E–0330

Sub. Code
1BCE1C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Computer Science

PROGRAMMING IN C AND DATA STRUCTURES

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define variable and constant.

2. What is the statement used to read and write a character in 'C'?

3. How are strings implemented in C?

4. What is dynamic array?

5. What is the need for a structure?

6. How to define enumerated data type?

7. Convert the following infix expressions into prefix and postfix.

   (a) $a + b * c - d$

   (b) $(x + y)/(u + v)$

8. Define Queue.

9. Define degree of a node and degree of a binary tree.

10. What is complete binary tree and full binary tree?

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

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

11. (a) Explain about storage classes.

Or

(b) Explain Bitwise operations with an example.

12. (a) Write a 'C' program to find sum of ten numbers using function.

Or

(b) Explain any five string functions.

13. (a) Explain passing structure to a function with an example.

Or

(b) Compare structure and union.

14. (a) Explain push and pop operation in 'C'.

Or

(b) Explain enqueue and dequeue operation in 'C'.

15. (a) Explain binary tree representation using an array.

Or

(b) Explain binary tree representation using linked list.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain user defined function and passing parameters.

17. Explain dynamic memory allocation and pointer operations.

18. Write a 'C' program to create a file.

19. Write procedure for inserting and deleting elements in linked list.

20. Explain applications of binary trees.

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E–0331

Sub. Code
1BCE3C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Computer Science

DATABASE MANAGEMENT SYSTEMS

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define DBMS.
2. Define Transaction.
3. What is Atomic domain?
4. What is temporal data?
5. Define Client-server architecture.
6. Define Heterogeneous databases.
7. What is the purpose of Index?
8. How do create a table?
9. What is stored procedure?
10. What is the need for cursor?

Part B (5 × 5 = 25)

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

11. (a) Explain generalization in E-R diagrams.

Or

(b) Explain specialization in E-R diagram.

12. (a) Explain 1NF and 2NF.

Or

(b) Explain BCNF.

13. (a) Explain about distributed transactions.

Or

(b) Explain about Network types.

14. (a) Explain Data integrity in Oracle.

Or

(b) How to Indexes and Sequences in Oracle?

15. (a) Explain Trigger with an example.

Or

(b) Write a PL/SQL program to insert values in a table.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain Database users and architectures.

17. Explain features of good relational designs.

18. Explain parallel systems.

19. Write short notes on views and user privileges and roles.

20. What is a package? How to create a package? How to use it?

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E–0332

Sub. Code
1BCE4C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Computer Science

JAVA PROGRAMMING

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the features of java?
2. What is meant by type casting?
3. What do you mean by associativity of an operator?
4. Write any Four mathematical functions in Java.
5. What is the use of Inheritance?
6. What is an abstract class?
7. How will you add a class to a package?
8. Define exception.
9. What is an Applet?
10. Write the syntax of the method used to draw a Rectangle

Part B (5 × 5 = 25)

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

11. (a) Explain the data types in java with example.

Or

(b) Explain Command line argument with an example.

12. (a) Explain the nested if statement with an example.

Or

(b) Explain the operators in java with example.

13. (a) Explain implementing interface with an example.

Or

(b) Explain single Inheritance with a program.

14. (a) How will you add a Package to the class? Explain with an example.

Or

(b) Explain the Exception handling in Java with an example.

15. (a) Explain how will you pass parameters to an Applet?

Or

(b) Explain the Applet life cycle.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the hardware and software requirements of a java.

17. Write a Java program to find the sum of even numbers that are divisible by 5 and not divisible by 6 between 150 and 750 using while loop.

18. Write a java program to multiply two matrices. Check the compatability.

19. Write a java program to display a your university name using Thread by extending Thread class.

20. Write a Java program to draw four concentric circles with different foreground colors.

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E–0333

Sub. Code
1BCE5C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Fifth Semester

Computer Science

OPERATING SYSTEMS

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write any two functions of operating system.
2. Define process.
3. What is an Interrupt?
4. What is deadlock?
5. What is parallel processing?
6. What is meant by busy waiting?
7. What are the various file attributes?
8. What is NOS?
9. What is a Pipe?
10. What is a symbolic link?

Part B (5 × 5 = 25)

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

11. (a) Explain any two types of operating system.

Or

(b) Explain single user contiguous scheme with a diagram.

12. (a) Explain round robin scheduling algorithm with an example.

Or

(b) Write short notes on Cache memory.

