A–8864

Sub. Code
4BCA1C1

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

First Semester

Computer Applications

PROGRAMMING IN C

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write any two features of 'C' language.
2. Give syntax for 'size of' operator with an example.
3. What is single subscripted variable? Give an example.
4. How to compare two strings? Give an example.
5. What is user–defined function?
6. Define a structure with syntax and example.
7. Write any two reasons for using pointers.
8. Distinguish between 'call by reference' and 'call by value'.
9. What are the basic file operations used in 'C'?
10. List any four preprocessor directives.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What are the steps involved in executing a 'C' program? Explain.

Or

(b) Illustrate nesting of IF..ELSE statement with suitable example.

12. (a) Explain the need for array variables.

Or

(b) What are the string handling functions used in 'C' language? Describe with an example.

13. (a) Write short note on recursion. Give suitable example.

Or

(b) Explain about unions with syntax and example.

14. (a) How to declare and initialize pointers? Explain.

Or

(b) Explain pointer expressions.

15. (a) Elaborate input/output operations on files with necessary example.

Or

(b) Write a 'C' program to copy the contents of one file to another.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. What are the categories of data types available in 'C' language? Explain with examples.

17. Explain arithmetic operations on characters. Give examples.

18. Write a program that will generate a data file containing the list of employees and their salaries. Use a structure variable to store the name and salary of each employee. Create a data file using a sample list.

19. Write a note on pointers and arrays. Give suitable example program.

20. What is macro? Write a nested macro that gives the minimum of three values.

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A–8865

Sub. Code
4BCA2C1

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Second Semester

Computer Applications

PROGRAMMING IN C++

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Inheritance.
2. What is reference variable? Write the syntax.
3. Write the two properties of static member functions.
4. What is copy constructor?
5. How can you make a private member inheritable?
6. What is pure virtual function?
7. What is a stream? Define input and output streams.
8. Define command line argument with an example.
9. Write the syntax for function template with multiple parameters.
10. Define Exception handling.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) List the applications of OOP.

Or

(b) Write a note on functions in C++.

12. (a) How can you define member function? Explain it.

Or

(b) Explain about parameterized constructor.

13. (a) Write a note on virtual base classes.

Or

(b) Explain about manipulators with an example.

14. (a) Write a program to handle errors during file operations.

Or

(b) Explain about Open( ): file modes.

15. (a) List the ten rules for Handling exceptions successfully.

Or

(b) Illustrate the user defined template with an example program.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss about control structures in C++.

17. Describe the constructor and destructor with an example program.

18. Explain about formatted console I/O operations.

19. Explain about sequential input and output operations.

20. State the exception handling mechanism with an example program.

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A-8866

Sub. Code
4BCA3C1

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Third Semester

Computer Applications

DATABASE MANAGEMENT SYSTEMS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List the levels of data base design with examples.
2. What is weak entity?
3. What is atomic domain?
4. Give the purpose of temporal data.
5. What is data server?
6. Define throughput.
7. What is sequence? Give an example.
8. What do you mean by users privilege?
9. Give syntax for stored procedure.
10. What is a package?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain various data models.

Or

(b) Describe the E-R model design issues.

12. (a) What is normal form? Explain first normal form with an example.

Or

(b) What do you mean by decomposition? Explain with an example.

13. (a) Write a note on locking.

Or

(b) Describe the various partitioning techniques.

14. (a) Explain about data integrity with examples.

Or

(b) How will you create and remove the synonyms? Explain.

15. (a) What is trigger? Explain how you will create it.

Or

(b) Write a note on transaction.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the database architecture with neat diagram.

17. Discuss about functional dependency.

18. Describe about the parallel databases.

19. How will you create and maintain a table? Give examples.

20. How will you create a package? Explain with examples.

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A–8867

Sub. Code
4BCA4C1

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Fourth Semester

Computer Applications

JAVA PROGRAMMING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Section A (10 × 2 = 20)

Answer **all** questions.

1. Define dynamic binding.
2. What is JVM?
3. Write the difference between pow(x,y) and exp(x).
4. State the use of conditional operator in java.
5. How do you create an object in Java?
6. What is an interface?
7. Define thread.
8. How to set thread priority?
9. What is an applet tag?
10. State the use of fillOval() method in Java.

Section B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a note on Java environment.

Or

(b) What is command line argument? Explain.

12. (a) Explain the various math class functions defined in java.lang package.

Or

(b) Write a program to check whether the given number is prime or not.

13. (a) Write the difference between method overloading and method overriding.

