SEMESTER EXAMINATION, APRIL-MAY - 2025

Course Name: - B.Tech (AIFM/CE/EE/ME/ECE)

Semester: - 2nd

Paper Name: - Programming for Problem Solving Using C

Paper Code: - NES-201

Time - 3Hrs + 20 minutes per hour extra time for V.I. & examinees with writer.

Additional 30 Minutes for Mid-Test.

Max Marks-70

समय-3 घण्टे+ 20 मिनट प्रति घंटे अतिरिक्त-दृष्टिबाधित एवं सहलेखक परीक्षार्थियों के लिए। 30 मिनटअतिरिक्तमिड-टेस्ट के लिए।

अधिकतम अंक-70

Instructions:

• The question paper consists of three sections namely A, B, C. All sections are compulsory.

• Section A- Each question carries 3 mark. All questions are compulsory.

- Section B- Answer any 5 out of 7 given questions. Each question carries 7 marks.
- SectionC- Answer any 2 out of 3 given questions. Each question carries 10 marks.
- Section D- Each question carries 02 mark. All questions are compulsory.

निर्देश:

- प्रश्न पत्र में तीन खण्ड अ, ब, व स हैं। सभी खण्ड अनिवार्य हैं।
- खण्ड—अ में प्रत्येक प्रश्न तीन अंक का है। सभी प्रश्न अनिवार्य हैं।
- खण्ड—ब में सात प्रश्नों में से किन्हीं पाँच प्रश्नों के उत्तर दें। प्रत्येक प्रश्न सात अंक का है।
- खण्ड—स में तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर दें। प्रत्येक प्रश्न 10 अंक का है।
- खण्ड-द में प्रत्येक प्रश्न 02 अंक का है। सभी प्रश्न अनिवार्य हैं।

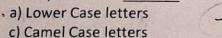
Section - A (खण्ड-अ)

Objective Questions(वस्तुनिष्ठप्रशन)

 Answer allthe following questions. निम्नलिखित समी प्रश्न अनिवार्य हैं।

5x3 =15

i) All keywords in C____







- b) Upper Case letters
- d) None of the mentioned
- ii) Which of the following is not a logical operator?

a) && c) || b)!





- When a C program is started, O.S environment is responsible for opening file and providing pointer for that file?
 - a) Standard input
 - c) Standard error



b) Standard output d) All of these .



- iv) Binary search algorithm cannot be applied to.
 - a) Sorted linked list
- b) Sorted Binary tree V
- c) Sorted linear Array
- d) Pointer Array



- v) Why is a macro used in place of a function?
 - -a) It reduces execution time.
 - c) It increases execution time.

- b) It reduces code size.
- d) It increases code size.





Section - B (खण्ड-ब) Short Answer Questions (लघुउत्तरीय प्रश्न)

2. Answer any five of the following questions. 5x7=35 निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तर दें। Define a computer. Draw and Explain all component of Digital computers. Write the difference call by value and call by reference. Write a program to swap any two numbers without using third variable. What is software? Explain various types of computer software's. 🗸 (3 Write a program to print the day of the week depending on the value of an integer variable 'day'. It assumes that day 1 is Sunday. Draw the flowchart and write a program to find the greatest among three numbers. Explain recursion. Write a program to find the factorial of any given number by using recursive function. Define Structure? Write the difference between structure and union. Section - C (खण्ड-स) Descriptive Questions(विवरणात्मकप्रश्न) 3. Answer any two of the following question. 2x10=20 निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर दें। Explain following with example: File Handling D) Pointer Define array and its types? Write a program to read an array of integers and print the sum of the elements of the array. Convert following numbers as: iii) A) (111010010)₂ to (?)₁₀ 8) (897)₁₀ to (?)₈ ey (491)10 to (?)2 (100111001010011)2 to (?)16 E) (3417)10 to (?)16 0100 SEMESTER END EXAMINATION, APRIL-MAY, 2025 Mid-Test Course Name: - B.Tech (AIFM/CE/EE/ME/ECE) Semester: - Second Paper Name: - Programming for Problem Solving Using C Paper Code: - NES-201 Time - 30 minutes Max Marks-20 Note: - Answer all the following questions: Q1. What is the 16-bit compiler allowable range for integer constants?

A) -3.4e38 to 3.4e38 B) -32767 to 32768 C) -32668 to 32667 D) -32768 to 32767

What is required in each C program?

- A) The program must have at least one function:
- B) The program does not require any function.
- C) Input data
- D) Output data
- Q3. What is the result after execution of the following code if a is 10, b is 5, and c is 10?

