I Year B.Tech Examinations-2014

Model Question Paper-I

CPDS

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1 a) What is black box testing and white box testing? [2M]

b) What is storage class? Write the scope and lifetime of register storage class? (2M)

c) Write a C program to accept the string using character pointer and display it. (2M)

d) What is the difference between structure and union? (2M)

e) Illustrate the results of bubble sort for each pass, for the following initial array of elements: 68 67 99 33 122 200 (2M)

f) Given the 3 sides of triangle a, b and c as input, Draw a flowchart to test whether it is isosceles, equilateral or not. It should also validate whether the input forms a triangle or not. (3M)

g) Write a C program to accept matrix and print transpose of matrix.

h) Explain about Pointer Compatibility? (3M)

i) Explain the different modes that can be provided as a parameter to the *fopen( )* function. (3M)

j) Write a C program to implement binary search by using recursion? (3M)

PART- B (Marks: 5 X 10 = 50)

Answer All Questions. Each Question Carries 10 Marks

2 A) i) Draw a flow chart to list out all prime numbers from 1 t n.

ii) What is type conversion? Explain briefly about implicit type conversion and explicit type conversion

(OR)

B) i) What are various conditional and bitwise operations in C, explain with an example

ii) List the basic datatypes, their sizes and range of values supported by C language.

3 A) i) What is an array? What are different types of array? Explain with examples?

ii) Define Recursion. Write a C program using recursion for finding GCD (Greatest Common Divisor) of two given numbers?

(OR)

	B)	**i)**	Explain briefly auto and extern storage classes with examples?
		ii)	Write a C program to find maximum and minimum number from given list.
4	**A)**	**i)**	Explain with an example how functions returning pointers.
		ii)	Explain how strings declared and initialized in C.
			(OR)
	B)	**i)**	Explain about gets(),putchar(),getche(),strstr(), strrchr() with example.
		ii)	How pointer is declared and initialized? Explain array of pointers with example?
5	**A)**	**i)**	Explain how complex numbers can be represented using structures. Write two C functions: one to return the sum of two complex numbers passed as parameters, and another to return the product of two complex numbers passed as parameters.
		ii)	Write C-program for finding the number of words in the given text file. Assume that the words are separated by one or more blanks.
			(OR)
	B)	**i)**	Explain about Command Line arguments?
		ii)	Write a complete C program for the following: There are two input files named “first.dat” and “second.dat”. The files are to be merged. That is, copy the content of “first.dat” and then the content of “second.dat” to a new file named “result.dat”.
6	**A)**	**i)**	Write a C program to implement selection sort?
		ii)	Explain in detail about a)stack b)queue
			(OR)
	B)	**i)**	What are the operations on Linear Lists? Differentiate between using Arrays and Linked Lists for implementation of Linear Lists.
		ii)	An Array contains 47, 3, 66, 32, 56, and 92. After two passes of a sorting algorithm, the array has been rearranged to: 3, 47, 66, 32, 56, and 92. Which sorting algorithm among selection and bubble sort is used? Defend your answer?

Note: Questions 2 to 6 from all five units not necessary to follow to have the questions from the same unit within the internal choice. i.e., for example if 2A is from Unit1 then, 2B may or may not from the same Unit1.

I Year B.Tech Examinations-2014

Model Question Paper-II

CPDS

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1 a) Write a C program to shift inputted data by 2 bits left? (2M)

b) What is the advantage of using header _les in `C'? (2M)

c) Write a C program to illustrate generic pointer? (2M)

d) Explain the use of ferror() and perror(). (2M)

e) Write a C program to implement Linear Search? (2M)

f) What is the difference between break and continue? Explain w.r.t looping statements with example. (3M)

g) Write about one dimensional and two dimensional arrays? Explain how the above type of arrays can be stored in memory? (3M)

h) Explain the use of strcpy() and strcmp()? (3M)

i) Write a program using structures to display following information for each student name, Roll-number, mark1, mark2, mark3, total, average? (3M)

j) Illustrate the results for each pass of selection sort for the following array of elements 2,3,78,5,46,32,56,8,100,9. (3M)

PART- B (Marks: 5 X 10 = 50)

Answer All Questions. Each Question Carries 10 Marks

2 A) i) What are various conditional and relational operators in 'C', explain them with an example.

ii) Explain different categories of an algorithm with an example?

(OR)

B) i) Discuss in detail about program execution steps?

ii) Write a C program to generate all Armstrong numbers from 1 to n.

3 A) i) Discuss with suitable examples the storage classes available in C?

ii) Write a 'C' program to check whether the given 3x3 matrix is symmetric or not?

