53 (IT 404) SYPR

2017

SYSTEM PROGRAMMING

Paper : IT 404

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer **any five** questions from **seven**.

1. *(a)* Define compiler and explain various phases of compiler with an example.

2+8

(b) What is an Operating System ? List the typical functions of Operating System.

4+6

2. (a) Describe loader and its operation. Describe in brief different schemes of a loader. 6+4

(b) Write the various elements and types of Assembly Language Statement. 6

(c) Write difference between program and process. 4

3. (a) Define both variants of Intermediate code generation with an example. 10

(b) What are keyword and positional macro parameters ? 4

(c) Write various features of UNIX operating system and define various types of file permissions with example. 6

4. (a) Explain conditional macro expansion and nested macro definitions in detail. 5+5

(b) What is shell in LINUX ? Write a shell program to compute the GCD of two numbers. 2+8

5. *(a)* Write the purpose of : 10

   (i) DC

   (ii) DS

   (iii) DROP

   (iv) USING

   (v) BALR

   (b) Explain the purpose of pass-I and pass-II of assembler. 8

   (c) What is a race condition ? 2

6. *(a)* What are the differences between function and macro ? 4

   (b) Explain the following commands — grep, tar, chown, chmod, expr, pwd, who, mv.

   8

(c) Write an algorithm for the boot loader.

8

7. (a) Write a shell program to find factorial of any given number. 5

(b) Write short notes on : *(any three)*

3×5

(i) Demand Paging

(ii) AWK Utility

(iii) Macro Expansion

(iv) Interpreter

(v) CPU Scheduling.

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