

A2-2357/SCSJC42

APRIL 2022

SYSTEM SOFTWARE

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer

1. Both the CISC and RISC architectures have been developed to reduce the
(a) Semantic gap (b) Time Delay
(c) Cost (d) Reduced Code
2. Pipe-Lining is a Unique feature of____
(a) RISC (b) CISC
(c) ISA (d) IANA
3. A single two pass assembler does which of the following in the first pass
(a) It allocates space for the literals
(b) It computes the total length of the program
(c) It builds the symbol table for the symbols and their values
(d) All of the above

4. Address symbol table is generated by the
- (a) Memory management software
 - (b) Assembler
 - (c) Match logic of associative memory
 - (d) Generated by operating system
5. Relocation bits used by relocating loader are specified by_____
- (a) Relocating loader itself
 - (b) Linker
 - (c) Assembler
 - (d) Macro Processor
6. The most powerful parser is _____
- (a) SLR
 - (b) LALR
 - (c) Canonical LR
 - (d) Operator Precedence
7. One of the purposes of using intermediate code in compilers is to
- (a) make parsing and semantic analysis simpler.
 - (b) improve error recovery and error reporting.
 - (c) increase the chances of reusing the machine-independent code optimizer in other compilers.
 - (d) improve the register allocation
8. The grammar $S \rightarrow aSa \mid bS \mid c$ is
- (a) LL(1) but not LR(1)
 - (b) LR(1) but not LR(1)
 - (c) Both LL(1) and LR(1)
 - (d) Neither LL(1) nor LR(1)

9. _____ is a computer program that allows a user to create and revise a target document.
- (a) Interactive editor
 - (b) User interface
 - (c) Interpreter
 - (d) Compiler
10. Which accepts inputs from the user's input devices and analyses the tokens and syntactic structure of the commands?
- (a) Pointers
 - (b) Command language processor
 - (c) Buffer
 - (d) Terminal

PART B — ($5 \times 7 = 35$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Explain the machine architecture of SIC.
- Or
- (b) Compare the features of UltraSPARC and PowerPC architecture.
12. (a) Explain the different instruction format and addressing modes used in the assembler.
- Or
- (b) Explain the various machine independent features of assembler?

13. (a) Explain the dynamic linking in loader design.

Or

(b) Write about Absolute Loader with algorithm.

14. (a) Write the concepts and notations used in specifying Grammars for programming languages.

Or

(b) Write a short note on P-Code compilers and interpreters.

15. (a) How are user interfaces useful in text editors? Explain

Or

(b) Write the user interface criteria for an interactive debugger.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss the architecture of CISC machines with example.

17. Briefly discuss about multi pass assembler.

18. Describe the machine dependent loader features.

19. Illustrate the Recursive-Descent Parsing technique with example.

20. Discuss the Text Editor structure with diagram.