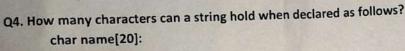
If
$$((a > b) && (a <= c))$$

$$a = a + 1;$$

else

c = c+1;

- A) a = 10, c = 10
- B) $a = 11, c = 10 \ \text{L}$
- C) a = 10, c = 11
- D) a = 11, c = 11



- A) 18
- B) 19-
- C) 20 0



- D) None of the these
- Q5. Directives are translated by the
 - A) Pre-processor -
 - B) Compiler
 - C) Linker
 - D) Editor



Q6. What will the result of num variable after execution of the following statements?

- A) 3-
- B) 5
 - C) 8
 - D) 11



- Q7. Which of the following language does the computer understand?
 - A) Computer understands only C Language
 - B) Computer understands only Assembly Language
 - C) Computer understands only Binary Language.
 - D) Computer understands only BASIC



Q8. Study the following statement

```
#include <stdio.h>
   int main()
     int *ptr, a = 10;
     ptr = &a;
     *ptr += 1;
     printf("%d,%d/n", *ptr, a);
What will be the output?
    A) 10, 10
    B) 10, 11
    C) 11, 10
    D) 11, 11 ·
Q9. What will be the output of this program?
int main()
int a=10, b=20;
printf("a=%d b=%d",a,b);
a=a+b:
b=a-b;
a=a-b;
printf("a=%d b=%d",a,b);
return 0;
   A) a = 20, b = 20
   B) a = 10, b = 20
   C) a = 20, b = 10
    D) a = 10, b = 10
```

Q10. C preprocessors can have compiler specific features.

- A) True'
- B) False
- C) Depends on the standard
- D) Depends on the platform



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अधिकतम अंक-70

30 मिनटअतिरिक्तमिड-टेस्ट के लिए।

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<u>Section - A (खण्ड-अ)</u> Objective Questions(वस्तुनिष्ठप्रशन)

 Answer allthe following questions. निम्नलिखित समी प्रश्न अनिवार्य हैं। 5x3 =15

- i) Which of the following cannot be a variable name in C?
 - a) Volatile

b) True

c) Friend

- d) Export
- ii) What is the sizeof(char) in 32-bit Ccompiler?

a) 1 bit

b) 2 bits

c) 1byte

d) 2 bytes

iii) What are the elements present in the array of the following C code? int array[5] = {5}

a) 5, 5, 5, 5, 5

b) 5, 0, 0, 0, 0

c) 5, (garbage), (garbage), (garbage)

d) (garbage), (garbage), (garbage), 5

- iv) Who is the father of C language?
 - a) Steve Jobs

b) James Gosling

c) Dennis Ritchie

- d) Rasmus Lerdorf
- v) What is an example of iteration in C?

a) for

b) while

c) do-while

d) all of the mentioned

Section - B (खण्ड-ब) Short Answer Questions (लघुउत्तरीय प्रश्न)

2. Answer any five of the following questions. निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तरदें।

5x7=35

i. Describe the concept of variable with example. Write a program of multiplication and division of two integers using C language.

- How to write pseudo code and algorithm with example. Differentiate between ii. algorithm, flowchart and pseudo code.
- What is the role of header file? How can you differentiate between low level and midiii. level and high-level language.
- Write the difference between Complier, Interpreter and Assembler. iv.
- What is linear search? Write a program to implement linear search. V.
- Differentiate between while and do-while loop. Write a program to find the sum of the vi. digits of a given number.
- Define Union? Write the difference between structure and union. vii.

Section - C (खण्ड-स) Descriptive Questions(विवरणात्मकप्रश्न)

3. Answer any two of the following question.

2x10=20

निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर दें।

- Mention the need of operators. Explain the various operators with example. Illustrate the i) operator precedence in detail.
- What is the difference between entry control loop and exit control loop? Write a program to ii) check whether an alphabet is vowel or consonant?
- Convert following numbers as: (iii
 - A) (10011010010)₂ to (?)₈
 - B) (957)₁₀ to (?)₂
 - C) (725)₁₀ to (?)₈
 - D) (11010111001011)₂ to (?)₁₆
 - E) (1342)₁₀ to (?)₁₆

MID TEST EXAMINATION, APRIL-MAY - 2025 Section- D

Course Name: - B.Tech (AIFM/CE/EE/ME/ECE)

Paper Name: - Programming for Problem Solving Using C

Time - 30 minutes

Semester: - Second Paper Code: - NES-201

Max Marks-20

Note: - Answer all the following questions:

Q1. What is the 16-bit compiler allowable range for integer constants?

- A) -3.4e38 to 3.4e38
- B) -32767 to 32768
- C) -32668 to 32667
- D) -32768 to 32767

B) Computer understands only Assembly LanguageC) Computer understands only Binary Language

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int main()
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    A) a = 20, b = 20
    B) a = 10, b = 20
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Q10. C preprocessors can have compiler specific features.

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