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Fundamental of C Programming

Unit I:

- Q1. What will be the value of the following expression? (2017)
'A' + '9'
- Q2. Write down the C statement to calculate percentage where three subjects English, hindi, maths and total are of int type and percentage is of float. Max marks for each subjects are 100. (2017)
- Q3. Create a Boolean data type in C, which will accept true and false value (2017)
True = 1
False=0
- Q4. Explain logical operators with examples (2017)
- Q5. Explain various types of data types in 'C', also explain implicit and explicit type casting. (2017)
- Q6. What is variable in C Language (2015)
- Q7. What is the use of getch() in C Program? (2015)
- Q8. What is pre-processor directives? (2015)
- Q9. Define unary operators in C Language. (2015)
- Q10. Write a program in C Language to calculate area of triangle. (2015)
- Q11. Explain all C tokens. (2015, 2014)
- Q12. Explain the different data types used in C Language. (2015)
- Q13. By default real no. is treated as a: (2014)
a) float
b) long double
c) double
d) far double
- Q14. Write the correct order of evaluation for the below expression (2014)
 $Z = x + y * Z / 4 \% 2 - 1$
- Q15. What is bitwise operator? (2014)
- Q16. What is top down approach? (2014)
- Q17. Arrange the following operators in ascending order according to their precedence (2013)
a) &&
b) ||
c) !
d) ?:
e) & (bitwise and)
- Q18 (2016, 2013)
a) Explain various types of operators with suitable example.
b) Compare various operators according to their precedence and also explain their associativity.
- Q19. What is the range of float data type. (2016)
- Q20. What is the range of float data type. (2016)
- Q21. What is the use of type-casting (2016)
- Q21. Which operators are not used with literals (2016)
- Q22. What is difference between constants and literals (2016)

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Unit II:

- Q1. What will be the output of (2017)
`X = 101;
X = X >> 2 << 2;
printf("%d", x);`
- Q2. Write down appropriate C statement for the formula (2017)
$$X = \frac{a_1b_1 + a_2b_2}{(c_1 + C_2) d}$$
- Q3. What will be the output of (2017)
`Int x = 0;
If (x = 0)
{
 printf("Hello");
}
else
{
 printf("Hey");
}`
- Q4. Explain various branching statements with appropriate examples (2017)
- Q5. Explain various looping statements with appropriate example (2017)
- Q6. Write the output for the following code: (2015)
`void main()
{
 int a;
 b = a++ + a;
}`
- Q7. Explain the use of switch case. (2015)
- Q12. What is the difference between goto, break and continue, specify with example. (2015, 2014)
- Q9. Describe the various loop control structures. (2015)
- Q10. Write a C Program to check the string is palindrome or not without using string function. (2015)
- Q12. Write a program to print Fibonacci series. (2014)
- Q13. What will be the output of the following code: (2013)
`int x = 40000;
printf("%d", x);`
- Q14. What will be the output of the following code: (2013)
`for (i = 1, j = 10; i < 6 ; ++i, j--)
{
 Printf("%d %d", i, j);
}`
- Q15. Find errors (if any) and remove them otherwise give output of the following (2013)
`char c = 'A';
int x = 10, y;
Y = x + c;
putchar (y);`
- Q16. Find errors and remove them (if any) otherwise give output of the following (2013)
`printf ("%d", ++5);`
- Q17. Find errors and remove them (if any) otherwise give output of the following (2013)
`Printf ["%d", sizeof("");]`
- Q18. What will be the output of the following (2013)
`Int x = 10, y = 20;
(x ? y) ? ++x : ++y`

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Printf("\n x = %d, y = %d", x, y);

Q19. Write a program in C to find LCM of two numbers. (2013)

Q20. Write a program in C to print the following series. (2013)

1, 8, 72, 46 521 ,..... up to n terms

Q21. (2013)

a) Explain various types of branching statements of C with suitable example

b) Explain various types of looping statements of C with suitable example.

