المملكة العربية السعودية

Kingdom of Saudi Arabia
Ministry of Education
College of computer
Department of Computer Science

Qassim University جامعة القصيم

المملكة العربية السعودية
وزارة التعليم
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Course: Concepts of Programming Languages (CS213)
Second semester 451

Midterm exam
Duration: 2 hours
Date: 16/10/2023

Mark 21 /25%

Student Name: [redacted] **Student ID:** [redacted]

Answer All Questions:

Instructor use only

Outcomes	1	2	3	4	5	6
Covered	✓	NA	NA	NA	NA	✓

Question	1	2	3	4	5	6
Covered Outcome	1	6	1	1	6	6
Allocated mark	5	5	4	3	4	4
Earned mark						

Total		
1	6	Exam
12	13	25

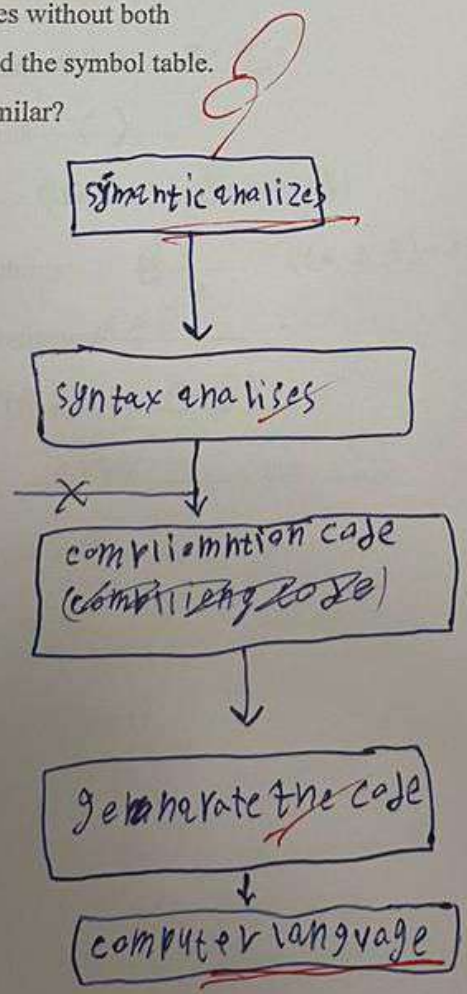
Answer all the following questions:

Question 1: Design a flowchart for a compilation processes without both the optional steps and the symbol table. And what does it similar?

[/5 pts]

3

Similar to ___ hybrid



compilation الأول
الثالث هو شبيه الـ compiler

K = 9 11
j = 3 27 33

Question 2: You have the following program : [/5 pts] 5

```
program Hello;
 var
 j, k:integer;
begin
 k:=9; j:=3;
while ((k<26) or (j<=20)) Do
begin
   j:=k*3;     k:=k+2;
   write(k*2,'  ');
end;
End.
```

1) write all the outputs ?

~~22, 39~~ 26
~~22~~ , ~~39~~ , 30 , 34, 38, 42, 46, 50, 54

2) Write only the values of k and j variables.

K: ~~9~~, 11, 13, 15, 17, 19, 21, 23, 25, 27

J: ~~3~~, 27, 33, 39, 45, 51, 57, 63, 69, 75

Question 3: Language Criteria 4 [/4 pts]

a) Give ~~three~~ two Programming language criteria you have seen in the course:

1) Readability 2) writeability

b) Give three Programming language categories you have seen in the course:

1) logic 2) Sanctional 3) markup

c) Give one language for each category

Procedural: Prolog Markup: XSLT

Functional: Scheme

Question 4: put a short sentence in the following: 2 [/3 pts]

1. COBOL was developed based on ~~for~~ algol58 language
2. Pascal developed in 1971 for teach
3. Lua is a Scripting language designed for the ~~web~~ Web aplictian
4. Haskell is a Sanctional language.
5. Delphi (Borland) was developed from algol60 with new features to support OOP ~~an it is faster than c++~~ and it is fesster than c++
6. Algol 60 is the first language whose syntax was formally defined based on Backus-Naur form (BNF)

Question 5: Write the following required codes. [/4 pts]

A) Write a Pascal function to find the factorial of an integer number N	Write a Scheme function to find the factorial of an integer number N

program factorial ;
 	
function fact(n: integar): longint;
if (n:=0) then
n:=1
else n:=n*(n-1);
var
n: integar;
began
for i:=0 UP to 16 do
writeln (n, "!=", fact(n)
end.
	(define (fact n
	
	if (n=0 n1)
	n=f
	(*n (-n1))

Question 6: write the output of each of the following Scheme statements [/4 pts]

a) (CDR 'A) returns---error no list

b) (CDR '(A)) returns-----(--)-----

c) (CDR '()) returns---error no variabs

d) (+ (- 9 2 3) 4) returns ------8---------

e) (EQ? 'A '(A B)) returns-AAD

f) (CAR '((A B) C D)) returns---(AB)

g) (CAR 'A) returns-----error no list

h) (CAR '(A)) returns -----A-----

Good luck: Prof. Dr. Mohamed Al-Hagery