13. (a) Explain the process cooperation.

Or

(b) Explain tile operation of loosely coupled multiprocessing system.

14. (a) Explain the NOS development.

Or

(b) Compare network and distributed operating system.

15. (a) Explain the UNIX processor management system.

Or

(b) Explain the UNIX File management scheme.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain any Two page replacement algorithms with example.

17. Explain

(a) Conditions for Deadlock

(b) Modeling Deadlock.

18. Explain the random access storage devices.

19. Explain various levels in the file management system.

20. Explain the UNIX memory management system.

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E–0334

Sub. Code
1BCEE1B

B.Sc. DEGREE EXAMINATION, APRIL 2019

Fifth Semester

Computer Science

Elective — DIGITAL IMAGE PROCESSING

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is basic relationship between pixels?
2. What is photographic film?
3. What is the need for image transform?
4. What is the advantages of Fourier transform?
5. What is frequency domain?
6. What is diagmalization of circulant matrices?
7. Define entropy.
8. What is the use of Thresholding in image segmentation?
9. What is open operation in morphology?
10. What is pattern class?

Part B (5 × 5 = 25)

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

11. (a) Explain elements of visual perception.

Or

(b) Explain about a simple image model.

12. (a) Explain about the discrete Fourier transform.

Or

(b) Explain briefly about hotelling transform.

13. (a) Explain about spatial filtering.

Or

(b) Write short notes on colour image processing.

14. (a) Explain about Lossy compression.

Or

(b) Write short notes on image compression standards.

15. (a) Explain about boundary descriptions.

Or

(b) Explain about regional descriptions.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain about elements of digital image processing system.

17. Discuss about fast Fourier transform.

18. Discuss about least square restoration.

19. Explain about edge linking and boundary detection.

20. Discuss briefly about elements of image analysis.

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E–0335

Sub. Code
1BCEE2A

B.Sc. DEGREE EXAMINATION, APRIL 2019

Fifth Semester

Computer Science

Elective : WEB DESIGN TECHNOLOGY

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write the names of two markup languages.

2. Writ the basic structure of a HTML web page.

3. Write the syntax of how the style informations are included in the HTML web page.

4. Write the HTML code for build a drop down menu.

5. Write the HTML code to display the alert box using Javasccript.

6. What are the operations used in the javascript programming?

7. Write the declaration syntax of the javascript array.

8. Write the syntax for use the 'Math object'.

9. What are the types of javascript events?

10. What are the applications of XML?

Part B (5 × 5 = 25)

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

11. (a) How will you set the background of a HTML Web page?

Or

(b) Explain about frameset tag in HTML.

12. (a) Write the HTML code with examples for inline style.

Or

(b) Explain about conflicting style.

13. (a) Explain and list the logical operators in javascript with example.

Or

(b) Write the sample code of break and continue statement.

14. (a) Write the code for Boolean and number object.

Or

(b) Write the scope rules.

15. (a) Explain the syntax of onclick and onload events.

Or

(b) Explain about the XML namespaces.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write the HTML code for the usage of ordered and unordered list with an example.

17. Describe with example of embedded style sheet.

18. Explain the while structure with example.

19. Describe multiple subscripted arrays with example in javascript.

20. Explain about mouse over and mouseout events with example.

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E–0336

Sub. Code
1BCE6C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Sixth Semester

Computer Science

COMPUTER NETWORKS

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the categories of networks?

2. What is meant by protocol and standards?

3. What is the significance of the twisting in twisted pair cable?

4. What are the major components of a telephone network?

5. What is meant by burst error?

6. What is meant by cDMA?

7. What is meant by classless addressing?

8. What is meant by connection less versus connection oriented services?

9. Define : socket interface.

10. Write about the DNS in the Internet.

Part B (5 × 5 = 25)

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

11. (a) Describe about network hardwares.

Or

(b) Explain the usage of networks in banking domains.

12. (a) Describe about circuit switching in detail.

Or

(b) Explain about wireless media.

13. (a) Describe about sliding window protocol.

Or

(b) Describe about multiple access protocol.

14. (a) Explain about fast Ethernet.

Or

(b) Explain about Gigabit-Ethernet.

15. (a) Describe about symmetric key algorithm.

Or

(b) Explain about public key algorithms.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the basic principles of computer networks.

