



CS101

Quiz for Final-Term

ABSTRACT

This comprehensive collection of notes is accurately crafted to empower students to excel academically, ensuring they achieve a minimum of 80% marks in their examinations. The content is organized with clarity and precision, focusing on key concepts, critical analyses, and practical applications tailored to the syllabus. These notes serve as a reliable resource for both thorough preparation and last-minute revision. Designed to inspire confidence and mastery, this guide is an essential tool for students striving for academic excellence.

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1. A **Tree** is a collection whose entries have a hierarchical organization similar to that of an organization chart.
2. What does a primitive data type in a programming language allow for? (**Declaration, allocation, and manipulation of data**)
3. The protocol that ensures older transactions are given priority when accessing locked items is called the _____ protocol. (**Wound-Wait**)
4. Persistent objects in a database are distinct from transient objects because _____. (**saved after program termination**)
5. What is the primary focus of the implementation phase in software engineering? (**Writing programs and creating data files**)
6. If information hiding is not properly implemented, what is its main effect on a software program? (**Errors occur during module development**)
7. Why do many software engineers argue for incorporating testing into various stages of software development? (**To eliminate the need for testing**)
8. During the implementation phase of software engineering, what task is typically performed? (**Writing Programs**)
9. A car-making factory makes cars for its clients. In the Factory Design Pattern, the factory is considered as a _____. (**Class**)
10. GOMS model is based on _____. (**Human Behaviors**)
11. An array is a _____ block of data whose entries are of the same type. (**Rectangular**)
12. ISO makes software _____ for software companies to guarantee quality Control. (**standards**)
13. To control access to information within a database, database systems rely on _____. (**Schemas, Subschemas**)
14. What does the term "Waterfall" in the Waterfall Model analogy represent? (**The strict, one-directional flow of the development process**)
15. How are fields in an aggregate type usually accessed? (**Field Names**)
16. What is another name for a Program Counter in the context of CPUs? (**Instruction Pointer**)
17. A _____ is a storage area that contains an encoded address. (**Pointer**)
18. What is the benefit of the Decorator Pattern during software development? (**It offers a standardized way of implementing a system**)
19. Operations that are only partially completed in commercial systems might lead to _____ information in the database. (**Incomplete Information**)
20. What does Basis Path Testing aim to achieve? (**To ensure every instruction is executed at least once**)
21. In a tree structure, what is the top node called? (**Root Node**)
22. Which register holds the address of the next instruction to be executed? (**Program Counter**)

23. In a tree, what is the term for the nodes at the other extreme? (**Leaf Nodes / Terminal Nodes**)
24. Which of the following represents the three-step software development process incorporating testing? (**Requirement Analysis → Design → Implementation, followed by Testing**)
25. What is the primary focus of the design phase in software engineering? (**Establishing Requirements**)
26. Open-source development of Linux was lead by _____. (**Linus Torvalds**)
27. What best describes the application of a one-dimensional array with 26 elements? (**Tracking alphabet letter occurrences**)
28. What does SDLC stand for in the development environment? (**Software Development Life Cycle**)
29. A _____ is a collection whose entries have a hierarchical organization similar to an organization chart of a typical company. (**Tree**)
30. A process which is used by the software industry to design, develop, and test high-quality software? (**Software Life Cycle**)
31. Database systems emerged as a means of _____ the information stored in organizations. (**Integrating**)
32. Which of the following relates to Intellectual Property Laws? (**Patent Law**)
33. What is the main characteristic of a one-dimensional array? (**Single row of elements**)
34. What is the primary focus of the Design Phase in software engineering? (**Constructing the software system**)
35. What is the benefit of the Decorator Pattern in software development? (**It offers a standardized way of implementing a system**)
36. The format in which information is displayed by spreadsheet programs is similar to the format used in _____. (**Relational Model**)
37. What is a stack in the context of data structures? (**A list in which entries are inserted and removed only at the head/top**)
38. A typical database application involves two major layers: the application layer and the _____. (**Database Management Layer**)
39. In a list, what is the opposite end of the head? (**Tail**)
40. What is the simplest form of an array? (**One-Dimensional Array**)
41. What is an aggregate type in programming? (**A block of data items with different data types**)
42. It is a description of the entire database structure that is used by the database software to maintain its database. (**Schema**)
43. The Turing Test was proposed in 1950.
44. Pages is an option in the **Insert ribbon**.
45. The language related to the functional paradigm is Python (**according to VU CS101**).

