

General Purpose Software

Main Aims of the Unit:

This unit introduces a range of computer packages and applications to the student. The student will be able to select an appropriate package given a specific problem and will be able to utilise off-the-shelf packages to produce solutions. Furthermore, the student is introduced to the role of operating systems in relation to such packages.

Main Topics of Study:

A. Spreadsheet

1. Layout of a spreadsheet screen. Help features. Loading/saving models.
2. Cell formatting. Font/size. Alignment. Column width, Row height. Boxing grouped cells. Moving/copying/deleting cell(s).
3. Data types including NUMBER, TEXT, CURRENCY, SCIENTIFIC, DATE, TIME
4. Data formatting - decimal places. Alignment. Date/time options.
5. Formulae. Cell addresses. Absolute and Relative addressing. Replicating a formula to a block of cells.
6. Functions:
 - a. Number: SUM, COUNT, AVERAGE, MAX, MIN, INT, ROUND, RANDOM, SQRT, ODD, SIN, COS, TAN, POWER.
 - b. Text: CHAR, VALUE, TRIM, RIGHT, LEFT, UPPER, LOWER.
 - c. Decision: IF, AND, OR, NOTNesting functions within functions.
7. Lookup tables and their use.
8. Design and construct spreadsheet models for a given problem. Layout design.
9. Print data, Print formulae adjusting column widths as necessary. Print with/without grid lines. Print with/without row/column labels. Fitting to a page.
10. Charts. Pie chart, histogram, bar chart, line graph. Customising output.
11. "What-if" models for the determinations of best results. Practical use in business.
12. Exporting/Importing data to/from other packages.

B. Word Processing

1. Layout of a word processing screen. Help. Loading/Saving documents. Multiple documents.
2. Document formatting. Margins. Alignment. Indentation. Bullet points. Page breaks.
3. Font/font size. Varying fonts/size to add effect to a document. Bold/Italics/Underline.
4. The concept of hidden embedded control characters to format. e.g. underlining.
5. Block editing. Copy/Cut blocks of text. Tabs. Changing case.
6. Search and replace in lengthy documents. Use of previous documents to create an updated version such as a newsletter, catalogue.
7. Spell check and the options IT offers. Grammar checking. Limitations of both. AutoCorrect.
8. Creating a table.
9. Mail merge. Realistic business examples of its use.
10. Quick entry of commonly use/local words/phrases using a few keys. Macros.
11. Final checks on a document. Print preview.
12. Printing. Sections or entire document. Choosing quality of print. Multiple copies.
13. Columns - newspaper style. Choosing column options.
14. Inclusion of clip art. Artistic lettering. Exporting/Importing data to/from other packages

C. Database

1. Concept of a database as a single system with multiple users and uses.
2. Relational databases and their advantages - single entry, consistency, integrity, redundancy, Independence of data and programs.
3. Concept of normalisation of data.
4. Creation of a database. Defining the data structure. Tables/columns.
5. Key fields. Primary key. Secondary key. Foreign key.
6. Data modelling. E-R diagrams.
7. Entering data. Editing data. Searches/enquiries. SQL. Basic SQL statements - SELECT...FROM...WHERE, CREATE TABLE..., INSERT INTO...
8. Report generation. Customisation of reports. Ordering. Column totalling.
9. Printing reports.

D. Graphics and Presentation Packages

1. Means of producing graphics - limited drawing in word processing, charts in spreadsheets to drawing packages and commercial CAD packages.
2. Typical uses of packages by industrial/commercial users.
3. Layout of a graphics package screen. Help features.
4. Main features. Line drawing. Line selection. Boxes. Shapes. Text. Libraries of objects.
5. Manipulating the drawing features. Moving, extending, copying, rotating, hatching.
6. 3-D effects. A drawing as a series of levels.
7. Dimensioning.
8. Printing. Saving/Loading.
9. Presentation package (eg PowerPoint) as a combination of text/graphics.
10. Features of a presentation package. Creating slides and a slide show. Customising to house style.

E. Operating Systems

1. Purposes of an operating system. GUI operating systems. Comparison between GUI and command control.
2. General features of operating systems - folders, files. Types of files for program, data, text, email, pictures etc.

3. File manipulation - copying, moving, deleting, printing.
4. Batch files.
5. Customising the desktop.
6. Installing and customising software packages.

