

A3-R4: PROGRAMMING & PROBLEM SOLVING THROUGH 'C' LANGUAGE

अवधि: 03 घंटे
DURATION: 03 Hours

अधिकतम अंक: 100
MAXIMUM MARKS: 100

ओएमआर शीट सं.:					
OMR Sheet No.:					

रोल नं.:

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Roll No.:

उत्तर-पुस्तिका सं.:

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Answer Sheet No.:

परीक्षार्थी का नाम:

परीक्षार्थी के हस्ताक्षर:

Name of Candidate: _____; Signature of candidate: _____

परीक्षार्थियों के लिए निर्देश:

Instructions for Candidate:

कृपया प्रश्न-पुस्तिका, ओएमआर शीट एवं उत्तर-पुस्तिका में दिये गए निर्देशों को ध्यान पूर्वक पढ़ें।	Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.
प्रश्न-पुस्तिका की भाषा अंग्रेजी है। परीक्षार्थी केवल अंग्रेजी भाषा में ही उत्तर दे सकता है।	Question Paper is in English language. Candidate can answer in English language only.
इस मॉड्यूल/पेपर के दो भाग हैं। भाग एक में चार प्रश्न और भाग दो में पाँच प्रश्न हैं।	There are TWO PARTS in this Module/Paper. PART ONE contains FOUR questions and PART TWO contains FIVE questions.
भाग एक "वैकल्पिक" प्रकार का है जिसके कुल अंक 40 हैं तथा भाग दो, "व्यक्तिपरक" प्रकार है और इसके कुल अंक 60 हैं।	PART ONE is Objective type and carries 40 Marks. PART TWO is subjective type and carries 60 Marks.
भाग एक के उत्तर, इस प्रश्न-पत्र के साथ दी गई ओएमआर उत्तर-पुस्तिका पर, उसमें दिये गए अनुदेशों के अनुसार ही दिये जाने हैं। भाग दो की उत्तर-पुस्तिका में भाग एक के उत्तर नहीं दिये जाने चाहिए।	PART ONE is to be answered in the OMR ANSWER SHEET only, supplied with the question paper, as per the instructions contained therein. PART ONE is NOT to be answered in the answer book for PART TWO .
भाग एक के लिए अधिकतम समय सीमा एक घण्टा निर्धारित की गई है। भाग दो की उत्तर-पुस्तिका, भाग एक की उत्तर-पुस्तिका जमा कराने के पश्चात दी जाएगी। तथापि, निर्धारित एक घंटे से पहले भाग एक पूरा करने वाले परीक्षार्थी भाग एक की उत्तर-पुस्तिका निरीक्षक को सौंपने के तुरंत बाद, भाग दो की उत्तर-पुस्तिका ले सकते हैं।	Maximum time allotted for PART ONE is ONE HOUR . Answer book for PART TWO will be supplied at the table when the answer sheet for PART ONE is returned. However, candidates who complete PART ONE earlier than one hour, can collect the answer book for PART TWO immediately after handing over the answer sheet for PART ONE .
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना एवं अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हाल नहीं छोड़ सकता है। ऐसा नहीं करने पर, परीक्षार्थी को इस मॉड्यूल/पेपर में अयोग्य घोषित कर दिया जाएगा।	Candidate cannot leave the examination hall/room without signing on the attendance sheet and handing over his Answer sheet to the invigilator. Failing in doing so, will amount to disqualification of Candidate in this Module/Paper.
प्रश्न-पुस्तिका को खोलने के निर्देश मिलने के पश्चात एवं उत्तर देने से पहले उम्मीदवार यह जाँच कर यह सुनिश्चित कर ले कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before answering the questions, the candidate should ensure that the Question booklet is complete in all respect.

जब तक आपसे कहा न जाए तब तक प्रश्न-पुस्तिका न खोलें।

DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.

PART ONE
(Answer all the questions)

1. Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

1.1 What will be output if you compile and execute the following 'C' code?

```
void main(){
float a=5.2;
if(a==5.2)
    printf("Equal");
else if(a<5.2)
    printf("Less than");
else
    printf("Greater than");
}
```

- A) Equal B) Less than
C) Greater than D) Compilation error

1.2 What will be output if you compile and execute the following 'C' code?

```
void main(){
int i=4,x;
x=++i + ++i + ++i;
printf("%d",x);
}
```

- A) 21 B) 18
C) 12 D) Compilation error

1.3 The following code 'for(;;)' represents an infinite loop. It can be terminated by.

- A) break B) exit(0)
C) abort() D) All of the mentioned

1.4 Arguments that take input by user before running a program are called?

- A) main function arguments
B) main arguments
C) Command-Line arguments
D) Parameterized arguments

1.5 Automatic variables are allocated memory in

- A) heap B) Data segment
C) Code segment D) stack.

