

**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION  
APRIL 2021**

B.C.A.

BCA 4C 08—COMPUTER GRAPHICS

Time : Two Hours

Maximum : 60 Marks

**Section A**

*Answer at least **eight** questions.*

*Each question carries 3 marks.*

*All questions can be attended.*

*Overall Ceiling 24.*

1. Explain the function of display processor ?
2. Distinguish text and point clipping ?
3. What are 2D transformations ?
4. Explain any *two* applications of computer graphics.
5. Distinguish between emissive and non-emissive displays.
6. Distinguish between horizontal retrace and vertical retrace.
7. Distinguish between aspect ratio and resolution.
8. What is Windowing ?
9. What is a beam penetration method ?
10. What is the significance of homogenous co-ordinates in computer graphics ?
11. What are color models ?
12. What are the main components of GIMP window ?

(8 × 3 = 24 marks)

**Turn over**

**Section B**

*Answer at least **five** questions.  
Each question carries 5 marks.  
All questions can be attended.  
Overall Ceiling 25.*

13. Explain Raster scan display systems.
14. What are the disadvantages of DDA line drawing algorithm ?
15. Explain composite transformations.
16. Explain the terms purity, brightness and luminance of light.
17. Explain any polygon fill algorithm.
18. Express the conversion from RGB to YIQ color model.
19. What is the main difference between magic wand and select by color ?

(5 × 5 = 25 marks)

**Section C**

*Answer any **one** question.  
The question carries 11 marks.*

20. Explain Bresenham's circle generating algorithm.
21. Explain image manipulation operations using GIMP.

(1 × 11 = 11 marks)

**FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION  
APRIL 2021**

B.C.A.

BCA 4B 05—DATABASE MANAGEMENT SYSTEM AND RDBMS

Time : Two Hours

Maximum : 60 Marks

**Section A (Short Answer Type Questions)**

*Answer at least **eight** questions.*

*Each question carries 3 marks.*

*All questions can be attended.*

*Overall Ceiling 24.*

1. What is a Primary Key and data abstraction ?
2. What is an entity relationship model ?
3. List and explain the types of keys.
4. Explain outer joins with example.
5. What is domain calculus in DBMS ?
6. What is database languages and interfaces ?
7. Discuss the use of rename operation.
8. List and define ACID properties.
9. What is bound and Unbound Cursors ?
10. Define Atomicity.
11. What is difference between subquery and correlated subquery ?
12. Write a shot note on Exist and Any.

(8 × 3 = 24 marks)

**Turn over**

**Section B (Short Essay Type Questions)**

*Answer at least **five** questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall Ceiling 25.*

13. What is database Management System ? Discuss in detail the advantages and disadvantages of using a database system ?
14. What are the variations in relational calculus ? Explain with examples.
15. Illustrate functional dependency and transitive dependency with example.
16. Write about relational algebra ? Discuss about different operators used in algebra.
17. What are aggregate functions ? and list and explain the aggregate functions supported by SQL
18. How can we destroy a view ? Explain the use of order by.
19. Discuss about the Conceptual Design with the ER-Model with example.

(5 × 5 = 25 marks)

**Section C (Essay Type Questions)**

*Answer any **one** question.*

*The question carries 11 marks.*

20.
  - a) Define BCNF. How does BCNF differ from 3NF ? Explain with example.
  - b) Explain 3NF. Give one example.
21.
  - a) List the table modification commands in sql. Explain with examples.
  - b) What is the difference between DBMS and RDBMS ?

(1 × 11 = 11 marks)

**FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
APRIL 2021**

B.C.A.

BCA 4C 08—COMPUTER GRAPHICS

(2017 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all the questions.  
Each question carries 1 mark.*

1. What is a Bitmap ?
2. What is Aspect ratio ?
3. What is the basic principle of line drawing algorithms ?
4. What is stair step appearance ?
5. What is the homogeneous coordinate representation of co-ordinate (x, y) ?
6. Write short notes on shear transformation.
7. What is polygon clipping ?
8. What is a window ?
9. Explain the difference between color models RGB and CMY.
10. How to remove a window border in GIMP ?