(OR)

B) i) Explain in detail about Preprocessor Directives in C.

ii) Write a complete C Program using functions to read ten integers and find:

(i) The number of even integers and their sum, and

(ii) The number of odd integers and their sum.

4 A) i) Explain about Pointer to functions and pointer to pointer with example?

ii) Write a C program using functions

a) To check whether the given string is palindrome or not by using predefined functions

b) To check whether the given string is palindrome or not without using predefined functions

(OR)

B) i) Explain about Memory Allocation functions in C?

ii) Explain about array of pointers and array of strings with examples?

5 A) i) Define Self referential structure. How it differs from nested structures. Explain with illustrative example

ii) Write a complete C program to copy data from one file to another file. The name of the source file and the name of the destination file are supplied by the user.

(OR)

B) i) Explain the following with examples:

i) Enumerated types ii) Unions.

ii) What are ways to set the file pointer randomly in a file? Explain.

6 A) i) Write a 'C' program to implement stack operations (Push and Pop)?

ii) Explain about singly linked list and operations.

(OR)

B) i) Write a C program to implement Bubble sort?

ii) Explain about binary search method.

I Year B.Tech Examinations-2014

Model Question Paper-III

CPDS

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1	a)	Differentiate between compiler and interpreter		(2M)
	b)	What is the need of user defined functionsQuestion from Unit 2		(2M)
	c)	What is a pointer variable? How is a pointer variable different from ordinary variable		(2M)
	d)	What is the purpose of ferror() and feof() functions		(2M)
	e)	What is time complexity and space complexity		(2M)
	f)	Differentiate between break & continue with examples		(3M)
	g)	In how many ways a 1D array can be declared and initialized		(3M)
	h)	Write about getchar(),gets(),scanf()with examples		(3M)
	i)	Write short notes on self referential structures		(3M)
	j)	Write about stack operations		(3M)

PART- B (Marks: 5 X 10 = 50)

Answer All Questions. Each Question Carries 10 Marks

2	A)	i)	Explain and specify the interactions between various components that support the basic functionality of a computer
		ii)	Draw a flow chart to check whether a number is perfect or not
			(OR)
	B)	i)	Describe various categories of computing environments
		ii)	Write a program to check whether a given number is prme or not
3	A)	i)	Write in detail about different storage classes with an example
		ii)	Write a program to perform matrix multiplication
			(OR)
	B)	i)	What is recursion? Write a program to generate fibnocci series using recursion
		ii)	Write a program to pass a 2D array to a function

4 A) i) Write a program to check whether a given string is palindrome or not

ii) Explain array of pointers with example

(OR)

B) i) Explain any four string handling functions with programs

ii) Explain arithmetic operations on pointers with examples

5 A) i) Write a program to perform sum of two complex numbers using structures

ii) Write a program to count number of characters, words and lines in a given text using files

(OR)

B) i) Explain in how many ways a structure can be passed to a function with example.

ii) Write a program to write and read the contents of a file using fscanf() & fprintf() functions

6 A) i) Explain binary search method with an example

ii) Write a program for binary search using recursion to find a given integer in an array of n elements

(OR)

B) i) Write a program to sort the elements by using Bubble sort technique

ii) Write algorithms for queue operations

I Year B.Tech Examinations-2014

Model Question Paper-VI

CPDS

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1	a)	Define an algorithm and write its characteristics	(2M)
	b)	Write short notes on scope of a variable	(2M)
	c)	What is the purpose of sprint() & sscanf()	(2M)
	d)	Distinguish between text mode binary mode operation of a file	(2M)
	f)	Difference between array & linked list	(2M)
	g)	Write minimal C- expressions for the following i) $6a^4+3a^3-5a^2-6a+22$. ii) 1235*abbc*. iii) x^3-3x^2+3x-1	(3M)
	h)	Explain ceil(),sqrtl(),pow() with example	(3M)
	i)	Write a program to find the length of a string by using string handling functions	(3M)
	j)	Write short notes on pointer to structure	(3M)
	k)	Explain linear search technique	(3M)

PART- B (Marks: 5 X 10 = 50)

Answer All Questions. Each Question Carries 10 Marks

2	A)	i)	Write an algorithm to read 10 integers and print sum of squares of all 10 values	(5M)
		ii)	Draw a flow chart to check whether a number is armstrong or not	(5M)
			(OR)	
	B)	i)	List the activities involved in each phase of water fall system development life cycle model	(5M)
		ii)	Write a program to check whether a given number is perfect or not	(5M)
3	A)	i)	Write programs to explain the difference between call by value & call by reference mechanisms	(5M)
		ii)	Write a program to print the transpose of a matrix	(5M)
			(OR)	