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46. Reports can be received at home through email because of advancements in Computer Networks (**Internet**).
47. Which phase distinguishes between the tasks of a software analyst and a programmer? (**Implementation Phase**)
48. Which field of engineering deals with designing system interfaces by considering human physical abilities? (**Ergonomics**)
49. What is the approach called when a prototype is discarded in favor of a fresh implementation of the final design? (**Throwaway Prototyping**)
50. Deriving an employee's job history in an object-oriented database involves asking the _____ to report its job history. (**Employee Object**)
51. USA has passed legislation allowing the government to actively monitor citizens in the name of (**National Security**)
52. Electronic theft includes _____. (**online scams**)
53. Eye for long amount of time is not meant to look: (**constantly**)
54. feature is used to change the font and paragraph properties of an entire document in MS Word? (**Style Set**)
55. The amount of paper Americans use in a year. (**85 million tons**)
56. In Microsoft Word, how can you close the Mini Toolbar after you have used it? (**click anywhere outside of Mini Toolbar**) and it will disappear automatically.
57. In the XML statement <staff clef="treble"></staff>, the value of the attribute is **treble**.
58. Inserting a new entry at the top of a stack is called **Pushing** an entry.
59. The shortcut key for Paste is **Ctrl + V**.
60. The Style group in the Home ribbon is the **Fourth** group.
61. If we want to link two sections of the same document, what do we generally use (**Hyperlink**)
62. A program logic written in an ordinary language and structured like computer instructions is known as **Pseudocode**.
63. Computer science allows hospitals to be managed **efficiently**.
64. The development process that flows in only one direction is called the **Waterfall Model**.
65. Information that was once buried in records has become accessible because of **Databases**.
66. are ideal for storing data that will be processed in the same order in which the file entries are stored. (**Sequential Files**)
67. Command can immediately take you to a page or any marked location within your document: (**Go To**)
68. The index in an indexed file helps in locating records. (**finding the identifying key**)
69. A track that leads to a simulation-oriented method. (**theoretical**)
70. Which shortcut key is used to italicize text in Microsoft Word. (**ctrl + i**)
71. Which shortcut key is used to bold text in Microsoft Word. (**ctrl + b**)
72. The field of Artificial Intelligence is being pursued along paths: (**2**)
73. In hash file, hashing identifies the location of a record directly from the _____ . (**key**)

74. What is the goal of using parental control? **(to promote responsibility and discipline in children)**
75. The protocol underlying HTTPS is **SSL/TLS**.
76. The **Text Box** command is located in the Text group of the Insert ribbon.
77. **Styles** provide consistent formatting and allow formatting changes throughout the document easily.
78. Line spacing is set from the **Paragraph** group.
79. Text highlighting is available in the **Font** group.
80. Format Painter is located in the **Clipboard** group.
81. In MS Word, what happens when you click the Cut button in the Clipboard group? **(the text is cut and placed on the clipboard)**
82. Insert tab can have group: **(styles, clipboard, pages, all of these)**
83. In the context of maintaining employee records, an index is typically used for quick retrieval based on _____. **(Employee Identification Numbers)**
84. Procedural knowledge is learning **(how)**
85. Which of the following is often integrated with content filters in the context of internet? **(Internet Firewalls)**
86. In context of environment, computer science have impacts: **(both positive and negative)**
87. Usual way of protecting software is: **(Copyright)**
88. When we draw a table in MS Word, the table has an initial column(s): **(One)**.
89. An index for a file contains a list of _____ stored in the file. **(Keys)**
90. Access to forbidden literature is because of: **(Computer)**
91. The Computer Fraud and Abuse Act was passed in 1984.
92. The role of the current variable in pseudocode depends on the given algorithm **(usually it stores the current item being processed)**.
93. The termination condition determines **when the loop should stop executing**.
94. The main characteristic of a public-key encryption system is that it uses two keys: **a public key and a private key**.
95. In Microsoft Word, what does the Quick Access Toolbar provide easy access to? **(frequently used commands)**
96. Design ribbon can have _____. **(Page Border)**
97. Processing a sequential file involves detecting when _____ is reached. **(The end of the File (EOF))**
98. In MS Word, the Paragraph group has which of the following option _____. **(shading)**
99. In MS Word, which of the following features is NOT available in the Text group of the Insert ribbon? **(symbols)**
100. Which of the following is a robot used in the medical field? **(Belgian robot)**
101. We can add charts in MS Word from which group: **(Illustrations)**

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102. In MS Word, which group should the user select to perform the Cut operation? **(Clipboard)**
103. What tab should you access to manage the overall design and layout of a table in Microsoft Word? **(Table Layout)**
104. FORTRAN and COBOL are Third Generation Languages **(3GLs)**.
105. Object-Oriented Programming **(OOP)** is a programming paradigm based on objects.
106. Object-oriented programming languages include **C++, Java, and C#**.
107. The number of nodes in the longest path from the root to a leaf is called the **Depth** of the tree.
108. ECPA stands for **Electronic Communications Privacy Act**.
109. A web page is an HTML file with the extension **.html or .htm**.
110. **Adobe Dreamweaver** is a powerful application for developing websites and mobile applications.
111. A rapidly expanding subject that is closely associated with database technology is _____ which consists of techniques in discovering patterns in collection of data **(Data Mining)**
112. The field of linguistics tends toward which direction? **(Theoretical)**
113. In MS Word, you can insert text with special styles using the WordArt command available in the _____ group of the Insert ribbon. **(Text)**
114. How can you input text into a table cell in Microsoft Word? **(click once on the cell and start typing)**
115. The index for a file is stored _____. **(As a separate file on the same device)**
116. Word provides preformatted text boxes through _____. **(Text Box)**
117. The fifth group in the Home ribbon is the: **(Editing)**
118. In MS Word, different types of effects on the text can be applied with _____. **(WordArt, Quick Parts, Text Box, All of the given)**
119. In a hash file, if a disproportionate number of keys happen to hash to the same bucket, what occurs _____. **(Clustering)**
120. When does Microsoft Word generally insert a blank page automatically? **(While typing)**
121. In Microsoft Word, which buttons are part of the Quick Access Toolbar by default? **(Save, Undo, and Redo/Repeat, Quick Print)**
122. Which feature is available in the Arrange group under the Layout ribbon in MS Word? **(Send Backward)**
123. In MS Word, where is information temporarily stored after it has been cut from somewhere? **(Clipboard)**
124. In MS Word, we have paste _____ options. **(Multiple)**
125. What does the Expander Arrow in the Font group do? **(Opens the Font dialog window)**

