INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

COMPUTER SCIENCE AND ENGINEERING

TUTORIAL QUESTION BANK

Course Name	**COMPUTER PROGRAMMING**
Course Code	**ACS001**
Class	I B. Tech
Branch	Common for CSE / IT / ECE / EEE
Year	2016 – 2017
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OBJECTIVES

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

PART – A (SHORT ANSWER QUESTIONS)

S. No	Question	Blooms Taxonomy Level	Course Outcome
	UNIT – I **INTRODUCTION**		
1	**List** the two major components of a computer system?	Remember	1
2	**Identify** the steps in creating and running a C program?	Remember	2
3	**Write** the steps used in problem solving?	Understand	3
4	**Write** the basic set of procedures that are followed by various organizations as program development life cycle methods?	Understand	2
5	**State** the properties of an algorithm?	Remember	2
6	**Write** the parameters which effects the run time of an algorithm?	Understand	2
7	**State** the need for measuring the complexity of an algorithm with an example?		
8	**Write** the various classes of data types ANSI C supports?	Remember	4
9	**State** which of the following are valid identifiers. If invalid, state the reason.	Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome
	a. sample1 b. data_7 c. return d. #fine e. 91-080-100 f. name & age g. _val		
10	**Find** the value of *x* in the following expression? x = 3 / 2 % 6 – 3 / 9;	Remember	3
11	**Find** the output of following statement? printf(“%s”,”IARE-2015”+5);	Understand	3
12	**Write** the size and range of the basic data types?	Remember	3

13	**Solve** the expression and find output of the following code?
	void main()
	{
	int i = -3 , j = 2, k = 0, m;
	m = ++i && ++j && ++k;
	printf(“%%3d%3d%3d%3d%3d”, i, j, k, m);
	}
		Understand	3

14	**Find** the output of the following code?
	void main()
	{
	double k=0;
	for(k = 0.0, k < 3.0; k++)
	printf(“Hello”);
	}
		Remember	3

15	**Solve** the expression and find output of the following code?
	void main()
	{
	int x = !5 – 4 + 2 * 5;
	printf(“%d”, x);
	}
		Remember	3

16	**Write** the basic escape sequence characters and its meaning with example?	Remember	3

17	**Find** the output of c, d, e and f in the below code?
	float c = 15/10.0;
	int d = 15/10;
	float e = 15/10;
	float f = 15.0/10.0;
		Remember	3

18	**Find** the output of the following code?
	int main()
	{
	printf(“%d”+1, 123);
	return 0;
	}
		Understand	3

19	**Find** the output of the following code?
	int main()
	{
	printf(“%d”, printf(“Hi!”) + printf(“Bye”));
	return 0;
	}
		Remember	3

20	**Find** the output of the following code?
	int main()
	{
	printf(“Work” “Hard”);
	return 0;
	}
		Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome

21	**Find** the output of the following code?
	int main()
	{
	int v = 10;
	printf(“%d”, v++, “%d”, v- -);
	return 0;
	}
		Understand	3

22	**Find** the output of the following code?
	Note: Assume two values are entered by the user are stored in the variables v and n respectively.
	int main()
	{
	int v = 5, n;
	printf(“%d”,scanf(“%d%d”, &v, &n));
	return 0;
	}
		Understand	3

23	**Find** the output of the following code?
	int main()
	{
	int a = 500, b = 100, c = 30, d = 40, e = 19;
	a += b -= c *= d /= e %= 5;
	printf(“%2d%2d%2d%2d%2d”, a, b, c, d, e);
	return 0;
	}
		Understand	3

24	**Find** the value of x, y, z for a = 9, b = 12, c = 3 (assume all are declared as float data type) a. x = a – b / 3 + c * 2 – 1; b. y = a – b / (3 + c) * (2 – 1); c. z = a – (b / (3 + c) * 2) – 1;	Understand	3

25	**Find** the output of the following code?
	int main()
	{
	int a;
	a = 015 + 0x15 + 5;
	printf(“%d”, a);
	return 0;
	}
		Understand	3

26	**Find** the output of the following code?
	int main()
	{
	printf(“%2d%2d%2d”, sizeof(3.14), sizeof(3.14f), sizeof(3.14L));
	return 0;
	}
		Understand	3

27	**Find** the output of the following code?
	int main()
	{
	int a = 5;
	a = ++i + ++i + ++i;
	printf(“%d”, a);
	return 0;
	}
		Understand	3

28	**Find** the output of the following code?
	int main()
	{
	int x = 025;
	printf("Decimal = %d\n", x);
	printf("Octal = %o\n", x);
		Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome
	printf("Hexadecimal = %x\n", x); }		

29	**Find** the output of the following code? Assume y = 6 and z = 7.
	int main()
	{
	int x = 5, y, z, p;
	p = printf("%d\n", scanf("%d%d", &y, &z));
	printf("x=%d \t y=%d \t z = %d \t p= %d\n", x, y, z, p);
	}
		Understand	3

30	**Find** the value of x and y in the following code?
	int main()
	{
	int x, y;
	x = sizeof("hello") - sizeof(int);
	printf("x = %d\n", x);
	y = sizeof(int) - sizeof(int);
	printf("y = %d", y);
	}
		Understand	3

31	**Find** the output of the following code?
	void main()
	{
	int scanf = 10, getch = 20, putch;
	putch = scanf + getch;
	printf("%d", putch);
	}
		Understand	3

32	**Find** the output of the following code?
	void main()
	{
	int i =1, j = 2;
	{
	int i =5;
	printf("%d\n", i+j);
	}
	printf("%d", i - j);
	}
		Understand	3

33	**Find** the output of the following code?
	void main()
	{
	int x, y,z;
	x = printf("one");
	y=sizeof(printf("two"));
	z=sizeof(x += y);
	printf("%5d%5d%5d", x, y, z);
	}
		Understand	3

34	**Find** the output of the following code?
	void main()
	{
	int x = 3, y = 4,z;
	x++;
	y-1;
	z = x + y;
	printf("%5d%5d%5d", x, y, z);
	}
		Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome

35	**Find** the output of the following code?
	void main()
	{
	int x=5, y=7,z;
	z=(x==6)||(y=6);
	printf("%5d%5d%5d", x, y, z);
	}
		Understand	3

	UNIT – II **CONTROL STRUCTURES, ARRAYS AND STRINGS**		

1	**Find** the output of the following code?
	void main()
	{
	int x=5;
	if(x = 6)
	printf("hello");
	else
	printf("Bye");
	}
		Understand	3

2	**Find** the output of the following code?
	void main()
	{
	int i=5,j=6,k=7;
	if(i<j, j>k, i==k)
	printf("Correct");
	else
	printf("Wrong");
	}
		Understand	3

3	**Find** the output of the following code?
	void main()
	{
	int x =10, y=8, z=1;
	if(++x || ++y)
	{
	printf("%5d%5d%5d", x=y, y=z, z=5);
	}
	}
		Understand	3