Or

(b) How do you create an array? Explain.

14. (a) How to create and access a package in Java?

Or

(b) Explain the basic concepts of exception handling.

15. (a) Describe the life cycle of an Applet.

Or

(b) Explain the drawing methods available in graphics class.

Section C

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the features of JAVA.

17. Write a program to eliminate the duplicate elements in a given set of elements.

18. Discuss the various forms of inheritance in Java with example.

19. Explain the life cycle of a thread.

20. Write a program to draw a polygon in Java.

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Sub. Code
4BCA5C1

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Fifth Semester

Computer Applications

VISUAL PROGRAMMING

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define dynamic Arrays.
2. List out the precedence of the operator.
3. How to disable menu items in a menu?
4. What is MDI?
5. Write any four important events of command buttons.
6. List out the important properties of frame control.
7. Write the purpose of Remote data control.
8. Define ADO.
9. How can you auto size an OLE control?
10. What is COM?

Part B $(5 \times 5 = 25)$

Answer **all** questions.

11. (a) Write a VB program to find even and odd numbers from an array.

Or

(b) How can you convert strings to numbers? Explain with an example.

12. (a) Write a VB program to create menus for inventory system.

Or

(b) Give short notes on MDI child forms.

13. (a) Write a VB program to take one list box, it contains name of picture file. If you click on particular picture file name then corresponding picture should be onto the picture box.

Or

(b) Explain when will you use frame control.

14. (a) How can you open a database with the data control?

Or

(b) What are the advantages of Activex Data Objects?

15. (a) How to insert on OLE object into an OLE control at runtime?

Or

(b) Explain how to handle multiple OLE objects using OLE control Arrays.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write a VB program to display the reverse of a given number using function.

17. Write a VB program to create menus of MS-Word and display it onto the form.

18. Discuss about the check boxes and option button controls with examples.

19. Explain how to create a table and enter the data into the table with an example.

20. Explain the following :

    (a) Adding an OLE control to form

    (b) Activating OLE objects from code.

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A–8869

Sub. Code
4BCA5C2

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Fifth Semester

Computer Applications

COMPUTER SYSTEM ARCHITECTURE AND DESIGN

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Perform the subtraction 72532 - 13250 using 2's complement.

2. Draw the graphic symbol for three-state buffer.

3. What is the purpose of IEN flip-flop?

4. Give any two drawbacks of machine language.

5. What are the common fields found in instruction format?

6. Give the condition to set the Z flag.

7. What do you mean by dicide overflow?

8. What is priority interrupt?

9. What is the use of bootstrap loader?

10. Define : hit ratio.

Part B $(5 \times 5 = 25)$

Answer **all** questions.

11. (a) Draw one stage of logic circuit and explain.

Or

(b) Describe the basic computer instruction formats.

12. (a) Explain any two memory-reference instructions.

Or

(b) What are the fields found in assembly language instruction and explain?

13. (a) Describe the general register organization.

Or

(b) Describe the major characteristics of a RISC processor.

14. (a) Explain the hardware implementation for signed-magnitude addition and subtraction.

Or

(b) Compare isolated I/O with memory mapped I/O.

15. (a) Illustrate the connection of memory chips to the CPU and explain.

Or

(b) Describe any two page replacement algorithms.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. What are the phases of instruction cycle and explain.

17. Draw the flowchart for second pass of assembler and explain.

18. Describe the different types of addressing modes.

19. Explain booth multiplication algorithm.

20. Describe the different types of mapping procedure available in cache memory.

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	4BCAE1A

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Fifth Semester

Computer Applications

***Elective* — WEB DESIGN TECHNOLOGY**

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List out the types of ordered list in HTML.

2. What are the attributes of <table> tag?

3. Write an example code for declaration of an array.

4. What is the purpose of sorting an array?

5. Write the syntax for if statement.

6. Define function.

7. What do you mean by recursion?

8. List out the math functions in Java Script.

9. What is an array?

10. Write down the operator precedence chart in VB script.

Part B $(5 \times 5 = 25)$

Answer **all** questions.

11. (a) Write a HTML program to display images by using all image attributes.

Or

(b) How do you create a frame in HTML?

12. (a) How can you initialize multidimensional arrays?

Or

(b) Describe the arithmetic operators available in Java Script.

13. (a) Write a Java Script to convert strings to numbers when dividing and multiplying.

Or

(b) Explain the structure of for statement with an example.

14. (a) What are scope rules? Explain.

Or

(b) Describe Boolean and number objects in Java script.

15. (a) What are the operators in VB script?