Q22. What is the difference between while and do while loop. (2016)

Q23. What is the output of the following program (2016)

int x = 10;

printf("%d", x << 2);

Q24. Write a program to print reverse of given number (2016)

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Unit III:

- Q1. What happens when a variable is declared as register variable but register memory is not available? (2017)
Q2. What is global variable? (2017)
Q3. Explain extern variable with an example (2017)
Q4. Write a program in C to print factorial of given number. (2017)
Q5. Write a program in C to swap two variables without using temporary variable. (2017, 2013)
Q6. What do you mean by function prototype? Explain it with an example. (2017)
Q7. Define Pointers and its use. (2015)
Q8. What is the use of register variable? (2015)
Q9. Write difference between user-defined and library functions. (2015)
Q10. What is recursion? Explain with example. (2015, 2014)
Q11. In the following program where is the variable 'a' getting defined and where it is getting declared? (2014)

```
int main()
{
    extern int a;
    printf("%d\n", a);
    return a;
}
int a = 20;
```

- Q12. What is macro in 'C' language? (2014)
Q13. What is the difference between call by value and call by reference? (2014)
Q14. What are storage classes? Explain in detail with examples. (2014)
Q15. What is recursion? What is the utility of recursions in 'C' language? Write a program to find out greatest common divisor of two given numbers using recursion. (2016, 2014)
Q16. What is top down approach? Explain different methods of parsing arguments in functions. Also explain different types of functions used in 'C' language. (2014)
Q17. Explain following with suitable example: (2014)
a) strcpy()
b) strcat()
c) strlen()
d) strcmp()
Q18. Char * name = "M.D.S. University"; then what will be the value of *(name + 18) and what will be the output if we write printf("%s", name + 8); (2013)
Q19. Write short notes on the following with suitable example. (2013)
I. auto
II. extern
III. static
IV. register
Q20. (2016, 2013)
a) Write a program in 'C' to solve tower of honoi game problem
b) Explain the tower of honoi game with solution for four rings.
Q21. Explain auto and static storage class of variable (2016)
Q22. Explain functions and their types with their suitable examples. (2016)

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Unit IV:

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- Q1. What do you mean by following statement? (2017)
`int * x [10];`
- Q2. Explain multi-dimensional array with appropriate example (2017)
- Q3. Write a program in C language to sort the array elements using bubble sort. (2015)
- Q4. Explain array and its types with appropriate syntax and example. (2015)
- Q5. What is the function of pointers in 'C' language? (2014)
- Q6. Explain the role of pointers in 'C' language. Explain reference variable in context to a program (2014)
- Q7. What is the meaning of (2013)
`Int (*p) [10];`
- Q18 (2013)
- a) Write a program to calculate 2D matrix multiplication
 - b) Write a program to print transpose of matrix.
- Q19. What is an array (2016)
- Q20. Why arithmetic operators are not used with pointers (2016)
- Q21. Explain 1-D and 2-D Array with suitable examples. (2016)
- Q22. Write a program to multiply two 2-D arrays. (2016)
- Q23. Explain pointers and addresses with suitable examples. (2016)
- Q24. Explain pointers to 1-D and 2-D arrays with examples. (2016)

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Unit V:

- Q1. Define structure. (2017)
- Q2. Write a program to create a mark sheet using structure and explain it. (2017)
- Q3. Explain pointer to structure with appropriate example. (2017)
- Q4. What do you mean by user-defined data types? (2015)
- Q5. Write important difference between structure and union. (2016, 2015)
- Q6. What is the difference between calloc() and malloc()? (2014)
- Q7. How will you free the allocated memory? (2014)
- Q8. What is enumerated data type? (2016, 2014)
- Q9. Explain the role of pointers in structures with program and how arithmetic operations performed on pointers. (2014)
- Q10. If student is given as (2013)
- ```
struct student
{
 char name[10];
 int e;
 int h;
 int m;
} * pstu;
```
- Then allocate memory to pstu pointer.
- Q11. Explain typedef with suitable example. (2016, 2013)
- Q12. What is union? Explain it. (2013)
- Q13. Explain various file handling operations with suitable examples. (2016)