4	Take x = 0, y = 0 and z = 1. **Find** the value of x, y, and z after executing the following code?
	if(x)
	if(y)
	z = 3;
	else
	z = 2;
		Understand	3

5	**Find** the output of the following code?
	int main()
	{
	int i = 1;
	for(; i < 4; i++);
	printf("%d", i);
	return 0;
	}
		Understand	3

6	**Find** the output of the following code?
	int main()
	{
	int a, b;
	for(a = 0; a < 10; a++);
	for(b = 25; b > 9; b -= 3);
	printf("%d%d", a, b);
		Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome
	return 0; }		

7	**Find** the output of the following code?
	int main()
	{
	int a;
	for(a = 5; --a;)
	printf("%d", a);
	return 0;
	}
		Understand	3

8	**State** the difference between entry controlled and exit controlled loop with example?	Remember	3
9	**Write** the usage of break and continue statement with example?	Remember	3

10	**Find** the output of the following code?
	int main()
	{
	int a = 1, b = 2, c = 3, d = 4, e;
	if(e = (a & b | c ^ d))
	printf("%d", e);
	return 0;
	}
		Understand	3

11	**Find** the output of the following code?
	void main()
	{
	int a=1,b=2,c=3,d=4;
	if (d > c)
	if (c > b)
	printf("%d %d", d, c);
	else if (c > a)
	printf("%d %d", c, d);
	if (c > a)
	if (b < a)
	printf("%d %d", c, a);
	else if (b < c)
	printf("%d %d", b, c);
	}
		Understand	3

12	**Find** the output of the following code?
	void main()
	{
	int choice = 3;
	switch(choice)
	{
	default: printf("default");
	case 1: printf("choice 1"); break;
	case 2: printf("choice 2"); break;
	}
	}
			3

13	**Find** the output of the following code?
	void main()
	{
	char c = 125;
	do
	printf("%d", c);
	while(c++);
	}
		Understand	3

14	**Find** the output of the following code? void main() {	Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome

	for(;;)
	{
	printf("%d", 10);
	}
	}		

15	**Find** the output of the following code?
	void main()
	{
	printf("hi!");
	if !(0)
	printf("bye");
	}
		Understand	3

16	**Find** the output of the following code?
	void main()
	{
	int a =1;
	if(a)
	printf("test");
	else ;
	printf("again");
	}
		Understand	3

17	**Find** the output of the following code?
	void main()
	{
	int i =1;
	if(i++, ++i, i--, --i)
	printf("%d\n", i);
	}
		Understand	3

18	**Find** the output of the following code?
	void main()
	{
	float i;
	for(i = 0.1;i < 0.4; i += 0.1)
	printf("%.1f\n", i);
	}
		Understand	3

19	**Find** the output of the following code?
	void main()
	{
	int i;
	for(i = 2;i += 2; i <= 9; i +=2)
	printf("%d\n", i);
	}
		Understand	3

20	**Find** the output of the following code?
	void main()
	{
	int i = 3;
	for(i--; i < 7; i = 7)
	printf("%d", i++);
	}
		Understand	3

21	**Find** errors if any from the following code?
	int main()
	{
	float x=3.5;
	switch(x)
	{
	case 3.1: printf("A");
	case 3.2: printf("B");
	case 3.3: printf("C");
		Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome
	} return 0; }		

22	**Find** the output of the following code?
	int main()
	{
	int i=3,j=4,k=5;
	for(++i; i==j; k++)
	{
	printf("hello %d", k);
	}
	return 0;
	}
		Understand	3

23	**Find** the output of the following code?
	int main()
	{
	int i,j;
	for(i=1;i<3;i++)
	{
	for(j=1;j<3;j++)
	{
	if(i==j)
	break;
	}
	}
	printf("%5d%5d",i,j);
	return 0;
	}
		Understand	3

24	**State** the rule that determines the order in which initial values are assigned to multi dimensional array elements?	Remember	4
25	**State** which of the following is the correct syntax for the initialization of one-dimensional array? a. num[3]={0 0 0}; b. num[3]={0,0,0}; c. num[3]={0;0;0}; d. num[3]=0	Remember	4

26	**State** which of the following is the correct syntax for initialization of two-dimensional array?
	a. table[2][3]={0,0,0,1,1,1};
	b. table[2][3]={
	{0,0,0}
	{1,1,1}
	};
	c. table[2][3]={0,1},{0,1},{0,1};
		Remember	4

27	**State** which of the following multi-dimensional array declaration is correct for realizing a 2x3 matrix? a. int m[2][3] b. int m[3][2] c. int m[3],m[2]	Remember	4

28	**Find** the output of the following code?
	void main()
	{
	int a[][3] = {{1, 2}, {3, 4, 5}, {5}};
	printf("%3d%3d%3d", sizeof(a), a[0][2], a[1][2]);
	}
		Understand	4

29	**Write** the output of the following code?	Understand	4

S. No	Question	Blooms Taxonomy Level	Course Outcome

	void main()
	{
	int xxx[10] = {5};
	printf("%3d%3d", xxx[1], xxx[9]);
	}		

30	**Write** the output of the following code?
	void main()
	{
	int a[3][2] = {10. 20, 30, 40, 50, 60};
	printf("%d", a[0][4]);
	}
		Remember	4

31	**Distinguish** Lvalue and Rvalue of an array element?	Remember	4
32	Is it possible to pass an entire array to a function as an argument? **State** with an example?	Remember	4

33	**Write** the output of the following code?
	#include<string.h>
	void main()
	{
	char s1[] = "Anil kumar gupta";
	char s2[] ="kumar";
	printf(strstr(s1,s2));
	}
		Understand	4

34	**Write** the output of the following code?
	#include<string.h>
	void main()
	{
	char s1[] = "jaihind";
	char s2[] ="jaipur";
	int x;
	x =strncmp(s1,s2,3);
	printf("x = %d", x);
	}
		Understand	4

35	**Write** the output of the following code?
	#include<string.h>
	void main()
	{
	char s1[] = "NEW DELHI";
	char s2[] ="BANGALORE";
	strncpy(s1,s2,4);
	printf("%s", s1);
	}
		Understand	4

36	**State** the correct syntax for copying a string S1 into S2?	Remember	7
37	**Identify** which of the following is used to represent the end of a string? a. Blank space b. Null character c. Newline character d. Last element of the string	Remember	6

38	**Examine** the code and identify the line no containing error?
	int a[10]; //line 1
	int *p; //line 2
	p=a; //line 3
	a=p; //line 4
		Remember	7

39	**Compare** the following two strings using strcmp() function and display its return value? char x[5] = "ABCD"; char y[5] = "abcd";	Remember	7

