S–4756

Sub. Code
23BAI1C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

First Semester

Artificial Intelligence

PROGRAMMING FOR PROBLEM SOLVING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** the questions

1. What do you mean by syntax?

2. How will you define data types?

3. Provide the definition of an identifier.

4. List the data types used in 'C' programming language.

5. Does 'C programming language support multi-dimensional arrays.

6. Define a string in 'C'.

7. What is a function?

8. Do we have pre-defined functions in 'C'.

9. What are pointers in 'C'?

10. Provide a coding example for structures in 'C'.

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

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

11. (a) Write down the advantages of programming languages.

Or

(b) Explain about structured programming with an example.

12. (a) With examples, discuss about arithmetic operators in 'C'.

Or

(b) Discuss about the conditional statement in 'C'.

13. (a) Write a program in 'C' for linear search.

Or

(b) How will you initialize a string in 'C'? Explain.

14. (a) Provide the ways and means of accessing variables in a function with an example.

Or

(b) Explain function prototypes in 'C' with coding examples.

15. (a) Write about declaring pointers in 'C' with examples.

Or

(b) Can we pass pointers to functions? Explain with code.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss in detail the software development life cycle.

17. Bring out a study on the various looping statements in 'C' with examples.

18. Describe with examples reading and writing a string in 'C'.

19. Write and explain a 'C' program to demonstrate the use of a function.

20. Elaborate dynamic memory allocation in detail.

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S–4757

Sub. Code
23BAI1S1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

First Semester

Artificial Intelligence

FUNDAMENTALS OF INFORMATION TECHNOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Write a note on data.
2. Write any two functions of a CPU.
3. What can you do with a word software?
4. Can we do a spell check in a word document?
5. Provide the purpose of a excel sheet.
6. How will you insert a column in a excel sheet?
7. Write the importance PowerPoint.
8. How to insert a new slide?
9. Define internet.
10. Expand URL.

Part B (5 × 5 = 25)

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

11. (a) Define computer software briefly.

Or

(b) Explain 'keyboard' as an input device.

12. (a) Explain the steps involved in a document in various file formats.

Or

(b) Show the importance of inserting images to a word document.

13. (a) Provide the steps involved in generating a series in a excel sheet.

Or

(b) Can objects be embedded in excel? Explain.

14. (a) Write a note on the slide sorter view.

Or

(b) How do we set timings for slides? Explain.

15. (a) List down the services of internet.

Or

(b) Discuss about browsers.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss in detail about the generations of a computer.

17. Provide the details involved in adding objects to a word document.

18. Bring out a detailed study on generating various charts in excel.

19. Describe the steps involved in creating a presentation with an example.

20. Elaborate on the various domain names in internet.

S–4758

Sub. Code
23BAI1FC

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

First Semester

Artificial Intelligence

OFFICE AUTOMATION

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Why do we require memory?
2. In memory, what do you mean by a Word?
3. List any two uses of a word document.
4. Show the use of bullets in a word document.
5. What is the purpose of a Excel sheet?
6. How do we use formula in Excel?
7. Write the method to save excel file.
8. Define information.
9. Provide the utility value of using a presentation.
10. Show the method of printing a PowerPoint file.

Part B (5 × 5 = 25)

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

11. (a) Define virtual memory briefly.

Or

(b) Write a brief note on UNIX operating system.

12. (a) Provide the details of spell checker in Word document.

Or

(b) With an example explain header.

13. (a) Discuss about auto numbering in an Excel sheet.

Or

(b) Do we have any restrictions on the number of rows and columns in Excel? Explain.

14. (a) Describe briefly about indexing.

Or

(b) With examples, explain the designing of queries in a database.

15. (a) Define the slide sorter view.

Or

(b) Elaborate on the Save and Save As options in PowerPoint.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the types of computer memory in detail.

17. Bring out a detailed study on Mail Merge in Word document.

18. Shows with examples, the creating of a PIE Chart in Excel.

19. Elaborate in detail on MS-Access for designing menu driven applications.

20. Elucidate on setting slide transition for a PowerPoint file.

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S–4763	Sub. Code
	23BAI2C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Second Semester

Artificial Intelligence

PYTHON PROGRAMMING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** the questions.

1. Define Python.
2. What do you need to run Python code?
3. Write the keyword that is used to define a function in Python.
4. How do you pass an argument to a function in Python?
5. Can binary files be used in Python?
6. What is the purpose of find() function.
7. Define a dictionary in Python.
8. Show the use of insert() method in Python.
9. Provide the benefits of using functions.
10. How will you define polymorphism?