Learning Outcomes for the Unit:

At the end of this Unit, students will be able to:

1. Use a range of applications packages including spreadsheets, databases, and graphics software
2. Describe an operating system and its function
3. Apply packages to a range of real-life business problems

The numbers below show which of the above unit learning outcomes are related to particular cognitive and key skills:

Knowledge & Understanding	1, 2
Analysis	3
Synthesis/Creativity	3
Evaluation	-
Interactive & group Skills	-
Self-appraisal/Reflection on Practice - Planning and Management of Learning	3
Problem Solving	3
Communication & Presentation	1, 3
Other skills (please specify)	-

Learning and teaching methods/strategies used to enable the achievement of learning outcomes:

Learning takes place on a number of levels through lectures, class discussion including problem review and analysis. Formal lectures provide a foundation of information on which the student builds through directed learning and self managed learning outside of the class. The students are actively encouraged to form study groups to discuss course material which fosters a greater depth learning experience.

Assessment methods weightings which enable students to demonstrate the learning outcomes of the Unit:

3 hour examination: 100%

Candidates will be required to answer 4 questions from the 5 given.

Indicative Reading for this Unit:

Main text: Refer to the ICM website for learning material

Alternative texts: In addition, Computer manuals for specific computer packages can be used.

Guideline for Teaching and Learning Time (10 hours per credit)

Lectures / Seminars / Tutorials / Workshops: 50 hours

Tutorial support includes feedback on assignments and may vary by college according to local needs and wishes.

Directed learning: 50 hours

Practical work/ Advance reading and preparation / Class preparation / Background reading

Self managed learning: 100 hours

Working through practical exercises on the computer and completing assignments as required will take up the bulk of the learning time. In addition students are expected to engage with the tutor and other students and to undertake further reading using the web and/or libraries.

Guidelines

- Each software package should be taught at a level higher than a casual user who could pick up basic concepts simply by using it. Any person who has ever used a spreadsheet computer will know how to enter data, use simple formulae, set decimal places and total a column. For this module, candidates will need to know how to use more advanced features such as absolute addresses and their use, a wider range of formats (dates etc), look-up tables and other standard functions.
- Students should be confronted with REALISTIC business uses of the software and not just simple exercise (e.g. payroll using a spreadsheet is unrealistic except for a very small business).
- Students should also meet realistic/usable layouts that would be used in business applications. e.g. A spreadsheet layout for an annual breakdown of expenses by different departments against different types of cost would have one layout. An ongoing budget where items are listed in date order with an accumulating balance showing after each would be totally different.
- Tutors will probably obtain the best results if after students are taught the rudiments through simple exercise, they are then given business case studies partially completed and asked to finish them.

GENERAL PURPOSE SOFTWARE

Instructions to candidates:

- a) Time allowed: Three hours (plus an extra ten minutes' reading time at the start – do not write anything during this time)
- b) Answer any FOUR questions
- c) All questions carry equal marks. Marks for sections of questions are shown in []
- d) Mark allocations should determine the length of your answers and the time you spend on each part. Generally, ONE valid point scores ONE mark
- e) Ensure that you pay particular attention to words underlined, in CAPITALS or in **bold**. FEW OR NO MARKS will be awarded to any question where these are ignored
- f) Where you are asked HOW to achieve a particular result using a named package, explain in general terms how it is achieved rather than listing particular keys to be pressed, which will vary from package to package e.g. "mark the sentence from start to end" rather than "press F4"
- g) You are advised to read an entire question before answering any part of it
- h) No computer equipment, books or notes may be used in this examination

1.
 - a) Explain what is meant by MAIL MERGE. Describe how it is set up and used. [6]
 - b) All word processing programs offer SEARCH AND REPLACE. Explain what this is, giving a clear specific example. [4]
 - c) Word processing programs offer grammar checking as well as spelling checking. Select and name a particular word processing program. Describe the options available with EACH of these two checking facilities. [6]
 - d) Suggest possible changes that a person could make to a lengthy document AFTER seeing a print preview. [4]
 - e) Finally, a document is to be printed. Describe the options presented to the user before the printing actually begins. [5]

2. Within a spreadsheet program:

- a) The cursor marks a particular cell. Describe the different TYPES of entry that are possible. Give examples. [5]
- b) Columns of figures in a spreadsheet are to be displayed as a line graph. Explain how to achieve this so that the graph is self-explanatory. [6]
- c) Explain how to implement the following: The value in cell B6 is to be stored in D6 but increased by 20% if A6 is greater than 10. However, if it is not, B6 should only be increased by 10%. This must work automatically if either of A6 and B6 values are changed. [5]
- d) Name and describe the action of ONE built-in spreadsheet function (not previously discussed in this question). Give a clear example of its use. [4]
- e) A spreadsheet model has the following headings in row 1 for members of a club.

