

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Identify the correct statement with respect to inherited attributes?
Option A:	The attributes can take values from the parents and from the left siblings but not the right sibling
Option B:	The attributes can take values from the parents and from the right siblings but not the left sibling
Option C:	The attribute can take value either from its parent or from its siblings.
Option D:	The attribute can only take value from its siblings.
2.	Which of the following is the graphical representation that shows the basic blocks and their successor relationship?
Option A:	Hamiltonian graph
Option B:	Control graph
Option C:	Flow graph
Option D:	DAG
3.	Rearrange the Compilation Process in the correct order:- a. Linking b. Assembling c. Pre-Processing d. Compiling
Option A:	c→d→b→a
Option B:	c→d→a→b
Option C:	d→c→b→a
Option D:	c→b→d→a
4.	What will be the FOLLOW(A) for following grammar? S→AaAb S→BaBb A→ε B→ε
Option A:	Only a
Option B:	a, b
Option C:	Only b
Option D:	Only ε
5.	Which technique is applicable to optimize the given code? t=c*4 for (j=0 ; j< c*4; j++) {.....}
Option A:	Constant Propagation
Option B:	Copy Propagation
Option C:	Induction Variable Reduction
Option D:	Common Sub-expression Elimination
6.	Consider the code:- MACRO &TEST ABC &X, &Y, &Z &TEST A 1, &X A 2, &Y A 3, &Z

	MEND LOOP1 SPCC P1,P2,P3 What will be the value in MDTC and MNTC after processing macro definition?
Option A:	MDTC = 5, MNTC =1
Option B:	MDTC = 6, MNTC =2
Option C:	MDTC = 2, MNTC =6
Option D:	MDTC = 1, MNTC =5
7.	Consider the Assembly code and Identify the type of statement: START 300 Line -1 ADD AREG,A Line -2 A DC '4' -- -- END
Option A:	Line -1 is Imperative Statement and Line-2 is Assembler Directive
Option B:	Line -1 is Assembler Directive and Line-2 is Declaration Directive
Option C:	Line -1 is Imperative Statement and Line-2 is Declaration Statement
Option D:	Line -1 is Declaration Directive and Line-2 is Assembler Directive
8.	Which of the following grammar is appropriate for operator precedence grammar?
Option A:	S-> EF
Option B:	S-> E*F ε
Option C:	S-> E+F
Option D:	S-> +EF
9.	Consider the Assembly code and Identify the type of statement: START 100 Line-1 MOVER AREG, First Line-2 ADD AREG, Second Line-3 MOVEM AREG, Result Line-4 PRINT Result What will be the intermediate code and Current Location Counter for Line-2?
Option A:	LC = 101, Intermediate code : (IS,02) (RG,01) (S,1)
Option B:	LC = 101, Intermediate code : (IS,01) (RG,01) (S,1)
Option C:	LC = 102, Intermediate code : (IS,01) (RG,01) (S,1)
Option D:	LC = 102, Intermediate code : (IS,02) (RG,01) (S,1)
10.	In terms of relocating the loader, which of the following is used to overcome the problem of linking?
Option A:	Transfer Vector
Option B:	Relocation bits
Option C:	Transfer Array
Option D:	Program length

Q2.	
A	Solve any Two 5 marks each
i.	Write a short note on Peephole Optimization.
ii.	Differentiate between Application and System Software.
iii.	What are the functions of Loader?
B	Solve any One 10 marks each
i.	Explain the different phases of compiler with suitable example?
ii.	What are the different ways of representing Intermediate code? Explain with example

Q3	Solve any Two Questions out of Three 10 marks each
A	<p>Consider the following Assembly Program:-</p> <pre> START 501 A DS 1 B DS 1 C DS 1 READ A READ B MOVER AREG, A ADD AREG, B MOVEM AREG, C PRINT C END </pre> <p>Generate Pass-1 and Pass-2 and also show the content of Database table involved in it.</p>
B	Explain various Code Optimization techniques in detail.
C	<p>Test whether the given grammar is in LL(1) or not. Construct LL(1) Parsing Table.</p> <p>$S \rightarrow AB/gDa$ $A \rightarrow ab/c$ $B \rightarrow dC$ $C \rightarrow gC/g$ $D \rightarrow fD/g$</p> <p>Where a,b,c,d,f,g are the terminals and S,A,B,C,D are the Non-Terminals</p>

Q4	
A	Solve any Two 5 marks each
i.	Draw a neat flowchart of pass-1 of two pass assembler design
ii.	What is relocation and linking concept in Loaders
iii.	Compare Pattern, Lexeme and token with example
B	Solve any One 10 marks each
i.	Draw a neat flowchart of two pass macro processor. Explain with the help of example
ii.	Explain the design of direct linking loader.