

ALCCS – OLD SCHEME

Time: 3 Hours

AUGUST 2013

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE:

- Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.
- Parts of a question should be answered at the same place.

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- Q.1**
- Differentiate between a Compiler and an Interpreter.
 - Write regular expression for a variable name in JAVA language.
 - What are the various elements of an assembly language programming? Give at least one example of each category.
 - What are the various aspects of compilation?
 - How literal references are handled in Pass I assembler? Show by taking a suitable example.
 - Explain program relocatability.
 - Compare and contrast recursive descent parsing with table driven LL(1) parsing?(7×4)
- Q.2**
- Define Parsing. Use Top down parsing to parse the string $\langle id \rangle + \langle id \rangle * \langle id \rangle$ using the grammar

$$E ::= T + E \mid T$$

$$T ::= T * V \mid V$$

$$V ::= \langle id \rangle$$
(8)
 - Write brief notes on various compiler writing tools. (5)
 - Explain some important transformations which are commonly used in optimizing compilers. (5)
- Q.3**
- Describe various parameter passing mechanisms. Compare their characteristics and side effects. (9)

Code: CS22**Subject: SYSTEM SOFTWARE**

- b. What do you mean by triples and quadruples? Generate the intermediate code of the following program segment
z := a+b*c+d*e ↑ f;
y := x+b*c; (9)
- Q.4** a. Define a language processor. Describe various types of language processors. (7)
- b. Give some insight into the tasks to be performed by a linkage editor. (7)
- c. What do you mean by program overlays? State the advantages of overlay structure. (4)
- Q.5** a. How a two-pass assembler is designed? Compare it with one-pass assembler. (9)
- b. Explain macros and macro processors. What are the assembly statements which will replace the macro call as a result of macro expansion? (9)
- Q.6** a. Explain Expansion Time Variables with suitable example. (6)
- b. Write a macro that swaps two variables. (6)
- c. Explain two explicit looping constructs REPT and IRP statements with example. (6)
- Q.7** a. Explain Operator Precedence Parsing with example. (6)
- b. What is dynamic linking? Discuss in brief a linkage editor for an IBM PC. (6)
- c. How storage allocation and access is done in a Block Structured Programming language? (6)