

1E1024

Roll No. : _____

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B. Tech. (Sem. I) (Main/Back) Examination, January/February - 2011
 Computer Programming & IT
 (Common to all Branches of Engg.)

Time : 3 Hours]

[Total Marks : 80

[Min. Passing Marks : 24

Attempt overall five questions.

All questions carry equal marks.

Use of following supporting material is permitted during examination.
 (Mentioned in form No. 205)

1. _____ Nil

2. _____ Nil

1 (a) Design and explain the architecture of computer.

8

(b) What is difference between ROM and PROM?

8

OR

1 (a) What do you mean by Language Translators? Explain with example.

8

(b) Write difference between high level, assembly and machine language.

8

2 (a) Calculate r's and (r-1) complement of $(42)_{10}$.

4

(b) Convert $(1000)_2$ to Gray code.

4

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[Contd...

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

8

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

8

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

8

OR

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

8

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

8

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

5

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

5

- (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.

8

- (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.



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