	B)	i)	What is recursion? Write a program to find factorial of a given number using recursion	(5M)
		ii)	Write a program to pass a 1D array to a function	(5M)
4	A)	i)	Write a program to check whether a substring is present in a given string or not	(5M)
		ii)	Explain 2D array using pointers with example	(5M)
			(OR)	
	B)	i)	Explain string I/O functions with examples	(5M)
		ii)	How to use a pointer as an argument in a function? Explain through an example	(5M)
5	A)	i)	Explain array of structures with an example	(5M)
		ii)	Write a program to copy content of one file into another file	(5M)
			(OR)	
	B)	i)	Write a c program to read information of student record(name,age,total marks) using structures	(5M)
		ii)	Write a program to write and read the contents of a file using fread() & fwrite() functions	(5M)
6	A)	i)	Explain linear search method with an example	(5M)
		ii)	Write a program for binary search to find a given integer in an array of n elements	(5M)
			(OR)	
	B)	i)	Write a program to sort the elements by using selection sort technique	(5M)
		ii)	Write algorithms for stack operations	(5M)

I Year B.Tech Examinations-2014

Model Question Paper-V

CPDS

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1	a)	what is the result of following expression and write step by step order of evaluation. (34+55/4*(33.5/3)+(6.4+4/(44-3/2)))	(2M)
	b)	What is the purpose of const and volatile keywords.	(2M)
	c)	Write about following with example program a. Strcmp , strcmpi b. srtcat , strncat	(2M)
	d)	Define structure and How a structure is defined	(2M)
	e)	How performance of algorithms are measured .	(2M)
	f)	Define th purpose of following translators a. Compiler b. Interpreter c.Assemble	(3M)
	g)	Define function and write its general syntax	(3M)
	h)	Define pointer and how it is declared,How pointers are initialized	(3M)
	i)	What is the difference between array and structure	(3M)
	j)	Define data structure and list its categories.	(3M)

PART- B (Marks: 5 X 10 = 50)

Answer All Questions. Each Question Carries 10 Marks

2	A)	i)	Define algorithm and its properties.
		ii)	Write an algorithm to print sum of given n numbers.
			(OR)
	B)	i)	What is the advantage of flowcharts and draw the symbols used in flowchart construction.
		ii)	Explain different computing environments.

3 A) i) Write a function to calculate factorial of given number using recursive calls.

ii) Explain categories of functions based on its return and parameters.

(OR)

B) i) Write a program to generate first n terms of febonacci series using 1-D array.

ii) Define 2-D array and write its declaration and how those are initialized.

4 A) i) Write a program to find frequency count of all characters in a given string.

ii) What is the result of following program segments.

a. Strcmp("HYD","hyd"); b. strcmpi("Vits","VITS");

(OR)

B) i) What is the difference between static and dynamic memory allocation strategies?

ii) How function are called using pointers explain with an example.

5 A) i) Write about following methods with an example

a. Fscanf b. fprintf

ii) Write a program to read a fie and print the content from the end of file.

(OR)

B) i) Write a program to read 10 students details and print them. Where a student record consists of name,rollno,branch,age,percentage,address.

ii) Write a program to calculate multiplication of complex numbers .(use structures)

6 A) i) Write a function to insert a element after given node position in Single linked list.

ii) Define stack and its operations

(OR)

B) i) Define Queue and its operation

ii) Write a program to implement selection sort.

I Year B.Tech Examinations-2014

Model Question Paper-VI

CPDS

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1 a) **Write about Increment and decrement operators with examples** (2M)

b) **In how many ways 1-D array elements are initialized** (2M)

c) **What is the advantage of void pointers compared to normal datatype pointers** (2M)

d) **What is the advantage of void pointers compared to normal datatype pointers** (2M)

e) **What is difference between linear and binary search.** (2M)

f) **What is the result of following program** (3M)

```
void main()
{
int a=0,b=0,c=1;
a=(++b?(a++?a:b++):(--c?c++:a+b));
printf("a=%d",a);
printf("\nb=%d",b);
printf("\nc=%d",c);
}
```

g) **Define the purpose of following** (3M)

a. Function definition **b. Function call** **c. function declaration.**

h) **Fill the following** (3M)

a. sizeof(int)=_____bytes **sizeof(int*)=_____bytes**

b. sizeof(char)=_____bytes **sizeof(char*)=_____bytes**

c. sizeof(float)=_____bytes **sizeof(float*)=_____bytes**

i) **Write about nested structures with an example.** (3M)

j) **What is the pre condition to perform binary search.** (3M)

