

Time : 2 ½ Hours

Total Marks: 60

N.B.

- 1) All questions are compulsory.
- 2) Figures to the right indicate marks.
- 3) Illustration, depth answers and diagram will be appreciated.
- 4) Mixing of sub-questions is not allowed.
- 5) Each question carries 6 marks.

Q.1 Attempt **Any Two** of the following:

12 Marks

- a) Explain DFA and NFA?
- b) Differentiate between Recursive descent and Predictive parser?
- c) Explain applications of compiler?
- d) List out and explain the parts of string?

Q.2 Attempt **Any Two** of the following:

12 Marks

- a) Explain Parsers and its types?
- b) What is the difference between compiler and interpreter?
- c) Explain the steps of lexical analyzer?
- d) What are the phases/structure of compiler?

Q.3 Attempt **Any Two** of the following:

12 Marks

- a) What is parse tree? And explain with example
- b) What is regular expression and give example.
- c) Explain Loop Optimization
- d) What are inherited and synthesized attributes?

Q.4 Attempt **Any Two** of the following:

12 Marks

- a) Write down the operations on languages?
- b) What are implementation scheme of syntax directed translation?
- c) Differentiate between L-attributed and S-attributed SDT.
- d) How compiler checks declarations and expressions in a program?

Q.5 Attempt **Any Two** of the following:

12 Marks

- a) Write short note on liveness of variables using Tiger compiler.
- b) What are blocks and traces?
- c) Explain CFG
- d) Explain Tokens, Patterns and Lexemes