	A	B	C	D
1	Family name	First name	Fees paid	Fees due

There are 50 members in the club and the first is recorded in row 3. Explain how to sort the worksheet into alphabetical order by family names. If more than one person has the same family name, first names should also be considered. [5]

3.
 - a) State the hardware needed to make full use of a graphics package. [4]
 - b) Name a particular graphics package and explain FULLY how to draw a circle so that it is the correct size and in the correct position. [5]
 - c) Describe OTHER facilities available within this package. Avoid trivial features. [10]
 - d) Discuss the advantages of using a graphics package over the traditional method used by draughtsmen to produce drawings by hand on a large drawing board. [6]
4.
 - a) Define FULLY the terms directory/folder and sub-directory in the context of an operating system. [4]
 - b) Explain the significance of extension names in filenames. Give THREE different examples. [5]
 - c)
 - i Explain how a new folder can be created on a hard disk.
 - ii Explain how only the files on a diskette with a particular extension name can be copied into it. Your answer can either state commands or describe how a mouse can be used in a Windows™ environment. [6]
 - d) Describe how to move a file from one folder to another. [5]
 - e) Explain how "cut and paste" might be used within an operating system and how it is achieved. [5]
5. Describe the features available in the Windows™ operating system for the following:
 - a) Creation of icons
 - b) Menus
 - c) Cut and paste
 - d) Desktop facilities
 - e) Time and date facilities [5 each]

GENERAL PURPOSE SOFTWARE

Instructions to candidates:

- a) Time allowed: Three hours (plus an extra ten minutes' reading time at the start – do not write anything during this time)
- b) Answer any FOUR questions
- c) All questions carry equal marks. Marks for sections of questions are shown in []
- d) Mark allocations should determine the length of your answers and the time you spend on each part. Generally, ONE valid point scores ONE mark
- e) Ensure that you pay particular attention to words underlined, in CAPITALS or in **bold**. FEW OR NO MARKS will be awarded to any question where these are ignored
- f) Where you are asked HOW to achieve a particular result using a named package, explain in general terms how it is achieved rather than listing particular keys to be pressed, which will vary from package to package e.g. "mark the sentence from start to end" rather than "press F4"
- g) You are advised to read an entire question before answering any part of it
- h) No computer equipment, books or notes may be used in this examination

1. In the context of word processing, explain the following terms and describe HOW each is achieved:
 - a) Automatic paragraph numbering and bullets [5]
 - b) Cut and paste [4]
 - c) Font [3]
 - d) Justification [4]
 - e) Preview document on screen [3]
 - f) Search and replace [4]
 - g) Word-wrap [2]

2.
 - a) Explain why an operating system is a necessary part of the computer. Your answer must not just list facilities provided. [3]
 - b) File management is one feature of an operating system. Describe FIVE different tasks a USER can perform through commands (or other ways) which relate to disk files. [10]
 - c) Write notes about EACH of the following components of the Windows™ operating system. Assume your answers are part of a training manual for beginners.
 - i Operation of the mouse and its various buttons
 - ii Folders/directories
 - iii Pull-down menus [4 each]

3. The table below is part of the screen of a spreadsheet model showing a salesman's record of sales to different companies over three years. All figures are rounded to the nearest integer. The file called SALES is stored on a diskette.

	A	B	C	D	E
1			SALES		
2		2007	2008	2009	
3	Frentel	3468	5412	4876	
4	Haibryal	432	2117	387	
5	Beechnose	80	270	282	
6	Arlhome		567	1236	
7	Barrize			1342	
8					
9	TOTALS				

State the name and version of the spreadsheet program you used in answering this question.

