

**B.TECH. DEGREE EXAMINATION, NOVEMBER 2014****Fifth Semester**

Branch : Computer Science and Engineering / Information Technology

LANGUAGE PROCESSORS (R, T)

(Old Scheme – Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

**Part A***Answer all questions.**Each question carries 4 marks.*

1. With an example, explain macro definition and usage.
2. Draw the flowchart of single pass assembler.
3. What language is generated by the following context-free grammar, with start symbol S? Is it regular? Justify your answer :  
$$S \rightarrow AA, A \rightarrow a \mid b$$
4. With examples, explain context free and regular grammars. Which one is more powerful in representation?
5. "A data descriptor is a structure containing information that describes data". Explain this statement with an example.
6. Explain the different forms of intermediate codes used compilation process.
7. Briefly explain the significances of global optimization and list four global optimization techniques used in compilers.
8. Where do we use lex and yacc tools? Explain.
9. What is meant by overlay programming?
10. What is meant by a relocatable code? Explain with a simple example.

(10 × 4 = 40 marks)

**Part B***Answer all questions.**Each full question carries 12 marks.*

11. (a) Explain Macro processors and their use in implementing a software.  
(b) With an example, explain the implementation of recursive macro definition.

(6 + 6 = 12 marks)

Or

**Turn over**



12. (a) How is two pass-assembler different from one pass assembler in resolving the future symbol? Explain.  
(b) Why do we need more passes in translation process? Explain with an example.  
(5 + 7 = 12 marks)
13. (a) A predictive parser is a recursive descent parser that does not require backtracking. Justify this statement with an example.  
(b) With an example, explain shift and reduce actions in shift/reduce parser.  
(6 + 6 = 12 marks)

Or

14. (a) Explain all the phases of compiler with the help of suitable example.  
(b) What is meant by ambiguous grammar? List four techniques used to resolve/eliminate ambiguity.  
(6 + 6 = 12 marks)
15. (a) Explain various approaches to symbol table organization.  
(b) Explain the issues in the design of a Code Generator.  
(8 + 4 = 12 marks)

Or

16. (a) "Programming languages have ambiguous grammars; in this case, semantic information is needed to select the intended parse tree of an ambiguous construct." Justify this statement with an example.  
(b) Explain major tasks in code generation.  
(4 + 8 = 12 marks)
17. (a) Is the given statement True/False? "An incremental compiler does not compile the source file into object code". Justify your answer.  
(b) Explain the types of optimizations used in compiler design.  
(4 + 8 = 12 marks)

Or

18. (a) With an example, explain how dynamically allocated data are stored in a heap  
(b) Explain different parameter passing methods and their implementation strategies.  
(5 + 7 = 12 marks)
19. (a) What is linker or linkage editor?  
(b) With an illustration of the linking process, explain how object files and static libraries are assembled into a new library or an executable file.  
(3 + 9 = 12 marks)

Or

20. (a) What are loaders and discuss various loading schemes used in practical applications.  
(b) What is meant by dynamic loading? Explain.  
(8 + 4 = 12 marks)  
[5 × 12 = 60 marks]