Part B (5 × 5 = 25)

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

11. (a) Write a note on numeric data types in Python.

Or

(b) With examples, define integers in Python.

12. (a) Write a Python program to demonstrate the use of a module.

Or

(b) Discuss about the Main module in Python.

13. (a) Write a Python program to find string in a text file using read ().

Or

(b) Explain the '*' operator that is used to concatenate strings.

14. (a) Describe in brief lists in Python.

Or

(b) Define the way in which we can access values in a dictionary.

15. (a) Discuss briefly about classes in Python.

Or

(b) How will you define data modeling? Explain.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe in detail type conversions with code examples.

17. Write a detailed note on looping statements in Python with examples.

18. Discuss in detail the writing numbers to a file with coding examples.

19. Elaborate on the various methods used to manipulate files in Python.

20. Elucidate in detail on classes with inheritance in Python.

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S–4765

Sub. Code
23BAI2S2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Second Semester

Artificial Intelligence

MULTIMEDIA SYSTEMS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What does multimedia provide to us?
2. How many media combine to form multimedia?
3. Spell out the relationship between pixels and images.
4. Expand JPEG.
5. What do you mean by digital audio?
6. Write about noise in multimedia audio.
7. How are animation created?
8. Where is NTSC format used?
9. What is a project?
10. Does multimedia projects done in phases?

Part B (5 × 5 = 25)

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

11. (a) List the applications that multimedia can be used.

Or

(b) Provide a brief note on the usage of text in multimedia.

12. (a) Write a note on image file formats.

Or

(b) Discuss in brief configuring computer workspace.

13. (a) Describe quantization in multimedia audio.

Or

(b) How will you define encoding in computer audio? Explain.

14. (a) Define about the technical requirements for creating animation.

Or

(b) Explain the areas where digital video can be used.

15. (a) Bring out a brief study on the intangible needs of a multimedia project.

Or

(b) What is the need for various hardware for a multimedia project? Elucidate.

Part C

(3 ×10 = 30)

Answer any **three** questions.

16. Bring out a detailed study on hypermedia and hypertext.

17. Elaborate image data types in detail.

18. Elucidate on adding sound to a multimedia project in detail.

19. Describe in detail shooting and editing videos.

20. Discuss in detail the software needs of a multimedia project

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Sub. Code
23BAI3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Artificial Intelligence

OBJECT ORIENTED PROGRAMMING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is objeet-oriented programming?

2. Explain the term “abstraction” in the context of OOP.

3. What are the basic data types in Java?

4. Define a constructor and its use in Java.

5. How does inheritance promote code reusability?

6. What is dynamic method dispatch in Java?

7. Describe the difference between an interface and an abstract class.

8. What is a try-catch block, and how is it used in Java?

9. Explain the concept of generics in Java.

10. What is the significance of the ‘final’ keyword in Java?

Part B (5 × 5 = 25)

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

11. (a) Discuss how arrays add array lists differ in Java with examples.

Or

(b) Explain the role of control statements in making decisions in a Java program.

12. (a) Compare and contrast single and multiple inheritance.

Or

(b) Describe how constructors are used in Java for object initialization.

13. (a) Analyze the concept of polymorphism its application in Java.

Or

(b) Discuss how exception handling improves program reliability.

14. (a) Explain the steps involved in reacting and writing files in Java.

Or

(b) Describe the use of the Collections Framework in Java with examples.

15. (a) Discuss the importance of multithreading in developing high-performance applications.

Or

(b) Explain how event handling is managed in Swing applications.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Evaluate the impact of OOP principles on modern software development with examples.

17. Design a Java application using interfaces and inheritance to model a real-world scenario. Explain your code.

18. Critically assess the role of exception handling and multithreading in concurrent programming.

19. Discuss the significance of the Java Collections Framework and how it enhances data management.

20. Develop a Java application that incorporates Swing elements to create a user-friendly interface. Explain the design choices.

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23BAI3C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Artificial Intelligence

DATA STRUCTURES AND ALGORITHMS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is an algorithm? List its characteristics.
2. Define the stack ADT and its applications.
3. Explain the concept of a circular queue.
4. List the types of binary trees and their properties.
5. What is the significance of asymptotic analysis in algorithm design?
6. Describe the insertion sort algorithm.
7. What is a binary search tree (BST)? Provide an example.
8. Explain the use of linked lists in dynamic memory allocation.
9. What are B-trees? Where are they used?
10. Define and explain the concept of a priority queue.

Part B (5 × 5 = 25)

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

11. (a) Discuss the implementation and applications of doubly linked lists.

