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Co-304/PUC/3rd Sem/CSE/2017/N

PROGRAMMING USING C

Full Marks - 70

Time - Three hours

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

SECTION - A

All questions are compulsory.

Marks - 25

Time - 1 hour

1. Answer in brief : 5×2=10
- (a) Define the escape sequence : \ r
 - (b) What do you mean by a pointer variable ?
 - (c) Define infinite loop.
 - (d) What is the use of & operator ?
 - (e) Define data type.

[Turn over

2. Fill up the blanks : $10 \times 1 = 10$

(a) Value of _____ remains same during execution of a program but value of _____ may be altered during execution of a program.

(b) _____ escape sequence is used to break a line but _____ is used to give a tabbed space.

(c) _____ operator is used to get remainder of integer division but _____ operator is used to calculate size in byte.

(d) Oval is used to indicate _____ and rectangle is used to indicate _____.

(e) To terminate a loop _____ statement is used, but to ignore some lines of the loop for one iteration only, _____ statement can be used.

3. Choose the correct answer : $5 \times 1 = 5$

(i) Array index in C language starts from

(a) 1

(b) 0

(c) 10

(d) None of these

(ii) In a 2 dimensional array, 1st and 2nd dimension represents respectively

- (a) row, row
- (b) column, column
- (c) row, column
- (d) column, row

(iii) Parameters in a calling program is

- (a) formal parameter
- (b) actual parameter
- (c) dummy parameter
- (d) None of these

(iv) A recursive function calls

- (a) another function
- (b) itself
- (c) both of these
- (d) None of these

(v) fprintf () function is used to send output to

- (a) printer
- (b) monitor
- (c) file
- (d) None of these

4. Write true or false : 5×1=5
- (a) C language statement can be written in capital letter.
 - (b) Every statement of C language should be ended with a semicolon.
 - (c) The `stdio.h` header file contains `printf ()` and `scanf ()` statements.
 - (d) `FILE` is a data type.
 - (e) In a single linked list we can move in both the direction either forward or backward.

SECTION – B

Answer any *three* questions.

Marks – 45

Time – Two hours

5. (a) Define the conversion specifications used in C language. State different conversion specifications used for different data types. 6
- (b) What are the relational operators used in C language ? Name them. 3

- (c) Describe all the looping statements of C language. 3
- (d) What are the branching statements in C ? Define them. 3
6. (a) Draw a flowchart to read a number and find the sum of individual digits of the number. 5
- (b) Generate first 20 terms of fibonacci series and display them in the screen using a C program. 6
- (c) Define the terms : 4
- (i) called function
 - (ii) calling function
 - (iii) actual parameter
 - (iv) dummy parameter
7. (a) Define the terms : $2 \times 3 = 6$
- (i) fscanf ()
 - (ii) fprintf ()
 - (iii) fopen ()

(b) Assume 5 data records are available in a data file called "itax.txt" with the fields : 9

ecode, ename, gAnnualPay

Calculate income tax as follows :

if gAnnualPay < 2,50,000.00 then itax = 0

if gAnnualPay > = 2,50,000.00 and gAnnualPay < 5,00,000.00 then tax = 5%

if gAnnualPay > = 5,00,000.00 and gAnnualPay < 10,00,000.00 then itax = 20%

if gAnnualPay > = 10,00,000.00 and itax = 30%

Store the result into another file called "itax Output.txt."

8. (a) Differentiate between structure and union. 5

(b) Write a C program to create structure to keep the following data : 10

sno, name, basic_pay, gross_pay.

Calculate Gross_pay as follows :

Gross_pay = basic_pay + da + hra + ma + cca, where da = 119% of basic_pay

hra = 15% of basic_pay subject to maximum 6000 per month.

Write code to read 5 records and also display them.

9. Write short notes on any *three* : $5 \times 3 = 15$

- (a) Bubble sort
- (b) Matrix multiplication
- (c) File handling in C
- (d) Sequential search techniques.