17. Explain about the theoretical basis for data communication.

18. Describe about the error detection methods in data link layer.

19. Describe the elements of transport protocol.

20. Describe about digital signature.

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E–0337

Sub. Code
1BCE6C2

B.Sc. DEGREE EXAMINATION, APRIL 2019

Sixth Semester

Computer Science

COMPUTER GRAPHICS

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is aliasing?
2. What is frame buffer?
3. What is the function of display –file interpreter?
4. Explain any two line-style primitives.
5. Define translation.
6. What is raster technique?
7. What is clipping?
8. What is windowing?
9. What is event handling?
10. What is sampled device?

Part B (5 × 5 = 25)

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

11. (a) How are character generated?

Or

(b) Explain about display the frame buffer.

12. (a) Explain function of CRT monitor with a neat diagram.

Or

(b) How is polygon represented?

13. (a) Derive scaling matrix representation.

Or

(b) What is the structure of segment table and explains operations of creation and closing of segments?

14. (a) Derive view transformation matrix.

Or

(b) Explain steps involved in line clipping.

15. (a) Explain about echoing.

Or

(b) Explain briefly about simulating a locator.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain Bresenham's line drawing algorithm.

17. Explain about polygon interfacing algorithm.

18. What is homogeneous co-ordinate? Derive matrix representation for rotation about an origin.

19. Explain steps involved in polygon clipping.

20. Explain about any two interactive techniques.

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E–0338

Sub. Code
1BCE6C3

B.Sc. DEGREE EXAMINATION, APRIL 2019

Sixth Semester

Computer Science

SOFTWARE ENGINEERING

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the factors of medium-size projects?

2. Write the outline of the user's manual.

3. Write the development effort-multipliers for software reliability.

4. What is meant by Recurrence relations?

5. What is meant by Information Hiding?

6. Write the properties of a modular system.

7. Write the activities of software maintenance.

8. What are the quality assurance activities?

9. Define the terms – verification and validation.

10. What are the contents of acceptance test plan?

Part B (5 × 5 = 25)

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

11. (a) Explain about team communication and product complexity.

Or

(b) Explain about the prototype life-cycle model.

12. (a) Explain about the work breakdown structures.

Or

(b) Explain the state-oriented notations.

13. (a) Explain about psudocode.

Or

(b) Describe about the structured coding techniques.

14. (a) Explain the system testing.

Or

(b) Describe about analysis and architectural design activities.

15. (a) Describe about formal technical reviews.

Or

(b) Describe about ISO 9000 quality standards.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe about the planning an organizational structure.

17. Describe about the formal specification techniques.

18. Explain about documentation guidelines.

19. Describe the configuration management.

20. Explain about the quality concepts in detail.

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E–0339

Sub. Code
1BCEE3B

B.Sc. DEGREE EXAMINATION, APRIL 2019

Sixth Semester

Computer Science

Elective — VISUAL BASIC

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is implicit declaration?
2. Name any four data type conversion function.
3. What are the types of combo box?
4. What are the basic properties of the scroll bar control?
5. What are two basic methods for drawing shapes on controls?
6. Define current X and current Y properties.
7. Write any four properties of the font common dialogue box.
8. What is Rich TextBox control?
9. What are the properties of Data control?
10. What are the methods are used to write the data entry applications?

Part B (5 × 5 = 25)

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

11. (a) Discuss about constants.

Or

(b) Explain nested control structures.

12. (a) Explain the appearance of forms.

Or

(b) Explain the basic properties of textbox control.

13. (a) Explain loading and saving images.

Or

(b) Describe about drawing line and shapes.

14. (a) Explain the properties of file open and file save common dialog boxes.

Or

(b) Explain tree view control.

15. (a) Explain the structure of BIBLIO database.

Or

(b) Explain data environment with data grid control.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss in detail on arrays and collections.

17. Write in detail on menu editor.

18. Explain scale properties and methods.

19. Explain the features of MS Flex grid control.

20. Describe in detail on advanced data-bound controls.

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E–0340

Sub. Code
1BCESA4

U.G. DEGREE EXAMINATION, APRIL 2019

Computer Science

Allied : COMPUTER ORIENTED NUMERICAL METHODS

(CBCS 2011 onwards)

Time : Three Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **ALL** questions.

1. Define transcendental equation with an example.

2. Define diagonally dominant with an example.

3. What is empirical law?

4. What is characteristic equation?

5. Write a note on forward differences.

6. What is inverse interpolation?

7. Write derivatives using backward difference formula.

8. What is the use of Romberg's method?

9. What is Picard's method?

10. Write fourth order R-K method.

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

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

11. (a) Find the real root of $x^3 - 3x + 1 = 0$ lying between 1 and 2 upto three decimal places by Newton Raphson method.

