S–4431

Sub. Code
23BIT1C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

First Semester

Information Technology

PROGRAMMING IN C

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. List the important criteria to assess the quality and effectiveness of programming languages.
2. What is the difference between variables and constants?
3. How are continue and break statements related?
4. Define array. How will you declare an array?
5. What is function in C? Give an example.
6. What is the use of recursive functions in C?
7. What is the basic difference between a structure and an array?
8. Define Union.
9. Write a program that print the value and address of a pointer.
10. Write the syntax for creating and opening a file.

Part B (5 × 5 = 25)

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

11. (a) Discuss the concept of structured programming language.

Or

(b) Discuss the fundamental data types in C.

12. (a) Write a C program to find the sum of the first 10 natural numbers.

Or

(b) Write a short note on String Handling functions.

13. (a) Write a C program to identify the smallest of three numbers.

Or

(b) Explain in detail about call by value and call by reference.

14. (a) Explain the basic concepts of structure with suitable example.

Or

(b) Write a note on File operations.

15. (a) Write a program to illustrate the concept of pointers.

Or

(b) Write a program for sorting character strings using pointers.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the importance of managing input and output operations in C program.

17. Write a C program to sort the n numbers.

18. Write in detail about the following

    (a) Function with argument and with return type

    (b) Nesting functions

19. Explain the concept of creating union within structure in detail.

20. Write a C program to copy content of one file to another.

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S–4432

Sub. Code
23BITA1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Information Technology

Allied – DIGITAL LOGIC FUNDAMENTALS

(CBCS – 2023 onwards)

Time : Three Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Why is Binary Number System used in Digital Computers?

2. Convert $(650.13)_8$ to hexadecimal.

3. What is Don't care condition.

4. State De Morgan's theorem.

5. List the types of Combinational Logic circuits.

6. Draw the logic diagram of half adder.

7. Differentiate register and counter

8. What are the different types of flip-flops?

9. Mention the advantage of synchronous counters over asynchronous counters.

10. What is the need of ROM?

Part B (5 × 5 = 25)

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

11. (a) (i) Convert $[01101.001101]_2$ to octal number.

(ii) Convert $[EC2]_{16}$ to binary number.

Or

(b) Explain Universal gates with an example.

12. (a) What is Canonical Sum of Product Expression? Obtain the canonical sum of product form of the function Y(A, B) = A + B.

Or

(b) Explain in detail about various representations of binary numbers with an example.

13. (a) Explain in detail about the working principle of 3-Line-to-8-Line Decoder

Or

(b) Implement the following function with a multiplexer $F(V, W, X, Y) = \Sigma(0, 1, 3, 5, 8, 10, 15)$

14. (a) Discuss in detail about J-K flip flop with an example.

Or

(b) Illustrate Parallel In/Serial Out Shift Registers with an example.

15. (a) Elaborate in detail about the design of BCD or Decade (MOD-10) Counter

Or

(b) What is memory? Explain in detail about the types of memory.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Define Logic Gates. Explain in detail about the types of logic gates with neat diagram.

17. Express the function $x = A + B\overline{C}$ in

    (a) Canonical SOP and

    (b) Canonical POS form

18. Elaborate in detail about the implementation method of parity generator and checkers.

19. Discuss about working principle of the Synchronous Counters.

20. Explain in detail about the types of RAMs.

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S–4433	Sub. Code
	23BIT1S1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024.

First Semester

Information Technology

OFFICE AUTOMATION

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. List down any four input devices.
2. Differentiate DOS and UNIX.
3. How can insert a WordArt in MS Word.
4. How do you open and close a MS Word document.
5. What are the various types of charts?
6. Define the term Data analytics.
7. Expand DBMS. What are the types?
8. Define Sorting.
9. What is the benefit of PowerPoint?
10. What is slide transition?

Part B (5 × 5 = 25)

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

11. (a) Write a short note on Operating System.

Or

(b) Discuss the characteristics and applications of monitors and printers.

12. (a) Explain the various text editing tools available in word processing software.

Or

(b) Discuss the importance of formatting in word processing software.

13. (a) Describe the process of sorting and filtering data.

Or

(b) Explain the benefits of data analytics in detail.

14. (a) How to design queries?

Or

(b) Write down the concept of DBMS architecture types.

15. (a) Discuss the use of themes in PowerPoint.

Or

(b) Explain the process of creating slide shows in PowerPoint.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss about the memory unit with diagram.

17. Describe the role of spell checking and grammar.

18. Explain the importance of data visualization in spreadsheet.

19. Discuss the role of reports in Data Base.

20. Describe the techniques for adding charts and graphs in PowerPoint.

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S–4434	Sub. Code
	23BIT1FC

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024.

