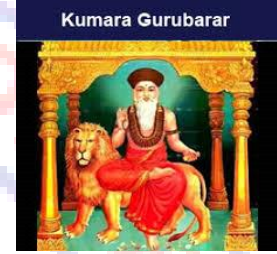ஸ்ரீ-ல-ஸ்ரீ காசிவாசி சுவாமிநாத சுவாமிகள் கலைக் கல்லூரி

திருப்பனந்தாள் – 612504

S.K.S.S ARTS COLLEGE, THIRUPPANANDAL - 612504

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QUESTION BANK
Title of the Paper

PROGRAMMING IN C

Course: I B.Sc. (IT)
Sub. Code: 16SCCIT2
Semester: II

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DEPARTMENT OF COMPUTER SCIENCE

CORE COURSE II

PROGRAMMING IN C

Unit I

Introduction to C – Constants, Variables, Data types – Operator and Expressions.

Unit II

Managing Input and Output operations – Decision Making and Branching – Decision making and Looping.
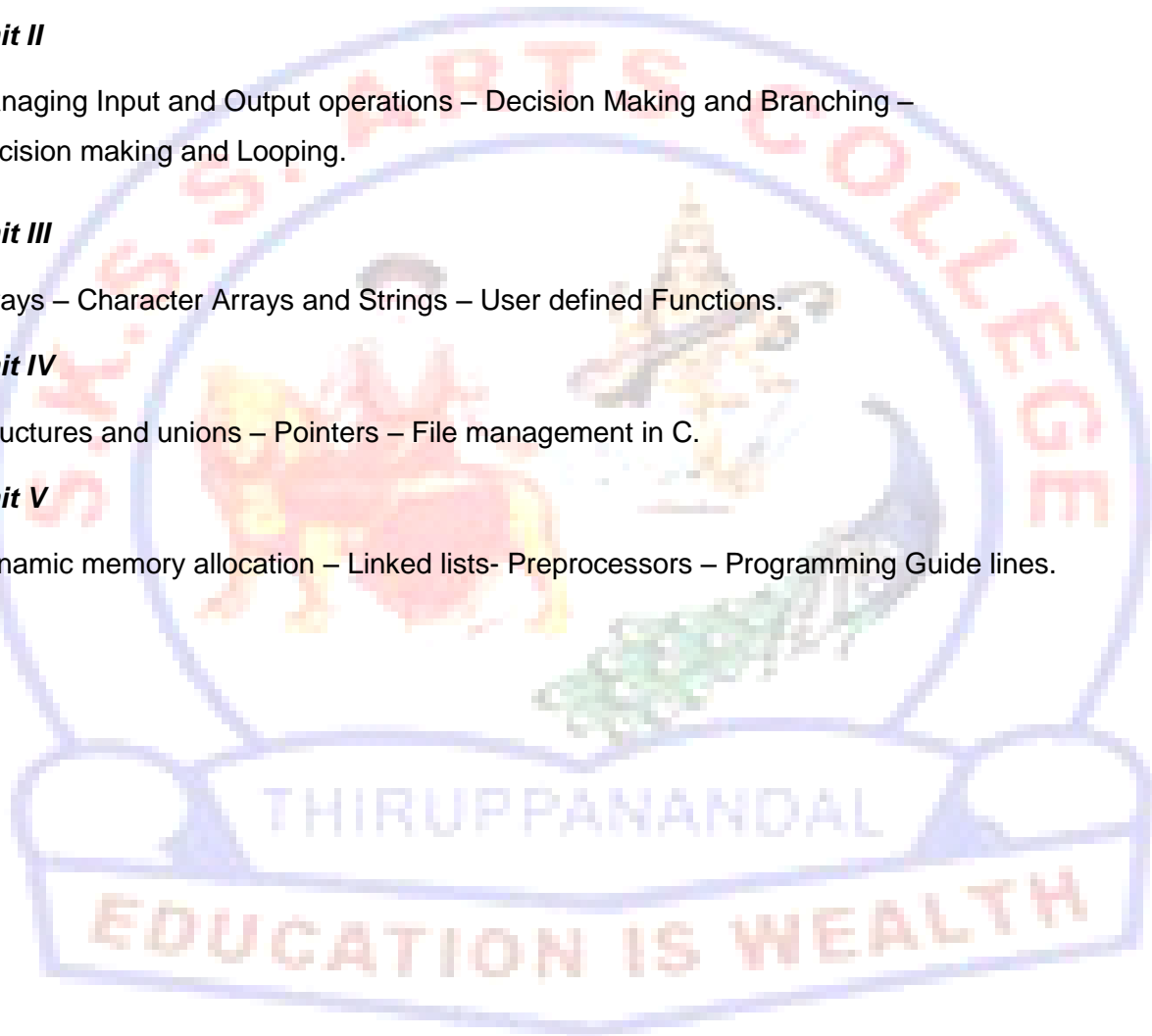
Unit III

Arrays – Character Arrays and Strings – User defined Functions.