Or

(b) Write the step by step procedure for solving algebraic equations using Horner's method.

12. (a) Explain linear law for curve fitting.

Or

(b) Fit a straight line $Y = ax + b$ to the following data by the method of group averages.

x :	0	5	10	15	20	25
y :	12	15	17	22	24	10

13. (a) Find the value of y from the following data at $x = 2.65$.

x :	–1	0	1	2	3
y :	–21	6	15	12	3

Or

(b) Estimate the missing term from the following :

x :	1	2	3	4	5
y :	7	—	13	21	37

14. (a) Find the first and second derivative of y at $x = 0.6$.

x :	0.4	0.5	0.6	0.7	0.8
y :	1.58	1.80	2.04	2.33	2.65

Or

(b) Derive Trapezoidal rule.

15. (a) Using Taylor's method, find $y(0.1)$ correct to 3 decimal places from $\frac{dy}{dx} + 2xy = 1,\ y_0 = 0$.

Or

(b) Using Picard's method solve $\frac{dy}{dx} = 1 + xy$ with $y(0) = 2$. Find $y(0.1)$.

Part C $(3 \times 10 = 30)$

Answer any **THREE** questions.

16. Solve the following system of equations using Gaussian elimination method.

$$x + y + z = 9$$
$$2x - 3y + 4z = 13$$
$$3x + 4y + 5z = 40.$$

17. Find the eigen values and eigen vectors of the matrix $A = \begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix}$ by Jacobi's method.

18. Use Lagrange's interpolation formula to find the value of y when $x = 10$ if the following values of x and y are given.

x :	5	6	9	11
y :	12	13	14	16

19. Evaluate $\int_0^2 \frac{dx}{x^2+4}$ using Romberg's method.

20. Solve by Milne's Predictor–Corrector method $\frac{dy}{dx} = \frac{2y}{x}$ at $x = 2$, given that $y(1) = 2$, $y(1.25) = 3.13$, $y(1.5) = 4.5$ and $y(1.75) = 6.13$.

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E–0367

Sub. Code
1BCE2C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Computer Science

PROGRAMMING IN C++ AND ALGORITHMS

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define object.
2. What is the purpose of data hiding?
3. What is pointer to member?
4. What is stalic members?
5. What is constructor?
6. What is the purpose of Destructor?
7. Define Polymorphism.
8. What is Abstract Class?
9. What is Linear search?
10. Define Spanning Tree.

Part B (5 × 5 = 25)

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

11. (a) Explain nesting of member function with an example.

Or

(b) Compare switch statement with if----else if statement.

12. (a) Write a C++ program to illustrate objects as function agreement.

Or

(b) What is friendly function? Give an example.

13. (a) What is meant by Dynamic Constructor? Explain.

Or

(b) Explain parameterized constructor with an example.

14. (a) Write a C++ program to illustrate unary operator overloading.

Or

(b) Write a C++ program to illustrate multilevel inheritance.

15. (a) Explain Kruskal's algorithm with an example.

Or

(b) Sort the following numbers using quick sort. 10, 5, 25, 20, 60, 8, 3.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain principles of Object Oriented Programming.

17. Write a C++ program to add two complex numbers. Use member function which return complex object.

18. Write a C++ program to illustrate the use of copy constructor.

19. Write a C++ program to illustrate the use of pure virtual function.

20. Explain Dijkstra's algorithm.

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E–0368

Sub. Code
1BCE5C2

B.Sc. DEGREE EXAMINATION, APRIL 2019

Fifth Semester

Computer Science

COMPUTER ORGANIZATION AND ARCHITECTURE

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the Number systems used in digital computer architecture?
2. Which Register is used for sequence the program instructions during execution? Write its function.
3. Write the Micro operations of the Instructions CMA, CME.
4. Write the differences between Machine Language and assembly Language.
5. Write the concept of Immediate Addressing Mode.
6. Write the functions of OR-instruction and XOR instruction.
7. Write the need of Input-Output interface.
8. What is Meant by Polling Procedure?
9. Write the types of ROM.
10. What is meant by Locality of Reference?

Part B (5 × 5 = 25)

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

11. (a) What are the Computer Registers available in digital computer? Write its operations.

Or

(b) Explain about the Instruction cycle.

12. (a) Write the Micro operations of ISZ and BSA.

