

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

B.Tech-VI Semester (CSE & ECM)

COURSE CODE(CREDITS): 18B11CI612 (3)

MAX. MARKS: 15

COURSE NAME: Compiler Design

COURSE INSTRUCTORS: Pardeep Kumar, Maneet Singh, Ramesh Narwal, Faisal Firdous

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

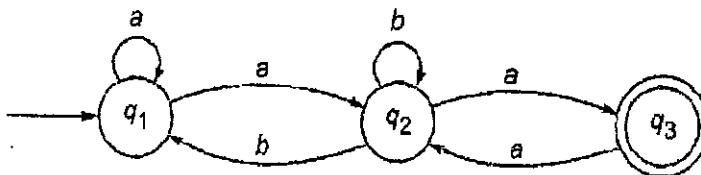
(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q1. Consider the following cases of compiler design: **Case 1:** We want to design a compiler for 5 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 front end and back end we need in case 1 and case 2? [CO-1] [3]

Q2. Explain phases of compiler with suitable diagram clearly mentioning the input and output at each phase. Name five data structures used in compiler design. [CO-1] [2+1]

Q3. What is porting in compiler design? Give suitable example. How a three pass compiler is better than its predecessor compilers? [CO-1] [3]

Q4. Consider the following transition diagram:



Find out the regular expression accepted by the above transition system. [CO-2] [3]

Q5. 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?

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

[CO2] [2+1]