PART-B (50 Marks)

Answer All Questions. Each Question Carries 10 Marks

2 A) i) **Write a program to print n palindrome starting from 0.**

ii) **Draw flow chart to show program development process.**

(OR)

B) i) **Write a program to print grade of student using following rules**

GRADE	PERCENTAGE
A	>=75
B	>=65 AND <75
C	>55 AND <65
FAIL	OTHERWISE.

ii) **Define precedence and associative rule and when these are applied in evaluating a expression?**

3 A) i) **Write a function to calculate factorial of given number using loops.**

ii) **Write a function to swap given two numbers using call by reference parameter technique.**

(OR)

B) i) **List all storage classes and its purpose.**

ii) a) **Define array and write its declaration syntax.**

b) **What is difference between following (int A[10];)**

a. **A[i] and i[A]** **b. A and &A[0]**

4 A) i) **Write a program to find number of characters, lines and words in given paragraph of text .**

ii) **Write about sscanf and sprintf methods with an example.**

(OR)

B) i) **Write a program to find given sun string in main string and display its index.**

ii) **Write about**

a. Strlen , strrev **b. strstr and strchr**

5 A) i) **Write a function to push and pop methods of stack.**

ii) **Write applications of stack.**

(OR)

B) i) **Define single linked list and its operations**

ii) **Write a function to delete element at given node position in Single linked list.**

6 A) I) **Write a C program to implement selection sort?**

Explain in detail about
a)stack
b)queue

(OR)

B) ii) **What are the operations on Linear Lists? Differentiate between using Arrays and Linked Lists for implementation of Linear Lists.**

An Array contains 47, 3, 66, 32, 56, and 92. After two passes of a sorting

algorithm, the array has been rearranged to: 3, 47, 66, 32, 56, and 92. Which

I Year B.Tech Examinations

Model Question Paper-VII

Computer Programming

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1.

a. What is an identifier and rules for identifier (2M)

b. What is an array, array declaration and features of array (2M)

c. What is the purpose of strstr() function and write the syntax (2M)

d. Define text file and binary file (2M)

e. Define searching and sorting . (2M)

f. What is meant by operator precedence and associativity (3M)

g. Writ about elements of a user defined function (3M)

h. Write short notes on void pointer (3M)

i. Write short notes on bitfields. (3M)

j. Define stack and queue (3M)

PART- B (Marks: 5 X 10 = 50)

2.

(a). List the basic data types in c and give their sizes in bytes (5M)

(b). Write an algorithm to read 10 positive integers & find out how many are perfect Squares (like 49,81 etc) (5M)

(or)

(a). Write a c program to read 10 integers & find number of even integers &odd integers and even sum &odd sum (5M)

(b). Explain bit wise operators with examples (5M)

3.

(a). Write a program to find GCD &LCM of given two integers by using recursion (5M)

(b) Write the C function *int minpos (float x[], int n)* that returns the position of the first minimum value among the first *n* elements of the given array *x*. (5M)

(or)

(a) Write a program to find whether a given matrix is symmetric or not (10M)

4. .

(a) Explain dynamic memory allocation functions with examples (10M)

(or)

(a)Write a program to print reverse of a given string. (5M)

(b)Write about strcmp()&strncmp() with examples (5M)

5. (a) What is a self referential structure? How it differs from nested structures? Explain with an example (10M)

(or)

(a) What are the ways to set the file pointer randomly in a file (5M)

(b) Write a program to append the contents of a file to another file (5M)

6.

(a) Write a program to implement stack operations (10M)

(or)

(b) Write an algorithm for binary search and explain with suitable example (10M)

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I Year B.Tech Examinations

Model Question Paper-VIII

Computer Programming

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1.

a. Name the steps involved in waterfall SDLC (2M)

b. What is the significance of conditional compilation . (2M)

c. Define chain of pointers with example . (2M)

d. Differentiate array and structure (2M)

e. What is LIFO & FIFO . (2M)

f. Differentiate else if ladder & switch statement (3M)

g. Write about inter function communication (3M)

h. How a string will be declared and initialized (3M)

i. What is the purpose of ferror() and feof() functions (3M)

j. Write short notes on linked list (3M)

PART- B (Marks: 5 X 10 = 50)

2. (a). Explain control statements in c with examples (10M)

OR

(b) (i). Describe various categories of computing environments (5M)

