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Total No. of Questions : 6] [Total No. of Printed Pages : 5

EX-223

B.Tech. VIth Semester (New Scheme) CSE

Examination, 2023

Compiler Design

Paper - CS - 602

Time : 3 Hours] **[Maximum Marks : 60**

Note : -Question 1 is compulsory. There are internal choice between Ques. 2 to Ques. 6. Attempt all questions.

1. Write short notes on :

(a) Code Optimization

(b) SLR

(c) Error Code

(d) Data Structure

(e) PARSER

Unit-I

2. (a) Explain with neat diagram the various phases of compliler ?

(b) Briefly discuss the pass Structure of an assembler ?

OR

(a) Explain about characteristics Nested Macro and Symbol table ?

(b) Explain macro preprocessor with its features ?

Unit-II

3. (a) Explain Book Keeping Process in detail ?

(b) Explain debug monitor is used ? Writes its advantages.

OR

(a) Explain in detail why used software tools in an editor ?

(b) Explain bootstrapping a compiler with suitable diagrams.

Unit-III

4. (a) Explain with an example Operator precedence parsing technique ?

(b) Construct the SLR parsing table for the following grammar.

$S \rightarrow L = R$

$S \rightarrow R$

$L \rightarrow R$

$L \rightarrow id$

$R \rightarrow L$

OR

(a) Explain different issues in the design of code generator ?

(b) Construct canonical collection of LR (1) items for the following grammar :

$S \rightarrow AA$

$A \rightarrow Aa \mid b$

Unit-IV

5. (a) What is the significance of symbol table generation in data structure ?

(b) Define a Quadruple. How is it different from triples ? Convert the following expression into three address code and quadruple.

$X = (p + q) / (r - s) * (t + w)$

OR

(a) Write the three address code sequence for the statement $x = y*z + y*-z$. Also give its triple representation.

(b) Explain process of Error Detection and recovery ?

Unit-V

6. (a) What is dead code elimination approach ? Explain.

(b) Construct DAG for the following expression.

$m + m * (n - o) + (n - p) * q$

OR

(a) Explain the term Loop Optimization in detail ?

(b) Construct DAG for the expression $(a/10 + (b - 10))*(a/10 + (b-10))$. Also write the sequence of instructions used for the DAG construction.

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