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GUJARAT TECHNOLOGICAL UNIVERSITY

| GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018 | | | | | | |
|---|-------------|--|-------------|--|--|--|
| Subject | :20/11/2018 | | | | | |
| Subject Code:2150708Date:20/11/2018Subject Name:System Programming | | | | | | |
| Time: 10:30 AM TO 01:00 PM Total I | | | | | | |
| Instructio | ns: | | | | | |
| | | empt all questions. | | | | |
| | | ke suitable assumptions wherever necessary. ures to the right indicate full marks. | | | | |
| 5. | Tig | ares to the right indicate full marks. | MARKS | | | |
| Q.1 | (a) | Remove left recursion from following grammar | 03 | | | |
| X | () | $A \rightarrow Ac \mid Aad \mid bd \mid \varepsilon$ | | | | |
| | (b) | Consider a grammar $S \rightarrow aa \mid aSa$, How a top down backtracking parser can generate six occurrences of a? | g 04 | | | |
| | (c) | Construct an LL(1) parsing table for the following grammar. | 07 | | | |
| | | $S \rightarrow aBDh$ | | | | |
| | | $B \rightarrow cC$ | | | | |
| | | $C \to bC \mid \varepsilon$ $D \to EF$ | | | | |
| | | $E \rightarrow g \mid \varepsilon$ | | | | |
| | | $F \rightarrow f \varepsilon$ | | | | |
| | | | | | | |
| | | | | | | |
| Q.2 | (a) | If the string a9b had been identified as identifier, but if in the | | | | |
| | | further use 9ab is written, which phase of compiler would | 1 | | | |
| | (b) | identify as an error? How? | 0.4 | | | |
| | (b) | How a lexical analyzer recognizes unsigned numbers such as 12,12.3,12.3E4? | 04 | | | |
| | | | ~ | | | |
| | (c) | Consider the assembly program fragment START 200 | 07 | | | |
| | | READ A | | | | |
| | | LOOP MOVER AREG,A | | | | |
| | | SUB AREG,='1' | | | | |
| | | BC GT,LOOP | | | | |
| | | STOP A DS 1 | | | | |
| | | What will be the intermediate code for the above program | 1 | | | |
| | | fragment? What does START directive do? What will be the | | | | |
| | | difference if ORIGIN directive is used in place of START? | | | | |
| | | OR | | | | |
| | (c) | Consider the assembly program fragment, | 07 | | | |
| | | MOVER CREG, B ADD CREG, ='1' | | | | |
| | | BC ANY,NEXT | | | | |
| | | LTORG | | | | |
| | | ='5' | | | | |
| | | ='1' | | | | |
| | | SUB AREG,='1' END | | | | |
| | | ='1' | | | | |
| | | (i) Explain LTORG directive. | | | | |



| rstranker's choice Explain the explicit Ramker endow opcodes where stress the endow of the endow opcode fragement. (iii) How table of literals will be manipulated? 03 Q.3 (a) Which peof gap makes the software buggy or unreliable? 03 (b) How the use of programming language can help in making the software reliable? 04 (c) Write Macro definition with following and explain. 07 (i) Macro with REPT statment 03 (ii) Macro with REPT statment 03 (iii) Macro with grammar for expressions 03 (c) Write a macro definition for adding two numbers 10 times. Use nested macro call to increment numbers by 1 every time in 10 iterations. 04 (c) Consider the following grammar for expressions 07 (c) Consider the following is a popular intermediate code in non optimizing compilers" 04 (b) Which are the methods used for identifying free memory area? 04 (c) Define program relocation. How address is corrected in address sensitive instructions in case of program relocation. 07 (c) Define program? 04 04 (c) Define program relocation. How address is corrected in address sensitive instructons in case of program relocation. < | IISU | nd | liker.com | |
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