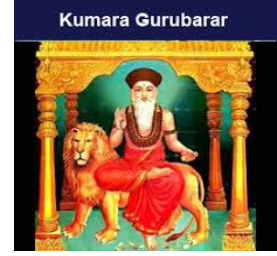




ஸ்ரீ-ல-ஸ்ரீ காசிவாசி சுவாமிநாத சுவாமிகள் கலைக் கல்லூரி  
தருப்பனந்தாள் - 612504

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



## QUESTION BANK

*Title of the Paper*

## PROGRAMMING IN C

Course: II B.Sc PHYSICS

Prepared by

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**Bharathidasan university Syllabus**  
**Allied Paper I**  
**Programming in C**

**Objective: To impart basic knowledge of Programming Skills in C language.**

**Unit I**

Introduction to Computers and their Applications. Computer System Characteristics – Hardware and Software – Types and Generations of Computers – Introduction to I/O and Storage Devices – Number Systems – Flowcharts – Algorithms.

**Unit II**

Evaluation and Applications of C Structure of a C programme - Data Types – Declarations – Operators – Expressions – Type Conversions – Built-in Functions – Data Input and Output Control Statements : IF, ELSE – IF, GOTO, SWITCH, WHILE – DO, DO – WHILE, FOR BREAK and CONTINUE.

**Unit III**

Functions – Defining and Accessing Functions – passing parameters to functions – Arguments – recursive functions – Storage Classes – Arrays : Arrays and functions – Arrays and Strings – String functions – String Manipulations.

**Unit IV**

Pointers – Pointer Declarations - operations on Pointers – pointers to functions – pointers and strings – pointers and arrays – array of pointers structures – structure and pointers – Unions.

**Unit V**

Data Files – Opening, Closing and Processing files – files with structures and unions- register variables – Bitwise operations – Macros Preprocessors.

**Text Book :**

1. Computer Today – S.K. Basandra – Galgotia Publications Unit II – V.
2. Programming in C – E.Balagurusamy – Tata McGraw Hill Publication.

**Reference Books :**

1. Programming with C - Byron S Gottfried – Schaum's Outline Series, Tata McGraw Hill Publications.
2. The Spirit of C – Mullish Cooper – Schaum's Outline Series – Tata McGraw Hill Publications.
3. Let Us C – Yeswant Kanetkar – BPB Publications.

**Unit - I**  
**Choose the Correct Answer**

1. Who is the father of a computer
  - a. Charles Babbage
  - b. Dennis Ritchie
  - c. John Lennon
  - d. Ken Thompson
  
2. Which of the following is period is 1<sup>st</sup> generation of computing?
  - a. 1945 - 1955
  - b. 1955 - 1963
  - c. 1964 -1971
  - d. 1972 -1991
  
3. Which part is called the brain of the computer?
  - a. harddisk
  - b. CPU
  - c. ALU
  - d. Memory
  
4. \_\_\_\_\_ software is a software package consisting of a large number of program required functioning of computer.
  - a. System
  - b. Application
  - c. hardware
  - d. none of the above
  
5. OMR stands for \_\_\_\_\_
  - a. Optical Mark Recognition
  - b. Optical Management Risks
  - c. Optical Mark Reader
  - d. Optical Multiple Resource
  
6. Which of the following device is an impact printer?
  - a. Ink - jet
  - b. Laser
  - c. Dot Matrix
  - d. Daisy - Wheel
  
7. DAT stands for \_\_\_\_\_
  - a. Disk Access Time
  - b. Direct Audio Tape
  - c. Digital Audio Tape
  - d. Direct Audio Tape

8. The input hexadecimal representation of 1110 is \_\_\_\_\_

- a. 0111
- b. E
- c. 15
- d. 14

9. \_\_\_\_\_ step by step methods of writing solution of problem.

- a. Algorithm
- b. Flowchart
- c. Program
- d. none of above

10. \_\_\_\_\_ algorithm can only one start and stop command.

- a. flowchart
- b. Program
- c. Algorithm
- d. Symbol

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

### **Short question (2 Marks)**

11. What is computer?
12. What are the two characteristics of computer?
13. What you meant by hardware?
14. Define ALU.
15. Write any 4 input devices?
16. What are the different types of keyboard?
17. What is monitor?
18. Give the examples of sequential access device.
19. Define hexadecimal.
20. What is algorithm?

