

**PRIYADARSHINI COLLEGE OF ENGINEERING, NAGPUR**  
**DEPARTMENT OF COMPUTER TECHNOLOGY**  
**ACADEMIC SESSION: 2022-23 (EVEN SEMESTER)**  
**QUESTION BANK FOR CAT-II**

<b>Subject</b>	:	Compiler Design	<b>Semester</b>	:	VII - A and B
<b>Subject Teacher</b>	:	Dr.(Mrs)Snehal Golait/Mr.C.R.Pote	<b>Date of Display</b>	:	3/04/2023
<b>Unit</b>	:	III,IV and V			

**Course Outcomes:**

After completing the course, students will be able to :

- CO3** Explain various forms of intermediate code and will be able to demonstrate use of SDTS to translate elementary programming constructs.
- CO4** Describe various optimization techniques and will be able to develop simple code generators.
- CO5** Explain storage allocation methods, error recovery techniques and will be able to apply various error recovery techniques in parsers.

<b>Q No.</b>	<b>Questions</b>	<b>Mapping with CO</b>	<b>BT Level</b>
Q.1 a)	What do you mean by SDTS. Explain with example.	CO3	II
Q.1 b)	Define Attribute. Explain different types of attributes.	CO3	II
Q.2 a)	Translate the expression A: = -B * (C + D)/E	CO3	II
Q.2 b)	Translate given expression into TAC if x < y then a= b + c else p= q+r	CO3	II
Q.3 a)	What is dominator? How it is used to identify loop in three address code?	CO4	I
Q.3 b)	Write a note on a) Loop unrolling. b) Loop Jamming. c) Loop invariant computation.	CO4	VI

Q.4 a)	Find IN and OUT for every blocks for the following graph	CO4	I
	<pre> graph TD     B1["A = 1 B = 2"] --&gt; B2["C = A + B D = C - A"]     B2 --&gt; B5["B = A + B E = C - A"]     B5 --&gt; B6["A = B * D B = A - D"]     B5 --&gt; B3["D = B * D"]     B3 --&gt; B4["D = A + B E = E + 1"]     B4 --&gt; B5     B4 --&gt; B3 </pre>		
Q.4 b)	Explain Peephole optimization with their characteristics.	CO4	II
Q.5 a)	What is data flow equations? Solve the data flow equation for the following flow graph.	CO4	I
	<pre> graph TD     Start["I = 1"] --&gt; Node1["J = 2 I = J + 3"]     Node1 --&gt; Node2["I = I + 1 J = I + 2"]     Node1 --&gt; Node3["J = 5"]     Node2 --&gt; End[" "]     Node3 --&gt; Node1 </pre>		
Q.5b)	Use simple code generation algorithm to generate code for following three address codes. Assume two registers are available. $T1 = a + b$ $T2 = c + d$ $T3 = e - T2$ $T4 = T1 - T3$	CO5	III
Q.6 a)	What are the different issues in code generator?	CO5	I
Q. 6 b)	Explain Register allocation and assignment	CO5	II
Q.7 a)	Define a DAG. Draw the DAG for the following three address code. $d = b * c$ $e = a + b$ $b = b * c$ $a = e - d$	CO5	I
Q7 b)	What are different storage allocation strategies? Explain	CO5	I
Q.8 a)	Explain error recovery in lexical analysis phase.	CO6	II
Q.8 b)	Explain error Recovery in LR parsing.	CO6	II
Q.9 a)	Explain data structures for symbol table organization	CO6	II
Q.9 b)	Explain run time storage allocation for procedure call and return statement.	CO6	II
Q.8 b)	What are problems in code generation?	CO6	I
Q.9 a)	Define symbol table. Explain data structure use for Representation of	CO6	I

	symbol table		
Q.9 b)	What are the different categories and goals of Error handling.	CO6	I
Q.10 a)	Write short notes on Register allocation and assignment	CO6	VI
Q.10 b)	Explain the symbol table management for block structured language.	CO6	II
Q.11	What are the various attribute that should be stored in symbol table and discuss various data structure for implementation of symbol table.	CO6	I

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**Subject Teachers**

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