(ii) Draw a flowchart to find sum of the digits of a given number (5M)

3. (a) Explain briefly the functions of a C preprocessor (10M)

OR

(b) Explain in how many ways an array can be passed to a function with example (10M)

4. a). (i) Describe the features of pointers . Explain array of pointers with example (5M)

(ii) Explain malloc() in c with example (5M)

OR

(b). Explain string I/O functions with example (10M)

(or)

5. (a). (i). Explain typedef and enum with example (7M)

(ii). Write about self referential structure (3M)

(or)

(b). Write a program to open a text file and write some text using fprintf() function (10M)

6. (a). Write a program to implement queue operations (10M)

(or)

(b) . Write an algorithm for selection sort and trace the steps using selection sort for the following elements: 3,13,7,26,44,23,98,57 (10M)

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I Year B.Tech Examinations

Model Question Paper-XI

Computer Programming

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1.

a. Difference between system software and application software (2M)

b. What is conditional compilation (2M)

c. How a 2D array is declared & initialized using pointers (2M)

d. Define sequential file and random access file (2M)

e. What are command line arguments (2M)

f. Explain goto statement with an example (3M)

g. Write short notes on scope of a variable (3M)

h. Define dynamic memory allocation functions with syntax (3M)

i. Write about fgetc() & fputc() with syntax (3M)

j. Define data structures and types of data structures (3M)

PART- B (Marks: 5 X 10 = 50)

2. (a). (i). Explain iterative statements in c with examples (10M)

(or)

(b). (i). Write a c program to print prime numbers between 1 to n (10M)

3. (a)What are the various categories of functions and explain with an example (10M)

(or)

(b). Write about 2D array declaration & initialization and Write a program to find sum of Two matrices (10M)

4. (a). (i). Explain function returning a pointer with example (5M)

(ii). Explain how a pointer is passed as an argument to a function with an example (5M)

(or)

(b) (i)Write a program to find the length of a given string without using string handling Function (5M)

(ii) Explain array of strings with example (5M)

5. (a).(i). Discuss the differences between a structure and union in C with an example (5M)

(ii). Differentiate array of structures and arrays within structures (5M)

(or)

(b). (i) What are the different modes to open a file? Explain with example (5M)

(ii) Write a program to read and write the contents of a file (5M)

6. (a). Write an algorithm for bubble sort . Illustrate the results of bubble sort for each pass, for the Following initial array of elements (10M)

(or)

(b) .Write a program to demonstrate the operations of a stack using arrays (10M)

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I Year B.Tech Examinations

Model Question Paper-X

Computer Programming

(Common to All Branches)

Time: 3 hours **Max.Marks:75**

Note: ***Answer All questions of PART-A***

Answer FIVE questions from PART-B

Part- A (Marks: 25)

1.

a. What is the need of iterative and decision making statements? (2M)

b. List the different preprocessor directives (2M)

c. What are the advantages of pointers? (2M)

d. Write about how memory will be done to the members which are declared inside structure and union. (2M)

e. Define enqueue and dequeue operations? (2M)

f. What are the steps involved in for creating and running a C program (3M)

g. Define formal and actual arguments?What are the rules for formal arguments and actual arguments (3M)

h. Write a program using strstr() function? (3M)

i. Write about different fseek() operations with syntax (3M)

j. How an element will be searched using binary search technique. (3M)

PART- B (Marks: 5 X 10 = 50)

2.

(a). (i). Explain structure of c program (5M)

ii)write a program to perform arithmetic operations using switch statement? (5M)

(or)

(b). Explain different types of operators involved in 'C' with examples (10M)

3.

(a) Define recursion and write programs to generate fibonocci series factorial of a given number using recursion (10M)

(or)

(b) (i). Explain multidimensional array with example (5M)

(ii).Write a program to find minimum & maximum element in an array using function (10M)

4. (a). (i). Explain arithmetic operations on pointers (5M)

(ii). Explain how a pointer is passed as an argument to a function with an example (5M)

(or)

(b) (i)Write a program to find the palindrome of a given string using function (5M)

(ii) Explain a formatted input and output functions on strings with example (5M)

5. . (a). (i). Write a program to pass the address of structure using function?(5)

(ii). Write a c program for nested structures and nested structures with pointers? (5M)

(or)

(b). (i) what are the error handling functions on a file? Explain with example (5M)

(ii) Write a program to count the number of words in a given a file (5M)

6. (a). Explain technique of binary search?Write a program for search an element using binary search with recursion (10M)

(or)

b)Write algorithms for i)stack operations (5M)

ii)queue operations (5M)

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