- Describe fully HOW to perform each of the following and
- ensure you make it clear WHERE THE CURSOR IS POSITIONED at the start of the process.
 - a) Read in the file from diskette. [2]
 - b) Improve the presentation by widening column A and aligning all the sales figures at the right-hand end of their cells. [4]
 - c) Total the figures in columns B to E placing the answer in row 9. This total must still be correct when additional lines are inserted or added to the end later. [4]
 - d) Column D represents sales figures for only the first 10 months of 2009. In column E place formulae to calculate the estimated sales for the whole year by increasing column D figures by 20%. [4]
 - e) Explain how to sort the rows so that the company names are in alphabetical order. [4]
 - f) The salesman makes sales worth 531 to "Pittin" in year 2009. Arrange for this entry to be inserted alphabetically into the sorted table. [4]
 - g) Display the estimated 2009 sales figures in column E as a bar chart. [3]

- 4.
 - a) List and explain the advantages of using a database package in preference to writing special programs to process commercial data. [8]
 - b) A technical author specialises in writing articles for magazines and books about developments in computing. He has written hundreds over the years, some of which were not accepted by a publisher. For those accepted, he has to

make formal claims for payment. He uses a database to hold outline details of all articles written and to identify articles which might be used which had previously been rejected. Obviously, in computing, articles which are old would probably not be publishable.

i He needs to know that he has been paid in full for articles published. List the fields that would be necessary for EACH article to achieve this. [8]

Give your answer in a table with the following headings.

Field name	Data type	Field size	Reason for being there
------------	-----------	------------	------------------------

ii Write a search command or describe how a search could be made to find articles that were NOT published articles. Any article over one year old should NOT be considered. [4]

c) The secretary of a club with around 40 members asks your advice on whether or not he should use a computer to control the administration of the club. State FIVE relevant points which you might put to him to help him make up his mind. [5]

5. Imagine you are a NEW secretary in the sales office of a large company. Each month, a newsletter is distributed to all staff in the sales department. All previous newsletters produced before you arrived have been saved on disk files.

ALL your answers to this question must specifically relate to THIS situation and you must explain in general terms – a list of function keys pressed will NOT earn marks.

a) Part of the magazine is printed in newspaper format with THREE narrow columns on each page. Explain how this is set up and how the text can be entered and later amended. [4]

b) One feature included each month is a numbered list of the best sales performances showing salesmen names, total sales (descending order) made and the position each held in the previous month.

Explain how you could copy the equivalent section from the previous newsletter and then change the order and values as appropriate. [4]

c) You have decided to include **headers** and **footers** in the newsletter. Define these terms precisely and explain how to implement ONE of them.

Explain why there might be a variable item in one of these. [4]

d) Also included is a graph showing total sales performance for all staff over each of the last 12 months. The data values are held in a table as a small part of a SPREADSHEET model which the sales manager holds. Explain how you would create the graph and include it in your newsletter. [4]

e) Suggest TWO features of the word processing program you would use when you consider the work is complete and BEFORE you print it out. In each case, explain WHY these features are useful. [4]

f) It has been decided that, in future, each staff member will be sent a personalised newsletter. Mail merge will be used. Explain how to set this up and send the first issue. [5]

GENERAL PURPOSE SOFTWARE

Instructions to candidates:

- a) Time allowed: Three hours (plus an extra ten minutes' reading time at the start – do not write anything during this time)
- b) Answer any FOUR questions
- c) All questions carry equal marks. Marks for sections of questions are shown in []
- d) Mark allocations should determine the length of your answers and the time you spend on each part. Generally, ONE valid point scores ONE mark
- e) Ensure that you pay particular attention to words underlined, in CAPITALS or in **bold**. FEW OR NO MARKS will be awarded to any question where these are ignored
- f) Where you are asked HOW to achieve a particular result using a named package, explain in general terms how it is achieved rather than listing particular keys to be pressed, which will vary from package to package e.g. “mark the sentence from start to end” rather than “press F4”
- g) You are advised to read an entire question before answering any part of it
- h) No computer equipment, books or notes may be used in this examination

1. Imagine you are a NEW administrator in the sales office of a large company. Each month, a newsletter is distributed to all staff in the sales department. All previous newsletters produced before you arrived have been saved on disk files. ALL your answers to this question must specifically relate to THIS situation and you must explain in general terms – a list of function keys pressed will NOT earn marks.
 - a) Part of the magazine is printed in newspaper format with THREE narrow columns on each page. Explain how this is set up and how the text can be entered and later amended. [4]
 - b) One feature included each month is a numbered list of the best sales performances showing salesmen names, total sales (descending order) made and the position each held in the previous month. Explain how you could copy the equivalent section from the previous newsletter and then change the order and values as appropriate. [4]
 - c) You have decided to include headers and footers in the newsletter. Define these terms precisely and explain how to implement ONE of them. Explain why there might be a variable item in one of these. [4]
 - d) Also included is a graph showing total sales performance for all staff over each of the last 12 months. The data values are held in a table as a small part of a SPREADSHEET model, which the sales manager holds. Explain how you would create the graph and include it in your newsletter. [4]
 - e) Suggest TWO features of the word processing program you would use when you consider the work is complete and BEFORE you print it out. In each case, explain WHY these features are useful. [4]
 - f) It has been decided that, in future, each staff member will be sent a personalised newsletter. Mail merge will be used. Explain how to set this up and send the first issue. [5]