(10 × 1 = 10 marks)

**Section B**

*Answer all the questions.  
Each question carries 2 marks.*

11. Explain how visualization and image processing finds application in computer graphics.
12. Distinguish between emissive and non-emissive displays.
13. What are output primitives ?
14. Give the DDA line drawing algorithm function.

**Turn over**

15. Explain how to perform Scaling with respect to a selected fixed position.
16. How do we perform reflection about the line  $y = 0$ .
17. Explain the significance of a color model.
18. How can we draw a circle with gimp ?

(8 × 2 = 16 marks)

### Section C

*Answer any **six** questions.  
Each question carries 4 marks.*

19. Explain the methods used in color CRT monitors.
20. Distinguish between active and passive matrix LCD displays.
21. What are the necessary steps to efficiently perform a polygon fill ?
22. Explain how to identify interior of a polygon.
23. How do we generate inverse transformations ?
24. Explain the transformation matrix to perform two successive scaling operations.
25. Give the transformation matrix for  $x$ -direction shear and  $y$ -direction shear.
26. Explain the terms purity, brightness and luminance of light.
27. How do we merge an image from a file to the current image in gimp ?

(6 × 4 = 24 marks)

### Section D

*Answer any **three** questions.  
Each question carries 10 marks.*

28. Briefly explain the working of LCD and LED displays with the help of block diagrams.
29. Explain scan line polygon filling algorithm.
30. Describe two dimensional transformations.
31. Explain Window to viewport transformation in detail.
32. Explain in detail the various standards primaries and chromaticity diagram used in color models.

(3 × 10 = 30 marks)

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**FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
APRIL 2021**

B.C.A<sub>1</sub>

BCA 4C 07—E-COMMERCE

(2017 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all the questions.*

*Each question carries 1 mark.*

1. What is online marketing ?
2. How can affect the cultural changes in e-transition ? Explain.
3. What is the current and prospective size of the electronic market ?
4. What is e-tailing ?
5. Why we use SMTP ?
6. What is packet switching ?
7. What are different goals of information system security ?
8. How to secure your server software ?
9. What is PGP ? Explain.
10. What are the different disadvantages of credit cards ?

(10 × 1 = 10 marks)

**Section B**

*Answer all the questions.*

*Each question carries 2 marks.*

11. What do you understand by E-commerce ? Explain electronic markets.
12. What are the different characteristics of the brokerage model ?
13. Why do some consumers prefer online transactions while others do not ? Justify.
14. What is protocol and which protocols handle Internet communications ?
15. What are the different key features of ISP policy of government of India ?

16. What is the different general security issues related to e- business ?
17. List out the digital payment requirements criteria and its needs.
18. What are the different classifications of new payment system ? Explain.

(8 × 2 = 16 marks)

### Section C

*Answer any six questions.  
Each question carries 4 marks.*

19. Explain the E-transition challenges for Indian corporates in detail.
20. What is E-Government ? Explain different classification.
21. What do aggregators do ? Explain.
22. What is URLs ? Explain different characters used in URLs.
23. Explain internet governance hierarchy in detail. What is the role of documentation in internet?
24. Explain different NASSCOM's flagship initiatives in detail.
25. When we start an e-business, why we need to aware the network security risks ? what are they ? Explain.
26. What e-payment security mechanisms are used by various banks in India ? Explain.
27. What is Caesar's method and RSA in encryption technique ? Explain.

(6 × 4 = 24 marks)

### Section D

*Answer any three questions.  
Each question carries 10 marks.*

28. Explain different delving factors in the way to the issues face while e-transition in Indian corporates.
29. Explain E-business models based on the relationship of transaction parties.
30. a) What are the different agents in software ? Explain each.  
b) Explain value of software agents in a network world
31. What is Firewall ? Why it is used ? What is its benefit ? Explain different components of firewall.
32. a) Explain different risks in e-commerce model.  
b) Explain the different factors include in the designing of e-payment system  
c) Explain the legal position of digital signatures.

(3 × 10 = 30 marks)



**FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, APRIL 2021**

B.C.A.

