MARKING SCHEME

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| --- | --- | --- | --- | --- |
| 1 | A |  | * researching and examining current systems and consulting users * liaising with colleagues such as systems analysts and designers * writing software and operating manuals * training users * providing support and responding to feedback * testing and modifying systems to ensure that they operate reliably * fault finding and fixing | 4x1=4 mks |
|  | * investigating current applications * liaising with users * producing specifications * costing new or modified systems * agreeing proposals * writing new software and operating manuals * testing the product to ensure that it operates satisfactorily * training users * handling support and feedback | 1x1=1 mk |
| B |  | EPOS is an automated device used to record and process information relating to sales |  |
|  | * **Financial accuracy** - EPOS systems greatly reduce the possibility of such staff errors, ensuring that a business's pricing and charging structure remains consistent. * **Accountability**- Electronic point of sale systems allows businesses to accurately monitor and record staff activity. * **Speed and efficiency**- EPOS systems greatly improve the speed and efficiency of transactions, which will appeal to customers and help your employees focus on serving more people * **Stock management**- EPOS system can save a noticeable amount of time compared to traditional, manual stocktaking operations. * **Reporting**- ability to produce a variety of business performance reports. Such reports can range from a basic analysis of daily or annual profit margins, to an identification of the top selling products or services in a company's range. | 2x1=2 mks |
|  | Bookshops, Super Markets, Libraries, restaurants, small retailers, manufacturers etc. | 1x1=1 mk |
| 2 | A |  | Used to hold copies of data from a computer’s fixed storage device for security reasons | 1x1=1 mk |
| B |  | Used for looking up for files stored separately but required for processing | 1x1=1 mk |
| 3 | A |  | 11101.011 + 111.111=   |  | | --- | | 11101.011 | | + 111.111 | | 100101. 010 | | 1x2= mks |
| B |  | Military, education, health care, entertainment, fashion, heritage, business, engineering, sport, media, scientific visualization, telecommunications, construction, film, programming language | 1x2=2 mks |
| 4 | A |  | **Graphical user interface (GUI):** provides the user with windows, icons, menus  and pointing devices (WIMP) to choose in the process of commanding a computer | 1x1=1 mk |
| B |  | **Command line interface:** lets the user to supply commands to the computer to be able to use it | 1x1=1 mk |
| C |  | **Menu driven interface:** provides the user with a list of commands to choose  From in the process of using a computer | 1x1=1 mk |
| 5 | A |  | * To append (enter) records into a table * Edit records * Display records * Search for specific records in a database | x3=1 mks |
| B |  | **Referential integrity** is a relational database concept in which multiple tables share a relationship based on the data stored in the tables, and that relationship must remain consistent. | 1x1=1 mk |
|  | **Indexes** are special lookup tables that the database search engine can use to speed up data retrieval | 1x1=1 mk |
| 6 |  |  | * **Arithmetic logic unit (ALU)** - performs simple arithmetic and logical operations. * **Control unit (CU)** - manages the various components of the computer. It reads and interprets instructions from memory and transforms them into a series of signals to activate other parts of the computer. The control unit calls upon the arithmetic logic unit to perform the necessary calculations. * **Main Memory (cache**) - serves as high-speed memory where instructions can be copied to and retrieved | x3=1 mks |
| 7 | A |  | USB | 1x1=1 mk |
| B |  | Parallel cables | 1x1=1 mk |
| C |  | Serial cables | 1x1=1 mk |
| 8 |  |  | =L23 + Q$18 | 2x1=2 mks |
| 9 |  |  | **Logical files** are files that are viewed on what details they contain while **physical files** are files viewed on how data is stored on a storage media and how processing operations are made possible | 2x1=2 mks |
| 10 | A |  | * **EULA – End User License Agreement** – is a contract between you and the purchaser of your software, and it gives the purchaser the right to use that copy of your software after they have paid for it. * **Warranty (terms of service)** - covers how your users should behave while using the application. The Terms of Use doesn’t usually give your users the right to copy your work; it simply sets out how they can use the work. * **Documentation (user manual)** – a document with guides of installation and usage * **Cash Receipt or Invoice** – that proofs the transaction indeed took place | x3=1 mks |
| B |  | * Writing letters * Writing memos * Writing projects * Writing essays, curriculum vitae, reports, publishing books, etc. | x3=1 mks |