S. No	Question	Blooms Taxonomy Level	Course Outcome
40	**Identify** the string function which is available in <string.h> to find the sub-string in the main string?	Understand	6
41	**State** various string manipulation functions in C?	Understand	6
	UNIT – III **FUNCTIONS AND POINTERS**		
1	**State** the advantage of user defined functions?	Remember	3, 4
2	**State** various types of functions used in C?	Understand	4
3	**State** the difference between actual and formal parameters?	Understand	3
4	**Write** the need for a function prototype with an example?	Remember	3
5	**State** the various types of functions depending upon categories of arguments and return statements with example?	Remember	3
6	**Define** a recursive function with an example?	Remember	4
7	**State** the advantages and disadvantages of recursion?	Remember	4

8	**Find** the output of the following code?
	void main ()
	{
	static int v = 5;
	printf ("%d\t", v--);
	if(v)
	main();
	}
		Remember	4

9	**Write** the default return type for a function with an example?	Remember	3
10	**Distinguish** between the following: a. Automatic and static variables b. Scope and visibility of variables	Understand	3
11	**Identify** the invalid prototype declarations if any with valid reasons: a. int (f1) void; b. void f2 (void, void); c. void f3 (int a, int &b);	Understand	3

12	**Find** errors if any, in the following function definitions:
	int abc (int a, int b)
	{
	double c = a + b;
	return (c);
	}
		Understand	3

13	**Find** errors if any, in the following function calls: a. xyz (int x, int y); b. xyz ( ) + xyz ( ); c. xyz (void);	Understand	3

14	**Find** the output of the following code?
	int prod (int m, int n);
	void main ( )
	{
	int x = 10, y = 20, p, q;
	p = prod (x, y);
	q = prod(p, prod (x, y));
	printf("%5d%5d", p, q);
	}
	int prod (int a, int b)
	{
	return (a * b);
	}
		Understand	3

15	**Find** the output of the following code? int test (int num)	Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome

	{
	int m,n=0;
	while(num)
	{
	m = num%10;
	if(m%2)
	n=n+1;
	num = num / 10;
	}
	return(n);
	}
	void main ( )
	{
	int r;
	r = test(135);
	printf("Result = %d", r);
	}		

16	**State** the reasons that is likely to happen when the following situations are encountered in a program: a. Actual parameters are less than the formal arguments in a function. b. The order of actual parameters in the function call is different from the order of formal parameters in a function where all the parameters are of the same type.	Understand	3
17	**State** the need for dynamic memory allocation and how does it help in building complex programs?	Understand	3
18	**Write** the principal difference between the functions malloc() and calloc()?	Understand	3
19	**List out** the dynamic memory allocation functions and write its general syntax?	Remember	3, 4
20	**Write** the usage of realloc () and free () function with example?	Remember	3, 4
21	**Define** scope of a variable?	Remember	3, 4
22	**Identify** the storage class which allows the data to be stored in CPU?	Remember	4

23	**Find** errors if any:
	void main ()
	{
	extern int x = 10;
	printf (“%d”, x);
	}
		Understand	4

24	**Find** the output of the following code?
	extern int x;
	int x = 25;
	void main ()
	{
	extern int x;
	printf (“%d”, x);
	}
		Understand	4

25	**Find** the output of the following code?
	void main()
	{
	static int i=5;
	if(--i)
	{
	main();
	printf("%d\t",i);
	}
		Understand	4

S. No	Question	Blooms Taxonomy Level	Course Outcome
	}		

26	**Find** the output of the following code?
	f(int i, int j)
	{
	i = i+j;
	printf("%5d%5d", i, j);
	}
	void main()
	{
	f(1,2);
	f(2,3);
	}
		Understand	4

27	In C, if you pass an array as an argument to a function, **predict** what actually gets passed?	Understand	4

28	**Find** the output of the following code?
	void fun()
	{
	static int s;
	s = s+ 2;
	printf("s = %d", s);
	}
	void main()
	{
	fun();
	fun();
	}
		Remember	4

29	**Find** the output of the following code?
	int add(int a, int b)
	{
	int c = a+b;
	}
	void main()
	{
	int a=10,b=20;
	printf("%2d %2d %2d",a, b, add(a,b));
	}
		Understand	4

30	**Find** the output of the following code?
	int funct(char ch)
	{
	ch=ch+1;
	return ch;
	}
	void main()
	{
	int a=127;
	printf("%d %d", a, funct(a));
	}
		Understand	4

31	**Write** the output of the following code?
	int val;
	static int funct()
	{
	return val*val;
	}
	void main()
	{
	val=5;
		Understand	4

S. No	Question	Blooms Taxonomy Level	Course Outcome

	funct();
	val++;
	printf("%d",funct());
	}		

32	**Write** the output of the following code?
	void main()
	{
	void funct1(void);
	void funct2(void);
	clrscr();
	funct1();
	}
	void funct1(void)
	{
	printf("Ocean of ");
	funct2();
	}
	void funct2(void)
	{
	printf("Knowledge");
	}
		Understand	4

33	**Write** the output of the following code?
	void print(int *);
	void print(int *);
	void main()
	{
	int x=100;
	print(&x);
	}
	void print(int *a)
	{
	printf("%d",*a);
	}
		Understand	4

34	**Write** the output of the following code?
	int increment(int i)
	{
	static int count =0;
	count = count + 1;
	return(count);
	}
	void main()
	{
	int i,j;
	for (i=0;i<=4;i++)
	j = increment(i);
	printf("%5d", j);
	}
		Understand	4

35	**Write** the advantages of pointer?	Remember	5
36	**State** how a pointer variable can be declared and accessed with an example?	Understand	7
37	**Write** the meaning of chain of pointers with an example?	Remember	7
38	**Write** the disadvantages of pointers?	Remember	7
39	**State** the arithmetic operations which are allowed in pointers?	Remember	7
40	**Write** the use of NULL pointer to avoid dangling state?	Understand	7

S. No	Question	Blooms Taxonomy Level	Course Outcome

41	**Find** the output of the following?
	void main()
	{
	int n[3][2] = {3, 6, 9, 12, 15, 18};
	printf("%2d%2d", *(n + 1)[1], **(n + 2));
	}
		Remember	7