2. People who register at a medical clinic have their details recorded on computer using a database package. The clinic provides a wide variety of health care facilities.
 - a) Define the three terms **field**, **file** and **record**. Give a SINGLE example for EACH, relating it to the clinic application. [6]
 - b) Explain how the structure of a record is first defined when the database is created. [4]
 - c) Text and numeric datatypes (and their variations e.g. character/alphabetic/string and integer/real) are the two most commonly used datatypes. State ONE OTHER datatype and give an example of how it could be used within THIS application. [3]
 - d) Explain, IN DETAIL, how a list could be printed of all registered people who have not visited the medical centre in the last year. You should identify what data would need to be supplied for this to be possible and what data would need to be on file. [4]
 - e) List THREE advantages of using a database to create a computer solution for administration of the medical centre compared with commissioning special programs. [3]
 - f) State TWO different examples of validation which a database program undertakes automatically. Describe ONE other typical example of validation where the user would have to specify the requirements. [5]

3. Write notes about FIVE of the following. State the operating system and version to which you relate your answer.
 - a) Clipboard
 - b) Icons and other ways of activating software
 - c) Customising the desktop display
 - d) File management
 - e) Printer definition files
 - f) Multi-tasking
 Full marks can be gained by making five different and relevant points for each. [5 each]

4.
 - a) List and explain the advantages of using a database package in preference to writing special programs to process commercial data. [8]
 - b) A technical author specialises in writing articles for magazines and books about developments in computing. He has written hundreds over the years, some of which were not accepted by a publisher. For those accepted, he has to make formal claims for payment. He uses a database to hold outline details of all articles written and to identify articles which might be used which had previously been rejected. Obviously, in computing, articles which are old would probably not be publishable.

- i He needs to know that he has been paid in full for articles published. List the fields that would be necessary for EACH article to achieve this. Give your answer in a table with the following headings. [8]

Field name	Data type	Field size	Reason for being there
------------	-----------	------------	------------------------

- ii Write a search command or describe how a search could be made to find articles that were NOT published articles. Any article over one year old should NOT be considered. [4]
- c) The secretary of a club with around 40 members asks your advice on whether or not he should use a computer to control the administration of the club. State FIVE relevant points which you might put to him to help him make up his mind. [5]

5. Within a spreadsheet program:

- a) The cursor marks a particular cell. Describe the different TYPES of entry that are possible. Give examples.[5]
- b) Columns of figures in a spreadsheet are to be displayed as a line graph. Explain how to achieve this so that the graph is self-explanatory. [6]
- c) Explain how to implement the following: The value in cell B6 is to be stored in D6 but increased by 20% if A6 is greater than 10. However, if it is not, B6 should only be increased by 10%. This must work automatically if either of A6 or B6 values are changed. [5]
- d) Name and describe the action of ONE built-in spreadsheet function (not previously discussed in this question). Give a clear example of its use. [4]
- e) A spreadsheet model has the following headings in row 1 for members of a club.

A	B	C	D
Family name	First name	Fees paid	Fees due

There are 50 members in the club and the first is recorded in row 3. Explain how to sort the worksheet into alphabetical order by family names. If more than one person has the same family name, first names should also be considered.[5]

GENERAL PURPOSE SOFTWARE

Instructions to candidates:

- a) Time allowed: Three hours (plus an extra ten minutes' reading time at the start – do not write anything during this time)
- b) Answer any FOUR questions
- c) All questions carry equal marks. Marks for sections of questions are shown in []
- d) Mark allocations should determine the length of your answers and the time you spend on each part. Generally, ONE valid point scores ONE mark
- e) Ensure that you pay particular attention to words underlined, in CAPITALS or in **bold**. FEW OR NO MARKS will be awarded to any question where these are ignored
- f) Where you are asked HOW to achieve a particular result using a named package, explain in general terms how it is achieved rather than listing particular keys to be pressed, which will vary from package to package e.g. "mark the sentence from start to end" rather than "press F4"
- g) You are advised to read an entire question before answering any part of it
- h) No computer equipment, books or notes may be used in this examination

1. Answer this question with regards to a word processing package.

State the name of the program you are describing.

