

UNIVERSITY OF KERALA
SCHOOL OF DISTANCE EDUCATION
BCA (Admission 2018)
Third Semester Assignment Topics

I. COMPUTER ORIENTED NUMERICAL METHODS (CP1331)

1. Compare Newton and Secant methods of solutions.
2. Using Lagrange Interpolation find the value of y at x=8. Given y(0)=18, y(1)=42, y(7)=57 and y(9)=90.
3. Approximate $\int_2^3 \frac{dx}{x-1}$ using Simpson's Rule with n=4.
4. Elaborate on LU decomposition of matrices.
5. Solve the following system of equations using Gaussian elimination

$$-3x + 2y - 6z = 6$$

$$5x + 7y - 5z = 6$$

$$x + 4y - 2z = 8$$

6. Explain Jacobi and Gauss –Siedel Methods for solving partial differential equations.
7. Using Euler's method solve $\frac{dy}{dx} = 1 - y$, y(0) in the range $0 \leq x \leq 0.3$
8. Write the following
 - a) Classical fourth order RK method
 - b) Rate of convergence of false position method
 - c) Forward difference operator

II. COMPUTER NETWORKS(CP 1341)

1. Explain about various transmission medias
2. Explain the following terms:
 - a) Piggybacking
 - b) Pipelining
3. Write a short note on
 - a) Bridge

- b) Hub
- c) Switch
- d) Router
- e) Gateway

4. Explain CSMA/CD in detail

5. Explain Distance Vector and Link state routing algorithms in detail.

III. OPERATING SYSTEMS (CP 1342)

1. Explain CPU scheduling algorithms in detail with example

2. Write a note on:

- a) Critical section problem
- b) Deadlocks
- c) Demand paging
- d) Semaphores

3. Explain different page replacement algorithms in detail.

4. Explain classical synchronization problems in inter process communication.

5. Explain the file system structure and implementation.

IV. COMPUTER ORGANIZATION & ARCHITECTURE (CP 1343)

1. Explain floating point number representations and its operations?

2. Compare RISC and CISC

3. Give a detailed study of Pentium Micro Processor

4. Write a note on:

- a) Segmentation
- b) Memory Protection
- c) Multiple module memories
- d) Memory Interleaving

5. Explain DMA and DMA Controller

V. PROGRAMMING IN JAVA (CP 1344)

1. Explain the features of Java programming Language.

2. Explain multithreading in Java with suitable example.
3. Differentiate between method overloading and method over-riding with example
4. Explain various types of inheritance supported by Java with diagrammatic illustrations and example.
5. Write the steps for Exception Handling Technique and write a program to create your own Exception.
6. Write short note with example
 - a) Constructor
 - b) Applet
 - c) Interface
 - d) Package