42	**Find** the value of *y, *(y + 1) for the following program fragment: char x [ ] = "Life is beautiful"; char *y = &x [3];	Remember	7
43	Given int x = 10, y = 10; int *p1 = &x, *p2 = &y; **Find** the value of each of the following expressions: a. (*p1)++ b. - - (*p2)	Understand	7
44	**Identify** the correct expression for declaring a pointer to a function? a. int (*p) (void); b. int *p (void);	Understand	7
45	**Find** the output of the following segment? int m[2]; *(m + 1) = 100; *m = *(m + 1); printf ("%d", m [0]);	Understand	7
46	**Use** void pointer to print the value of x and ch? int *ip, x = 5; char *cp, ch = 'a'; void *vp;	Remember	7
47	**Write** the procedure for swapping two strings using pointers?	Remember	5
48	**Write** the significance of void pointer?	Remember	7
49	**State** the role of preprocessor?	Remember	2
50	**List out** the categories of preprocessor directives?	Remember	2
51	**Write** the different forms of macro substitution with example?	Remember	2
52	**State** different forms of file inclusion with example?	Remember	2
53	**List out** miscellaneous preprocessor directives with example?	Remember	2
54	**Write** the advantages of macro definitions in a program?	Remember	2
55	The value of a macro name cannot be changed during running of a program. **Write** your comments?	Understand	3
56	**Write** the need for conditional compilation and how does it help a programmer?	Remember	2
57	**Distinguish** between #ifdef and #if directives?	Remember	2
58	**Define** a macro and state how it is different from a C variable name?	Remember	2
59	**List out** the precautions one should take when using macros with argument?	Remember	2
60	**Enumerate** the differences between functions and parameterized macros?	Understand	3
	UNIT – IV **STRUCTURES, UNIONS**		
1	**Define** a structure and state how the members of a structure are accessed with example?	Understand	7
2	**Write** the major differences between arrays and structures?	Remember	7
3	**Write** an example of nested structure?	Remember	7
4	**State** the difference between a structure and union?	Remember	7
5	**Write** an example of array of structures?	Remember	7
6	**Write** the general format of sending a copy of a structure to the called function?	Remember	7

S. No	Question	Blooms Taxonomy Level	Course Outcome
7	The uninitialized integer data type of a structure contains which of the following default values a. Garbage b. Zero c. One	Remember	7
8	**Identify** the following expressions which are correct for accessing the 'num' variable value of the i^{th} element of a structure array 'student' a. student[i].num b. student.num[i] c. student[i]->num	Remember	7

9	**Find** the output of the following?
	struct
	{
	int i;
	float f;
	}var;
	void main()
	{
	var.i=5;
	var.f=9.76723;
	printf("%d %.2f",var.i,var.f);
	}
		Remember	7

10	**Write** the output of the following?
	struct values
	{
	int i;
	float f;
	};
	void main()
	{
	struct values var={555,67.05501};
	printf("%2d %.2f",var.i,var.f);
	}
		Remember	7

11	**Write** the output of the following?
	union A
	{
	char ch;
	int i;
	float f;
	}temp;
	void main()
	{
	temp.ch='A';
	temp.i=777;
	temp.f=12345.12345;
	printf("%d", temp.i);
	}
		Remember	7

12	**Write** the output of the following? void main() { struct employee { unsigned id: 8; unsigned sex:1;	Understand	7

S. No	Question	Blooms Taxonomy Level	Course Outcome

	unsigned age:7;
	};
	struct employee emp1={203,1,23};
	printf("%d\t%d\t%d",emp1.id,emp1.sex,emp1.age);
	}		

13	**Write** an example for enumerated data type?	Remember	7
14	**State** the default starting value of enumerated set?	Understand	7
15	**Write** the usage of typedef with example?	Remember	7
16	**Write** the value of tulip from the following enumerated flowers? enum flowers{rose, lily = 5, lotus, tulip, sunflower};	Understand	7
17	**State** the operator which connects the structure name to its member name?	Understand	7
18	Size of an union is determined by size of the. a. First member in the union b. Last member in the union c. Biggest member in the union d. Sum of the sizes of all members	Understand	7
19	**Find** the size of the following union declaration? union Temp { double a; int b[10]; char c; }u; (Assuming size of double = 8, size of int = 4, size of char = 1)	Understand	7
20	Bit fields can only be declared as part of a structure a. false b. true c. can't say d. none	Understand	7
	UNIT – V **FILES**		
1	**Write** the basic operations of a file?	Understand	7
2	**Write** the various text file opening modes?	Understand	7
3	**State** the various types of status enquiry library functions in C?	Understand	7
4	**Write** the syntax and usage of ftell()?	Remember	7
5	**Write** the purpose of fseek() with example?	Remember	7
6	**Write** the syntax and usage of rewind()?	Remember	7

7	**Find** the output of the following
	int main()
	{
	FILE *fp = stdin;
	int n;
	fprintf(fp, "%d", 45);
	}
		Understand	7

8	If there is any error while opening a file, fopen() will return? a. Nothing b. EOF c. NULL d. Depends on compiler	Understand	7
9	**Find** the meaning of 'a' in the following operation? fp = fopen("sample.txt", "a");	Understand	7
10	**Identify** which is correct about a FILE a. A structure tag declared in stdio.h	Understand	7

S. No	Question	Blooms Taxonomy Level	Course Outcome
	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		

11	**Predict** the output of this code?
	#include <stdio.h>
	int main()
	{
	FILE *fp = stdout;
	stderr = fp;
	fprintf(stderr, "%s", "hello");
	}
		Understand	7

12	**Find** the output of this code?
	#include <stdio.h>
	#include <stdlib.h>
	int main()
	{
	FILE *fp = stdout;
	int n;
	fprintf(fp, "%d", 45);
	}
		Understand	7

13	**Find** which is true about stdout, stdin and stderr? a. File pointers b. File descriptors c. Streams d. Structure	Understand	7

14	**Predict** the output of this code?
	#include <stdio.h>
	#include <string.h>
	int main()
	{
	char line[3];
	fgets(line, 3, stdin);
	printf("%d\n", strlen(line));
	return 0;
	}
		Understand	7

15	**Find** the content of 'file.c' after executing the following program?
	#include<stdio.h>
	int main()
	{
	FILE *fp1, *fp2;
	fp1=fopen("file.c", "w");
	fp2=fopen("file.c", "w");
	fputc('A', fp1);
	fputc('B', fp2);
	fclose(fp1);
	fclose(fp2);
	return 0;
	}
		Understand	7

16	If the file 'source.txt' contains a line "Be my friend", **predict** the output of below program? #include<stdio.h> int main() { FILE *fs, *ft;	Understand	7

S. No	Question	Blooms Taxonomy Level	Course Outcome

	char c[10];
	fs = fopen("source.txt", "r");
	c[0] = getc(fs);
	fseek(fs, 0, SEEK_END);
	fseek(fs, -3L, SEEK_CUR);
	fgets(c, 5, fs);
	puts(c);
	return 0;
	}		

17	**Identify** the error in the program?
	#include<stdio.h>
	#include<stdlib.h>
	int main()
	{
	unsigned char;
	FILE *fp;
	fp=fopen("trial", "r");
	if(!fp)
	{
	printf("Unable to open file");
	exit(1);
	}
	fclose(fp);
	return 0;
	}
		Understand	7

18	**Identify** which is true about fseek() ? 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 completed successfully d. All of the above	Understand	7
19	When fopen() is not able to open a file, it returns a. EOF b. NULL c. Runtime Error d. Compiler Dependent	Understand	7
20	**Identify** which of the following is true about FILE *fp a. FILE is a keyword in C for representing files and fp is a variable of FILE type. b. FILE is a structure and fp is a pointer to the structure of FILE type c. FILE is a stream d. FILE is a buffered stream	Understand	7

PART – B (LONG ANSWER QUESTIONS)