Unit IV

Structures and unions – Pointers – File management in C.

Unit V

Dynamic memory allocation – Linked lists- Preprocessors – Programming Guide lines.

Unit - I
Choose the Correct Answer

1. All keywords in C are in _____
   a. LowerCase letters
   b. UpperCase letters
   c. CamelCase letters
   d. None of the mentioned

2. The format identifier '%i' is also used for _____ data type.
   a. char
   b. int
   c. float
   d. double

3. Which data type is most suitable for storing a number 65000 in a 32-bit system?
   a. signed short
   b. unsigned short
   c. long
   d. int

4. Which of the following is a User-defined data type?
   a. typedef int Boolean;
   b. typedef enum {Mon, Tue, Wed, Thu, Fri} Workdays;
   c. struct {char name[10], int age};
   d. all of the mentioned

5. What is the size of an int data type?
   a. 4 Bytes
   b. 8 Bytes
   c. Depends on the system/compiler
   d. Cannot be determined

6. Which of the following declaration is not supported by C?
   a. String str;
   b. char *str;
   c. float str = 3e2;
   d. Both String str; & float str = 3e2;

7. What will be the output of the following C code?
   ```
   1. #include <stdio.h>
   2. void main()
   3. {
   4. float x = 0.1;
   5. printf("%d, ", x);
   6. printf("%f", x);
   ```

   a. 0.100000, junk value
   b. Junk value, 0.100000

    c. 0, 0.100000
    d. 0, 0.999999

8. What will be the output of the following C code?

```
1. #include <stdio.h>
2. int main()
3. {
4. int x = 2, y = 0;
5. int z = (y++) ? y == 1 && x : 0;
6. printf("%d\n", z);
7. return 0;
8. }
```

    a. 0
    b. 1
    c. Undefined behaviour
    d. Compile time error

9. What will be the output of the following C function?

```
1. #include <stdio.h>
2. int main()
3. {
4. reverse(1);
5. }
6. void reverse(int i)
7. {
8. if (i > 5)
9. exit(0);
10. printf("%d\n", i);
11. return reverse(i++);
12. }
```

    a. 1 2 3 4 5
    b. 1 2 3 4
    c. Compile time error
    d. Stack overflow

10. What will be the output of the following C function?

```
1. #include <stdio.h>
2. void reverse(int i);
3. int main()
4. {
5. reverse(1);
6. }
7. void reverse(int i)
8. {
9. if (i > 5)
10. return ;
11. printf("%d ", i);
12. return reverse((i++, i));
13. }
```

a. 1 2 3 4 5
b. Segmentation fault
c. Compilation error
d. Undefined behaviour

Answers: 1.a   2.b   3.b   4. d   5. c   6. a   7. b   8. a   9.d   10. a

Short question (2 Marks)

11. Who invented C Language?
12. Why C Language?
13. List some keywords in C.
14. Define what are the advantages of c language?
15. Define what is C token?
16. Define what is a constant?
17. Define what is variable?
18. Define what is an expression?
19. Define what is data types?
20. What are the primitive data types in c?

Paragraph Questions (5 Marks)

21. Write down the rules for constructing Integer constant with examples.
22. Write a program to add two given number and give the sample output for it.
23. Write a short notes on variables.
24. Write a short note on Arithmetic operators with examples.
25. Write a short note on relational operators with examples
26. Write a short note on Bitwise operators with examples

27. Write a short note on Logical operators with examples

28. Write a program to check a given number is even or odd.
29. Explain the concept of "Introduction to C".
30. Discuss about Expressions with examples.

Essay Type Questions (10 Marks)

31. Write a detailed note on datatypes with example.
32. Discuss in detail about the real constants.

33. Write a detail note on Arithmetic and Logical Operators with example.

34. Write a detail note on

a. Relational operators

b. Bitwise operators

35. Write a example program to swap two numbers using variables, constants and operaters.
36. Explain about variables with its rules.
37. Explain about string and character constants in detail.
38. Explain about operators precedence with example expression.
39. Explain conditional and special operators with example.
40. Write a program using the concepts of any 2 operators.

