

Babasaheb Bhimrao Ambedkar Bihar University, Muzaffarpur

Directorate of Distance Education

PROFESSIONAL/TECHNICAL 4TH SEMESTER

BCA/4th Semester/13-16: Bachelor of Computer Applications

Paper-BCA19: Numerical Methodology: MODEL QUESTIONS (Full Marks -70)

ANSWER ANY FIVE QUESTIONS

- Q. 1. Write an algorithm to check a number whether a given number is Prime or not.
- Q. 2. Write a program in C language to determine whether a number is Odd or Even. Also give its flowchart.
- Q. 3. The error in the measurement of the area of circle is not allowed to exceed 0.1%. How accurately should the diameter be measured?
- Q. 4. Prove that Bisection Method always converges.
- Q. 5. Find out the root of the equation $x^3 - x - 1 = 0$ lying between 1 and 2 by Bisection Method.
- Q. 6. Find the real root of $x \sin x + \cos x$ and $f'(x) = 0$, using Newton's Iteration Method, which is near $x = \pi$ correct to 3 decimal places.
- Q. 7. Define missing term technique. Express $y = 2x^3 - 3x^2 + 3x - 10$ in factorial notation and hence shows that $\Delta^3 y = 12$.
- Q. 8. What is Divided Difference? Write the properties, the divided difference are symmetrical in their arguments.
- Q. 9. Discuss about Picard's Method of Successive Approximation.
- Q. 10. What do you mean by Milne's Predictor Correction Method?
- Q. 11. If the average fraction defection of a large sample of a product is 0.1537, calculate the control limits given that sub-group size is 2000.
- Q. 12. Discuss and explain Chi-Square Test (χ^2). Also write their properties.
- Q. 13. Write and explain Gauss' Forward method of Interpolation.
- Q. 14. Define Regression. Also find out the Line of Regression.
- Q. 15. Write short notes on any two of the following:
- a) Fractional Notation b) Accuracy of Numbers c) Finite Difference

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Paper-BCA20: Computer Graphics and Multimedia: MODEL QUESTIONS (Full Marks -70)

ANSWER ANY FIVE QUESTIONS

- Q. 1. What are the uses of computer graphics? Also write the classification of use of computer graphics.
- Q. 2. What do you mean by image processing through picture analysis?
- Q. 3. What is frame buffer? Also explain the raster scan display system.
- Q. 4. What is video mixing? Explain the video lookup table.
- Q. 5. Write and explain the interface between application program and the hardware.
- Q. 6. Write and explain the steps in Bresenham's circle drawing algorithm.
- Q. 7. Discuss and explain the steps required to fill the polygon using flood fill technique.
- Q. 8. What do you mean by pattern filling. Also list various thick primitives.
- Q. 9. Discuss and explain the line clipping with neat diagram.
- Q. 10. Write and explain how to modify the line clipping algorithm to clip polygons.
- Q. 11. Give the 2D transformation matrix for translation, rotation and scaling.
- Q. 12. What is reflection? Also derive the matrix for inverse transformation.
- Q. 13. Derive the 3-D transformation matrix to transform world coordinates to viewing coordinates.
- Q. 14. What is parallel projections? Also explain the various types of parallel projections.
- Q. 15. Write short notes on any two of the following:
 - a) Input technology
 - b) architecture of vector display
 - c) video controller

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Paper-BCA21: Operating System & Unix: MODEL QUESTIONS (Full Marks -70)

ANSWER ANY FIVE QUESTIONS

- Q. 1. What are the basic features of Unix Operating System?
- Q. 2. What is the significance of an Operating System? Explain in detail file system in Unix Operating System.
- Q. 3. What do you mean by a process? What are the various possible states of Process? Discuss.
- Q. 4. What are various file systems supported in UNIX? Discuss any three of them.
- Q. 5. What is the difference between Booting and Mounting processes in Unix Operating System?
- Q. 6. Explain the term Inter-Process communication. What are various approaches to achieve the same? Discuss.
- Q. 7. What do you mean by the term Login? Explain the login procedure in UNIX.
- Q. 8. What are the uses of erase, kill and eof commands in UNIX? Discuss.
- Q. 9. Discuss and explain with proper syntax of the use of chmod command with detail options.
- Q. 10. Discuss and explain about vi editor. What are three modes of operations of vi?
- Q. 11. Describe the various utilities used for taking back-up and compression activities.
- Q. 12. What is a process? How can we run a process at the background?
- Q. 13. What are pipes? Explain with an example the use of redirection input and output.
- Q. 14. Which are the commands used to connect to remote machines? Also explain the transfer of file between computers.
- Q. 15. Write short notes on any two of the following:
 - a) Semaphore
 - b) cat command
 - c) ls command.

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Paper-BCA22: Software Engineering Principles: MODEL QUESTIONS (Full Marks -70)

ANSWER ANY FIVE QUESTIONS

- Q. 1. What do you mean by software process? What is the difference between a methodology and a process? Explain using suitable example.
- Q. 2. What are the major advantages of first constructing a working prototype before developing the actual product?
- Q. 3. What is software engineering? Write down characteristics of software engineering?
- Q. 4. Differentiate between spiral model and prototyping model.
- Q. 5. What are the different categories of software development projects according to the COCOMO estimation model?
- Q. 6. What is CASE? Explain different tools available in CASE for software development.
- Q. 7. What is software testing? Explain testing objectives and testing principles.
- Q. 8. What is Black Box Testing? Explain.
- Q. 9. Write and explain the strategic approach to software testing.
- Q. 10. Discuss and explain Alpha and Beta testing.
- Q. 11. What do you mean by Code Reading? Also explain about code inspection.
- Q. 12. Why maintenance phase is costlier? Explain in detail.
- Q. 13. Discuss and explain about good coding style.
- Q. 14. What do you mean by Customer Driven software development?
- Q. 15. Write short notes on any two of the following:
 - a) Structured testing
 - b) Coupling and Cohesion
 - c) Needs for SRS
