

(c) Represent the following numbers in sign magnitude, 1's complement and 2's complement representation. Assume word length = 16 bits :

(i) $(+34)_{10}$

(ii) $(-38.2)_{10}$

(iii) $(-76.8)_{10}$

(iv) $(+45)_{10}$

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3 (a) Write a program of add two numbers and explain this program step by step with the help of flow chart.

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(b) What are the data types in C? Explain with examples.

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OR

3 (a) What are the advantages and disadvantages of C language?

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(b) What is the difference between Constant and Variable?

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4 (a) Write a program to check the input number is prime or not.

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(b) What is difference between while and do-while loops?

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(c) Write a program in C to print the sum of the following series :

$$x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$$

OR

4 (a) Explain Memory allocation for 2-D arrays.

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(b) Explain the function fopen() used to open a file in C. What are the difference modes associated with fopen() ? Explain meaning of each one.

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2

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- 5 (a) Write a program to read a character and check whether it is vowel or not? 8
- (b) What is the difference between pointer and structure? 8

OR

- 5 (a) What do you mean by function? How many types of functions are available in C? 8
- (b) Write a program to swap two numbers using pointer. 8