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126. Act that extends government restrictions on wiretaps to include the transmission of data is: **(ECPA)**.
127. **PUSH** is an operation of a stack.
128. **Depth** is the longest path from the root node to the leaf node at the lowest extreme.
129. **Tree** is the most suitable data structure for representing a parent-children relationship.
130. In MS Word, we can insert special characters or different symbols using the Symbols group of the **Insert ribbon**.
131. A **Pointer** is a storage area that contains such an encoded address.
132. **%=** is not a relational operator in C++.
133. The Arrange group is placed on the _____ ribbon in MS Word. **(Layout)**
134. Which group of commands in Microsoft Word includes Find, Replace, and Select? **(Editing group)**
135. In MS Word, we can increase the size of text from the Home ribbon group called _____. **(Font)**
136. From a perspective, an entire operating system is like _____. **(One Large Indexed File)**
137. Which of the following significantly increases the chances of fraudulent activity? **(Identity Theft)**
138. Social sites includes **(Twitter, Google, Bing, All of these)**
139. The Arrange group is located under which ribbon in MS Word? **(Page Layout)**
140. Which feature is NOT available in the Text group under the Insert tab in MS Word? **(Link)**
141. What is the shortcut key to select the entire text in a document? **(Ctrl + A)**
142. Which of the following icons belongs to the Text group? **(Text Box)**
143. One way to identify the EOF is by planning a special record known as a _____ at the end of the files. **(Sentinel)**
144. What is the primary purpose of content filtering in a firewall? **(Preventing access to harmful items)**
145. Which of the following acts as a security guard between the Internet and your Local Area Network? **(Firewall)**
146. When editing a document in MS Word, what advantage does the Find and Replace feature provide? **(It saves time by avoiding manual searching)**
147. When we draw a table in MS Word, how many initial columns does the table have? **(Zero (0))**
148. A device that responds to stimuli from its environment is called _____. **(Agent)**
149. Which option is included in the Pages group? **(Cover Page)**
150. A Patent gives the creator legal ownership and protection for an original invention, such as software. **(20 years)**
151. CAN-SPAM Act applies in. **(US)**.

152. USA has passed legislation allowing the government to actively monitor citizens in the name of _____. (**National Security**)
153. The Styles group in the Home ribbon is the (**fourth group**)
154. In Microsoft Word, what is the purpose of entering a word or phrase while adding a hyperlink? (**Displaying the hyperlink text**)
155. “Displaying text in two Columns” feature is in which tab in MS Word? (**Page Layout**)
156. Information Technology has no overreaching standardization. (**No overreaching standardization**)
157. Find option includes which of the following? (**Find, Advanced Find, Go To – All of These**)
158. What is the purpose of entering a word or phrase while adding a hyperlink in MS Word? (**Displaying the hyperlink text**)
159. What is the purpose of the Go To command in MS Word? (**Immediately jump to a specific page, section, or bookmarked location**)
160. In Microsoft Word, how can you change a specific word or phrase throughout the entire document effortlessly? (**Find and Replace**)
161. In Microsoft Word, which group under the insert tab is primarily used to create links within the document or external resources? (**Links**)
162. Most famous word processor is: (**MS-word**)
163. Pages group includes which option: (**Cover Page**)
164. In MS Word, you can insert text with special styles using the WordArt command available in which group of the Insert ribbon? (**Text**)
165. A mark or any other distinctive sign associated with a product is called: (**Trademark**)
166. Computer security is also known as _____. (**Cyber Security**)
167. Data mining is practiced on _____ data collections, called data warehouse. (**Static**)
168. People are working in a sitting position due to computer science and thus have more chance to develop: (**Obesity**)
169. Which risk category primarily deals with threats like online scamming and identity theft? (**Electronic Theft**)
170. Which Ribbon tab is used to access the Hyperlink function in Microsoft Word? (**Insert Tab**)
171. When using styles to format a document, what advantage do they offer? (**Consistent application of formatting choices**)
172. The conversion from key values to bucket numbers in hashing is done by _____. (**Hash Function**)
173. Each statement in natural language can have _____. (**A single word can have multiple meanings**)

