PAPER ID-410753

Roll No: | | | | | | | | | | | | | |

MCA
(SEM III) THEORY EXAMINATION 2021-22
COMPILER DESIGN

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

Q no.	Question	Marks	CO
a.	Define Bootstrapping.	2	1
b.	Differentiate compiler and interpreter.	2	1
c.	Write down drawbacks of predictive parser.	2	2
d.	List out the actions performed by shift reduce parser.	2	2
e.	Define the term abstract syntax tree.	2	3
f.	What are loop variant constraints?	2	3
g.	What are the various advantages of heap storage allocation?	2	4
h.	Define symbol table.	2	4
i.	What is machine independent code optimization?	2	5
j.	What are the issues to be considered during code generation?	2	5

SECTION B

2. Attempt any *three* of the following:

Q no.	Question	Marks	CO
a.	Define regular expression. Write about the identity rules for regular expressions.	10	1
b.	Discuss in brief about left recursion and left factoring with examples,	10	2
c.	Explain reducible and non-reducible flow graphs with example.	10	3
d.	Explain various data structures for symbol table.	10	4
e.	Explain in brief about different principle sources of optimization techniques.	10	5

SECTION C

3. Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	Write a LEX program that recognizes the tokens in PASCAL. Discuss it.	10	1
b.	Discuss the role of lexical analyzer in a compiler.	10	1

4. Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	Define ambiguous grammar. Explain it with an example.	10	3
b.	What are the problems in top down parsing? Explain each with suitable example.	10	2

5. Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	Differentiate between synthesized and inherited attributes with suitable example.	10	3
b.	Translate the expression –(a+b)*(c+d)+(a+b+c) into quadruple, triple and indirect triple.	10	3

6. Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	Explain in detail the symbol table organization for block structured languages.	10	4
b.	Explain in brief about stack storage allocation strategy.	10	4

7. Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	Explain in detail inter procedural optimization.	10	5
b.	Explain different types of intermediate codes forms.	10	5