BCA 4C 08—MANAGEMENT INFORMATION SYSTEM

(2014 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A***Answer all questions.**Each question carries 1 mark.*

1. The most creative and challenging phase of SDLC is \_\_\_\_\_.
  - a) Feasibility study.
  - b) Maintenance.
  - c) Design.
  - d) None of these.
2. \_\_\_\_\_ system operates in a predictable manner.
  - a) Deterministic.
  - b) Social.
  - c) Open.
  - d) None of the above.
3. GDSS is the short form of :
  - a) Group Decision Support System.
  - b) Group Discussion Service System.
  - c) Group Decision Service System.
  - d) Group Discussion Support System.
4. A system that reacts to its environment is called \_\_\_\_\_ system.
  - a) Adaptive.
  - b) Closed.
  - c) Machine.
  - d) Conceptual.
5. Which of the following is included in the Office automation systems ?
  - a) Word processing.
  - b) Electronic calendaring.
  - c) Electronic mail.
  - d) All of the above.
6. Demand forecasting system is \_\_\_\_\_.
  - a) Deterministic.
  - b) Closed.
  - c) Probabilistic.
  - d) All of the above.

**Turn over**

7. Can you point out the sub-system which does not belong to the MIS ?
- a) Transaction Processing System (TPS).
  - b) Data Communication System.
  - c) Decision Support System (DSS).
  - d) Automated Office System.
8. \_\_\_\_\_ is the process of defining the current problem, determining why a new system is needed, identifying the objectives of the proposed system.
- a) Feasibility analysis.
  - b) System definition.
  - c) System Analysis.
  - d) System requirements.
9. SDLC stands for \_\_\_\_\_.
- a) Software Design Life Cycle.
  - b) Software Development Life Cycle.
  - c) System Development Life Cycle.
  - d) System Design Life Cycle.
10. \_\_\_\_\_ provides a manager with the information needed to make decisions regarding firms operational activities.
- a) EIS.
  - b) ES.
  - c) EDI.
  - d) MIS.

(10 × 1 = 10 marks)

### Part B

*Answer all questions.  
Each question carries 2 marks.*

- 11. What is DSS ?
- 12. What do you mean by structured decisions ?
- 13. What is information overload ?
- 14. What are the operating elements of an information system in terms of physical components ?
- 15. What is business data processing ?

(5 × 2 = 10 marks)

**Part C**

*Answer any five questions.  
Each question carries 4 marks.*

16. State the prototyping approach to application system development.
17. What is a system ? Differentiate between open and closed system.
18. Discuss the general model of the human as an information processor.
19. Describe the objectives of MIS.
20. What is office automation system ? Describe the areas in office automation.
21. Explain the behavioural model of organisational decision making.
22. Define information. Explain quality of information in terms of various utilities.
23. Briefly explain the information system for management control of an organization.

(5 × 4 = 20 marks)

**Part D**

*Answer any five questions.  
Each question carries 8 marks.*

24. Discuss on the Newwell-Simon model.
25. Discuss the major phases involved in decision making process.
26. Explain the role of Transaction Processing System with the help of a diagram.
27. What are the basic subsystems of MIS ? Discuss any two.
28. Explain organisation as socio-technical system.
29. Discuss on Synthesis of MIS structure.
30. Explain basic models of organisational structure.
31. Describe the role of MIS in business decision making.

(5 × 8 = 40 marks)

**FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, APRIL 2021**

B.C.A.

BCA 4B 05—DATABASE MANAGEMENT SYSTEM AND RDBMS

(2017 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all the questions.  
Each question carries 1 mark.*

1. What is data abstraction ?
2. What is network data model ?
3. What is Functional Dependency ?
4. What is the use of 'where' clause in SQL.
5. What do you meant by triggers ?
6. Justify the need for normalization
7. Explain DCL.
8. What is a project operation ? Explain.
9. What the difference is between TRUNCATE and DELETE command ?
10. What is atomicity ?