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174. In MS Word, from which group can you set line spacing? **(Paragraph Group)**
175. Which of the following icons represents the WordArt feature in MS Word? **(WordArt)**
176. In a classical employee file, what is used to retrieve information about a single employee in a company? **(Hash Functions)**
177. Generally, the Footer feature is used for presenting what in an MS Word document? **(Page Numbering)**
178. What was the initial focus in the early years of computing regarding software quality? **(Debugging process)**
179. What is the significance of computer-aided software engineering (CASE) tools in the software development process? **(They streamline and simplify various aspects of development)**
180. Database technology combined with data mining techniques is an important _____ tool **(Data Storage)**
181. What is a design pattern in the context of software engineering? **(A pre-developed model for solving recurring software problems)**
182. Which phase provides a road map for developers during project planning? **(Software Design)**
183. _____ is the field of engineering that deals with designing system interfaces by considering human mental abilities. **(Cognetics)**
184. The simplest form of an array is the _____ array. **(One-Dimensional)**
185. A major role of the DBMS in commercial systems is to maintain database integrity by guarding against _____. **(Unintentional interactions)**
186. What does the ISO 9000 series of standards address? **(Design, Production, Installation, and Servicing)**
187. Which risk involves potential exposure to inappropriate content or products? **(Online Marketing)**
188. The Text group command is located in which ribbon in MS Word? **(Insert)**
189. What is the default theme of an MS Word document? **(Office)**
190. In the Insert tab of Microsoft Word, where is the Pages group located? **(Far Left)**
191. What is the fifth group in the Home ribbon? **(Editing)**
192. To choose a Bullets and Numbering style in Microsoft Word, which of the following options is correct? **(Select the style you want to use and click on it)**
193. A rapidly expanding subject closely associated with database technology consists of techniques for discovering patterns in collections of data. **(Data Mining)**
194. A(n) _____ file is normally stored as a separate file on the same mass storage device as the data file. **(Index File)**
195. In Microsoft Word, what is the goal behind placing commands within groups and tabs? **(To minimize the number of mouse clicks)**

196. ISO/IEC 15504 is a set of standards jointly developed by which organizations? **(ISO and IEC)**
197. Accuracy can be achieved with the help of testing the result of _____ in the entire development process **(Each intermediate step)**
198. In a two-dimensional array, how are positions identified? **(pairs of indices)**
199. The SELECT operation extracts _____ rows from a relation. **(rows)**
200. What is cited as a beneficiary of research in Human-Machine Interface **(HMI)** design? **(Smartphone Interface)**
201. A transaction requiring exclusive access will _____. **(Be forced to wait if the item is already exclusively locked.)**
202. When we apply a Header, where is it displayed? **(At the top of every page)**
203. What is the significance of the Home Ribbon in MS Word? **(The Home Ribbon is the most important ribbon)**
204. Which feature is used to add text at the top margin of a page in MS Word? **(Header)**
205. In MS Word, we need to write an equation such as 2^3 **(2 raised to the power of 3)**. Which feature is suitable for this purpose? **(Superscript)**
206. In MS Word 2007, which category under Illustrations allowed the insertion of media files such as sound and video clips? **(Clip Art)**
207. Theoretical Track is a part of what? **(AI Domain)**
208. Which groups are available under the Insert tab in Microsoft Word? **(Pages, Tables, and Illustrations)**
209. Text files are considered sequential files where each logical record is encoded using ASCII and Unicode. **(Symbols)**
210. The issue known as _____ might occur if rolling back one transaction affects others and causes a chain reaction. **(Cascading Rollback)**
211. A pre-developed model for solving recurring problems in software solutions is called: **(Design Pattern)**
212. _____ are sophisticated software packages primarily designed for the software engineering environment. **(IDE's)**
213. DBMS stands for _____. **(Database Management System)**
214. Why was the Waterfall Model considered rigid in its approach to software development? **(It insisted on a sequential completion of all phases)**
215. _____ model allows the development process only in one direction. **(Waterfall)**
216. From a lay-person's perspective, design is often equated with _____. **(How)**
217. From a lay-person's perspective, Requirement analysis is often equated with **(What)**
218. What is the origin of design patterns in software engineering? **(Traditional Architecture)**
219. What do tree structures resemble in an organization? **(Organization Chart)**

