53 (CS 501) SYPR

2013

(May)

SYSTEM PROGRAMMING

Paper : CS 501

Full Marks : 100

Pass Marks : 30

Time : Three hours

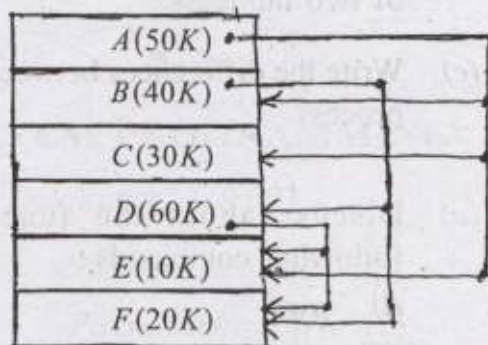***The figures in the margin indicate full marks for the questions.***

*Answer **any five** questions out of seven.*

1. (a) With a clear diagram discuss the pass I of a two pass assembler. 10

 (b) For the following program

 (i) Create the symbol table at the end of pass I.

 (ii) Show the base table at the end of pass II. 5+5

2. (a) Write an assembly language program (using IBM 360 assembly language) to compute the sum of five values stored in $D1, D2, D3, D4$ and $D5$. 10

(b) Write the purposes of 5×2

(i) DC

(ii) DS

(iii) USING

(iv) DROP

(v) BALR

3. (a) What are the differences between function and macro ? 5

(b) With an example discuss how two-pass macro processor works. 10

(c) Write briefly on ALA. 5

4. (a) What are the basic functions of a loader ? 5

(b) Write the functions of EXTERN and ENTRY. 5+5

(c) Consider the subroutine calls between the procedures A, B, C, D, E, F as depicted below :

Show the possible storage assignment of dynamic loading using a diagram.　　5

5. (a) Discuss the different phases of a compiler.

10

(b) Using Round Robin CPU scheduling algorithm compute the average turn around time and average waiting time for the following problem. Assume time slice $= 2$.

Process	CPU burst time
P_1	3
P_2	4
P_3	2
P_4	1
P_5	7

10

6. (a) What is shell in LINUX ? 5

(b) Write a shell program to compute the GCD of two numbers. 10

(c) Write the differences between program and process. 5

7. (a) Discuss about the functions of the following commands : 5×2

(i) pwd

(ii) who

(iii) mv

(iv) cp

(v) tar

(b) Write down the functions of a System Administration. 10