S. No	Question	Blooms Taxonomy Level	Course Outcome
	UNIT – I **INTRODUCTION**		
1	**List** out the different operators used in C language? **Explain** any two types of operators with examples.	Understand	1
2	**List** out various steps involved in creating and running a program?	Remember	1
3	**Write** a C program for swapping of two given numbers using a temporary	Understand	3

	variable and without using temporary variable.		
4	Distance between two points (x_1, y_1) and (x_2, y_2) is governed by the formula $D^2 = (x_2 - x_1)^2 + (y_2 - y_1)^2$ **Write** a C program to compute D given the coordinates of the points.	Apply	3
5	Area of a triangle is given by the formula $A = \sqrt{S(S-a)(S-b)(S-c)}$ Where a, b and c are sides of the triangle and 2S = a + b + c. **Write** a C program to compute the area of the triangle given the values of a, b, c.	Apply	3
6	The price of one kg of rice is Rs. 40.75 and one kg of sugar is Rs. 30. **Write** a C program to get these values from the user and display the prices as follows. **** LIST OF ITEMS *** Item Price Rice Rs 40.75 Sugar Rs 30.00	Apply	3
7	**Write** a C program to read two floating point numbers using a scanf statement, assign their sum to an integer variable and then output the values of all three variables.	Apply	3
8	**Write** a C program to print the value 345.6789 in fixed-point format with the following specifications: a. Correct to two decimal places b. Correct to five decimal places and c. Correct to zero decimal places	Understand	2
9	The ABC electric company manufactures four consumer products. Their inventory position on a particular day is given below. **Code Quantity Rate(Rs.)** F105 275 575.00 H220 107 993.95 I019 321 215.50 M315 89 725.00 Write a C program to prepare the inventory report table in the following format: **INVENTORY REPORT** **Code Quantity Rate Value** --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- **Total Value:** ----------	Understand	2
10	**Write** a C program to read a four digit integer and print the sum of its digits. Hint: use / and % operators	Apply	2
	UNIT – II **CONTROL STRUCTURES, ARRAYS AND STRINGS**		
1	**Compare** and **Contrast** while and do while loop? Write a C program to print the odd numbers from X to Y using do while loop?	Understand	3
2	**Write** a program to find the number of and sum of all integers greater than 100 and less than 200 that are divisible by 7?	Apply	3
3	**Write** a C program to display your branch name based upon the branch code using switch statement?	Understand	3
4	Admission to a professional course is subject to the following conditions: a. Marks in Mathematics >= 60 b. Marks in Physics >= 50 c. Marks in Chemistry >= 40 d. Total in all three subjects >= 200 e. Total in Mathematics and Physics >= 150	Apply	3

	Given the marks in the three subjects, **write** a C program to process the application to list the eligible candidates.		
5	**Write** a C program to compute the real roots of a quadratic equation **$ax^2 + bx + c = 0$** The roots are given by the equations $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ The program should request for the values of the constants a, b and c and print the values of x1 and x2. Use the following rules: a. No solution, if both a and b are zero b. There is only one root, if a=0 c. There are no real roots, if b^2 - 4ac is negative d. Otherwise, there are two real roots Write a C program to test all the above conditions.	Apply	3
6	**Calculate** the LCM and GCD of two 2- digit numbers?	Remember	3
7	**Write** a C program to calculate commission for the input value of sales amount. Commission is calculated as per the following rules: a. Commission is nil for sales amount Rs 5000/. b. Commission is 2% for sales when sales amount is greater than 5000 and less than equal to 10000. c. Commission is 5% for sales amount greater than 10000.	Apply	3
8	A character is entered through keyboard. **Write** a C program to determine whether the character entered is a capital letter, a small case letter, a digit or a special symbol using if-else and switch case. The following table shows the range of ASCII values for various characters. Characters — ASCII values A – Z — 65 – 90 a – z — 97 – 122 0 – 9 — 48 – 57 Special symbols — 0 – 47, 58 – 64, 91 – 96, 123 - 127	Remember	3
9	If cost price and selling price of an item S input through the keyboard, write a program to determine whether the seller has made profit or incurred loss. **Write** a C program to determine how much profit or loss incurred in percentage.	Apply	3
10	**Write** a C program to produce the following output? 1 3 5 7 9 11 13 15 17 19	Apply	3
11	**Write** a C program to display N^{th} Fibonacci number.	Understand	3
12	**Write** a C program to print the numbers in triangular form. 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5	Apply	3
13	**Write** a C program to read in two numbers, x and n, and then compute the sum of this geometric progression $1+x+x^2+x^3+...x^n$. For example: if n is 3 and x is 5, then the program computes 1+5+25+125. Print x, n, the sum. Perform error checking. For example the formula does not make sense for negative Exponents – if n is less than 0. Have your program print an error message if n<0, then go back and read in the nest pair of numbers of without computing the sum. Are any values of x also illegal? If so, test for them too.	Apply	3
14	**Write** a C program to print Armstrong numbers between 1 to n where n	Apply	3

	value is entered by the user. Armstrong number is defined as the sum of cubes of individual digits of a number. e.g. $371 = 3^3 + 7^3 + 1^3$		
15	**Write** a C program to generate all prime numbers between 1 and n, where n value is supplied by the user.	Apply	3
16	**Write** a C program to print first n lines of the Pascal's Triangle. Pascal's triangle is a triangular array of the binomial coefficients. 1 1 1 1 2 1 1 3 3 1	Apply	3
17	**Write** a C program to print first n lines of Floyd's Triangle. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Apply	3
18	**Write** a C program to print the following series 1/1! + 2/2! + 3/3! + ……	Apply	3
19	**Write** a C program to compute and display the sum of all integers that are divisible by 6 but not divisible by 4 and lie between 0 and 100. The program should also count and display the number of such values.	Apply	3
20	**Write** a C program to produce the following form of Floyd's triangle 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1	Apply	3
21	**Write** C programs for the following: a. Find the largest and smallest number among a list of integers. b. Read a list of elements into an array and print the reverse of the list.	Apply	3
22	**Write** C programs for the following: a. Read two matrices and find the addition and multiplication of two matrices. b. Find the transpose of a matrix. e.g. Given matrix 1 2 3 4 5 6 Transpose of the matrix: 1 4 2 5 3 6	Apply	4
23	**Write** a C program to store numbers into an array and find the frequency of a particular number in array and print it.	Apply	4
24	**Write** a C program to swap the K^{th} and $(K+1)^{th}$ elements in an integer array where K is given by the user.	Apply	4
25	**Write** a C program to merge two sorted arrays into a third array.	Apply	4
26	**Write** a C program to check whether a given matrix is sparse matrix or not. The size of the matrix must be minimum 2x2.	Apply	4
27	**Write** a C program to print a given number into words. [Hint: 123 should be displayed as one two three]	Apply	4
28	**Write** a C program accepts a string and returns true if the string is a palindrome and false if it is not, without using string built-in functions?	Apply	7
29	**Write** a C program to a. Check whether the given string is palindrome or not with and without using string functions. b. Insert a sub-string in to given main string from a given position.	Apply	6