Or

(b) Explain about the Pseudoinstruction.

13. (a) Describe the General Register Organization in detail.

Or

(b) Explain about Direct and Indirect Addressing modes.

14. (a) Explain about the Biased Exponent.

Or

(b) Explain about the Priority Interrupt Harwares.

15. (a) Write the difference between Static RAM and Dynamic RAM.

Or

(b) Explain the concept of Associative Memory.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the Timing and control unit.

17. Explain the functions of Assembler.

18. Explain the characteristics of RISC Computer.

19. Explain about the Input-Output Processor (IOP).

20. Describe the Mapping process in Cache memory.

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E–0369

Sub. Code
1BCEE1A

B.Sc. DEGREE EXAMINATION, APRIL 2019

Fifth Semester

Computer Science

Elective : DATA MINING AND DATA WAREHOUSING

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the importance of warehouse delivery method?

2. What is meant by Transforming data?

3. What is meant by tuning the data load?

4. What is meant by tuning queries?

5. What is data mining?

6. What are steps involved in data mining?

7. What is OLAP system?

8. What is web search engine?

9. Define Itemset.

10. What is association rule?

Part B (5 × 5 = 25)

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

11. (a) Explain Backup and Archive process.

Or

(b) Write briefly about process flow within a data warehouse.

12. (a) Write briefly about estimating the load.

Or

(b) What are the functions of query manager?

13. (a) Explain about Data mining issues.

Or

(b) Explain about data mining metrics.

14. (a) Write short notes on fuzzy set and fuzzy logic.

Or

(b) Write short notes on Neural networks.

15. (a) What are Incremental ruler? Explain.

Or

(b) What is Advanced Association Rule Technique?

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the functions of Load Managers.
17. Explain the functions of system managers.
18. Discuss social implications of data mining.
19. Discuss about A statistical perspective of Data mining.
20. Discuss about distributed algorithm in Association rules.

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E–0370

Sub. Code
1BCEE3A

B.Sc. DEGREE EXAMINATION, APRIL 2019

Sixth Semester

Computer Science

Elective : MOBILE COMMUNICATION

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List the characteristics of a communication device.
2. Draw the frequency spectrum.
3. Which principle is used in SDMA?
4. What are the different broadcast patterns?
5. What is meant by Roaming?
6. What is meant by wireless ATM?
7. Draw the diagram for packet delivery to and from the mobile node.
8. What is meant by congestion control in Traditional TCP?
9. What are the capabilities of UML script?
10. What are the approaches that might help wireless access?

Part B (5 × 5 = 25)

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

11. (a) Explain about Frequency Division Multi-plexing.

Or

(b) Explain the advantages and dis-advantages of cellular systems.

12. (a) Describe the types of mobile services.

Or

(b) Describe the components of a Digital Audio Broadcasting (DAB) sender in detail.

13. (a) Explain about Handover in detail.

Or

(b) Describe about BRAN (Broadband Radio Access Network) in detail.

14. (a) Explain the basic architecture of cellular IP.

Or

(b) Explain about the transaction-oriented TCP.

15. (a) Explain the components and interface of the WAP 1.X architecture.

Or

(b) Explain about wireless datagram protocol.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain about the time domain representation of a signal.

17. Explain about the localization and calling in detail.

18. Describe the location management in detail.

19. Describe about the snooping TCP.

20. Explain about file systems in detail.

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E–0396

Sub. Code
1BCESA3

U.G. DEGREE EXAMINATION, APRIL 2019

Computer Science

Allied : RESOURCE MANAGEMENT TECHNIQUES

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the role of OR in industry?
2. Write the first two phases of OR.
3. Give the matrix form of an LPP.
4. What is the test of optimality?
5. What is duality?
6. Define an IPP.
7. Give any two applications of assignment problem.
8. Write the method to solve an assignment problem.
9. What is non-degenerate transportation problem?
10. What is Row minima method?

Part B (5 × 5 = 25)

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

11. (a) Explain the different features of OR.

Or

(b) Describe the various methods used in OR.

12. (a) Solve graphically the following LPP.

Maximize $Z = 2x_1 + x_2$

Subject to the constraints

$x_1 + 2x_2 \leq 10$

$x_1 + x_2 \leq 6$

$x_1 - x_2 \leq 2$

$x_1 - 2x_2 \leq 1,\ x_1, x_2 \geq 0.$

Or

(b) Solve by simplex method.

