

Sl. No.

**A3-R4/B1.3-R4 : PROGRAMMING & PROBLEM SOLVING THROUGH
'C' LANGUAGE**

अवधि : 03 घंटे

अधिकतम अंक : 100

DURATION : 03 Hours

MAXIMUM MARKS : 100

ओएमआर शीट सं. :
OMR Sheet No. :

रोल नं. :
Roll No. :

उत्तर-पुस्तिका सं. :
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 ध्यानपूर्वक 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 का 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, ओएमआर उत्तर-पुस्तिका पर 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. 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 पश्चात् 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 to the Invigilator.
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना और अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हॉल/कमरा नहीं छोड़ सकते हैं। 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/her 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 पश्चात् एवं उत्तर लिखना आरम्भ करने से पहले उम्मीदवार जाँच कर यह सुनिश्चित कर लें कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before starting to answer 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 there in.

(1x10)

1.1 The default storage class of a 'C' variable is :

- (A) Auto
- (B) Static
- (C) Extern
- (D) Register

1.2 What is sizeof() in C ?

- (A) Operator
- (B) Function
- (C) Macro
- (D) None of these

1.3 int main()

```
{
extern int i;
i = 20;
printf("%d", sizeof(i));
return 0;
}
```

- (A) 20
- (B) 0
- (C) Undefined reference to i
- (D) Linking Error

1.4 main()

```
{
int x = 10;
{
int x = 0;
printf("%d", x);
}
}
```

- (A) 10
- (B) Compilation Error
- (C) 0
- (D) Undefined

1.5 What should be the output ?

```
void main()
{
int a = 10/3;
printf("%d", a);
}
```

- (A) 3.33
- (B) 3.0
- (C) 3
- (D) 0

1.6 What do you mean by "int(*ptr)[10]" ?

- (A) ptr is an array of pointers to 10 integers
- (B) ptr is a pointer to an array of 10 integers
- (C) ptr is an array of 10 integers
- (D) Invalid statement

- 1.7 Which of the following is not a logical operator ?
- (A) &
 (B) &&
 (C) ||
 (D) !
- 1.8 Which of the following cannot be checked in a switch-case statement ?
- (A) Character
 (B) Integer
 (C) Float
 (D) enum
- 1.9 In C, if you pass an array as an argument to a function, what actually gets passed ?
- (A) Value of elements in array
 (B) First element of the array
 (C) Address of the last element of array
 (D) Base address of the array
- 1.10 Which of the following is the correct order of evaluation for the below expression ?
- $$z = x + y * z / 4 \% 2 - 1$$
- (A) */% + - =
 (B) = */% + -
 (C) /* % - + =
 (D) * % / - + =
2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the "OMR" sheet attached to the question paper, following instructions therein. (1x10)
- 2.1 A function may have several declarations, but only one definition.
- 2.2 Only character or integer can be used in switch statement.
- 2.3 # define is known as preprocessor compiler directive.
- 2.4 sizeof() is a function that returns the size of a variable.
- 2.5 The return type of malloc function is void.
- 2.6 = is used for comparison, whereas, == is used for assignment of two quantities.
- 2.7 Blank spaces may be inserted between two words to improve the readability of the statement.
- 2.8 Continue keyword is used to skip one iteration of loop.
- 2.9 A file opened for writing already exists its contents would be overwritten.
- 2.10 In a call to printf() function the format specifier %b can be used to print binary equivalent of an integer.

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 attached to the question paper, following instructions therein. (1x10)

X		Y	
3.1	switch statement is often used for	A.	Array
3.2	The purpose of library function fflush() is	B.	Entry control
3.3	Do-while loop is	C.	joins two strings
3.4	fseek	D.	Converts a data type to another data type
3.5	strcat()	E.	menu selection
3.6	Typecasting	F.	To clear the specified buffer
3.7	exit(0) in a 'C' program represents	G.	User defined data type
3.8	Union in C	H.	Exit control
3.9	group of related data of same type that share a common name	I.	Termination of a program
3.10	To insert the comments in the program this symbol is used	J.	to move file pointer associated with a given file to a specific position
		K.	Inbuilt data type
		L.	<!-->
		M.	/*

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Enter your choice in the "OMR" answer sheet attached to the question paper, following instructions therein. (1x10)

A.	index	B.	NULL	C.	or
D.	recursion	E.	derived	F.	void
G.	global	H.	local	I.	flowchart
J.	break	K.	and	L.	left to right
M.	right to left				

4.1 The _____ statement causes an exit from the innermost loop or switch.

4.2 When a function calls itself again and again, it is called _____.

4.3 The _____ value is used to access the data element of an array.

4.4 Each string is terminated with _____ character.

4.5 Array is _____ type of data type.

4.6 A variable declared inside a function is called _____ variable.

4.7 The _____ operator is true only when both the operands are true.

4.8 If a function return type is declared as _____ it cannot return any value.

4.9 _____ is a pictorial representation of an algorithm.

4.10 s++ has associativity _____.

PART TWO

(Answer any FOUR questions)

5. (a) Explain the command line argument in C programming with suitable example.
- (b) Differentiate between break and continue.
- (c) Write a 'C' program to check whether given number is prime or not. **(5+5+5)**
6. (a) Write a suitable 'C' program to print the following pattern :
- ```
*
**


```
- (b) Explain about union datatype in C with suitable example.
- (c) What is an array ? Explain declaration and initialization of two dimensional integer array in 'C' with suitable example. **(5+5+5)**
7. (a) Write a program to store the information (name, roll and marks) of a student and display it on the screen using structures.
- (b) Differentiate between do-while loop and while loop with the help of one example for each.
- (c) Explain about pre and post increment operator and the ternary operator with example. **(5+5+5)**

8. (a) What are preprocessor directions ? Why do we need them ? Explain various preprocessor directives.
- (b) Write a recursive function to compute factorial of a number. **(8+7)**
9. (a) Write 'C' program to copy content of one file into another file.
- (b) Explain the following :
- (i) static variable
  - (ii) auto variable
  - (iii) register variable
- (c) Write a program to find greatest number in array using pointer. **(5+6+4)**

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SPACE FOR ROUGH WORK

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SPACE FOR ROUGH WORK