First Semester

Information Technology

FUNDAMENTALS OF COMPUTERS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define computer.

2. What is the main function of the Storage Unit?

3. Give one advantage of high-level languages over low-level languages.

4. Name two key components of system software.

5. What is the first step in the problem-solving process?

6. Give an example of a problem-solving strategy.

7. What is the purpose of a function in a computer program?

8. Define algorithm.

9. What is a module in programming?

10. Why is problem-solving important in decision-making?

Part B (5 × 5 = 25)

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

11. (a) Elaborate note on evaluation of computers.

Or

(b) Explain the role of the Input unit in a computer system.

12. (a) Explain object oriented language with example.

Or

(b) State the advantages and disadvantage of using machine language.

13. (a) How can computers be used to assist in problem-solving? Explain.

Or

(b) List the difficulties faced when trying to solve problems.

14. (a) Describe the process of analyzing a problem before coding.

Or

(b) Explain different symbols used for flowchart.

15. (a) How are parameters used in functions? Discuss.

Or

(b) How if-else statements work in programming? Explain.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the various characteristics of computers.

17. Describe the different types of computer software and their functions.

18. Explain the concept of problem-solving in everyday life.

19. Describe the various data types used in programming and their significance in storing different kinds of information.

20. Explain how loops can be used to solve problems that involve repetitive tasks.

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S–4435	Sub. Code
	23BIT2C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024.

Second Semester

Information Technology

JAVA PROGRAMMING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define JVM.

2. Why java is platform independent?

3. What are the difference between static variable and instance variable?

4. How to declare an array?

5. How do you access a static variable?

6. Illustrate constructor.

7. What is Thread?

8. List out the two types of exceptions.

9. Define Applet.

10. What is the purpose of 'Choice' component in AWT?

Part B (5 × 5 = 25)

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

11. (a) Write a note on Benefits of Java.

Or

(b) Explain about the structure of Java program.

12. (a) Discuss about two dimensional array.

Or

(b) Describe the conditional operator with an example.

13. (a) Elaborate note on abstract class in Java.

Or

(b) How does method overriding differ from method overloading? Discuss.

14. (a) Analyze try, catch and finally statement with an example.

Or

(b) How to add a new class to a package? Explain with an example.

15. (a) Explain about the AWT Menu design.

Or

(b) Describe how to handle keyboard events in AWT.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. List out the Java Tokens and explain in detail.

17. What is string? Explain string built in function with an example.

18. Discuss in detail about different types of inheritance.

19. Explain how interface is used to achieve multiple Inheritance in Java.

20. Explain Applet life cycle with suitable diagram.

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S–4436

Sub. Code
23BITA2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Information Technology

Allied — INTERNET AND WEB DESIGN

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. List out some Web browsers.

2. Illustrate on Uniform Resource Locator (URL).

3. How can you create a graphical navigation bar using HTML and CSS?

4. Difference between text based and graphics based navigation bar.

5. Narrate the steps to specify the width of a table column in HTML.

6. Which HTML tag is used to create a checkbox?

7. Name the popular server-side JavaScript environment.

8. How do you create a Date object in JavaScript?

9. Clarify the steps to access an image element in the HTML document using JavaScript?

10. What is an event in JavaScript? Give an example.

Part B (5 × 5 = 25)

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

11. (a) Describe shortly World Wide Web and its evolution.

Or

(b) Discuss the advantages of search engine and give some examples.

12. (a) Examine the HTML tags to add backgrounds and borders.

Or

(b) Explain briefly about CSS to format and style different types of paragraphs.

13. (a) Describe the process of merging cells in an HTML table.

Or

(b) Write a note on the components of a basic HTML form and their functionalities.

14. (a) Explain the difference between = = and = = = operators in JavaScript.

Or

(b) Differentiate between *while* and *do...while* loops in JavaScript.

15. (a) Describe the purpose of the Link and Area objects in JavaScript.

Or

(b) Elucidate the significance of the on Load event in web applications.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Analyze the significance of E-Commerce and Video Conferencing.

17. Elucidate the steps redirect users to another URL using HTML and CSS.

18. Explain the differences between the <audio> and <video> tags in HTML.

19. Discuss the architecture of a typical server-side JavaScript application using Node.js.

20. Analyze the event handlers for keyboard events like onKeyDown, onKeyPress, and onKeyUp.

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S–4437	Sub. Code
	23BITA3

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Information Technology

Allied — MICROPROCESSOR AND MICROCONTROLLER

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. State the basic operations of microprocessor.