(10 × 1 = 10 marks)

**Section B**

*Answer all the questions.  
Each question carries 2 marks.*

11. What are the different advantages of using DBMS approach.
12. Write short notes on Strong entity.
13. What are the different SQL built-in types ? Explain any one.
14. Why do we need DBMS ? Explain with example.
15. Explain why we use null values and when ?
16. What is a lock ? Why we use it ? Justify.

**Turn over**

17. Explain the concept of durability in transaction.
18. What is fetch in SQL ?

(8 × 2 = 16 marks)

### Section C

*Answer any six questions.  
Each question carries 4 marks.*

19. With a neat diagram, explain Three-Schema-Architecture.
20. Draw an ER diagram for a database that keeps track of company and employee phones. Assume that an employee may work in up to 2 departments but may also not be assigned to any department. Employee may or may not have personal phone but a department must have one and have up to three phone numbers including employees' personal phone number. Use (min, max) constraints to draw ER diagram ?
21. What are the different transaction states ? Explain each with example.
22. Explain relational calculus and domain calculus.
23. What are the different states in transaction ? Explain each.
24. What is a view ? How can it be created ? Explain with an example.
25. Consider the following relations :

Create Three tables Book\_list ; Issued\_Books and Member\_list.

Book\_list contains : BID, Title, Author, Price, Status (Indicates whether the book is issued or not issued)

Issued\_Books contains : BID, MID, Issuedate, returndate.

Member\_List contains : MID, Name, Address, Programme (BBA/B.Sc.CA/B.Sc.Maths/B.A.)  
Sem, nb(number of books taken)

Add appropriate constraints to the above table and specify.

Queries :

- Display the Book id and name of the students who return the book after 10 days.
  - Find out the member name and title of books issued before a particular date.
  - Find out the details of a particular sem students who took at least one book.
  - Display student's details and names of book returned on a particular date and semester.  
From this, display students of same semester.
26. How to use stored procedures within queries ? Explain with example.
27. Explain Join Dependencies and Fifth Normal Form.

(6 × 4 = 24 marks)

**Section D**

*Answer any three questions.  
Each question carries 10 marks.*

28. Explain Relational Calculus and Domain Calculus with examples, definitions and expressions.
29. a) Compare File Systems vs. DBMS.  
b) Explain Database administrators, Data Models, Schemas, and Instances.
30. Write note on :
- a) Integrity Rules.
  - b) Built-in functions.
  - c) Transaction Properties
31. a) Explain with suitable the sub-queries and correlated sub-queries.  
b) Explain All, Any, order by and numeric function with examples.
32. a) What are the different Control Structures and Loops in SQL? Explain each with example and syntax.  
b) Explain different Security, Looping Through Arrays and Looping Through Query Results

(3 × 10 = 30 marks)

**FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
APRIL 2021**

**B.Ç.A.**

**BCA 4C 07—E-COMMERCE**

**(2014 Admissions)**

**Time : Three Hours**

**Maximum : 80 Marks**

**I. Answer *all* questions from the following. Each question carries 1 mark :**

- 1 \_\_\_\_\_ is the graphical internet service that provides a network of interactive documents and the software to access them.
- 2 The process of encrypted data readable once again is called \_\_\_\_\_.
- 3 The exchange of business documents in a well-accepted format has resulted in the development of EDI \_\_\_\_\_.
- 4 \_\_\_\_\_ is the world's largest computer network.
- 5 WSDL stands for \_\_\_\_\_.
- 6 Which of the following is not a feature of e-commerce ?
  - (a) Person-to-person.
  - (b) Speed.
  - (c) Digital Id.
  - (d) None of these.
- 7 This type of card includes and embedded integrated circuit chip (ICC) :
  - (a) Credit card.
  - (b) Smart card.
  - (c) E cash.
  - (d) None of these.
- 8 B2B e-commerce has been conducted between :
  - (a) Business to Bank.
  - (b) Business to Business.
  - (c) Business to Customer.
  - (d) None of these.
- 9 These are online magazines generally covering a topic of interest :
  - (a) Banner Advs.
  - (b) E-zines.
  - (c) Search engines.
  - (d) None of these.