Maximize $Z = x_1 - x_2 + 3x_3$

Subject to the constraints

$x_1 + x_2 + x_3 \leq 10$

$2x_1 - x_3 \leq 3$

$2x_1 - 2x_2 + 3x_3 \leq 0$

$x_1, x_2, x_3 \geq 0.$

13. (a) Using the duality theory solve.

Maximize $Z = 3x_1 + 4x_2$

Subject to the constraints

$x_1 - x_2 \leq 1$

$x_1 + x_2 \geq 4$

$x_1 - 3x_2 \leq 3;\ x_1, x_2 \geq 0$

Or

(b) Solve the IPP.

Maximize $Z = x_1 + 4x_2$

Subject to the constraints

$2x_1 + 4x_2 \leq 7$

$5x_1 + 3x_2 \leq 15$

$x_1, x_2 \geq 0$ and are integers.

14. (a) Explain the mathematical formulation of assignment problem.

Or

(b) Solve the following Assignment Problem.

	J_1	J_2	J_3	J_4
W_1	20	13	7	5
W_2	25	18	13	10
W_3	31	23	18	15
W_4	45	40	23	21

15. (a) Obtain an initial basic feasible solution to the following transportation problem using Vogels approximation method.

	D_1	D_2	D_3	D_4	
S_1	2	3	11	7	6
S_2	1	5	6	1	4
S_3	5	8	15	9	10
	8	6	3	3	

Or

(b) Explain unbalanced TP.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain in detail on modeling in OR.

17. Solve using, two-phase simplex method.

Maximize $Z = 5x_1 + 8x_2$

Subject to the constraints

$3x_1 + 2x_2 \geq 3$

$x_1 + 4x_2 \geq 4$

$x_1 + x_2 \leq 5$

$x_1, x_2 \geq 0$

18. Solve by dual simplex method the following problem.

Minimize $Z = 2x_1 + 2x_2 + 4x_3$,

Subject to the constraints

$2x_1 + 3x_2 + 5x_3 \geq 2$

$3x_1 + x_2 + 7x_3 \leq 3$

$x_1 + 4x_2 + 6x_3 \leq 5$

$x_1, x_2, x_3 \geq 0$

19. Solve the following travelling salesman problem.

	A	B	C	D
A	∞	4	7	3
B	4	∞	6	3
C	7	6	∞	7
D	3	3	7	∞

20. Solve the following Transportation Problem.

	X	Y	Z	
A	8	7	5	60
B	6	8	9	70
C	9	6	5	80
	50	80	80	

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E–0397

Sub. Code
1BCEA4

U.G. DEGREE EXAMINATION, APRIL 2019

Computer Science

Allied : PROGRAMMING IN C++

(CBCS – 2011 onwards)

Time : 3 Hours Maximum : 60 Marks

Part A (10 × 1.5 = 15)

Answer **all** questions.

1. Define Object.
2. What is Conditional operator?
3. What is static data member?
4. What is meant by private member?
5. Define constructor.
6. What is polymorphism?
7. What is sequential file?
8. Define Generic programming.
9. Why is expection handled?
10. What is meant by divide by zero exception?

Part B (5 × 3 = 15)

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

11. (a) Compare it-else if with switch statement.

Or

(b) Compare while loop with do..while loop.

12. (a) Explain about friend function in Brief.

Or

(b) Explain parameterized constructor with an Example.

13. (a) Explain abstract class with an example.

Or

(b) Explain Hierarchical inheritance.

14. (a) Explain function Template with an example.

Or

(b) Explain class Template with an example.

15. (a) Explain Exceptions in constructors and Destructors.

Or

(b) Explain about Fault Tolerant Design technique.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss about principles of object oriented programming.

17. Write a C++ program using copy constructor.

18. Explain about virtual function with an Example.

19. Write a C++ program to create a sequential file to store student name, roll no and class.

20. Explain Exception Handling model.

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E–0444

Sub. Code
1BEC3A1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Electronics and Communication

Allied : COMPUTER HARDWARE AND MAINTENANCE

(CBCS – 2012 onwards)

Time : 3 Hours Maximum : 60 Marks

Part A (10 × 1.5 = 15)

Answer **all** questions.

1. What are called peripheral devices?
   தொடர்பு சாதனங்கள் என்பவை என்ன?

2. Expand SMPS.
   SMPS - விரிவாக்குக.

3. What is reset logic?
   Reset logic என்றால் என்ன?

4. Expand : NMI.
   NMI-ஐ விரிவாக்குக.

5. What is FDD interface?
   FDD interface என்பது என்ன?

6. What is FDC?
   FDC என்பது என்ன?

7. What is hard disk?

   Hard disk என்பது என்ன?