Or

(b) Write a VB script to illustrate the concept of message box function.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write a HTML program to design a web page for your college website.

17. Discuss about the decision-making statements in Java Script.

18. Write a Java Script to display a simple message "Welcome!!!" in your demo web page and when the user hovers over the message, a popup should be displayed with a message "welcome to my Web page!!!".

19. Explain Java Script global functions with an example.

20. Describe classes and objects of VB script.

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A – 8871

Sub. Code
4BCAE1B

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Fifth Semester

Computer Applications

Elective – MOBILE COMMUNICATIONS

(CBCS – 2014 onwards)

Time : Three Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **ALL** questions.

1. What are called signals?

2. What is Base stations?

3. Write down the merits of FDMA technique.

4. What is known as footprint in satellite system?

5. Define Bluetooth.

6. What do you mean by Handover?

7. Define Encapsulation.

8. What do you mean by selective re-transmission?

9. What is the mechanism of code?

10. Write a note on HTTP.

Part B (5 × 5 = 25)

Answer **ALL** questions.

11. (a) Write short notes on wireless transmission.

Or

(b) Discuss the cellular architecture with neat sketch.

12. (a) Explain the motivation for specialized MAC.

Or

(b) Explain the features of LEO satellite system.

13. (a) Describe the Bluetooth protocol architecture with neat sketch.

Or

(b) Explain the MAC management of IEEE 802.11

14. (a) Explain snooping TCP and list out its merits.

Or

(b) What is Transaction oriented TCP? Explain.

15. (a) Discuss on:

(i) Mio-NFS

(ii) Rover

Or

(b) Describe the system architecture of WWW.

Part C

(3 × 10 = 30)

Answer **any THREE** questions.

16. Explain the various multiplexing techniques with neat sketch.

17. Describe the GSM system architecture.

18. Compare and contrast: infrastructure and adhoc networks.

19. Describe the mobile network layer with neat sketch.

20. Explain WAP architecture with diagram.

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A–8872

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4BCAE2A

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Fifth Semester

Computer Applications

***Elective* — COMPUTER GRAPHICS**

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write any four application areas of computer graphics.

2. What are the basic line attributes?

3. Write down the different types of transformation.

4. Define Window and Viewport.

5. What is meant by Clipping?

6. Define Depth cueing.

7. What is 3D transformation?

8. Write the general processing steps for converting a world coordinate to device coordinate.

9. What is the need for user Interface?

10. What is called Echoing?

Part B $(5 \times 5 = 25)$

Answer **all** questions.

11. (a) What are Hard copy devices and why is it called so? Give examples.

Or

(b) Explain Bresenham's Line Drawing algorithm.

12. (a) Discuss about 2D basic transformations.

Or

(b) What is Composite transformation? Explain.

13. (a) List down the concepts of windowing.

Or

(b) What is Line segment clipping? Explain it with a neat sketch.

14. (a) Explain Rotation and Translation with respect to 3D objects.

Or

(b) Discuss the Mirror reflection of 3D objects.

15. (a) Write short notes on Command language.

Or

(b) Describe the Interactive techniques.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the working principle of CRT with its diagram.

17. Explain about Matrix Representations and Homogeneous coordinates.

18. Explain Cohen Sutherland Line clipping algorithm with neat sketch.

19. Discuss on :

    (a) Parallel projection

    (b) Reflection in 3D.

20. Explain User Interface Design.

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A–8873

Sub. Code
4BCAE2B

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Fifth Semester

Computer Applications

Elective: OPERATING SYSTEM

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are workstations?

2. Define: Page frames.

3. What is meant by preemptive scheduling policy?

4. What is the meaning of condition, "Starvation"?

5. Distinguish dedicated device from shared device.

6. What is meant by seek time?

7. What are directories?

8. What is meant by location transparency?

9. Define: "Reentrant code".

10. What is a fork that is used in UNIX operating system?

Part B $(5 \times 5 = 25)$

Answer **all** questions

11. (a) Illustrate and explain the concept of fixed partitioned memory management strategy.

Or

(b) Discuss the page replacement policy, "First-in First-out" with an illustration.

12. (a) Give a brief account on process control blocks.

Or

(b) Explain the process of avoiding the occurrences of deadlock with an example.

13. (a) Narrate the concept of process cooperation with producers/consumers problem.

Or

(b) Elucidate the mechanism of any two device handler seek strategies.

14. (a) Give a note on file access methods.

Or

(b) Elaborate the different functions of a network manager related to network management.

15. (a) Write the evolution of UNIX operating system.