Or

(b) Explain the process of converting a postfix expression to infix.

12. (a) Compare the performance of different sorting algorithms: Bubble Sort, Insertion Sort and Selection Sort.

Or

(b) Discuss the applications of graph algorithms in network design.

13. (a) Explain the algorithm for Breadth-First Search (BFS) in graphs.

Or

(b) Describe the implementation of AVL trees and their importance in database indexing.

14. (a) Discuss the concept of recursion and its applications in computer science.

Or

(b) Explain the time-space trade-off in the context of data structures and algorithms.

15. (a) Describe the working of binary heaps and role in implementing priority queues.

Or

(b) Discuss the application of dynamic programming in solving optimization problems.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Analyze the advantages and disadvantages of different data structures in handling dynamic data.

17. Evaluate the importance of graph traversal algorithms in solving real-world problems, with examples.

18. Design a queue-based data structure to manage task scheduling in an operating system and explain its implementation.

19. Discuss the challenges of implementing complex data structures such as AVL trees and B-trees in large-scale databases.

20. Propose a new sorting algorithm and evaluate its performance compared to existing algorithms.

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Sub. Code
23BAI3S1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Artificial Intelligence

WEB DESIGNING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are the benefits of using CSS in web development?
2. Outline the main features of XML.
3. Identify the different types of CSS styling for text formatting.
4. Describe the significance of margin and padding in the Box Model.
5. What is meant by dynamic content in DHTML?
6. Explain the concept of data binding in Dynamic HTML.
7. What are the key features of JavaScript as a client-side scripting language?
8. Differentiate between 'for loop and 'while' loop in JavaScript.
9. Explain the role of JavaScript in the DOM environment.
10. What is the importance of JavaScript's own objects in web development?

Part B (5 × 5 = 25)

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

11. (a) Distinguish between CSS classes and IDs with examples.

Or

(b) Demonstrate how XML is structured with a sample code.

12. (a) Illustrate the CSS Box Model with a labeled diagram.

Or

(b) Discuss how to style tables using CSS.

13. (a) Analyze the impact of DCOM on web development.

Or

(b) Explain how event bubbling works in Dynamic HTML an example.

14. (a) Develop a JavaScript code snippet to calculate the factorial of a number.

Or

(b) Discuss the role of conditions in JavaScript programming.

15. (a) Analyze how JavaScript can be used for form validation.

Or

(b) Discuss the relationship between JavaScript and web browser environments.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss the role of CSS in web development.

17. Explain. how to style a webpage using the CSS Box Model.

18. Describe the process of using Dynamic HTML to change content styles.

19. Create a simple JavaScript application to display a message based on user input.

20. Explain how JavaScript objects are used in web development.

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S–4769

Sub. Code
23BAI3S2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Artificial Intelligence

PHP PROGRAMMING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define PHP.
2. What does WAMP stand for?
3. What is a PHP variable and how is it declared?
4. Write a program to find the year "2000" is leap year or not.
5. How do you create an indexed array in PHP?
6. Write syntax for Switch statement.
7. Explain the purpose of the fopen( ) function in PHP
8. How can you. read the entire contents of a file into a string in PHP?
9. How can you set a cookie in PHP? Provide an example.
10. Explain the purpose of the session-destroy function in PHP.

Part B (5 × 5 = 25)

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

11. (a) Explain the significance of PHP in creating dynamic web pages. Why is it considered a powerful tool for web developers?

Or

(b) Discuss the scope and future prospects of PHP in the web development.

12. (a) Write a PHP program to find biggest of two numbers using if-Else condition.

Or

(b) Illustrate how to embed PHP code in an HTML page?

13. (a) Write a PHP Program to print the multiplication table of given number using for loop.

Or

(b) Discuss the concept of arrays in PHP. Explain with examples.

14. (a) Explain how to read a file line by line in PHP using a loop. Write a PHP script that reads a text file and displays each line.

Or

(b) Compare and contrast the fgets( ), file_get_ contents( ), and fread( ) functions in PHP.

15. (a) How to store data in Cookies? Explain briefly.

Or

(b) Write a PHP program to keep track of the number of visitors visiting the web page and to display this count of visitors.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Describe the installation and configuration process of XAMPP for PHP development.

17. List out the various operators in PHP and explain with examples.

18. Illustrate the use of built-in array functions in PHP with examples.

19. Explain the various methods available in PHP for reading data from files.

20. Demonstrate the process of managing sessions. in PHP, including how to start a session, set session variables and destroy a session. Provide example.

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