### **Paragraph Questions (5 Marks)**

21. Explain characteristics of computer.
22. Write a short notes area of advantage application.
23. Describe third generation & fourth generation computer.
24. Explain ALU, CPU.
25. Explain online devices.
26. How monitors are classified based on signals.
27. Explain magnetic tape.
28. Covert the following decimal to octal. a  $753_{10}=?_8$                       b.  $0.88_{10}=?_8$

29. What are the different types of hardware?  
30. Explain important features of a good algorithm.

### Essay Type Questions (10 Marks)

31. Explain history of development of computer.  
32. Explain I - P O cycle.  
33. What are the different types of software?  
34. Write detailed notes on Input devices.  
35. Write detailed notes on Output devices.  
36. Discuss paper tape.  
37. Convert to hexadecimal to octal & decimal to binary  
a.  $25B_{16}=?_8$       b.  $2F5.94=?_8$   
a.  $150_{10}=?_2$       b.  $0.52=?_2$   
38. Explain about Impact computer  
39. Explain about Algorithm.  
40. Explain flowchart symbols.

### Unit - II

#### Choose the Correct Answer

1. ANSI stands for \_\_\_\_\_  
a. American national standard institute  
b. Academic national standard international  
c. Academic network standard information  
d. Area national standard institute
2. The format identifier '%i' is also used for \_\_\_\_\_ data type.  
a. char  
b. float  
c. int  
d. double
3. which of the following is not a valid variable name declaration?  
a. float PI=3.14;  
b. double PI=3.14;  
c. int PI=3.14;  
d. #define PI=3.14;
4. What will be the output of the following C code?  
1. #include <stdio.h>  
2. void main()

```
3. {
4. int x =1,y = 0,z = 5;
5. int a = x && y && z++;
6. printf("%d",z);
7. }
```

- a. 6
- b. 5
- c. 0
- d. varies

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)
- 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. 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. a 2. c 3. d 4. b 5. a 6. a 7. d 8. d 9. b 10. b**

### **Short question (2 Marks)**

- 11. List some keywords in C.
- 12. What is C token?
- 13. What is a constant?
- 14. What is variable?
- 15. What is a data type?
- 16. Write any 4 operator in C.
- 17. Define conditional operator.
- 18. Give if statement syntax.
- 19. Define else-if Ladder? Give example for it.
- 20. Give out the syntax of for loop with an example.

### **Paragraph Questions (5 Marks)**

- 21. Write short note for execution c program.
- 22. What is the use of character set?
- 23. What is continue statement and why we use it?
- 24. Write a program odd or even number.
- 25. Explain increment and decrement operators.
- 26. Write a program to find the factorial of a given number
- 27. Discuss briefly about else if ladder with an example program
- 28. What is while loop? Using while loop find out the sum of first 20 natural numbers.
- 29. What is Switch case? Give out its syntax with an example.
- 30. Write a short note on a. break b. continue c. goto.

### **Essay Type Questions (10 Marks)**

- 31. Explain about data types.
- 32. Briefly explain type's conversion of expression.

33. Briefly explain arithmetic operator and bitwise operator with examples.
34. Explain about operators precedence with example expression.
35. Explain about decision making with if statement with example.
36. Discuss about nested if else statement.
37. Explain While and Do While with Example.
38. Explain for loop with example.
39. Write notes for break and continue.
40. Explain about switch statement.

### Unit - III

#### Choose the Correct Answer

- 1..What is right way to initialize array?
  - a. `int num[6]={2,4,12,5,45,5};`
  - b. `int n[]={2,4,12,5,45,5};`
  - c. `int n(6)={2,4,12,5,45,5};`
  - d. `int num(6)={2,4,12,5,45,5};`
2. what is the maximum number of dimensions array in C?
  - a. Two
  - b. Eight
  - c. Twenty
  - d. Theoretically no limit. The only practical limits are memory size and compilers.
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()`
  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, wo9

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. The recursive functions are executed in a \_\_\_\_\_

- a. Parallel order
- b. first in first out order
- c. last in first out
- d. random order

9. what is the maximum length of a c string.?  
a. 32 characters  
b. 64 characters  
c. 256 characters  
d. none of the above
10. What standard function will you use to find the last occurrence of a character in a string in C?  
a. strnchar()  
b. strchar()  
c. strrchar()  
d. strchr()

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

### **Short question (2 Marks)**

11. What is an array?  
12. What is a char array?  
13. What is 1D array?  
14. Mention the memory mapping of 2D Array.  
15. Define Function? Give out its syntax?  
16. Define function call.  
17. Define recursion.  
18. What is the use of strcmp()?  
19. Give syntax strcat().  
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 array?  
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 short notes on comparison of two strings.  
28. Explain about nesting of function.  
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. Briefly explain the 1D array.
32. Write a detailed note on array and its operations.
33. Write a detailed note on 2D array.
34. Write a matrix program Array.
35. Write a detailed note on string and character Array.
36. Describe in detail about string handling functions.
37. Explain scope and variable in function.
38. Explain about how do you passing arguments to a function.
39. Write a program to find the length of a string.
40. What is recursion? Write a C program to find the factorial of a given number using recursion.