1.6 End of file is detected by

- A) fend() B) endf()
C) EOF D) FEND

1.7 If the first string and the second string both are identical, then strcmp function returns

- A) a value of 0 B) either 1 or 0
C) a value of 1 D) any positive integer

1.8 Register variable are active

- A) outside the function
B) throughout the program
C) only in the function where it is defined
D) surrounding of that function

1.9 What will be the output of following program

```
#include
main()
{
int x,y = 10;
x = y * NULL;
printf("\n %d \n", x);
}
```

- A) error B) 0
C) 10 D) Garbage value

1.10 What is the output of this C code?

```
#include <stdio.h>
void main()
{
static int x;
if (x++ < 2)
main();
}
```

- A) Infinite calls to main B) Run time error
C) Varies D) main is called twice

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

2.1 Are the expression *ptr++ and ++*ptr are same?

2.2 3 += 3; evaluates to 6.

2.3 The default precision for printing of floating point values is 6. If the floating-point number is more precise than 6 digits, it will be rounded.

2.4 The following block of code sums up an input series of grades (terminated by -1).

```
while( grade != -1 )
total = total + grade;
counter = counter + 1;
printf( "Enter grade, -1 to end: " );
scanf( "%d", &grade );
```

2.5 A double data type number uses 64 bits giving a precision of 14 digits.

2.6 Every C program must have at least one main () function section.

2.7 The precedence of arithmetic operators is (from highest to lowest)

%, *, /, +, -

2.8 Is the following statement valid in C?

```
int my_num=100,000;
```

2.9 void (*ptr)(int); ptr is ptr is pointer to int that converts its type to void.

2.10 We need to recompile the program before executing it even if there is no change in the source code.

3. Match words and phrases in column X with the closest related meaning/ word(s)/phrase(s) in column Y. Enter your selection in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

X		Y	
3.1	In 'C' size of data type varies from compiler to compiler. In TURBO C 3.0 (16 bit compilers) size of: double is _____ byte	A.	char
3.2	_____ is a ternary operator.	B.	5
3.3	_____ is integral data type?	C.	Break
3.4	What will be output when you execute following 'C' code? <pre>#include<stdio.h> void main(){ char arr[7]="Network"; printf("%s",arr); }</pre>	D.	True
3.5	What will be output when you will execute following 'C' code? <pre>#include<stdio.h> void main(){ char data[2][3][2]={0,1,2,3,4,5,6,7,8,9,10,11}; printf("%O",data[0][2][1]); }</pre>	E.	10
3.6	What will be output of the following 'C' program? <pre>#include<stdio.h> int main(){ struct s{ int a; }; struct s b={10}; printf("%d",b.s); return 0; }</pre>	F.	Continue
3.7	_____ can be used for coming out of recursion?	G.	Garbage Value
3.8	All static variables are automatically initialized to zero.	H.	?:
3.9	Character constants are coded using double quotes.	I.	8
3.10	_____ is used to skip some statements in a loop for that iteration.	J.	Return
		K.	False
		L.	Null
		M.	**

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Choose the most appropriate option, enter your choice in the “OMR” answer sheet supplied with the question paper, following instructions therein. (1x10)

A.	realloc()	B.		C.	gets()
D.	//	E.	extern	F.	wild
G.	macro	H.	malloc()	I.	strchr()
J.	/*	K.	\	L.	dangling
M.	Type <i>conversion</i>				

- 4.1 A single line comment in C language source code can begin with _____.
- 4.2 _____ is a logical OR operator.
- 4.3 _____ int fun(); - The declaration indicates the presence of a global function defined outside the current module or in another file.
- 4.4 _____ function that is most appropriate for reading in a multi-word string.
- 4.5 _____ operator is used to continue the definition of macro in the next line.
- 4.6 _____ is a inbuilt library function to adjust the allocated dynamic memory size.
- 4.7 The library function _____ finds the first occurrence of a substring in another string.
- 4.8 #define allow us to define _____.
- 4.9 _____ is a way to promote from lower to higher *data type*.
- 4.10 A pointer in C which has not been initialized is known as _____ pointer.

PART TWO
(Answer any FOUR questions)

- 5.
- a) Write a 'C' program to swap two variables without using third variable.
 - b) What are merits and demerits of array in 'C'?
 - c) Write a 'C' program in which a scanf() function can read a complete paragraph of text.

(5+5+5)

- 6.
- a) What is difference between pass by value and pass by reference?
 - b) Write a function in 'C' to print even numbers from 1 to 100.
 - c) Write a 'C' program to find whether a number is palindrome or not.

(4+5+6)

- 7.
- a) Write a program to reverse an array of numbers.
 - b) Define array and link list. Give one example for each showing its usage.
 - c) Write a program to delete an element from a given location of an array of integers.

(5+5+5)

- 8.
- a) Write a 'C' Program to find Sum of lower triangular elements in a matrix.
 - b) Write a 'C' Program to find substring of string without using Library Function.
 - c) How can you create your own header file in 'C' programming? Briefly explain.

(5+5+5)

- 9.
- a) Write down three different methods used for referencing multiple values from a function.
 - b) Write a 'C' program to read following details of 50 students.

Student Name, Student Roll No, Class

Display total number of students studying in class "BCA".

- c) Write two main differences between structure and union.

(5+6+4)

