

1078
B.E., First Semester
CS-101: Programming Fundamentals

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Part.

~~x-x-x~~

Q1:

1. What are the advantages of using Flow charts?
2. The ASCII code of the letter E in decimal is
3. What are the advantages and disadvantages of call by value?
4. Draw the table showing operator precedence and associativity.
5. What do you mean by scope of variable?
6. What is the difference between malloc() and calloc()?
7. Convert binary number 11111011.101 into hexadecimal number and decimal number
8. What happens if the number of values in the array initialization is less than the size of array?
9. What is command line argument?
10. What is the difference between Binary and ASCII files?

(1*10)

Part-A

Q2: a. Draw a flowchart that read a set of numbers from the standard input and count even and odd numbers in that set. Also display the two counts on screen. (3)

b. Discuss briefly various software development tools like Assembler, Compiler, Translator and Debugger. (3)

c. Some C program contains the following declaration and initial assignments: (4)

int a=8, b=3, c=-5, i=8, j=5, k;	char c1=' ', c2='#', c3='A', ac, bc, cc='c', dc='d';	short s;
float xf=8.8, yf=3.5, zf=-5.2, x=0.005, y=-0.01, z;	long int ix;	double dx;

k=(j>5)?i;j;	!(x==0);	i%o=j;	i!=(j>0)?j:0;
2*b+3*(a-c);	2*xf/3*yf;	3*c2;	'3'*c2;
c1%oc3;	z=(x>=0)?x:0	k=z=x	(x>y)&&(i>0) (j<5)

Determine the value of each expression and assignment expression given above. Also give a comment to support the answer.

Q3: a. Some C program contains the following declaration and initial assignments:

int i,j;	char c;	short s;
float x;	long int ix;	double dx;

Determine the data type of each of the following expression below. Also give a comment to support the answer. (3)

i+c;	x+c;	dx+x;
i+x;	((int)dx)+ix;	s+j;

b. Using Example, discuss the difference between break and continue statement. (3)

c. : Wap to find whether the input number from keyboard (=marks of student) corresponds to which grade. If it lies between

80 to 100-----A	50 to 79----B	40 to 49-----D	0 to 39----F	Otherwise---invalid marks
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Also print appropriate message for each grade e.g for grade A print excellent etc. (4)

Q4: a. Write a C program to perform addition of two matrices entered from keyboard (dimensions of your own choice). (4)

b. Write a program to create a directory of students with roll numbers. The program should display the roll number for a specified name and vice-versa. (4)

c. Explain with example. What is recursion? (2)

Part-B

Q5: a. Using examples, tell the difference between structures and unions? (2)

b. Define a structure for an employee having name, age, designation and salary obtained in last five years. Write a program to input the details for 20 employees and print the details of the employees who have age more than 50 years. (4)

c. Explain with examples typedef and bit-fields. (4)

Q5: a. What are C-preprocessor and Macros? (2)

b. Write a program to find the greatest number in an array using pointers. (4)

c. With examples, discuss pointer to arrays and pointers to structures. (4)

Q7: a. Explain any three file-related functions. (4)

b. With examples, differentiate between Standard and Formatted input and output functions. (4)

c. Discuss briefly stderr and exit functions. (2)

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