

Total No. of Questions : 10]

SEAT No. :

P3217

[Total No. of Pages : 2

[5354]-672

B.E. (Computer Engineering)

PRINCIPLES OF MODERN COMPILER DESIGN

(2012 Pattern)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Neat diagrams must be drawn wherever necessary.
- 2) Figures to the right indicate full marks.
- 3) Assume suitable data, if necessary.

- Q1)** a) Discuss the action taken by every phase of compiler on following string: [6]  
 $A = B * (C + D) - E$   
b) Translate the following statements into three address code: [4]  
 $x = A[i] * m/n^p + g \& q[i]$

OR

- Q2)** a) What is Lex? How tokens are generated in Lex? [6]  
b) Explain: Error detection and recovery in YACC? [4]
- Q3)** a) Write Syntax Directed Translation scheme for boolean expression? [4]  
b) Compare: Quadruple, Triple, Indirect Triple. [6]

OR

- Q4)** a) Differentiate between SLR, LR(K) and LALR parser. [6]  
b) Explain advantages of dividing three address statements into basic blocks. [4]
- Q5)** a) Explain: Issues in code generation. [6]  
b) Write the need for code optimization. [4]  
c) Explain labelling algorithm for tree. [8]

P.T.O.

OR

- Q6)** a) Discuss the principle sources of code optimization, give proper examples wherever necessary. [8]  
b) What are different terms related to simple code generation algorithm. [4]  
i) Register descriptor.  
ii) Address descriptor.  
c) What is next use information? Explain its use in code generation. [6]
- Q7)** a) Explain type checking with respect to context handling. [6]  
b) What is meant by desugaring? Why is importance of it. [6]  
c) Compare between Structure and Union type. [4]

OR

- Q8)** a) Write note on Java CC. [6]  
b) Write note on Desugaring. [6]  
c) Compare register oriented and stack oriented architectures. [4]
- Q9)** a) Explain Dynamic compilation. [6]  
b) Write note on data parallelism. [6]  
c) Explain marshalling and unmarshalling of messages. [4]

OR

- Q10)** a) Explain cross compilation using XMLVM. [6]  
b) Write note on nVidia cuda compiler. [6]  
c) Write difference between GCC and G++. [4]

