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Your Roll No.

1977

B.Sc. (Hons.) (Computer Sc.)/III Sem. C

Paper 302—SYSTEM SOFTWARES

(Admissions of 2001 and onwards)

Time : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *All* questions.

Section I

1. (a) State the purpose of each of the following commands : 5

(i) diff

(ii) pwd

(iii) mv

(iv) ln oldfile newfile

(v) ps.

P.T.O.

(b) Write the output of the following : 15

(i) `who | wc -l`

(ii) `echo PATH is $PATH`

(iii) `grep you/etc/passwd`

(iv) `ls -l file1 | awk '{print substr($1, 2, 10)}'`

(v) `chmod 666 file2.`

(c) Assume that a file `test` is available in the current directory and has the following contents : 2

great fleas have little fleas,

upon meir backs to bite'em.

and little fleas have lesses fleas,

and so ad infinitum.

Give a command to list lines that :

(i) have the word 'fleas' in them.

(ii) do not have the word 'fleas' in them.

2. (a) What are inodes ? What purpose do they serve ? 3
- (b) Write a shell script to input a number from the command line and perform the following : 3
- (i) If the commandline arg is not provided show an error and exit.
- (ii) If the number is even, show the message : "is even".
- (iii) If the number is odd, store it in a file; file3.
- (c) Write commands or shell script to concatenate files filex and filey and append the output to file filez. 2
3. (a) Write a sed script which inserts a blank line after each line of text of the input file. 2
- (b) Write a code using awk to print only the odd numbered lines of a file. 3

Section II

4. (a) Write down the functions of the two passes of a simple assembler. 5
- (b) What is dynamic linking ? 2

- (c) Describe the following : 4
- (i) Bit mask FEC
- (ii) Modification record M, 000014,05.
5. (a) Instructions in one control section may need to refer data or instructions in another control section. Which two assembler directives are used to achieve this ? Discuss the role of each. 4
- (b) Describe the function of absolute loader. 3
6. Give the output of the following LEX generator program : 4
- ```

digit [0-9]
letter [A-Za-z]

%{
 . int account, bcount;
}%

%%

{digit}({digit})*

{letter}({letter}|{digit})*

%%

```

```
int main (void) {

 yylex();

 printf("%d\t %d", account, bcount);

 return 0;

}
```

The input file has data :

55 and 78 is 133

12 added to the sum gives 135

Should it not give 200.

### Section III

7. Write an XML file with the root tag library. Design 3 book tags within the root, each with an attribute isbn. Each book tag has child elements name, author and publisher. 6
8. Give the output of the following perl program : 3

```
@list = ("black", "white", "orange", "red", "yellow");
```

```
print ("the list contains : @ list\n");
```

```
print("the list contains", @list, "\n");
```

```
print("$list[1]");
```

9. (a) Write a JavaScript function to input two 2 \* 2 arrays of numbers and add them. 3
- (b) Write a JavaScript function to input a string, display all the words in the string along with their lengths. 2
- (c) Write the syntax and use of the following JavaScript functions : 4
- (i) indexOf ( )
- (ii) split( ) in string object.