Code No: RR10106 ┃ **RR** ┃ ┃ **Set No. 2** ┃

I B.Tech Examinations,December 2010
INTRODUCTION TO COMPUTERS
Common to CE, ME, CHEM, MECT, MEP, AE, AME, MMT

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Using Lagrangian interpolation formula find the values of y at x= 1.25 and x=1.45 given the following set of data.

x:	1.2	1.3	1.4	1.5
y:	1.063	1.091	1.119	1.145

   (b) Write Newton's forward interpolating cubic polynomial for the following data (0.0,1.0), (0.5, 1.276), (1.0, 1.5431) and (1.5, 2.3534).   [8+8]

2. Explain the following terms:

   (a) Global & Local variables.

   (b) Formal & Actual arguments.

   (c) Automatic & static variables.

   (d) Global & external variables.   [4×4=16]

3. (a) Give various character codes with an example.

   (b) Briefly discuss about operating system.

   (c) Convert the following numbers into binary.   [4+4+8]
      i. 1011.11_8
      ii. 1101.101_8

4. (a) What is a personal computer? What are its advantages?

   (b) Compare and contrast RAM and ROM.

   (c) Describe working principle of laser printer.   [4+4+8]

5. (a) Explain for loop with example.

   (b) Write a program to display first N Fibonacci numbers.   [6+10]

6. Solve the following system of equations using.

   (a) Jacob's and

   (b) Gauss Seidal iteration methods.   [8+8]
      $6X_1 - X_2 - X_3 = 11.33$
      $-X_1 + 6X_2 - X_3 = 32$
      $-X_1 - X_2 + 6X_3 = 42.$

7. (a) Write an algorithm for Newton - Raphson method.

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(b) If an approximate root of the equation x $(1 - log_e x)$=0.5 lies between 0.1 & 0.2 find the value of the root correct to 3 decimal places. [8+8]

8. (a) Find the value of $\int\limits_{1}^{5} f(x)dx$ using the following tabular values

x:	1	2	3	4	5
y:	2.876	2.877	2.878	2.880	2.881

(b) Apply Runge-Kutta 4th order method to obtain the solution of y$'$ = -xy^2, y(0) = 2 using h = 0.2. [8+8]

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Code No: RR10106 | **RR** | **Set No. 4**

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Time: 3 hours   Max Marks: 80
Answer any FIVE Questions
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1. (a) Explain for loop with example.
   (b) Write a program to display first N Fibonacci numbers.   [6+10]

2. (a) Give various character codes with an example.
   (b) Briefly discuss about operating system.
   (c) Convert the following numbers into binary.   [4+4+8]
       i. 1011.11_8
       ii. 1101.101_8

3. (a) What is a personal computer? What are its advantages?
   (b) Compare and contrast RAM and ROM.
   (c) Describe working principle of laser printer.   [4+4+8]

4. (a) Write an algorithm for Newton - Raphson method.
   (b) If an approximate root of the equation x $(1 - log_e x)$=0.5 lies between 0.1 &
       0.2 find the value of the root correct to 3 decimal places.   [8+8]

5. Solve the following system of equations using.

   (a) Jacob's and
   (b) Gauss Seidal iteration methods.   [8+8]
       $6X_1 - X_2 - X_3 = 11.33$
       $-X_1 + 6X_2 - X_3 = 32$
       $-X_1 - X_2 + 6X_3 = 42.$

6. (a) Using Lagrangian interpolation formula find the values of y at x= 1.25 and
       x=1.45 given the following set of data.

x:	1.2	1.3	1.4	1.5
y:	1.063	1.091	1.119	1.145

   (b) Write Newton's forward interpolating cubic polynomial for the following data
       (0.0,1.0), (0.5, 1.276), (1.0, 1.5431) and (1.5, 2.3534).   [8+8]

7. Explain the following terms:

   (a) Global & Local variables.
   (b) Formal & Actual arguments.

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(c) Automatic & static variables.

(d) Global & external variables. [4×4=16]

8. (a) Find the value of $\int\limits_{1}^{5} f(x)dx$ using the following tabular values

x:	1	2	3	4	5
y:	2.876	2.877	2.878	2.880	2.881

(b) Apply Runge-Kutta 4th order method to obtain the solution of $y' = -xy^2$, $y(0) = 2$ using h = 0.2. [8+8]

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Code No: RR10106 $\boxed{\textbf{RR}}$ $\boxed{\textbf{Set No. 1}}$

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⋆ ⋆ ⋆ ⋆ ⋆

1. (a) What is a personal computer? What are its advantages?

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   (c) Describe working principle of laser printer. [4+4+8]

2. Explain the following terms:

   (a) Global & Local variables.

   (b) Formal & Actual arguments.

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3. (a) Explain for loop with example.

   (b) Write a program to display first N Fibonacci numbers. [6+10]

4. (a) Find the value of $\int_1^5 f(x)dx$ using the following tabular values

x:	1	2	3	4	5
y:	2.876	2.877	2.878	2.880	2.881

   (b) Apply Runge-Kutta 4th order method to obtain the solution of y′ = -xy², y(0) = 2 using h = 0.2. [8+8]

5. (a) Give various character codes with an example.

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x:	1.2	1.3	1.4	1.5
y:	1.063	1.091	1.119	1.145

   (b) Write Newton's forward interpolating cubic polynomial for the following data (0.0,1.0), (0.5, 1.276), (1.0, 1.5431) and (1.5, 2.3534). [8+8]

7. Solve the following system of equations using.

5

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Code No: RR10106 $\boxed{\textbf{RR}}$ $\boxed{\textbf{Set No. 3}}$

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1. (a) Find the value of $\int\limits_{1}^{5} f(x)dx$ using the following tabular values

x:	1	2	3	4	5
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   (b) If an approximate root of the equation x $(1 - log_e x)$=0.5 lies between 0.1 & 0.2 find the value of the root correct to 3 decimal places. [8+8]

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