Or

(b) How do synchronization mechanisms are implemented in UNIX system.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. With algorithms, compare and contrast best-fit algorithm with first bit algorithm Illustrate.

17. Describe any two process scheduling algorithms in detail.

18. Explain the working principles of direct access storage devices in detail.

19. Narrate the process of physical storage allocation strategies followed during file management.

20. Discuss the concept of processor management strategies applied for UNIX operating system.

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A–8874

Sub. Code
4BCA6C1

B.C.A DEGREE EXAMINATION, NOVEMBER 2019

Sixth Semester

Computer Applications

DATA MINING AND DATA WAREHOUSING

(CBCS – 2014 onwards)

Time : Three Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the benefits of data mining?

2. Define support.

3. What is pruning?

4. List out the process managers.

5. What is meant by knowledge discovery in database?

6. List any two cluster analysis software.

7. What is web search engine?

8. What is Biparite graph?

9. Define data warehouse.

10. What is data cube?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b) in each.

11. (a) Describe the association rule mining tasks.

Or

(b) Explain the steps in mining frequent pattern without candidate generation.

12. (a) Explain DT rules.

Or

(b) Explain Naive Bayes method.

13. (a) Describe the different data types used in clustering.

Or

(b) Discuss the quality and validity of cluster analysis methods.

14. (a) Write short notes on Web content mining.

Or

(b) Explain the functional areas of search engine.

15. (a) Discuss about tuning performance of data warehouse.

Or

(b) Discuss the characteristics of OLAP system.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give an example for Apriori with transactions and explain Apriori Gen Algorithm.

17. Describe the essential features of decision trees in context of classification.

18. Explain the various cluster analysis methods in detail.

19. Discuss on Web Data Mining.

20. Explain the following:

    (a) Operational Data source

    (b) OLAP.

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A–8875

Sub. Code
4BCA6C2

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Sixth Semester

Computer Applications

COMPUTER NETWORKS

(CBCS – 2014 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is signal-to-noise ratio?
2. Give any two design issues for the layers.
3. What do you mean by hamming distance?
4. State the problem with the basic bit-map protocol.
5. For what purpose, tunneling technique is used?
6. What are adaptive algorithms?
7. What is upward multiplexing?
8. When UDP is not advisable?
9. When a system is said to be lossless and lossy?
10. What is DNS?

Part B $(5 \times 5 = 25)$

Answer **all** questions.

11. (a) Describe the uses of computer networks.

Or

(b) Write short broadband and narrowband ISDN.

12. (a) Describe the Petri Net models.

Or

(b) Explain the bit-map protocol.

13. (a) Why we need firewalls?

Or

(b) Describe the connection setup procedure of ATM networks.

14. (a) What are the services provided by the transport layer?

Or

(b) What are the principles to be followed while designing protocols for Gigabit networks?

15. (a) Draw the basic model of web and explain how the web works.

Or

(b) With an example, explain Transposition Ciphers.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the OSI Reference model.

17. Explain the simplex stop-and-wait protocol.

18. Explain the shortest path routing algorithm with an example.

19. Discuss in detail about TCP.

20. Explain how video compression is accomplished.

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A–8876

Sub. Code
4BCA6C3

B.C.A. DEGREE EXAMINATION, NOVEMBER 2019

Sixth Semester

Computer Applications

SOFTWARE ENGINEERING

(CBCS – 2014 onwards)

Time : Three Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the goals of software engineering?

2. What do you mean by software size factor?

3. Name the two categories of cost estimation techniques.

4. What is SRS?

5. What are the advantages of modularization?

6. What is meant by walk through?

7. What is unit testing?

8. State the art of debugging.

9. Mention the software quality concept.

10. Expand the term SQA. Why is it needed?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b) in each.

11. (a) Explain the various types of projects based on its size factor.

Or

(b) Write short notes on planning activities.

12. (a) Describe the software cost factors.

Or

(b) Explain work breakdown structure (WBS) cost estimation technique.

13. (a) What is cohesion? Explain the various types of cohesion.

Or

(b) Distinguish between real time and distributed system design.

14. (a) Write short notes on validation testing strategy.

Or

(b) Explain source code metrics used in software maintenance.

15. (a) Discuss on formal technical reviews.

Or

(b) Explain the SQA plan.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the quality and productivity factors of a software project.

17. Explain any two cost estimation techniques in detail.

18. Describe the fundamental design concepts.

19. Explain the following testing strategies:

    (a) Integration testing.

    (b) System testing.

20. Explain the concept of statistical quality assurance.

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