



6495

Bachelor of Computer Applications (BCA)
(Part-II) (Semester-IV) Examination, 2025
DCC-BCA-402
(Visual Programming)

Duration of Examination: 3 Hours

परीक्षा की अवधि: 3 घण्टा

Max. Marks: 70

पूर्णांक: 70

Note:- The question paper is divided into 02 Parts: Part - A & Part-B.

Part-A

Will consist of 10 compulsory questions. Answer to each question shall be limited up to 50 words. Each question will carry 02 marks. Total 20 Marks. (Marks-10×2=20)

Part-B

Will consist of 10 questions. Student will have to answer 05 questions, selecting At least one questions from each unit. The answer to each question shall be limited upto 400 words. Each question carries 10 marks. Total 50 Marks. (Marks-5×10=50)

नोट:- प्रश्न पत्र दो भागों में होगा। भाग-अ और भाग-ब

भाग-अ

भाग-अ में 10 अनिवार्य प्रश्न होंगे। प्रत्येक प्रश्न का उत्तर 50 शब्दों तक सीमित होगा। प्रत्येक प्रश्न दो अंक का होगा। (10×2=20 अंक)

भाग-ब

भाग-ब में 10 प्रश्न होंगे। छात्र को प्रत्येक इकाई से कम से कम एक प्रश्न का चयन करते हुए पाँच प्रश्नों का उत्तर देना होगा। प्रत्येक प्रश्न का उत्तर 400 शब्दों तक सीमित होगा। प्रत्येक प्रश्न 10 अंक का होगा। (5×10=50 अंक)

430

Part-A

1. What is Visual Programming?
2. What is the CLR in the .NET Framework?
3. Define a variable in programming.
4. What are the differences between explicit and implicit variable declarations?
5. What is passwordchar property of a textbox?
6. When is lostfocus event executed?
7. What is variant datatype?
8. What is MSIL?
9. Explain any two EXIT statements with an example.
10. Difference between for loop and for each loop with real life?

**6495****Part-B**

430

Unit-I

- 11- (a) Explain combo box control and how to add items to combo box during design time and run time.
(b) Write notes on Drive Listbox, Directory Listbox and File Listbox.
12. (a) What are modules? Explain different types of Modules.
(b) Explain common dialog control with suitable example.
13. Explain the architecture of the .NET Framework, including the role of the CLR, Assemblies, and Garbage Collection.

Unit-II

14. Discuss different types of loops and conditional statements in Visual Programming with examples.
15. Write a detailed note on working with Forms in .NET, including how to load, show, and hide forms.
16. Describe the process of database programming with ADO.NET. How do you connect a Visual Basic application to SQL Server and perform CRUD operations?
17. Explain the concept of Object-Oriented Programming in .NET, focusing on inheritance, interfaces, and polymorphism.

Unit-III

430

18. Differentiate between:
- (a) Image box and picture box.
(b) Check box and option box.
(c) List box and combo box.
19. Write a program that takes two numbers from the user as an input, and then demonstrates the working of a calculator? Hint: Calculator working is like addition, multiplication, subtraction of two numbers
20. Write a program in c# to perform database connection and extract the details of those student who lives in "Ajmer" from student table having fields id, name, contact, city.



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**Bachelor of Computer Applications (BCA)
(Part-II) (Semester-IV) Examination, 2025
DCC-BCA-404
(Design Analysis & Algorithms)**

Duration of Examination: 3 Hours
परीक्षा की अवधि: 3 घण्टा

Max. Marks: 70
पूर्णांक: 70

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Part-A

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भाग-ब

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437

Part-A

1. Describe the selection sort algorithm and its time complexity.
2. What is the binary search algorithm? State its time complexity.
3. What is the greedy method? Provide a simple example of its application.
4. What is Prim's algorithm used for ? Briefly explain its working.
5. What is the O/I knapsack problem in the context of dayamic programming?
6. What is Floyd's algorithm used for ? Provide a brief explanation.
7. Define NP- complete problems and give an example.
8. Briefly explain Kruskal's algorithm for minimum spanning tree.
9. What is back tracking? Provide an example where it is applied.
10. What is the traveling salesperson problem (TSP) and why is it important in algorithm design?



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Part-B

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Unit-I

11. Discuss the importance of asymptotic notations in analyzing algorithms. Explain Big O, Big omega, and Big Theta notations with examples.
12. Describe the merge sort algorithm in detail. Compare its time complexity with Quick sort.
13. Solve the Knapsack problem using the Greedy method. Discuss why the greedy approach may not always give an optimal solution with an example.