30	**Write** a C program to a. Remove blank spaces from a string. b. Capitalize all the letters of a string.		
	UNIT – III **FUNCTIONS AND POINTERS**		
1	**Write** C programs that uses both recursive and non-recursive functions: a. Find the sum of n natural numbers b. Find the factorial of a given number	Apply	3
2	**Write** a C program that uses functions to do the following: a. Convert decimal number to binary number b. Convert binary number to decimal number	Apply	3
3	**Write** C programs that uses both recursive and non-recursive functions: a. Find the N^{th} Fibonacci number b. Find the reverse of a number	Apply	3
4	**Write** a C program that uses functions to do the following: a. Convert a Roman letter into its decimal equivalent. b. Find 2's complement of a binary number.	Apply	4
5	**Write** a user defined function which takes an array of sorted integers and returns the median value? [Hint: For odd set of integers there will be a single median and for even set of integers, there will be two middle values and median is the average of the two middle values]	Apply	4
6	**List** out the different types of storage classes with valid example?	Apply	4
7	**Compare** and **Contrast** iteration versus recursion with suitable example?	Apply	6
8	**Explain** different types of preprocessor directives?	Apply	6
9	**Write** a C program to find the seat position in a second class sleeper coach for the given seat number? [Hint: The sleeper coach has 72 seats and in each cabin there are 8 seats. Seat position: lower berth, upper berth, middle berth, side lower and side upper]	Apply	4
10	**Write** a C program to print the tomorrow's date for the given today's date. [Hint: Suppose today's date is 31st March 2016, then the next day will be 1st April 2016]	Apply	4
11	**Distinguish** between the following: a. Actual and formal arguments b. Scope and visibility of variables	Apply	3
12	**Write** a C program using function that reads an array of integers and reverses the elements of an array using pointers?	Apply	7
13	**Write** a C program to read lines of text from the keyboard, count and display the occurrence of a particular word in that text?	Apply	7
14	**List** out the advantages of using pointers and **explain** generic (void) pointers with a suitable example?	Apply	7
15	**Write** a C program that accepts a set of 5 names using array of pointers concept and displays them?	Apply	7
16	**Explain** in detail about dynamic memory allocation functions like malloc(), calloc(), realloc() and free() with suitable example?	Apply	5
17	**Write** a C program to pass a multi-dimensional array to a function containing marks of students and display it on the screen?	Apply	3
18	**Write** a C program to read a list of N integers and sort it using pointers. [hint: use any sorting technique]	Apply	6
19	**Write** a C program to read a string and find the number of vowels, consonants, digits and white spaces in that string?	Apply	6
20	**Write** a C program to a. Copy the elements of one array to another array using pointers. b. Read two strings and compare these two strings character by character. Display the similar characters found in both the strings and count the number of dissimilar characters.	Apply	4
21	**Write** a C program to	Apply	7

	a. Add two numbers using pointers. b. Swap two numbers using pointers.		
22	**Write** a C program to a. Read the name of a person as input and prints the name in an abbreviated fashion, e.g. Ram Kumar as R K b. Read a line of text and count all occurrence of a particular word.	Apply	7
23	**Explain** the following: a. Process of pointer initialization with an example? b. Distinguish between (*m)[5] and *m[5]?	Apply	7
24	**Write** a function day_name that receives a number n and returns a pointer to a character string containing the name of the corresponding day. The day names should be kept in a static table of character strings local to the function?	Apply	7

25	Given the following declarations:
	int x = 10, y = 10;
	int *p1 = &x, *p2 = &y;
	Find the values of the following expressions:
	a. (*p1) ++
	b. - -(*p2)
	c. *p1 + (*p2) - -
	d. + +(*p2) - *p1
		Apply	7

	UNIT – IV **STRUCTURE AND UNION**		
1	**Write** a C program to read your full name and date of birth and display the same using the concept of nested structure.	Apply	7
2	**Write** a C program to maintain a book structure containing name, author and pages as structure members. Pass the address of structure variable to a user defined function and display the contents.	Apply	7
3	A marketing company is having 50 employees and it maintains employee records in terms of their empid, empname, desg, salary, quantity, sales amount. The company gives 10% hike in salary to the employees if their sales amount is more than 50000/-. **Write** a C program that displays the employee records who got hike in salary.	Apply	7
4	IARE College is maintaining student attendance records by storing rollno, stdname, attendance percentage in 5 different subjects. **Write** a C program to find the average attendance percentage and print the following a. If attendance percentage >=75 then print student is eligible for writing final exam. b. If attendance percentage >= 65 and <75 then print student is in condonation list. c. Otherwise not eligible for writing exams.	Apply	7
5	Consider the declaration of the structure typedef struct { char x; char *y; int z[20]; } status; **Discuss** whether the following are valid, if invalid, give reason. a. struct status s1; b. struct status s2[25]; c. status s3; d. status s4 [20];	Apply	7
6	**Explain** the following with suitable example: a. Nested Structures b. Array of structures	Understand	7
7	**Explain** the following with suitable example:	Understand	7

	a. self referential structures b. enumerated types		
8	**Write** a C program to pass a copy of the entire structure named stores containing members name, price and quantity to a function?	Apply	7
9	**Write** the usage of the following: a. Unions b. Bit fileds	Understand	7
10	**Explain** with examples, the different ways of assigning values to structure members?	Understand	7
11	**Explain** three different approaches that can be used to pass structures as function arguments?	Apply	7
12	**Define** a structure called complex consisting of two floating point numbers x and y and declare a variable p of type complex. Assign initial values 0.0 and 1.1 to the members.	Apply	7
13	**Define** a structure data type called time_struct containing 3 members integer hour, integer minute and integer second. Develop a program that would assign values to the individual members and display the time in the following format: **16 : 40 : 51**	Apply	7
14	**Define** a structure named census with the following 3 members: a. A character array city[ ] to store names. b. A long integer to store population of the city. c. A float member to store the literacy level. **Write** a program to do the following: a. To read details for 5 cities randomly using an array variable. b. To sort the list alphabetically. c. To sort the list based on literacy level. d. To sort the list based on population. e. To display sorted lists.	Apply	7
15	**Define** a structure that can describe a hotel. It should have members that include the name, address, grade, average room charge, and number of rooms. **Write** functions to perform the following operations: a. To print out hotels of a given grade in order of charges. b. To print out hotels with room charges less than a given value.	Apply	7
16	**Define** a structure called cricket that will describe the following information: Player name Team name Batting average Using cricket, declare an array player with 50 elements and **write** a program to read the information about all the 50 players and print a team-wise list containing names of players with their batting average.	Apply	7
17	**Define** a 'slack byte'? **Explain** how it affects the implementation of structures?	Apply	7
18	**Explain** the meaning and purpose of the following: a. **struct** keyword b. **typedef** keyword c. **sizeof** operator	Apply	
19	**Compare and contrast** structures and unions?	Understand	7
20	IARE maintains salary details of every employee by storing their name, department, basic pay, da, hra and cca. Store this information in a nested structure and display the salary of an employee.	Apply	7
	UNIT – V **FILES**		
1	**Write** a C program to read a text file containing some paragraph. Use fseek() function and read the text after skipping 'n' characters from	Apply	7