2. Recall the purpose of the Program Counter.

3. What is the role of the SOD pin?

4. Mention the role of LDA and STA instruction.

5. What is the purpose of the INTR and INTA?

6. What is the significance of the mask bits in the SIM instruction?

7. Classify the different types of ports.

8. What is the special function of 8051?

9. How is Timer 1 stopped in the 8051 microcontroller?

10. Which register in the 8051 microcontroller is used to set the timer mode?

Part B (5 × 5 = 25)

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

11. (a) Explain the role of the Accumulator in the 8085 microprocessor.

Or

(b) Explain the flag register of 8085 microprocessor.

12. (a) Explain the role of arithmetic instructions and give examples.

Or

(b) With neat PIN diagram explain the various signals of 8085 microprocessor.

13. (a) Describe how the RIM instruction is used in the 8085 microprocessor.

Or

(b) Classify the different types of interrupts available in the 8085 microprocessor.

14. (a) Draw the pin diagram of 8051 microcontroller.

Or

(b) State the applications of microcontroller.

15. (a) Explain the purpose of the interrupt control register in the 8051 microcontroller.

Or

(b) Illustrate the timers and counters in the 8051 microcontroller with their primary functions.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Draw and explain the 8085 microprocessor bus organization.

17. Draw and label the functional block diagram of the 8085 microprocessor.

18. Describe the basic working principle of the 8259 Programmable Interrupt Controller.

19. Describe the architecture of the 8051 microcontroller.

20. Describe the different types of interrupts available in the 8051 microcontroller.

S–4439

Sub. Code
23BIT2S1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Second Semester

Information Technology

BASICS OF INTERNET

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer all the questions.

1. Define World Wide Web.

2. Point out page formatting tags.

3. Write a note on linking video and audio file.

4. Define troubleshooting.

5. Define infotainment in the context of internet usage.

6. Comment on preformatted text.

7. Difference between demographic and psychographic descriptions

8. Give an example of a psychographic trait that might influence internet usage.

9. Name two common types of cybercrimes.

10. State the role of encryption play in preventing cybercrime.

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

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

11. (a) Write a short note on Forms with text boxes and text areas.

Or

(b) Analyze the concepts of block quotes and horizontal lines.

12. (a) Explain briefly table borders and table headers.

Or

(b) Compare text link and image links.

13. (a) How the style of presentation influences the classification of internet content as infotainment?

Or

(b) Discuss the impact of user-generated content on the classification of internet content as infotainment.

14. (a) Discuss how the internet has impacted traditional values related to privacy.

Or

(b) Examine the long-term effects of internet use on societal values and lifestyle.

15. (a) Analyze the challenges of balancing cyber security with privacy concerns in the digital age.

Or

(b) Elucidate the future possibilities of cybercrime prevention.

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

Answer any **three** questions.

16. Describe the significance of a web page formatting with example.

17. Discuss about working with forms such as submit, reset buttons, and menu lists.

18. Examine the evolution of infotainment on the internet and discuss how content creators adapt their style to cater to changing audience preferences.

19. Discuss how the internet has contributed to the lifestyles, and assess whether this is beneficial or detrimental to cultural diversity.

20. Describe about the future landscape of cybererime with the advancement of technologies like AI, quantum computing, and IoT.

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S–4440

Sub. Code
23BIT2S2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Second Semester

Information Technology

PROBLEM SOLVING TECHNIQUES

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions

1. How does a program differ from an algorithm?
2. What is a general problem-solving strategy?
3. How would you sum the numbers from 1 to 10?
4. What is the factorial of 5?
5. What is the square root of 16?
6. What is the greatest common divisor (GCD) of 8 and 12?
7. What is the maximum value in the array [3, 1, 4, 1, 5]?
8. What is array partitioning?
9. How many permutations can be generated from three distinct items?
10. What is the purpose of text line editing?

Part B (5 × 5 = 25)

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

11. (a) Explain the basic requirements for solving problems using a computer.

Or

(b) Explain the process of implementing an algorithm in a programming language.

12. (a) Describe an algorithm to count the number of elements in a list or set.

Or

(b) Write down the steps to swap the value of two variables without using a third variable.

13. (a) Explain the method for finding the square root of a number using an algorithm.

Or

(b) Describe an algorithm for raising a number to a large power.

14. (a) Describe how you would create a histogram of values from an array.

Or

(b) How to find the maximum and minimum values in an array? Explain.

15. (a) Describe the process of keyword searching in large text files.

