**SUBJECT: SYSTEM SOFTWARE**

**QUESTION BANK**

| Q.1 | What is a Language Processor? |
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| Q.2 | Explain Language Processing activities in brief. |
| Q.3 | Explain Life Cycle of a Source Program. |
| Q.4 | Write a short note on Text Editors and its types. |
| Q.5 | What are phases and passes? Compare and contrast. |
| Q.6 | Draw diagram and explain the analysis phase of a Language Processor. |
| Q.7 | Briefly explain IR with an example. |
| Q.8 | Draw diagram and explain the synthesis phase of a Language Processor. |
| Q.9 | Write a Short note on the Symbol Table. |
| Q.10 | What are the different data structures used for symbol table? List them and explain it briefly. |
| Q.11 | Draw a diagram and explain the working of a toy compiler. |
| Q.12 | Write a short note on Program execution activities. |
| Q.13 | What is the role of the program generator domain? |
| Q.14 | What are the different operations provided by the symbol table? |
| Q.15 | Explain Sequential search organization using an example. |
| Q.16 | What are self organizing lists? |
| Q.17 | How is a token searched in search trees? Explain with an example. |
| Q.18 | How does hashing work? |
| Q.19 | What are the allocation data structures used for? |
| Q.20 | Compare and contrast Stack and Heap. |
| Q.21 | What are the characteristics of a system software? |
| Q.22 | What is assembler and assembly language? Give its advantages. |
| Q.23 | What are the basic functionalities provided by an Assembler. |
| Q.24 | What are the types of Assembler? |
| Q.25 | Explain the elements of Assembly code and types of statements. |
| Q.26 | Explain the design of a Two pass assembler |
| Q.27 | How does Single pass assembler work? |
| Q.28 | Define Forward reference and it can be solved. |
| Q.29 | Briefly discuss backpatching. |
| Q.30 | What are the different tables used in Two pass assembler. |
| Q.31 | What are the different ways to write intermediate code? |
| Q.32 | Explain Assembler directives. |
| Q.33 | Write difference between Single pass and Two pass assembler. |

|  | Which of the following activities involves checking tokens against the grammatical rules of a programming language?  a) Lexical Analysis  b) Syntax Analysis  c) Semantic Analysis  d) Option (a) and (c)  **Answer:** b) Syntax Analysis |
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|  | **Which of the following is not a program execution activity ?**   * **a) Fetching or**  loading the program * **b) Parsing** * **c) Decoding or** interpreting the program instructions * **d) Executing or**  executing the program   **Answer: b) Parsing**   * The program execution activity involves loading the program into the memory of the computer system, interpreting the program instructions, and executing them on the computer system. |
|  | **Bloom's Level: Analysis Question:**  **In the lifecycle of a source program, which phase directly follows the compiling stage?**   * **a) Editing** * **b) Linking** * **c) Executing** * **d) Debugging**   **Answer: b) Linking** |
|  | **Bloom's Level: Knowledge Question:**  **Which of the following is an example of application software?**   * **a) Operating System** * **b) Device Driver** * **c) Word Processor** * **d) Compiler**   **Answer: c) Word Processor** |
|  | **Bloom's Level: Comprehension Question:**  **How does application software differ from system software?**   * **a) Application software manages hardware resources, while system software provides entertainment functions.** * **b) Application software performs specific user-oriented tasks, while system software provides the necessary platform for running application software.** * **c) Application software is always pre-installed on computers, while system software must be installed separately.** * **d) Application software includes device drivers, while system software includes word processors.**   **Answer: b) Application software performs specific user-oriented tasks, while system software provides the necessary platform for running application software.** |
|  | **Bloom's Level: Application Question:**  **A computer has a new printer connected to it. Which type of software must be installed to ensure the printer functions properly?**   * **a) Operating System** * **b) Application Software** * **c) Device Driver** * **d) Compiler**   **Answer: c) Device Driver** |
|  | **Bloom's Level: Analysis Question:**  **Analyze the relationship between system software and application software. Which of the following statements is true?**   * **a) System software depends on application software to function correctly.** * **b) Application software provides the platform for system software to run.** * **c) System software is essential for running application software, but not vice versa.** * **d) Both types of software are independent and do not interact. Answer: c) System software is essential for running application software, but not vice versa.** |
|  | **If a program fails to execute due to missing libraries, during which stage did an error likely occur?**   * **a) Edit time** * **b) Compile time** * **c) Link time** * **d) Run time**   **Answer: c) Link time** |
|  | **Bloom's Level: Analysis Question:**  **In a symbol table implemented using a linear structure, what is a potential disadvantage compared to using a hash table?**   * **a) Linear structures often provide faster lookup times for large datasets.** * **b) Linear structures may require more complex handling of collisions.** * **c) Linear structures are less efficient in managing memory allocation dynamically.** * **d) Linear structures can result in slower search times due to lack of indexing.**   **Answer: d) Linear structures can result in slower search times due to lack of indexing.** |
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