| 11 |  |  | * High level languages are machine independent while low level languages are machine dependent * It’s difficult to debug errors with low level languages but easy with high level languages * Low level languages are difficult to learn as compared to high level languages * High level languages are portable i.e. can be used in different software platforms as compared to low level languages * High level languages require a larger memory to run as compared to low level languages * Low level language don’t require interpreters with the exception of assembly language that require an assembler, high level languages do. | 2x1=2 mks |
| 12 | A |  | A nibble is half of a byte by the number of bits | 1x1=1 mk |
| B |  | A bit is a binary digit which is either a ‘0’ or a ‘1’ | 1x1=1 mk |
| C |  | A word is a set of two or more bytes | 1x1=1 mk |
| 13 | A |  | R- quick launch toolbar | x1=1 mk |
|  | S- notification area | x1=1 mk |
| B |  | R host shortcuts for programs for quick launch while S is an area that interacts with the user on latest developments of programs running on the background | 1x1=1 mk |
| 14 | A |  | Online, real-time, distributed, time-sharing, batch, multiprocessing, multitasking, interactive processing | 2x1=2 mks |
| B |  | Burglar proofing, smoke and dust control, | 1x1=1 mk |
|  | Enhance security, burglar proofing, user access level, data encryption | 1x1=1 mk |
| 15 | A |  | Algorithm is a finite number of logical steps that a program follows in order to solve a problem | 1x1=1 mk |
|  | A pseudo code is a set of statements written in a human readable language but expressing the processing logic of a problem | 1x1=1 mk |
|  | A flowchart is a diagrammatic representation of a program’s algorithm | 1x1=1 mk |
| B |  | M  K  K=1/(m+1)(m+1)  1  1  1 1 1 | = 5 mks  Correct shape = ½ a mark  Correct labeling = ½ a mark |
| C |  | Start 1  Display M 1  Read M  K=1/(m+1)(m+1) 1  Display K 1  Stop 1 | = 5 mks |
| D |  | In the while loop, a condition is met before a statement is execute while the repeat…until loop, allows a statement within it to be executed at least once since the condition is tested at the end of the loop. | = 2 mks |
| 16 | A |  | Label | 1x1=1 mk |
|  | Value | 1x1=1 mk |
|  | Labels cannot be manipulated mathematically while values can | 1x1=1 mk |
| B |  | =110/100 x 102 | = 2 mks |
| C |  | =COUNTIF(B2:B6,">300") | = 2 mks |
| D |  | * Html doesn’t have conditional statements like IF…THEN…ELSE * In Html, variables are never declared | 2x1=2 mks |
|  | * Hypertext preprocessor (PHP) * JavaScript * ASP, JSP, PHP, Perl, Tcl and Python | 3x1=3 mks |
| E |  | A source program is a program code not yet translated into machine readable form while an object code is a program code that is in machine readable form | 1x1=1 mk |
| F |  | Modular programming involves subdividing computer programs into separate sub-programs that can be used **1x1=1 mk**  The benefits of using modular programming include: **1x1=1 mk**   1. Less code has to be written. 2. A single procedure can be developed for reuse, eliminating the need to retype the code many times. 3. Programs can be designed more easily because a small team deals with only a small part of the entire code. 4. Modular programming allows many programmers to collaborate on the same application. 5. The code is stored across multiple files. 6. Code is short, simple and easy to understand. 7. Errors can easily be identified, as they are localized to a subroutine or function. 8. The same code can be used in many applications. 9. The scoping of variables can easily be controlled. | = 2 mks |
| 17 | A |  | * They are portable * They are efficient, fast, accurate and reliable compared to mechanical processing * They produce neat work * They can be networked thus easy communications and resource sharing * They are cheap to acquire * They can store a lot of information in a small space | 1x2=2 mks |
|  | * Overflow- occurs when the result from a calculation is too large to be stored in the allocated memory space * Truncation- results from having real numbers that have a long fractional part which cannot fit in the allocated memory space * Rounding errors- results from having real numbers that have a long fractional part which cannot fit in the allocated memory space | 1x3=3 mks |
|  | Data integrity refers to accuracy and consistency (validity) of data over its lifecycle | 2x1=2 mks |
| B |  | **Data encryption** is the conversion of data into a form called a **ciphertext** that cannot be easily understood by unauthorized people, while a **password** is a secret code provided at user access level to get entry into computer resources or systems | 1x1=1 mk |
|  | **Dry run** involves a mental run where the programmer examines the source code one step at a time and determine what it will do when run, while **walkthrough** is a method for assessing how easy or hard it will be for users to write programs in a programming language | 1x1=1 mk |
| C |  | X- Random Access Memory  R- control unit  S- Arithmetic and Logic unit (ALU)  Q- Main Memory | 1x4=4 mks |
|  |  | = 2 mks |
| 18 | A |  | Multimedia is the field concerned with the computer-controlled integration of text, graphics, drawings, still and moving images (Video), animation, audio, and any other media where every type of information can be represented, stored, transmitted and processed digitally. | 1x1= 1mk |