220. How do software engineers often describe the relationship between requirements analysis and design? (**Requirement Analysis is about "What and Design is about "How."**)
221. The development cycle in XP (**Extreme Programming**) involves _____. (**Repeated cycles of analysis, design, implementation, and testing**)
222. When using the PROJECT operation, if multiple columns are required, how are they specified? (**Using commas**)
223. In the context of health, what impacts does computer science have? (**Both positive and negative**)
224. How did governments respond to the issue of email spam? (**They have implemented specific regulations**)
225. In MS Word, which of the following is NOT a category available in the Pages group under the Insert tab? (**Paragraph**)
226. What is the initial step in inserting a picture from a file into a Word document? (**Click on "Pictures" in the Illustrations group**)
227. Begin the paragraph with a large letter that extends down into the text. This feature is called: (**Drop Cap**)
228. Which feature allows you to write mathematical and scientific formulas using the Insert ribbon in MS Word? (**Equation**)
229. When does the Mini Toolbar appear in Microsoft Word? (**It appears when you select text**)
230. How can you input text into a table cell in Microsoft Word? (**Click once on the cell and start typing**)
231. Which feature allows you to save text or graphics as building blocks and quickly reuse them whenever needed? (**Quick Parts**)
232. How do we refer to nodes that have the same parent in a tree? (**Siblings**)
233. In the traditional Waterfall Model, what is the task of the SQA group before the Design Stage begins? (**Approving the Software Requirements Specification**)
234. What can be achieved through Information Hiding in software development. (**Maintain the validity and integrity of system**)
235. Which template C++ template library allows programmers to easily implement objects? (**Standard Template Library**)
236. The naming convention used in JOIN operations ensures _____ for attributes in the new relations. (**Similarity**)
237. A module should be designed so that other modules do not need access to its internal information. This is called _____. (**Information Hiding**)
238. One of the advantages of separating application software from the DBMS is done to achieve _____ allowing change application software. (**Data Independence**)
239. Which of the following is NOT a reason for moving software into the Maintenance Stage? (**Repair Process**)

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240. A car-making factory manufactures cars for its clients. In the Factory Design Pattern, what does the car represent? **(Instance)**
241. What field of mathematics is used in Basis Path Testing? **(Graph Theory)**
242. The term cohesion refers to this . **(internal binding)**
243. The problem known as the _____ can arise if one transaction is in the middle of the transferring funds from one account when the other transaction tries to complete the deposits in the bank. **(Incorrect Summary Problem)**
244. What is the purpose of prototyping in Incremental and Iterative Models? **(To evaluate the incomplete version of the proposed system)**
245. Which company created the Rational United Process **(RUP)**? **(IBM)**
246. What is a design pattern in the context of software engineering? **(A pre-developed model for solving recurring software problem)**
247. Retrieving a list of job titles in a specific department involves selecting tuples based on _____ attributes. **(relation)**
248. What can happen if modifications are made to software without understanding the underlying problem? **(Introduction of more problems)**
249. In a Structure Chart, functions are represented by _____. **(Rectangle)**
250. What is the primary focus of the Maintenance Phase in software engineering? **(Repairing software defects)**
251. _____ is exemplified by two transactions, each of which makes a deduction from the same account. **(Lost Update Problem)**
252. How is the depth of a tree defined? **(the number of nodes from the root to leaf in the tree)**
253. What is the layperson's perception of Requirement Analysis? **(Deciding what the software system is to do)**
254. The format in which information is displayed by spreadsheet programs is similar to the format used in the _____. **(Relational Model)**
255. One operation we might want to perform on a relation is to select _____ possessing certain characteristics and place the selected _____ into a new relation. **(tuple, tuple)**
256. What, according to most practitioners in software engineering, what is the major cause of cost overruns and late product delivery? **(Poor communication and changing requirements)**
257. A typical database application involves two major layers: the Application Layer and the _____ Layer. **(Database)**
258. What is the purpose of ergonomics in Human-Machine Interface **(HMI)** design? **(Designing systems that harmonize with physical abilities of humans)**
259. Stronger form of cohesion called **(functional cohesion)**
260. In a tree structure, what is the top node called? **(root node)**

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261. The manufactured product moved into the Maintenance Phase for _____. **(Error correction)**
262. What do "manageable pieces" refer to in software engineering? **(Breaking down a project into smaller components)**
263. What is the colloquial term for the head of a stack? **(Top)**
264. In the case of _____ that are subject to heavy transaction loads, it is highly likely that a random snapshot will find the database in the middle of some transaction. **(Large Databases)**
265. In an array, what does the first index in a pair identify? **(row associated with the position)**
266. Software engineering is an engineering discipline that is concerned with _____. **(All aspects of software production)**
267. Why do software engineers support the use of well-designed high-level programming languages? **(To simplify the software maintenance process)**
268. The links between _____ in an object-oriented database are normally maintained by the DBMS. **(Objects)**
269. Reusable unit of software is called _____. **(Component)**
270. The relational model portrays data as being stored in tables called _____. **(Relations)**
271. _____ provides a means of defining pre-fabricated object definitions. **(Inheritance)**
272. Why is it important for an interface to present all relevant information when a decision is required? **(To facilitate the user)**
273. Why is a stack considered a LIFO **(Last In, First Out)** structure? **(Entries are removed in the reverse order of storage)**
274. What is the significance of Computer-Aided Software Engineering **(CASE)** tools in the software development process? **(They streamline and simplify various aspects of software development)**
275. If a transaction requests exclusive access to an item that is already locked with an exclusive lock, what happens? **(The additional access request is denied)**
276. Subschemas are crucial in providing _____ to different users within a database. **(Restricted Access)**
277. Which group contains the Header and Footer features in MS Word? **(Page Number)**
278. Which of the following is often integrated with content filters in the context of the Internet? **(Internet Firewalls)**
279. Which Act requires financial institutions to protect the private information of individuals? **(Gramm-Leach-Bliley Act (GLBA))**
280. From the Screenshot option in MS Word, you can capture a screenshot of any open window.