## Unit - IV

### Choose the Correctt Answer

1. In C a pointer variable to an integer can be created by decalaration.
  - a. `int p*;`
  - b. `int *p;`
  - c. `int +p;`
  - d. `int $p;`
  
2. A pointer variable can be
  - a. passed to a function
  - b. changed within function
  - c. returned by a function
  - d. can be assigned an integer value
  
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. consider the declaration static struct

- 1. {
- 2. unsigned a:5;
- 3. unsigned b:5;
- 4. unsigned c:5;
- 5. unsigned d:5%;
- 6. }v=(1,2,3,4);

- a. 4 bytes
- b. 2 bytes
- c. 1 bytes
- d. none of these

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. Member of a union are accessed as \_\_\_\_\_

- a. union-name. member
- b. union-pointer->member

- c. union-name. member & union-pointer->member
- d. none of the mentioned

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

### **Short question (2 Marks)**

11. What is a pointer?
12. What is a function pointer?
13. Define pointer expression.
14. Write a syntax pointer.
15. Write a pointer array.
16. What are the 2 comparison of structure variable?
17. Define structure..
18. What is union?
19. Write a syntax structure.
20. Define size of structure.

### **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. How to declaring structure variable?
26. Write a program students using structure.
27. Write short notes on structure function.
28. Explain about accessing address of a variable.
29. Describe about pointer expression.
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. Briefly explain about pointers and array.
35. Explain about pointer and character string.
36. Write about structure with in structure.
37. How to use declaring and initializing pointers?
38. How do you use Structures as Function Arguments?
39. Explain about array of structure.
40. Write a program assignment of initial values to a structure variable.

**Unit - V**  
**Choose the Correct Answer**

1. Which of the following true about FILE\*fp
  - a. FILE is a keyword in C for files and fp is a variable of file type.
  - b. FILE is a stream.
  - c. FILE is a buffered stream.
  - d. FILE is a structure and fp is a pointer to the structure file type.
  
2. FILE is of type \_\_\_\_\_
  - a. int type
  - b. char \* type
  - c. struct type
  - d. none of the above
  
3. Fseek() should be preferred over rewind() mainly because
  - a. rewind() doesn't work for empty files
  - b. rewind() may fail for large files
  - c. in rewind,there is no way to check if the operations complded sucessfully
  - d. All of the above
  
4. When fopen() is not able to open a file, it returns
  - a. EOF
  - b. NULL
  - c. Runtime Error
  - d. Compiler Dependent
  
5. 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
  
- 6.For binary files, a \_\_\_\_\_ must be appended to the mode string.
  - a. B”
  - b. “B”
  - c. “binary”
  - d. 01”

7. FILE reserved word is?

- a. A structure tag declared in stdio.h
- b. One of the basic data types in c
- c. Pointer to the structure defined in stdio.h
- d. It is a type name defined in stdio.h

8. Which type of files can't be opened using fopen()?

- a. .txt
- b. .bin
- c. .c
- d. None of the above

9. What is the output of this program?

- 1. #include <stdio.h>
- 2. #define int char
- 3. main()
- 4. {
- 5. int i=50;
- 6. printf ("sizeof (i) =%d", sizeof (i));
- 7. }

- a. 2
- b. 8
- c. 4
- d. 1

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.c 3.c 4.b 5.b 6.c 7.b 8.d 9.d 10.c**

### **Short question (2 Marks)**

11. Define file.

12. Write a syntax fopen file.

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

14. Write a syntax fscanf() .

15. Define bitwise operations.

16. What is the use of #include?

17. What is a Linker?

18. What is a compiler?

19. What is macro?

20. What are the different macros?

**Paragraph questions (5 Marks)**

21. Write a program to opening a file.
22. What is fclose? Write a C program to fclose file.
23. Write a program to read the content of a file.
24. Write a program to write a file.
25. How to use get w and put w function.
26. How to use getc and putc function.
27. Write a short notes closing file.
28. Explain about command line argument.
29. Describe about bitwise operation.
30. Describe about nesting of macros.

**Essay Type Questions (10 Marks)**

31. Discuss in detail about Reading a file and Writing to a file.
32. Briefly explain about f printf and f scanf function.
33. write a program to find even and odd numbers and to store it in two separate files
34. Explain error handling during I/O operation.
35. Briefly explain about random access files.
36. Explain about register variables.
37. Write a program closing a file.
38. Write a program fopen a file.
39. Briefly explain about file including.
40. Write a program to write a file.