Find simple data occurrences

2.15 Manage database files	2.15.1	Students should be able to
		Demonstrate file management techniques
		❑ Create
		❑ Name
		❑ Save
		❑ Copy
		❑ Rename
		❑ Abandon changes
		❑ Locate directories (folders)
		❑ Display directory (folder) contents
		❑ Locate files
	2.15.2	Understand the need for data integrity practises
	2.15.3	Demonstrate data-integrity practices
		❑ Compare data with source
		❑ Input controls
		❑ Use check totals
	2.15.4	Print reports and query outputs

Topic 3 – Programming (Teacher Designed Assessment Tasks)

3.1 Apply fundamental principles of problem analysis.		Students should be able to:
	3.1.1	Apply problem analysis and decision making to problems
	3.1.2	Apply principles of logic flow in relation to problem solving
3.2 Apply principles of planning for a computer program		Students should be able to
	3.2.1	Demonstrate problem specification using structure diagrams and at least one other method such as
		❑ Flowcharts
		❑ Decision Trees
		❑ Decision Tables
	3.2.2	Research a problem in terms of its input/output requirements
	3.2.3	Evaluate the suitability of developing a computer program to solve a problem
	3.2.4	Identify features of a computer program that would solve a problem
		❑ Iteration
		❑ Decision-making
3.3 Code a given program from a given structure diagram		Programs contain sequence, selection and repetition
		Within this range, Students should be able to:
	3.3.1	Define and use variables, and name them so they describe the purpose for which they are created
	3.3.2	Write computer code using a suitable text editor
	3.3.3	Use documentation features where appropriate
	3.3.4	Display the full range of file management skills in handling the code files, and word-processing skills in writing the code
	3.3.5	Write program code which leads to the solution of the problem as specified.

Topic 4 – Desktop Publishing on a Personal Computer (Teacher Designed Assessment Tasks)

4.1	Demonstrate knowledge of the uses and features of desktop publishing on a personal computer		*Students should be able to*:
		4.1.1	Identify uses for DTP
		4.1.2	Demonstrate the principles of page layout appropriate to the document being produced
		4.1.3	Identify DTP applications
			❑ Adobe PageMaker
			❑ Xerox Ventura
			❑ Microsoft Publisher
			❑ Quark XPress
4.2	Produce DTP documents		*Students should be able to*
		4.2.1	Load and quit a DTP program
		4.2.2	Use the online help facility if available
		4.2.3	Load a pre-formatted word-processed document into the DTP document and edit and reformat appropriately
		4.2.4	Place a graphics file
			Size
			Move it to an appropriate place in the document
		4.2.5	❑ Use lines
			❑ Boxes
			❑ Headlines
			❑ Multi-columns
			❑ Text flow and
			Other available options to enhance the document
		4.2.6	Add and remove pages as required without loss of essential data
4.3	Manage DTP files		*Students should be able to*
		4.3.1	Demonstrate ability to manage files
			❑ Create
			❑ Name
			❑ Save
			❑ Copy
			❑ Rename
			❑ Abandon changes
			❑ Locate directories (folders)
			❑ Display directory (folder) contents
			❑ Locate Files
		4.3.2	Print documents.

Topic 7 – Using Personal Computers to Make Computer Presentations (Teacher Designed Assessment Tasks)

7.1	Exploit the features of computer applications		Students should be able to:
		7.1.1	Demonstrate awareness of the potential that different applications have for supporting presentations
		7.1.2	Identify features of particular applications which would be useful int he development of a presentation
		7.1.3	Select features from applications which are to be incorporated within a presentation.
7.2	Plan work that is to exploit features of computer applications		Students should be able to:
		7.2.1	Construct a paper plan of a presentation which identifies applications to be used in the development of material for presentation
		7.2.2	Identify and select particular features of applications which are to be incorporated within the presentation
7.3	Draw together computer generated materials		Students should be able to:
		7.3.1	Construct elements of the presentation in appropriate applications
		7.3.2	Organise the material within the files of the applications.
		7.3.3	Draw together material from the files of the applications to compile as a single complete presentation
7.4	Identify elements of sound practise		Students should be able to:
		7.4.1	List the decisions which were taken in the choices made in the construction process
		7.4.2	Describe elements of sound practise which were considered during the construction process
7.5	Present the topic		The information must
		7.5.1	Be communicated to the target audience, and
		7.5.2	Meet its design specifications