8. What is format?

   Format என்பது என்ன?

9. What is trouble shooting?

   பிழை நிவர்த்தி என்பது என்ன?

10. List any two SMPS problems.

    SMPS-ல் உருவாகும் இரண்டு பிரச்சினைகளை கூறு.

Part B $(5 \times 3 = 15)$

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

11. (a) Write a short note on PC hardware.

    PC Hardware -ஐ பற்றி சிறு குறிப்பு வரைக.

    Or

    (b) Describe the bus interface unit.

    Bus இணைப்பு சுற்றினை விவரி.

12. (a) Discuss briefly about RAM logic.

    RAM logic-ஐ விவரி.

    Or

    (b) Outline the features of new generation mother board.

    புதிய தலைமுறை Mother board -ஐ விவரி.

13. (a) Describe the disk format.
Disk format-ஐ விவரி.

Or

(b) Explain the printer controller.
Printer controller - ஐ விவரி.

14. (a) Discuss the function of CRT display.
CRT -ன் செயல்களை விளக்குக.

Or

(b) Describe briefly about CGA.
CGA -ஐ சுருக்கமாக விவரி.

15. (a) Outline the fault elimination process.
பிழை நிவர்த்தி முறையை விளக்குக.

Or

(b) Describe the systematic trouble shooting.
Systematic பிழை நிவர்த்தியை விளக்குக.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the functional block of a PC.
ஒரு PC-ன் செயல்பாட்டை விவரி.

17. Discuss in detail about NMI logic.
NMI logic -ஐ விவரி.

18. Explain : 6845 CRT controller.
6845 CRT controller -ஐ விவரி.

19. Explain : Hard disk card.
Hard disk card -ஐ விவரி.

20. Explain the types of faults.
பிழைகளின் வகைகளை விவரி.

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E–0445

Sub. Code
1BEC4C1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Electronics and Communication

ANALOG, DIGITAL AND MOBILE COMMUNICATION SYSTEMS

(CBCS – 2012 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write a wave equation of AM wave?

   வீச்சு பண்பேற்ற அலையின் சமன்பாடு எழுதுக.

2. What is a function of crystal oscillator in AM transmitter?

   வீச்சு பண்பேற்ற அலைபரப்பியிலுள்ள படிக அலையியற்றியின் வேலை என்ன?

3. What is the frequency range in FM?

   அதிர்வெண் பண்பேற்றியின் அதிர்வெண் எல்லை என்ன?

4. Write a short note on AF Amplifier.

   AF பெருக்கியினை பற்றி சிறு குறிப்பு வரைக.

5. Draw a waveform of PAM.

   PAM ன் அலைவடிவத்தை வரைக.

6. How to work the PTM circuit?
PTM சுற்று எப்படி வேலை செய்கிறது.

7. What are the difference between ASK and FSK signals?
ASK மற்றும் FSK அலையின் வேறுபாடு என்ன?

8. What do you mean by M-Ary FSK?
M-Ary FSK பற்றி நீவிர் அறிவன யாது?

9. Give the expansion of AMPS.
AMPS ன் விரிவாக்கம் தருக.

10. Write a short note on cellular radio system.
Cellular வானொலி அமைப்பினை பற்றி சிறு குறிப்பு வரைக.

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

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

11. (a) Explain the DSBSC.
DSBSC ஐ பற்றி விவரி.

Or

(b) Draw and explain the AM transmitter.
வீச்சு பண்பேற்ற அலைபரப்பியை படம் வரைந்து விவரி.

12. (a) What are the parameters of FM wave?
அதிர்வெண் பண்பேற்ற அலையின் வரையறை என்ன?

Or

(b) Explain the PLL.
PLL ஐ பற்றி விளக்குக.

13. (a) Explain PFM.

விளக்குக PFM.

Or

(b) Explain PPM.

விளக்குக PPM.

14. (a) How to working of PCM? Explain its uses.

PCM வேலை செய்யும் விதம் மற்றும் அதன் பயன்களை எழுதுக.

Or

(b) Explain the detection of PSK circuit.

PSK சுற்றின் பண்பிறக்கியை விவரி.

15. (a) Explain the AMPS control system.

AMPS கட்டுப்பாட்டு அமைப்பை விவரி.