|  |  | Examples of multimedia   * Presentations * Video * Audio * Animation software * 3D motion studio * Still images/pictured | 1x2= 2 mks |
|  | B |  | Warranty- is a written guarantee issued to the purchaser of an article by the seller promising to repair or replace it if necessary within a specified period of time | 1x1= 1mk |
|  | 1. **How long does the warranty last?** Check the warranty to see when it begins and when it expires, as well as any conditions that may void coverage. 2. **Who do you contact to get warranty service?** It may be the seller or the manufacturer who provides you with service. 3. **What will the company do if the product fails?** Read to see whether the company will repair the item, replace it, or refund your money. 4. **What parts and repair problems are covered?** Check to see if any parts of the product or types of repair problems are excluded from coverage. For example, some warranties require you to pay for labor charges. Also, look for conditions that could prove expensive or inconvenient, such as a requirement that you ship a heavy object to a factory for service, or that you return the item in the original carton. 5. **Does the warranty cover "consequential damages?**" Many warranties do not cover damages caused by the product, or your time and expense in getting the damage repaired. For example, if your freezer breaks and the food spoils, the company will not pay for the lost food. 6. **Are there any conditions or limitations on the warranty?** Some warranties provide coverage only if you maintain or use the product as directed. For example, a warranty may cover only personal uses—as opposed to business uses—of the product. Make sure the warranty will meet your needs. | 2x3= 6mks |
| C |  | Types of special purpose memories:   * Cache memory- A CPU cache is a cache used by the central processing unit of a computer to reduce the average time to access memory. The cache is a smaller, faster memory which stores copies of the data from the most frequently used main memory locations. * Buffers- a buffer is a region of physical memory storage used to temporarily hold data while it is being moved from one place to another. Typically, the data is stored in a buffer as it is retrieved from an input device (such as a mouse) or just before it is sent to an output device (such as speakers). However, a buffer may be used when moving data between processes within a computer. Like a cache, a buffer is a "midpoint holding place" but exist not so much to accelerate the speed of an activity as to support the coordination of separate activities. * Registers- a processor register is a small amount of storage available as part of a CPU or other digital processor. Such registers are (typically) addressed by mechanisms other than main memory and can be accessed more quickly. Almost all computers, load-store architecture or not, load data from a larger memory into registers where it is used for arithmetic, manipulated, or tested, by some machine instruction. Manipulated data is then often stored back in main memory, either by the same instruction or a subsequent one. | 1x3= 3 mks |
| D |  | **Read** means to capture information from a storage device while **write** means to put information on a storage device | 2x1=2 mks |
| 19 | A |  | A certain pattern is used by the CPU when choosing the next task to process. It can either be First come First Serve(FCFS), Shortest Job First (SJF) or Round Robin etc. |  |
|  | Scheduler Selects from among the processes in memory that are ready to execute, and  allocates the CPU to one of them  CPU scheduling decisions may take place when a process:  1. Switches from running to waiting state  2. Switches from running to ready state  3. Switches from waiting to ready  4. Terminates |  |
| B |  | * Graphical based – are specifically made to design graphical objects like pictures and drawings examples: Corel draw and illustrator * Layout based - are developed to create different page layout designs for text and pictures e.g. page maker, Microsoft publisher, InDesign etc. |  |
| C |  | Chatting is exchanging messages online in real time with one or more simultaneous users of a computer network |  |
|  | Website- a location connected to the internet that maintains one or more pages on the world wide web |  |
|  | A search engine is a software system that is designed to search for information on the world wide web |  |
| D |  | * Job creation- the provision of new opportunities for paid employment, especially for those who are unemployed. * Job displacement - involuntary job loss due to economic factors such as economic downturns or structural change * Job replacement – This is an act of losing a position for someone to take over maybe more experienced or efficient |  |
|  | * Saves papers thus reduces cutting of tree * Disposing used computers is hazardous * Due to increased energy consumption, thus increase in electricity generating stations that affect the environment e.g. burning of fossil fuel |  |
| End | | | | |