	beginning of the file?		
2	**Explain** the following functions with suitable example: a. ftell() b. fseek() c. rewind()	Understand	7
3	**Write** a C program to read a text file "sample.txt" and reverse N character in a file.	Apply	7
4	**Explain** the following file I/O functions with example: a. fopen() b. fclose() c. fread() d. fwrite()	Understand	7
5	**Write** a C program to open a file names INVENTORY and store in it the following data **Item number price quantity** Printer P100 7500 10 Scanner S200 5500 5 Hard disk H300 4500 8 Read the data from the INVENTORY file and display the inventory table with the value of each item. [Hint: value = price * quantity and use fprintf() and fscanf() functions]	Apply	7
6	**Write** a C program to capitalize first letter of every word in a file.	Apply	7
7	**Write** a C program to read name and marks of n number of students from user and store them in a file. If the file previously exists, then add the information of n students to the end of existing content.	Apply	7
8	**Write** a C program to count chars, spaces, tabs and newlines in a file.	Apply	7
9	Create a structure named employee containing name, age and basic pay. **Write** a C program to create 5 employee records and write to a file. Then read the records from file and display it.	Apply	7
10	**Write** a C program count the total number of characters inside the source file.	Apply	7

PART – C (PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS)

S. No	Question	Blooms Taxonomy Level	Course Outcome
	UNIT – I INTRODUCTION		

1	**Code 1:**
	for(i =0, j = 0, i = j; i++, j++)
	printf("%d", i);
	Code 2:
	for(i =0, j = 0, i = = j; i++, j++)
	printf("%d", i);
	Analyze the above two codes and write the output with valid justification?
		Apply	8

2	#define square(x) x*x
	void main()
	{
	int x, y = 3, z = 6;
	x = square(y + z) – square(y – z);
	printf("x = %d", x);
	}
	Analyze the above code and **predict** the output from printf() statement.
		Apply	9

S. No	Question	Blooms Taxonomy Level	Course Outcome

3	Consider the following C program segment:
	char p[20];
	char *s = "string";
	int length = strlen(s);
	int i;
	for (i = 0; i < length; i++)
	p[i] = s[length - i];
	printf("%s",p);
	
	Find the output of the program?
	a. gnirts
	b. gnirt
	c. string
	d. no output is printed
		Apply	8

4	**Find** the output of following program print?
	#include<stdio.h>
	void f(int *p, int *q)
	{
	p = q;
	*p = 2;
	}
	int i = 0, j = 1;
	int main()
	{
	f(&i, &j);
	printf("%d %d \n", i, j);
	getchar();
	return 0;
	}
		Apply	9

5	Consider the following C function:
	int f(int n)
	{
	static int i = 1;
	if (n >= 5)
	return n;
	n = n+i;
	i++;
	return f(n);
	}
	Find the value the value returned by f(1)?
		Apply	8

6	**Find** the output of the following fragment of C-program? char c[] = "STUDENTS2016"; char *p =c; printf("%s", p + p[3] - p[1]) ;	Apply	9

S. No	Question	Blooms Taxonomy Level	Course Outcome

7	Consider this C code to swap two integers and these five statements: the code
	void swap(int *px, int *py)
	{
	*px = *px - *py;
	*py = *px + *py;
	*px = *py - *px;
	}
	S1: will generate a compilation error
	S2: may generate a segmentation fault at runtime depending on the arguments passed
	S3: correctly implements the swap procedure for all input pointers referring to integers stored in memory locations accessible to the process
	S4: implements the swap program
		Apply	9

8	Consider the following C-function in which a[n] and b[m] are two sorted integer arrays and c[n + m] be another integer array.
	void xyz(int a[], int b [], int c[])
	{
	int i, j, k;
	i = j = k = 0;
	while ((i<m))
	if (a[i] < b[j])
	c[k++] = a[i++];
	else
	c[k++] = b[j++];
	}
	Find the condition(s) which hold(s) after the termination of the while loop?
		Apply	8

9	Consider the following declaration of a 'two-dimensional array in C: char a[100][100]; Assuming that the main memory is byte-addressable and that the array is stored starting from memory address 0, what is the address of a[40][50]?	Apply	9

10	Find the value of j at the end of the execution of the following C program.
	int incr (int i)
	{
	static int count = 0;
	count = count + i;
	return (count);
	}
	main ()
	{
	int i,j;
	for (i = 0; i <=4; i++)
	j = incr(i);
	}
		Apply	8

UNIT – II CONTROL STRUCTURES, ARRAYS AND STRINGS			

1	void main()
	{
	int i = 5, sum = 0;
	for(i; i; i+5)
	sum = sum + i;
	printf("Sum = %d", sum);
	}
	Analyze the above code and predict the output from printf() statement.
		Apply	9

S. No	Question	Blooms Taxonomy Level	Course Outcome

2	void main()
	{
	int i = 5, j = 10, k = 1;
	if(++i || ++j)
	k = i + j;
	else
	k = i – j;
	printf("%3d%3d%3d", i, j, k);
	}
	Evaluate the final value of i, j, k from the above code?
		Apply	8

3	for(i = 1;i < 3; i++)
	{
	for(j = 1; j < 3; j++
	{
	for(k = 1; k < 3; k++)
	{
	if(j == k)
	break;
	else
	{
	printf("%d%d%d", i,j, k);
	continue;
	}
	}
	}
	}
	Predict the output of the above code.
		Understand	9

4	switch (N % 6)
	{
	case 3: printf("Wednesday");
	default: printf("Sunday");
	case 5:printf("Friday");
	}
	In the above code if N = 27, then **predict** the output of the code?
		Apply	8

5	Consider the C function given below. Assume that the array listA contains n > 0 elements, sorted in ascending order.
	int ProcessArray(int *listA, int x, int n)
	{
	int i, j, k;
	i = 0;
	j = n-1;
	do
	{
	k = (i+j)/2;
	if (x <= listA[k])
	j = k-1;
	if (listA[k] <= x)
	i = k+1;
	}while (i <= j);
	if (listA[k] == x)
	return(k);
	else
	return -1;
	}
	Explain the purpose of function ProcessArray?
		Apply	9

S. No	Question	Blooms Taxonomy Level	Course Outcome

6	void g(int x[10], int p)
	{
	x[p] = p;
	x[p – p] = p;
	}
	void main()
	{
	int arr[3] = {10, 20, 30};
	g(arr, 2);
	printf("%d%d%d", arr[0], arr[1], arr[2]);
	}
	Predict the output of the above code.
		Apply	8

7	char a[5] = "IARE";
	int i =0;
	while(a[i])
	printf("%s\n", (a + i++));
	Find the output of the above code.
		Apply	9