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281. In MS Word, from which group can we highlight text using color? **(Font Group)**
282. In MS Word, the Format Painter is in which group? **(Clipboard Group)**
283. Which of the following is a famous example of word processing software?
(Microsoft Word)
284. There are many types of sensors, including _____. **(Camera sensors, Range sensors, Microphones, All of These)**
285. What is the primary focus of the maintenance phase in software engineering?
(Repairing Software Defects)
286. The point at which all the steps and transactions have been recorded in the log is called the _____. **(Commit Point)**
287. Which inter-module coupling occurs when one module passes control of execution to another module, as in a function call? **(Control Coupling)**
288. Which field of engineering deals with designing system interfaces by considering human mental abilities? **(Cognetics) (often written as "Cognetics" in VU handouts; academically, the field is usually called Cognitive Ergonomics.)**
289. How is a programmer's role distinct from that of a software analyst during the implementation stage? **(Programmers are primarily involved in the implementation stage)**
290. What is testing primarily associated with during the traditional development process? **(Confirming the software product against the Software Requirements Specification).**
291. What is stepwise refinement in algorithm discovery? **(Breaking a problem into sub-problems)**
292. Which of the following control semantic structures is used in algorithms for making decisions based on conditions? **(loop structures)**
293. What is the key advantage of assigning precise definitions to primitives used in algorithm representation? **(It removes problems of ambiguity)**
294. What is the main characteristic of public-key encryption systems? **(The use of two keys for encryption and decryption)**
295. A _____ alters the execution sequence of the program. **(Control statement)**
296. How does the termination condition relate to the while statement in pseudocode?
(It is the negation of the condition appearing in the while structure.)
297. while structure starts with checking_____ **(condition)**
298. What term do computer scientists use to describe the idea of an algorithm being executable? **(Effective)**
299. What approach does the imperative paradigm use for the programming process?
(Finding an algorithm and expressing it as a sequence of commands)
300. _____ is a package containing a party's name and that party's public key.
(Certificate)

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301. Let a list contains the names Fred, Alex, Byron, and Carol. What will the first sublist look like after sorting? **(Alex, Fred, Byron, Carol)**
302. How many comparisons are required to sort the elements using the insertion sort algorithm? 13, 10, 9, 6, 33, 100 **(5)**
303. Which of the following is the correct reason why parents choose to use parental controls on digital devices? **(To promote responsible and disciplined technology usage)**
304. Who proposed the Turing Test? **(Alan Turing)**
305. A file that is accessed in a serial manner from its beginning to its end, where information is arranged in one long row, is called _____. **(Sequential File)**
306. Shortcut key for Paste. **(Ctrl + V)**
307. In a Hash File, the key is used for _____. **(Identification Number)**
308. Which feature is available in the Design ribbon? **(Page Border)**
309. Requiring a certain degree of uniformity in the style, size, and orientation of symbols is an _____. **(Advantage)**
310. How is the termination condition reached in loop control? **(By applying the modification step repeatedly)**
311. What is a digital signature in the context of public-key encryption? **(An authentication mark on a message created using the private key)**
312. What might be true about the value of finding a related problem in problem solving? **(it helps develop general algorithm)**
313. Which of the following is essential for the representation of an algorithm? **(Well-defined primitives)**
314. What is the primary role of the control process in a loop structure? **(To execute the body of the loop)**
315. How many iterations are required to find 88 in the given array? {5, 6, 77, 88, 99} **(4)**
316. The initialization step in a loop structure establishes a starting _____. **(condition)**
317. In _____ paradigm is the programmer's task to develop a precise problem statement rather than designing an algorithm to solve the problem? **(Declarative)**
318. What is the role of the Prevention of Electronic Crimes Ordinance, 2007, in Pakistan's legal framework for cybersecurity? **(It addresses the prevention of electronic crimes)**
319. What is the purpose of an assignment statement in programming? **(To assign a value to a variable)**
320. Polyas's analysis of problem solving is to evaluate the solution for **(Accuracy)**
321. What is the purpose of System Documentation? **(Describes the software's internal composition for maintenance)**
322. The internal features of a system can be ignored by the programmer and the user. This abstraction technique is called _____. **(Information Hiding)**