Unit - II
Choose the Correct Answer

1. What action is carried out by scanf if a user enters any blank spaces, tabs, and newlines?
>   a. consider as input
>   b. ignores it
>   c. produces error
>   d. nothing can be said

2. What error will generate if the read and write parameters are not separated by commas?
>   a. run-time error
>   b.compile error
>   c. logical error
>   d.   no error

3. If by mistake you specify more number of arguments, the excess arguments will
_____
>   a. be ignored
>   b. produce compile error
>   c. produce run-time error
>   d. produce logical error

4. What happens when zero flag is used with left justification?
>   a. data is padded with zeros
>   b. zero flag is ignored
>   c. data is padded with blank spaces
>   d. will give error

5. What will be the output of the following C code?
>   1. #include <stdio.h>
>   2. void main()
>   3. {
>   4. int x = 5;
>   5. if (x < 1)
>   6. printf("hello");
>   7. if (x == 5)
>   8. printf("hi");
>   9. else
>   10. printf("no");
>   11. }

>   a. hi
>   b. hello
>   c. no
>   d. error

6. The C code 'for(;;)' represents an infinite loop. It can be terminated by _____
>   a. break
>   b. exit(0)

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    c. abort()
    d. terminate

7. Which for loop has range of similar indexes of 'i' used in for (i = 0;i < n; i++)?
    a. for (i = n; i>0; i–)
    b. for (i = n; i >= 0; i–)
    c. for (i = n-1; i>0; i–)
    d. for (i = n-1; i>-1; i–)

8. 4. Which of the following cannot be used as LHS of the expression in for   (exp1;exp2; exp3)?
    a. variable
    b. function
    c. typedef
    d. macros

9. Which keyword can be used for coming out of recursion?
    a. break
    b. return
    c. exit
    d. both break and return

10. The keyword 'break' cannot be simply used within _____
    a. do-while
    b. if-else
    c. for
    d. while

Answers: 1. b   2. b   3. a   4. b   5. a   6. a   7. d   8. d   9. b   10.b

Short question (2 Marks)

11. Define Conditional control structure and its types.
12. What is repetitive control structure?
13. What is selective control structure?
14. What is nested if? Give out an example for it.
15. What is if-else? Give out its syntax.
16. Define else-if Ladder? Give out an example for it.
17. Give out the syntax of for loop with an example.
18. Distinguish between do-while and while.
19. What is the use of break statement?
20. What is continue statement and why we use it?

Paragraph Questions (5 Marks)

21. Write a short note on if structure with an example.
22. Explain write a program to find the biggest of two given numbers
23. Write a program to find the factorial of a given number
24. Discuss briefly about else if ladder with an example program
25. What is while loop? Using while loop find out the sum of first 20 natural numbers.
26. What is Switch case? give out its syntax with an example
27. Write a short note on nested for structure with an example.

28. Write a program to find the largest of 3 given numbers
29. Write a short note on   a. break   b. continue   c. goto.
30. Discuss briefly on? Operator with an example.

Essay Type Questions (10 Marks)

31. Discuss in detail about control structures
32. Write a detail note on following with an example
         a.nested if
         b.for
         c.while
33. Write a program to check a given number is prime or not
34. What is nested control structure? Give out an example program for it.
35. Explain about Switch statement with example.
36. Explain about do and do while with example.
37. Explain about if statement with its types.
38. Briefly explain the ways of getting input for an program.
39. Briefly explain the ways of providing output for an program.
40. Explain about decision making with looping with example.

Unit - III
Choose the Correct Answer

1. What is the correct syntax to send a 3-dimensional array as a parameter? (Assuming declaration int a[5][4][3];)
         a. func(a);
         b. func(&a);
         c. func(*a);
         d. func(**a);

2. What are the applications of a multidimensional array?
         a. Matrix-Multiplication
         b. Minimum Spanning Tree
         c. Finding connectivity between nodes
         d. All of the mentioned

3. Which of the following is a correct format for declaration of function?
         a. return-type function-name(argument type);
         b. return-type function-name(argument type){}
         c. return-type (argument type)function-name;
         d. all of the mentioned

4. Which of the following function declaration is illegal?
         a. int 1bhk(int);
         b. int 1bhk(int a);
         c. int 2bhk(int*, int []);
         d. all of the mentioned

