

Total No. of Questions : 10]

P3436

SEAT No. :

4146

[5670]-712

[Total No. of Pages : 2

B.E. - (Computer Engineering)

COMPILERS

(2015 Pattern) (Semester II) (Elective - III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Attempt Q.No. 1 or Q.No. 2; No.3 or Q.No.4; No. 5 or Q.No. 6., Q7 or Q.8 Q.9 or Q.10
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

- Q1) a) Explain synthesized and inherited attribute with example [6]
b) Explain in brief; [4]
i) Operating system support for compilers
ii) Memory Management

OR

- Q2) a) Consider the grammar $E \rightarrow E - E, E \rightarrow E * E, E \rightarrow id$
Write shift reduce parsing steps of the input string "id1-id2*id" [6]
b) Explain role of parser. Explain interaction between lexical analyzer and parser. [4]

- Q3) a) What is "Syntax Directed Definition"? Give syntax directed definition scheme for if E Then S" [6]
b) What is need of semantic analysis? Explain the position of type checker with diagram. [4]

OR

- Q4) a) Write short note on I/P buffering used in lexical analysis. [6]
b) Give Lex specification to recognize the tokens-identifier, operator, number data types. [4]

- Q5)** a) Explain following storage allocation scheme. [6]
- i) Stack storage allocation
 - ii) Static storage allocation
 - iii) heap storage allocation
- b) Explain in detail data stored in Activation Record. [5]
- c) What is calling sequence in Procedure call? Explain Division of tasks between caller and callee. [5]

OR

- Q6)** a) Explain Access links for finding non local data. [6]
- b) Explain Displays. Explain with suitable example maintaining the display. [5]
- c) Explain issues with nested procedures. [5]

- Q7)** a) Explain in detail peephole Optimization. [8]
- b) What are issues in code generation? [8]

OR

- Q8)** a) What is need for next -use information? Explain how to compute next-use information. [8]
- b) Explain register allocation and assignment problem. [8]