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323. Which phase provides developers with a roadmap? **(System Analysis)**
324. What is the beginning of a list called? **(Head)**
325. In a queue, where are entries inserted? **(At the Tail)**
326. A module should be designed so that other modules do not need to access its internal information. This principle is called _____. **(Information Hiding)**
327. How is the depth of a tree defined? **(By the number of horizontal levels/layers in the tree)**
328. If while ($i \leq n$), the loop will keep executing until 'i' remains (less than or equal to n)
329. Which of the following is the correct syntax for a conditional statement? **(if (condition) Statement A else Statement B)**
330. Which of the following is true for flip-flops? **(Accepts one input individually)**
331. What is the correct expression for finding a factorial where $f = 1$, $I = 1$; while ($i \leq n$)? **($F = f * n$)**
332. What is the primary focus of a programmer in a declarative programming system? **(Developing a precise statement of the problem)**
333. SSL protocol is the backbone of HTTPS.
334. In computer programming, what comes after the if keyword in an if statement? **(condition)**
335. Which of the following is the correct statement about Information Hiding in software development? **(It hides the data of a program module from other modules)**
336. Third Generation Language attribute refers to? **(For all machines)**
337. In Object-Oriented Paradigm, each object has its own collection of functions called **Methods**.
338. Recurring problems handled by predefined modules in software design are called **Design Patterns**.
339. The GOMS model is based on **Human Behavior**.
340. Which language is related to the Object-Oriented Paradigm? **(Smalltalk)**
341. Which of the following is NOT an object-oriented programming language? **(HTML)**
342. Modern computer application problems are more easily solved using **Parallel Processing**.
343. Software testing that does not rely on knowledge of the software's internal composition is **Black Box Testing**.
344. Which of the following is responsible for maintaining the anonymity of the actual client from the server over the Internet? **(Proxy Server)**
345. What distinguishes the declarative paradigm from the imperative paradigm in programming? **(Developing a precise statement of the problem)**
346. In the context of program development, what is the goal of finding a general algorithm? **(To develop an algorithm that can solve all instances of a problem)**

347. Under which paradigm is a program viewed as an entity that accepts input and produces output? **(Functional)**
348. Which one of the following is the traditional approach to programming?
Imperative Paradigm.
349. Which SDLC phase provides the solution to the problem? **Design Phase.**
350. Which SDLC phase distinguishes the tasks of a software analyst and a programmer? **Implementation Phase.**
351. Cohesion refers to Internal Binding **(Internal Cohesion).**
352. A control structure that repeatedly executes instructions based on a condition is called a **Loop.**
353. Structure chart functions are represented by **Rectangles.**
354. To reduce dependencies and effects on other modules, use **Information Hiding.**
355. The description of only a portion of a database for a particular user is called a **Schema.**
356. Which of the following is not a relational operator in C++? **(%=)**
357. In pseudocode, an algorithm can be represented as _____. **(dynamic way)**
358. Which informal example illustrates the concept of repeatedly executing a statement as long as a condition is true? **(As there are tickets to sell, keep selling tickets)**
359. Which translator takes an assembly language program as input and produces machine language code as output? **(Assembler)**
360. What is the % symbol called? **(Modulus operator)**
361. The sign of modulus is **(%)**
362. What is the primary goal of the sequential search algorithm? **(Searching for a specific target value)**
363. Which of the following is correct for the symbolic representation of primitives? **(Syntax)**
364. What might be true about the value of finding a related problem? **(It helps develop general algorithms)**
365. The set of tasks that ensures software correctly implements its specified functions? **(Verification)**
366. Why is the Therac-25 incident considered a software failure? **(there was a technical issue in the software)**
367. In the declarative paradigm, what does a programmer focus on when presented with a problem? **(Developing a precise statement of the problem)**
368. The conceptual organization and arrangement of data is called Data Structure **(according to your transcript).**
369. Compiler designers sometimes provide additional features called **Language Extensions.**
370. A single if-else statement provides **Two Choices.**
371. The point where all previous steps have been recorded is called a **Checkpoint.**

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372. A variable containing symbols and alphabets uses the **Character** data type.
373. In the Java programming language, what is the equivalent term for an activation in the context of concurrent processing? (**Thread**)
374. For controlling vandalism over network connections? (**Firewall**)
375. What is the correct format to find a value from a given list? (**Search ()**)
376. Which of the following is the traditional approach to programming? (**Imperative Paradigm**)
377. What is the role of "getting your foot in the door" in problem solving? (**It prevents direct confrontation**)
378. A program logic written in ordinary language that illustrates a structure similar to computer instructions is known as _____. (**Algorithm**)
379. Which programming language was developed for scientific and engineering applications? (**FORTRAN**)
380. What is the primary purpose of the pseudocode unit represented by the statement `def name ()`? (**To define a loop structure**)
381. What is the significance of the term "post-test" in loop structures? (**Tests for termination after loop execution**)
382. In the process of algorithm discovery, what is the value of specific solutions in the context of finding general algorithms? (**They are essential for solving all instances of a problem**)
383. Which operation combines different relations into one relation? **Join Operation.**
384. How is an array represented? **Rectangular Block of Data.**
385. Which programming language is related to the Functional Paradigm? **LISP.**
386. In Ada, the term used for parallel processing is **Task.**
387. A collection organized hierarchically like a company organization chart is called a **Tree.**
388. Reason behind the Welsh NHS IT failure? (**Technical issues in the software**)
389. Which of the following relates to Origami? (**Paper folding**)
390. What does it mean for an algorithm to be unambiguous? (**The steps are clear and have a unique interpretation**)
391. Which mathematician presented loosely defined problem-solving phases in 1945? (**G. Pólya**)
392. If the condition in an if-else statement is false, which function or statement will be executed? (**Reject Application ()**)
393. Which paradigm works on objects? (**Object-Oriented Paradigm**)
394. The strongest form of cohesion is **Functional Cohesion.**
395. The weakest form of cohesion is **Logical Cohesion.**
396. In the following C++ programming statement, what does "z" represent? (**a variable**)