8	for(putchar('C');putchar('A');putchar('R'))
	putchar('T');
	Predict the output of the above code.
		Apply	9

	UNIT – III **FUNCTIONS AND POINTERS**		

1	**Explain** the output of the following program?
	void f(int x, int y, int z)
	{
	printf("%d%d%d", x, y, z);
	}
	void main()
	{
	int x = 5, y= 6, z= 7;
	f(x = y, y = z+2, z = x+3);
	}
		Apply	9

2	**Analyze** the following program and identify the error in the program?
	void main()
	{
	char ch = 'c';
	char c = 'a';
	char *const ptr = &ch;
	ptr = &c;
	}
		Apply	9

3	**Analyze** the following program and find the output of the program?
	int fun(int a, int b)
	{
	printf("\n a = %d", a);
	printf("\n b = %d", b);
	}
	void main()
	{
	int(*fptr)(int,int);
	fptr = func;
	func(2, 3);
	fptr(2,3);
	}
		Apply	8

S. No	Question	Blooms Taxonomy Level	Course Outcome

4	**Analyze** the following program and find the output of the program?
	char s[100];
	char *fun(char s[])
	{
	static int i = 0;
	if(*s)
	{
	fun(s + 1);
	s[i] = *s;
	i++;
	}
	return s;
	}
	void main()
	{
	char s[] = “sample code”;
	printf(“%s”, fun(s));
	}
		Apply	9

5	**Analyze** the following program and find the output of the program?
	void main()
	{
	char s1[7] = “1234”, *p;
	p = s1 + 2;
	*p = ‘\0’;
	printf(“%s”, s1);
	}
		Apply	9

6	Consider the following three C functions :,
	[PI] int * g (void)
	{
	int x = 10;
	return (&x);
	}
	[P2] int * g (void)
	{
	int * px;
	*px = 10;
	return px;
	}
	[P3] int *g (void)
	{
	int *px;
	px = (int *) malloc (sizeof(int));
	*px = 10;
	return px;
	}
	Identify which of the above three functions are likely to cause problems with pointers?
	
	a. Only P3
	b. Only P1 and P3
	c. Only P1 and P2
	d. P1, P2 and P3
		Apply	9

S. No	Question	Blooms Taxonomy Level	Course Outcome

7	Find the output of the following C program?
	int f(int x, int *py, int **ppz)
	{
	int y, z;
	**ppz += 1;
	z = **ppz;
	*py += 2;
	y = *py;
	x += 3;
	return x + y + z;
	}
	void main()
	{
	int c, *b, **a;
	c = 4;
	b = &c;
	a = &b;
	printf("%d", f(c,b,a));
	getchar();
	}
		Apply	8

8	Consider the C program shown below. Find the output of this program code?
	# define print(x) printf ("%d", x)
	int x;
	void Q(int z)
	{
	z += x;
	print(z);
	}
	void P(int *y)
	{
	int x = *y+2;
	Q(x);
	*y = x-1;
	print(x);
	}
	main(void)
	{
	x=5;
	P(&x);
	print(x);
	getchar();
	}
		Apply	8

S. No	Question	Blooms Taxonomy Level	Course Outcome

9	Consider the following C program
	main()
	{
	int x, y, m, n;
	scanf ("%d %d", &x, &y); /* x > 0 and y > 0 */
	m = x; n = y;
	while (m != n)
	{
	if(m>n)
	m = m - n;
	else
	n = n - m;
	}
	printf("%d", n);
	}
	The program computes
	a. x+y using repeated subtraction
	b. x mod y using repeated subtraction
	c. the greatest common divisor of x and y
	d. the least common multiple of x and y
		Apply	9

10	**Predict** the output of the following code?
	double foo (double); /* Line 1 */
	int main ()
	{
	double da, db;
	// input da
	db = foo (da);
	}
	double foo (double a)
	{
	return a;
	}
		Apply	8

	UNIT – IV **STRUCTURE AND UNIONS**		

1	**Analyze** the following program and find out the error in the program?
	#include<stdio.h>
	int main()
	{
	struct a
	{
	float category:5;
	char scheme:4;
	};
	printf("size=%d", sizeof(struct a));
	return 0;
	}
		Apply	8

S. No	Question	Blooms Taxonomy Level	Course Outcome

2	**Predict** the output of the program?
	#include<stdio.h>
	int main()
	{
	struct value
	{
	int bit1:1;
	int bit3:4;
	int bit4:4;
	}bit={1, 2, 13};
	printf("%d, %d, %d\n", bit.bit1, bit.bit3, bit.bit4);
	return 0;
	}
		Apply	9

3	**Verify** the following statements which correctly assigns 12 to month using pointer variable pdt?
	#include<stdio.h>
	struct date
	{
	int day;
	int month;
	int year;
	};
	int main()
	{
	struct date d;
	struct date *pdt;
	pdt = &d;
	return 0;
	}
		Apply	8

4	**Predict** the output of the program?
	#include<stdio.h>
	int main()
	{
	enum days {MON=-1, TUE, WED=6, THU, FRI, SAT};
	printf("%d, %d, %d, %d, %d, %d\n", MON, TUE, WED, THU,
	FRI,
	SAT);
	return 0;
	}
		Apply	9

5	**Analyze** the program and identify the error in the program?
	#include<stdio.h>
	int main()
	{
	struct emp
	{
	char name[25];
	int age;
	float bs;
	};
	struct emp e;
	e.name = “suresh”;
	e.age = 25;
	printf(“%s %d\n”, e.name, e.age);
	return 0;
	}
		Apply	8

S. No	Question	Blooms Taxonomy Level	Course Outcome

6	**Analyze** the code and identify the statements which are correct in the following program?
	#include<stdio.h>
	int main()
	{
	union a
	{
	int i;
	char ch[2];
	};
	union a u1 = {512};
	union a u2 = {0, 2};
	return 0;
	}
	a. u2 CANNOT be initialized as shown.
	b. u1 can be initialized as shown.
	c. To iniatialize char ch[] of u2 '.' Operator should be used.
	d. The code causes an error 'Declaration syntax error'
		Apply	9

	UNIT – V **FILES**		
1	In fopen(), the open mode "wx" is sometimes preferred "w" because. 1) Use of wx is more efficient. 2) If w is used, old contents of file are erased and a new empty file is created. When wx is used, fopen() returns NULL if file already exists. a. Only 1 b. Only 2 c. Both 1 and 2 d. Neither 1 and 2	Apply	8
2	**Write** a C program that request for a file name and an integer known as offset value. The program then reads the file starting from the location specified by the offset value and prints the contents on the screen. If the offset value is a positive integer then printing skips that many lines. If it is negative number it prints that many lines from the end of the file. An appropriate error message should be printed if anything goes wrong.	Apply	9
3	**Write** a menu driven C program to add, display, search, update and delete the student record. Every student record contains name, roll no, age and marks in individual subjects.	Apply	8

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