M 8515

Reg. No. : .....

Name : .....

IV Semester B.C.A. Degree (CCSS – Reg./Supple./Imp.) Examination, May 2015
GENERAL COURSE
4A12BCA : Numerical Skills

Time : 3 Hours Max. Weightage : 21

SECTION – A

Answer **all** questions. Weightage for a bunch of **four** questions is **1**.

1. Relative error is defined as _____
2. In Gauss elimination method, the coefficient matrix is transferred to _____ form.
3. Simpson's rule for numerical integration is _____
4. A graph of order 0 or 1 is called a _____ **(W=1)**
5. The number of vertices of a graph is called its _____
6. The number of levels a list contains is called its _____
7. A universally valid formula is called a _____
8. A formula which consists of a product of elementary sums is called a _____ **(W = 1)**

SECTION – B

Answer **any 5** questions. Weightage **1 each**.

9. What is inference theory ?
10. What are graphs ?
11. What are linked lists ?
12. What are the short comings of the Taylor method ?

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13. What are tautologies ?

14. List few problems faced by numerical computing methods.

15. What is floating point representation ?

16. What are truncation errors ? **(5×1=5)**

SECTION – C

Answer **any 5** questions. **Each** carries **2** Weightage.

17. Explain the types of errors that are encountered in numerical calculations.

18. Explain the Newton Raphson method with the help of an algorithm.

19. Solve the following using Gauss elimination $\begin{bmatrix} 5x-2y+z=4 \\ 7x+y-5z=8 \\ 3x+7y+4z=10 \end{bmatrix}$.

20. Form the Taylor series for y(x), find y(1) correct to four decimal places of y(x) $y1 = x - y2$ and $y(0) = 1$.

21. Explain the Gauss Jordan method.

22. What are directed trees ? Give its features.

23. Explain the term connectives.

24. Explain the Runge Kutta method. **(5×2=10)**

SECTION – D

Answer **any one** question. Weightage **4**.

25. Explain the various normal forms.

26. Describe the tree traversal methods using suitable examples. **(1×4=4)**
