JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-VI Semester (CSE)

COURSE CODE (CREDITS): 18B11CI612 (3) MAX. MARKS: 15

COURSE NAME: COMPILER DESIGN

COURSE INSTRUCTOR:{Pardeep,Ramesh, Seema & Nitika} MAX. TIME: 1 Hour

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Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculators is not allowed

<table>
<tr><th>Q.No</th><th>Question</th><th>CO</th><th>Marks</th></tr>
<tr><td>Q1</td><td>(i) Consider the following cases of compiler design. Case 1: We want to design a compiler for 10 different programming languages for the same machine. Case 2: We want to design a compiler for the same programming language for 5 different machines. How many numbers of analytical and synthesis part we need in case 1 and case 2?
(ii) Show the design of a 3-pass compiler with suitable diagram in terms of front end and back end .</td><td>CO1</td><td>2+2</td></tr>
<tr><td>Q2</td><td>(i) How many numbers of tokens should be there as output of lexical analysis phase in the following C code? Does the lexical analysis phase will find any bug in this code?

main({{
/* Welcome to Compiler Design */
}
x=y++++++;
int x,y,z;
printf("sum %d %d",x); {

(ii) What is the advantage of bootstrapping in compiler design? Name any one language compiler based on bootstrapping.</td><td>CO2</td><td>1+1+1+1</td></tr>
<tr><td>Q3</td><td>Construct a deterministic finite automaton corresponding to the non-deterministic finite automata M ({Q_0, Q_1, Q_2, Q_3}, {a,b}, δ, Q_0 , {Q_3}) with transition function given as under:</td><td>CO2</td><td>3</td></tr>
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