Or

(b) Explain the digital cellular system.

இலக்க செல்லுலார் அமைப்பை விவரி.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the AM Radio receiver.

வீச்சு பண்பேற்று வானொலி ஏற்பியை பற்றி விவரி.

17. Draw and explain the working of FM receiver.

அதிர்வெண் பண்பேற்ற ஏற்பியை படம் வரைந்து வேலை செய்யும் விதத்தை விவரி.

18. Explain the generation and detection of FSK circuit.

FSK ன் சுற்றின் உருவாக்கம் மற்றும் இறக்கம் செய்தல் பற்றி விவரி.

19. Explain the following :

(a) PAM

(b) PWM.

கீழ்கண்டவற்றை விவரி.

(அ) PAM

(ஆ) PWM.

20. Explain the operations of cellular telephone with block diagram.

செல்லுலார் தொலைபேசி வேலைசெய்யும் விதத்தை கட்ட அமைப்பு படத்துடன் விளக்குக.

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E–0446

Sub. Code
1BEC4A1

B.Sc. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Electronics and Communication

***Allied* — ELECTRONIC COMMUNICATIONS PRINCIPLES AND SYSTEMS**

(CBCS – 2012 onwards)

Time : 3 Hours Maximum : 60 Marks

Part A (10 × 1.5 = 15)

Answer **all** questions.

1. What are the degrees of Modulation?

   பண்பேற்றத்தின் டிகிரி (degree) என்றால் என்ன?

2. What is the function of Bus interface unit?

   Bus interface unit-ன் செயல்பாடு யாது?

3. Define FDM.

   FDM வரையறு.

4. Define Modulation index of FM.

   FM-கான பண்பேற்ற குறியீட்டை வரையறு.

5. What is Amplitude Shift Keying (ASK)?

   வீச்சு மாற்ற பண்பேற்றம் (ASK) என்றால் என்ன?

6. What are different types of digital modulation?

டிஜிட்டல் பண்பேற்றத்தின் பல்வேறு வகைகள் என்ன?

7. What is a Fiber optic?

பைபர் ஆப்டிக் (Fiber optic) என்றால் என்ன?

8. Define PIN diode.

PIN டையோடு வரையறு.

9. Define DTE interface.

DTE இணைப்பு வரையறு.

10. Define Topologies.

டோபோளாஜிஸ் (Topologies) வரையறு.

Part B $(5 \times 3 = 15)$

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

11. (a) Define Amplitude modulation.

வீச்சு பண்பேற்றம் வரையறு.

Or

(b) Define Demodulation.

பண்பிறக்கம் (Demodulation) வரையறு.

12. (a) What are the two methods of producing an FM wave?

FM அலை (wave) உற்பத்திகான இரண்டு வகைகள் என்ன?

Or

(b) What are the application of PLL?

PLL-ன் பயன்பாடுகள் என்ன?

13. (a) Differentiate ASK and PSK.

ASK மற்றும் PSK -ன் வேற்றுமைகளை எழுதுக.

Or

(b) What do you mean by FDM?

FDM என்றால் என்ன?

14. (a) Explain the principle of LED.

LED-ன் கொள்கைகளை விளக்கு.

Or

(b) What are the advantage of Fiber optic Communication?

பைபர் ஆப்டிக் (Fiber optic) தொடர்பின் நன்மைகள் என்ன?

15. (a) Mention the types of Error in Communication.

தொலைதொடர்பின் பிழைகளின் வகைகளை குறிப்பிடுக.

Or

(b) What do you meant by ARQ?

ARQ என்றால் என்ன?

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the basic element of Communication system with schematic diagram.

தொடர்பு அமைப்பின் அடிப்படை உறுப்புகளை தகுந்த வரைபடத்துடன் விளக்குக.

17. Explain the working of PCM with neat diagram.

PCM-ன் செயல்களை தகுந்த வரைபடத்துடன் விளக்குக.

18. Discuss the combined multiple access system.

கம்பைன்ட் மல்டிபுள் ஆக்சஸ் (combined multiple access) அமைப்பை விளக்குக.

19. Explain Fiber optical Communication system.

பைபர் ஆப்டிகல் (Fiber optical) தொடர்பு அமைப்பை விளக்குக.

20. What is Protocol? Mention the various types of protocol and explain.

நெறிமுறை (Protocol) என்றால் என்ன? நெறிமுறையின் பல்வேறு வகைகளை எழுதி விளக்குக.

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