5. What will be the output of the following C code?
         1. #include <stdio.h>
         2. int main()

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3. {
4. char *str = "hello, world";
5. char *str1 = "hello, world";
6. if (strcmp(str, str1))
7. printf("equal");
8. else
9. printf("unequal");
10. }

a. equal
b. unequal
c. Compilation error
d. Depends on the compiler

6. What will be the output of the following C code?
1. #include <stdio.h>
2. int main()
3. {
4. char *str = "hello, world";
5. char str1[15] = "hello wo 9";
6. strcpy(str, str1);
7. printf("%s", str1);
8. }

a. Compilation error
b. Segmentation Fault
c. hello, world
d. hello, wo 9

7. What will be the output of the following C code?
1. #include <stdio.h>
2. #include <string.h>
3. int main()
4. {
5. char *str = "hello, world";
6. char str1[9];
7. strncpy(str1, str, 9);
8. printf("%s %d", str1, strlen(str1));
9. }

a. hello, world 11
b. hello, wor 9
c. Undefined behaviour
d. Compilation error

8. Which header declares several functions useful for testing and mapping characters?
a.sert.h
b.dio.h
c.ype.h
d.rno.h

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9. The_____function tests for any character for which isalpha or isdigit is true.
        a. isxdigit()
        b. isspace()
        c. isalnum()
        d. isupper()

10. What does the following C code do?
int iscntrl(int);
        a. checks if character is upper case
        b. checks if character is lower case
        c. tests for any control character
        d. no function as such

Answers: 1. a 2. d 3. a 4. d 5. b 6. b 7. c 8. c 9. c 10. d

Short question (2 Marks)

11. What is an array?
12. Mention the memory representation of an array
13. What is a char array? How will you declare it?
14. What is 2D array
15. Mention the memory mapping of 2D Array
16. Define Function definition? Give out its syntax?
17. Define function call.
18. Give out its syntax?
19. What is the use of strcmp()?
20. List out any 5 string functions

Paragraph question (5 Marks)

21. Define array. Give out an example program for array?
22. Write a program to find the sum and average of n given numbers?
23. Write a program to check a given string is palindrome or not?
24. Write a short note on strings with example.
25. Write a short note on string functions with example.
26. How to pass an entire array to a function. Explain it with a example program
27. Write a program to print the following output:
                0   1   1   2   3   5   8
28. Write a program to calculate sum of the digits of a given number
29. How will you calculate the length and reverse of a string.
30. What is 2D array? Give out an example program for it.

Essay Type Questions (10 Marks)

31. Write a program to explian the working principle of an array.
32. Write a detailed note on array and its operations?
33. Write a program to sort the given numbers in ascending order?
34. Write a detailed note on 2D array?
35. Write a matrix program implement 2 Dimensional Array?
36. Write a detailed note on string and character Array?
37. Describe in detail about string functions.
38. Write a program to demonstrate string functions?
39. Explain about how do you Passing arguments to a function.
40. Write a program to find the length of a string with and without string functions?

Unit - IV
Choose the Correctt Answer

1. What is (void*)0?
    a. Representation of NULL pointer
    b. Representation of void pointer
    c. Error
    d. None of above

2. In which header file is the NULL macro defined?
    a. stdio.h
    b. stddef.h
    c. stdio.h and stddef.h
    d. math.h

3. If a variable is a pointer to a structure, then which of the following operator is used to access data members of the structure through the pointer variable?
    a. .
    b. &
    c. *
    d.. ->

4. A pointer is
    a. A keyword used to create variables
    b. A variable that stores address of an instruction
    c. A variable that stores address of other variable
    d. All of the above

5. The operator used to get value at address stored in a pointer variable is
    a. *
    b. &

    c. &&

    d. ||

6. Which of the following operators can be applied on structure variables?

    a. Equality comparison (==)

    b. Assignment (=)

    c. Both of the above

    d. None of the above

7. User-defined data type can be derived by_____.

    a. struct

    b. enum

    c. typedef

    d. All of the mentioned

8. Which of the following cannot be a structure member?

    a. Another structure

    b. Function

    c. Array

    d. None of the mentioned

9. The size of the union is determined by the size of a

    a. First member of the union

    b. Last member of the union

    c. Biggest member in the union

    d. Sum of sizes of all members

10. Which of the following data type is allowes in bit fields?

    a. Char

    b. Float

    c. Double

    d. None of the above

Answers: **1.a**   **2.c**   **3.d**   **4.c**   **5.a**   **6.b**   **7.d**   **8.b**   **9.c**   **10.a**