**Turn over**

10 This is the process of making information unintelligible to the unauthorized reader :

- (a) Uncryption.
- (b) Decryption.
- (c) Encryption.
- (d) None of these.

(10 × 1 = 10 marks)

II. Answer any *eight* questions from the following. Each question carries 2 marks :

- 11 What is supply chain management ?
- 12 What is C2C e-commerce ?
- 13 What is electronic purse ?
- 14 What is sniffing the network ?
- 15 Give a note on Grids.
- 16 What is enterprise resource portal ?
- 17 What is E-advertising ?
- 18 Define VPN.
- 19 Explain Cyber stalking.
- 20 Discuss CD-ROM based shopping.

(8 × 2 = 16 marks)

III. Answer any *six* questions from the following. Each question carries 4 marks :

- 21 Distinguish between traditional commerce and e-commerce.
- 22 Explain the different generations in Wireless Communication.
- 23 Discuss the various transition ways to E-Commerce.
- 24 Discuss the important limitations of e-commerce security measures.
- 25 What are the success factors for mobile commerce ?
- 26 Explain the basic components of biometric ID system.
- 27 Explain the benefits of VoIP ?
- 28 What are the different types of internet advertising ?



IV. Answer any *two* questions from the following. Each question carries 15 marks :

- 29 Explain different model of e-commerce transactions.
- 30 Define web site. Discuss the need for a web site for e-commerce.
- 31 Explain electronic payment system and its components.

(2 × 15 = 30 marks)

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**FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
APRIL 2021**

B.C.A.

BCA 4B 05—VISUAL PROGRAMMING USING C# .NET

(2014 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A**

*Answer all questions.*

*Each question carries 1 mark.*

1. The .NET provides a run-time environment called \_\_\_\_\_ that runs the code and provides services that simplifies application development.
2. \_\_\_\_\_ allows us to write queries for local as well as remote data sources such as XML.
3. Name the method in C# used to convert a type to a single Unicode character
4. \_\_\_\_\_ keyword is used to refer base class constructor to subclass constructor.
5. Select appropriate word from the bracket : Abstract classes can (never / always) have instances.
6. Say True or False : “Encapsulation is the way to add functions in a user defined data structure.”
7. \_\_\_\_\_ statements are used in exception handling.
8. Which of the following is a pointer to a function (reference to a method) :
  - (a) Labels.
  - (b) Tooltips.
  - (c) Delegates.
  - (d) None of these.
9. Pick the most appropriate choice : \_\_\_\_\_ provides consistent access to data sources.
  - (a) HTML.
  - (b) CTS.
  - (c) ADO.NET.
  - (d) ASP.NET.
10. The DataAdapter serves as a bridge between \_\_\_\_\_ and a data source to retrieve data

(10 × 1 = 10 marks)

Turn over

**Part B**

*Answer all questions.*

*Each question carries 2 marks.*

11. List any *two* benefits of .NET framework.
12. List the data types in C#.
13. Define Polymorphisms.
14. What are “Delegates” ?
15. Give the syntax of connection strings.

(5 × 2 = 10 marks)

**Part C**

*Answer any five questions.*

*Each question carries 4 marks.*

16. Explain metadata and assemblies.
17. Identify the role of “Namespaces”.
18. Illustrate the use of Access Modifiers with example(s).
19. Discuss Abstract classes with example(s).
20. Identify the steps in exception handling.
21. Give the important properties of TextBoxes and RadioButtons.
22. Write a note on ODBC.
23. Explain the role of DataReader.

(5 × 4 = 20 marks)

**Part D**

*Answer any five questions.*

*Each question carries 8 marks.*

24. Discuss the architecture of .NET framework.
25. Explain the control statements in C# with suitable examples.
26. Illustrate the steps in creating a class, an object and array of objects. Explain nested classes
27. Explain inheritance with examples.

28. Illustrate how interfaces are implemented and used in applications.
29. Write short notes on :
- (i) Event handling.
  - (ii) Multiple document interface.
30. Explain the role of "DataAdapters" with examples.
31. Discuss the architecture of ADO.NET.

(5 × 8 = 40 marks)

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