Or

(b) Write down the steps involved in adjusting text line length.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain top-down design and how is it used in problem-solving.

17. Explain the steps required to convert a number from binary to decimal.

18. How can you compute the n'th Fibonacci number using recursive algorithm? Explain with example.

19. Describe a method to efficiently find the k'th smallest element using algorithm.

20. Interpret the concept of permutation generation and how can it be achieved using a recursive approach?

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S–4441	Sub. Code
	23BIT3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Information Technology

PHP PROGRAMMING

(CBCS – 2023 onwards)

Time :3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. How to use comments in PHP?

2. Mention the rules for naming variable.

3. Define String.

4. Why do we use array slice ( ) function?

5. Write the use of gettype( ), settype( ).

6. Define user defined functions.

7. What is debugging?

8. Write the syntax of 'throw'.

9. What is the use of header ( ) function?

10. What are the common uses of cookies?

Part B (5 × 5 = 25)

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

11. (a) Briefly explain how PHP embedded with HTML.

Or

(b) Classify the various types of operators with example.

12. (a) Explain with an example of substring function.

Or

(b) Discuss about array functions with an example.

13. (a) Explain the concept of *call by value and call by Reference* with an example.

Or

(b) Discuss on different modes of file opening with syntax.

14. (a) How do you create and use a custom exception class in PHP? Explain.

Or

(b) Illustrate finally block with its syntax and give an example.

15. (a) Explain how to destroy a session and its variables. Write an example program.

Or

(b) How to store and delete a data in Cookies? Explain.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Distinguish GET method and POST method? Explain with an example.

17. Discuss in detail about different types of array.

18. With suitable example explain different file operations.

19. Demonstrate the role of try and catch block in error handling. Explain with an example.

20. Explain how to use PHP sessions to store and retrieve data.

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S–4442

Sub. Code
23BIT3S1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Information Technology

CYBER FORENSICS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions

1. Define computer forensics.
2. Identify the functions of email forensics tools.
3. List out the types of digital evidence.
4. What is the chain of custody in digital forensics?
5. What is bit stream imaging in cyber forensics?
6. What are the practical considerations in cyber forensic?
7. Define Electronic Evidence Discovery.
8. How is digital evidence used in litigation?
9. What is meant by usable file formats?
10. How can email evidence be destroyed?

Part B (5 × 5 = 25)

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

11. (a) Elucidate the importance of computer forensics in law enforcement.

Or

(b) Describe the process of creating a forensic image of hard drive.

12. (a) Enlighten the importance of data backup in computer forensics.

Or

(b) Discuss the importance of controlling contamination in digital evidence handling.

13. (a) Illustrate the legal aspects of collecting and preserving computer forensic evidence.

Or

(b) Elaborate on computer image verification and authentication techniques.

14. (a) Explain the process of discovering electronic evidence.

Or

(b) Discuss the importance of timeline analysis in computer forensics.

15. (a) Explain the process of becoming a digital detective.

Or

(b) Classify the various types of useable file formats.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Classify the types of computer forensics technology with example.

17. Discuss the role of write-blockers in digital evidence collections.

18. Analyze the role of hashing and digital signatures in computer image verification and authentication.

19. Describe the forensic identification and analysis of technical surveillance devices.

20. Illustrate the challenges of working with unusable file formats.

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S–4443

Sub. Code
23BIT3S2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Information Technology

ENTERPRISE RESOURCE PLANNING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer all the questions.

1. Define Enterprise Resource Planning.

2. List out any four popular ERP solutions.

3. What is business process reengineering?

4. Why the Demand Chain and Supply Chain have to be decoupled?

5. Give some examples for customer relationship applications.

6. Comment on material management.

7. Expand SDLC.

8. Who are consultants?

9. Define e-commerce.

10. What is organizational culture?

Part B (5 × 5 = 25)

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

11. (a) Explain about conceptual model of ERP.

Or

(b) State the various the needs of ERP.

12. (a) Explain cross functional integrated ERP Systems.

Or

(b) Highlight the objectives of data warehousing.

13. (a) List out various functional modules of ERP software.

Or

(b) Discuss the benefits of materials management.

14. (a) State the importance of object oriented architecture.

Or

(b) Explain the role of SSAD.

15. (a) State the various objectives of future directives.

Or

(b) What are the tools using in ERP? Discuss.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the structure of ERP.

17. Discuss the different phases of product life cycle management.

18. Narrate the current situations of marketplace and its future growth.

19. Explain the various 'Phases' involved in the ERP implementation life cycle.

20. Analyze the success and failure factors of ERP.