397. What is the primary focus of pseudocode in the context of algorithm development? **(Syntax-semantic structures)**
398. The process used to design, develop, and test high-quality software systems is the Software Development Life Cycle **(SDLC)**.
399. Which symbol is used at the end of a line to separate statements in many imperative languages? **(;)**
400. The distinction between Software Engineering and other engineering disciplines is measured using **Metrics**.
401. For the sequential search algorithm technique, it is _____ for the list to be sorted alphabetically by names. **(Mandatory)**
402. Which engineering field designs interfaces according to human physical abilities? **Ergonomics**.
403. _____ refers to data items that can take only the values True or False. **(Boolean)**
404. What is the key characteristic of an algorithm, according to the formal definition in the textbook? **(Order and executability)**
405. Which of the following is NOT a reason for software entering the maintenance phase? **Repair Process**.
406. What is the nature of an algorithm? **(Dynamic)**
407. What does the cyclic pattern of a loop involve? **(Repeatedly checking the condition and executing the body)**
408. Which group enforces the Quality Control System? Software Quality Assurance **(SQA)**.
409. Each programming language supports the parallel processing paradigm using different terminology. In Ada, which term is used for this purpose? **(Task)**
410. Which coupling occurs when one module passes control to another? **Control Coupling**.
411. In the context of the insertion sort algorithm, what restriction is imposed while sorting a list? **(Sort using the same storage space without extra memory space)**
412. What will be the output of the following statement?

Integer a = 10 + 4.86 **(14.86)**

413. What is the purpose of the provided pseudocode?

```
def FindMax():  
    max = first number in the list  
    Current = second number in the list  
    While (elements in the list exist)  
        If (max < current)  
            max = current  
        Current = next value in the list
```


(Finding the maximum number in a list)

414. How many times will the loop in the example below execute?

```
int counter=1;
while(counter<=5)
{
    cout<<counter;
    counter=counter+2;
}
```

(3 times)

415. How would you interpret the following pseudocode?

```
while (temperature > 0):
    print('Keep warm')
Next instruction
```

(Print "Keep Warm" while the temperature is greater than 0)

416. What is the purpose of the program given below?

```
if (CGPA>=3.0)
    cout<<"Give Scholarship";
else
    cout<<"Sorry you do not qualify for the scholarship";
```

(Determine whether a student qualifies for a scholarship)

417. What will be the output of the following code?

```
marks = 60
if (marks>=50)
    Print(You have passed the examination)
Else
    Print(You have failed the examination)
```

(You have passed the examination)

418. What is the purpose of the given pseudocode?

```
f = 1
i=1;
While (i<=n):
    f=f*i;
    i=i+1;
```

(To calculate the factorial of a given number)

419. In what case will both print statements be executed?

```
if (marks>60)
    Print(You have passed the examination)
Else
    Print(You have failed the examination)
```

(Both cannot be executed at the same time)

420. What is the significance of the statement $F = F * i$ in each iteration of the loop in the given?

```
f = 1
i = 1;
While (i <= n)
    f = f * i;
    i = i + 1;
```

(It multiplies the current value of F by the loop counter i)

421. In the given example, what does the loop do?

```
While (pH level > 4)
    Add a drop of sulfuric acid
```

(Add a drop of sulfuric acid if the pH level is greater than 4)

422. Given the unsorted list:

Fred, Alex, Diana, Byron, Carol

Which name will appear last after sorting? (Fred)

423. In the context of the provided pseudocode, what is the purpose of the statement `Count = Count - 1`?

```
def Greetings():
    Count = 3
    while (Count > 0):
        print ('Hello')
        Count = Count - 1
```

(To decrement the counter)

424. In the provided pseudocode, what is the role of the `Current` variable?


```
def FindMax():  
    max = first number in the list  
    Current = second number in the list  
    While (elements in the list exist)  
        If (max<current)  
            max=current  
        Current = next value in the list
```

(It stores the current value being compared)

425. What would be the next statement in the following pseudocode?

Def FindMax
Max = first number in the list
Current = second number in the list
While elements in the list exist If (Max < Current)

1. What is the purpose of the provided pseudocode?

```
def FindMax():  
    max = first number in the list  
    Current = second number in the list  
    While (elements in the list exist)  
        If (max<current)  
            max=current  
        Current = next value in the list
```

(Finding the maximum number in a list)

426. What is depicted in the following figure?



(Software Life Cycle)

427. Which of the following commands is available in the drop-down menu of the ‘Wrap Text feature’ in the MS word?

A. Top and Bottom B. Behind Text C. In Front of Text

(A,B and C)

428. What does the condition `Temperature > 0` imply in the following pseudocode?

```
While (Temperature > 0):  
    Turn on Heater
```

(Keep the heater on until the temperature is no longer greater than zero)