- a) Define the terms **headers** and **footers** as used within a word processing package. Describe how both may be implemented. Explain why one of them might include a variable quantity. [5]
- b) Commonly used phrases such as one's name or company name can be added to a document simply by pressing one or two keys. Explain in detail HOW to instruct the word processing program to achieve this. [5]
- c) It is required to display the middle part of a document with a different font and point size from the rest of the text. Explain how to achieve this. [5]
- d) A previously created document is loaded from a file. It contains some underlined words and some emboldened words. Explain how the WORD PROCESSING PROGRAM is able to detect that such text needs to be displayed differently from the rest of the text. [5]
- e) Explain how to include a table created as a spreadsheet file into the middle of a word processing document. [5]

2. Suppose you work for a software company that advises small businesses on their hardware and software needs. To give each business an idea of what your company can offer, a presentation is being prepared that can be taken to the company and shown to relevant staff. You will deliver the presentation yourself using visual images, graphical effects and bullet points, displaying them on a large screen connected to your laptop computer.

Explain how the computer could be used to assist this presentation. Include in your answer the hardware and software needed. Explain what the software offers and how the presentation is put together. [25]

3. The diagram shows a spreadsheet screen for the stationery purchases in different departments of a company.

	A	B	C	D	E
1			STATIONERY		
2	DEPARTMENT	Paper	Filing	Discs etc.	TOTALS
3	Sales	1234.5	2467.89	1357.91	
4	Purchase	987.65	4321	2345.67	
5	Personnel	876	4567.89	2233.44	
6	Production	76.54	234.5	678.91	
7	TOTALS				

For this question, you are required to explain how each of the following tasks below can be achieved. State the name of the spreadsheet program to which you refer. Your answers may be either complete commands or an explanation of HOW the task is achieved.

- a) In C1, "STATIONERY PURCHASES" was typed in. Explain why only part of it is shown and how all of it can be displayed. [3]
- b) Improve the layout as follows:
 - i Headings in B2, C2 and D2 are to be moved to the right-hand end of each cell so that they appear directly over the figures below.
 - ii All the numbers shown should be right aligned with TWO decimal places. [5]
- c) Row and column totals are to be produced so that if any of the existing numbers are altered, the totals will automatically change. [4]
- d) Define REPLICATION and explain how it can be used in c). [4]
- e) After this model was created, another department called "Marketing" was created in the company. Explain how it could be included in the display and how its purchases would also be included in the totals. [4]
- f) Explain how to create compound bar charts for the five departments so that each bar represents the whole expenses for a department but each bar is composed of three parts representing the three cost areas. [5]

- 4. a) Define FULLY the terms **directory/folder** and **sub-directory** in the context of an operating system. [4]
- b) Explain the significance of extension names in filenames. Give THREE different examples. [5]
- c) i Explain how a new folder can be created on a hard disk.

- ii Explain how only the files on a diskette with a particular extension name can be copied into it. Your answer can either state commands or describe how a mouse can be used in a Windows™ environment. [6]
- d) Describe how to move a file from one folder to another. [5]
- e) Explain how "cut and paste" might be used within an operating system and how it is achieved. [5]

5. Details of all patients admitted into a LARGE city hospital are held on a database. The hospital administrator is also the database administrator and will constantly make enquiries of the database to provide information from it.

- a) Define the terms FIELD, FILE and RECORD, giving a SINGLE example of EACH chosen from this hospital application. [6]
- b) Explain HOW to achieve the following tasks:
 - i Create and define the original structure of this database.
 - ii Produce a list showing the names of those patients who are scheduled to have operations tomorrow. You will need to name items in the database necessary for this. [8]
- c) When a doctor requests details of a patient, the administrator will print a short report about that patient. List THREE items of data apart from full name which would be printed about the patient. [3]
- d) Most datatypes are text or numeric or variations of these. Name a totally different datatype and give a real example of its use in this application. [3]
- e) The following is a table defining a purchase order. Explain how this would be reorganised after FIRST-ORDER normalisation.

```
PurchaseOrder = OrderNumber
                + SupplierCode
                + SupplierName
                + SupplierAddress
                + DateOfOrder
                + (StockCode      {These are
                + StockName      {repeated for
                + QuantityOrdered {every
                + UnitPrice      {item
                + CostOfItem)    {purchased
                + TotalCostOfOrder
                + ModeOfTransport {may not be present
```

You may abbreviate the names (e.g. ON = OrderNumber)

[5]