Short question (2 Marks)

11. What is a pointer?

12. What is a function pointer?

13. Define file.

14. Mention any 4 file functions.

15. What is the use of fgetc () and fputc()?

16. Give out the syntax of fopen() with an example.

17. Define structure.

18. What is union?

19. What is call by value?

20. What is call by reference?

Paragraph question (5 Marks)

21. What is a pointer? How will you pass pointer to an array?
22. How will you pass a pointer to a function with an example.
23. How structure members are accessed?
24. Explain the concept of union with an example.
25. Write a program to read the content of a file
26. Write a short note on file modes.
27. Write a program to create a file.
28. Write a program to reading a file.
29. Write a program to opening a file.
30. Describe about Accessing Union Members.

Essay Type Questions (10 Marks)

31. Explain about detailed note on pointers.
32. Write a program to demonstrate pointers.
33. Write a detailed note on structures.
34. Discuss in detail about Creation of a file and Opening a file.
35. Discuss in detail about Reading a file and Writing to a file
36. Write a program to find even and odd numbers and to store it in two separate files
37. Write a program to calculate student marksheet processing and store the information in a file
38. How do you use Structures as Function Arguments
39. How will you perform file copy.
40. Write a short note on call by value with an example.

Unit - V
Choose the Correct Answer

1. Which of the following is/are true
   a. malloc() and memset() can be used as same effect a calloc().
   b. calloc() takes two arguments, but malloc takes only 1 argument.
   c. Both malloc() and calloc() return 'void *' pointer.
   d. All of the above

2. What is the return type of malloc() or calloc()
   a. void *
   b. Pointer of allocated memory type
   c. void **
   d. int *

3. We use malloc and calloc for
   a. Dynamic memory allocation
   b. Static memory allocation
   c. Both dynamic and static memory allocation

   d. None of the above

4. Which function is used to delete the allocated memory space?
   a. Dealloc()
   b. free()
   c. Both a and b
   d. either a or b

5. When fopen() is not able to open a file, it returns
   a. EOF
   b. NULL
   c. Runtime Error
   d. Compiler Dependent

6. getc() returns EOF when
   a. End of files is reached
   b. When getc() fails to read a character
   c. Both of the above
   d. None of the above

7. Which of the following mode argument is used to truncate?
   a.   a
   b.   w
   c.   f
   d.   t

8. FILE reserved word is?
   a. A structure tag declared in stdio.h
   b. One of the basic datatypes in c
   c. Pointer to the structure defined in stdio.h
   d. It is a type name defined in stdio.h

9. Which type of files can't be opened using fopen()?
   a. .txt
   b. .bin
   c. .c
   d. None of the above

10. If there is any error while opening a file, fopen will return?
   a. Nothing
   b. EOF
   c. NULL
   d. Depends on compiler

Answers: 1. d   2.a   3.a   4.b   5.b   6.c   7.b   8.d   9.d   10.c

Short question (2 Marks)

11. State Dynamic Memory Allocation in C.
12. What is recursion?
13. What is c preprocessor?
14. Mention any 4 prepocessing directives?
15. What is the use of #include?
16. What is a Linker?
17. What is a compiler?
18. What is a emulator?
19. Define malloc() function.
20. Define realloc() function.

Paragraph questions (5 Marks)

21. Describe about malloc().
22. Explain about free() method
23. Describe about simple linked list
24. Describe about traversal linked list
25. Write a simple program for linked list.
26. Expalin how an preprocesser works with an neat diagram.
27. Describe about Macros in preprocesser
28. Describe about File Inclusion in preprocesser
29. Describe about Conditional Compilation in preprocesser
30. Explain the following c standard guidelines
       a. Formatting
       b. System portability
       c. Documentation

Essay Type Questions (10 Marks)

31. How can you determine the size of an allocated portion of memory?
32. What is the realloc( ) and purpose of it?
33. What is static memory allocation and dynamic memory allocation?
34. What is the return value of malloc (0)?
35. What is dynamic memory fragmentation?
36. Explain about Dynamic Memory Allocation
37. Explain about preprocesser in detail.
38. Describe the various programming guidelines for c
39. Write a program to Adding and delete an item to the list
40. Write a program to create and display an item to the list
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