Unit-II

14. Solve the 0/1 Knapsack problem using dynamic programming. Provide an example with a detailed solution.
15. Explain the traveling salesperson problem (TSP) and how dynamic programming is used to solve it? Discuss its time complexity.
16. Solve the n-queens problem using back tracking. Provide a solution for the 4-queens problem and explain the steps involved.
17. Explain the hamilton circuit problem. Discuss how backtracking is used to solve it and illustrate it with an example.

Unit-III

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18. Explain Warshall's algorithm and discuss its use in finding the transitive closure of a directed graph.
19. Discuss the limitations of algorithmic power. How do NP-hard and N-P complete problems pose challenges in algorithm design?
20. Discuss the Branch and Bound technique and solve the Knapsack problem using this method. Compare it with the dynamic programming approach.



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Bachelor of Computer Applications (BCA)
(Part-II) (Semester-IV) Examination, 2025
AEC-BCA-401
(Computer Based Statistics)

Duration of Examination: 3 Hours

परीक्षा की अवधि: 3 घण्टा

Max. Marks: 70

पूर्णांक: 70

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Part-A

1. Verify whether the set of vectors $\{(0,1), (2,0)\}$ is ortho normal or not.
2. What is the special feature of Psevdo inverse?
3. If x is a poisson random variable with parameter $\lambda > 0$, then prove that $E(X^2) = \lambda E(x+1)$.
4. If the covariance between X and Y is 36 and the standard deviation of X and Y are 16 and 9 respectively, find the coefficient of correlation.
5. What do you mean by degrees of freedom in testing of hypothesis?
6. Distinguish between parameter and statistic.
7. The joint PDF of a two dimensional random variable (X,Y) is given by

$$f(x, y) = \begin{cases} Ke^{-(x+y)} & ; 0 \leq x \leq y, 0 \leq y \leq \infty \\ 0 & ; \text{otherwise} \end{cases}$$

Find the value of K .

8. Mention the application of statistics.



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9. What do you mean by correlation? Mention any four uses of it.
10. Explain the functions of statistics.

Part-B

420

Unit-I

11. A student's grades on five test are 70, 75, 80, 85 and 90. If the final exam, worth two test grade.
12. The number of defects per unit in a sample of 330 units of manufactured product was given below. fit a poisson distribution to the data (Given $e^{-0.439}=0.6447$)

No. of defects	0	1	2	3	4
No. of Units	214	92	20	3	1

13. The mean and standard deviation of a set of 100 observations were worked out as 40 and 5 respectively by a computer which by mistake took value 50 in place 40 for one observation. Find the correct mean and standard deviation.

Unit-II

14. Find the least squares solution of the linear system $Ax=b$ given by $X_1-X_2=4$; $3x_1+2x_2=1$; $2x_1+4x_2=3$.

15. Find the arithmetic mean and range for the following data representing marks of 80 students.

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	12	13	21	19	15

16. What is primary data? Explain the methods of collecting primary data.

Unit-III

420

17. Define regression coefficients. Explain the properties of regression coefficients.

18. Find Quartiles, median and mode for the following data:-

Class	10-30	30-50	50-70	70-90	90-110	110-130
Frequency	4	10	14	12	8	6

19. State and prove $\lambda - \mu$ theorem.

20. The resolved part of a force of magnitude 100 kgwt in a direction is a half of it. Find its inclination with the force 2 the other resolved part.



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Bachelor of Computer Applications (BCA)
(Part-II) (Semester-IV) Examination, 2025
DCC-BCA-403
(Android Programming)

Duration of Examination: 3 Hours
 परीक्षा की अवधि: 3 घण्टा

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Part-A

1. What do you mean by following code: Uri.parsing() ?
2. Define the user interface and it's types.
3. What content providers in terms of android?
4. What is the use of passing in android code?
5. Write essential states of an activity.
6. Describe the app components activity and threads.
7. What is an android manifest file?
8. Mention the importance of having emulator with in the android environment.
9. Differentiate onResume() and onStart() method.
10. Mention the types of third party framework.



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Part-B

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Unit-I

- ✓11. Explain the visible activity? When is the best time to kill a foreground activity.
- ✓12. Explain in detail packaging and deployment of application.
13. Explain customizing the action items and their applications.

Unit-II

- ✓14. Explain various types of android applications. Create any small application in android.
15. Explain about absolute and relative layouts with suitable examples.
16. Write a code for to create an alarm application that rings every monday at 8 a.m.
- ✓17. Explain the software engineering issues for mobile application development.

Unit-III

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18. Explain the term intent. How many different intent types are there?
- ✓19. Explain the fragment with suitable example and also discuss the lite cycle of fragement.
20. Create an android application code of student's information and display message through Toast.

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