S–2961

Sub. Code
23BDS1C1

B.Sc. DEGREE EXAMINATION, APRIL 2024

First Semester

Data Science

PROGRAMMING IN C

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. Write a simple C program by properly declaring the Header file, Variable and data types.

2. Define C tokens.

3. Where do we use nested if statement and why it is necessary?

4. What is the decision making in C programming?

5. How memory allocation happens in Arrays? Draw an example block diagram.

6. Define function and what is called function prototype.

7. Write the syntax for structures.

8. How do we declare a variable to access a structure? Give an example.

9. Give any two ways to declare a pointer.

10. Differentiate pointer variable and a normal variable.

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

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

11. (a) Explain the importance of C program and its advantages.

Or

(b) Elaborate on increment and decrement operators with an example program.

12. (a) Explain the difference between while and do while statements.

Or

(b) Explicate about IF ELSE ladder with an example code.

13. (a) Write a C Program for Transpose of a Matrix using Multidimensional Arrays.

Or

(b) Enunciate on Actual parameters and Formal parameters with an example.

14. (a) Explain the advantages of union with its syntax.

Or

(b) Derive macro substitution with an example.

15. (a) Write a C program to explain call by value using pointers.

Or

(b) Explain about pointers and functions with an example program.

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

Answer any **three** questions.

16. Describe in detail about operator precedence with suitable example program.

17. Write a C program to calculate employee payroll processing using switch and GOTO statement (get 5 EMPLOYEE details and his name, salary, Allowances and calculate his Gross Pay and display the names of the employee who earns more than 75000 p/m).

18. Explain in detail about storage classes with few examples.

19. Elaborate the concept of array within structures with proper example program.

20. Write a C program to explain pointer concepts with arrays and structures with an example.

———————

S–2962	Sub. Code 23BDSA1

B.Sc. DEGREE EXAMINATION, APRIL 2024

First Semester

Data Science

Allied – DATABASE MANAGEMENT SYSTEM

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define file system.
2. What is data abstraction?
3. Write valuable points on integrity rules.
4. What is a logical view of data?
5. How a normal form used in a database table?
6. Give an example for SELECT Command in SQL.
7. With an example neatly explain string function.
8. Write a query for conversion function.
9. What is Embedded SQL?
10. What are the data types used in PL/SQL?

Part B (5 × 5 = 25)

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

11. (a) What are the problems in file system?

Or

(b) What is a business rule?

12. (a) Write a brief note on data redundancy.

Or

(b) Discuss about system catalog.

13. (a) Describe briefly about database table.

Or

(b) State the need for normalization.

14. (a) Explain cross and Natural join with example.

Or

(b) Elaborate briefly about Date and time function.

15. (a) Give an example PL/SQL query for arithmetic operators.

Or

(b) Write about block structure of PL/SQL.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe briefly about Data models.

17. Discuss Relation database model with example.

18. Explain Data definition and data manipulation commands with example.

19. Explain the following (a) Join on clause (b) Where (c) Intersect.

20. Illustrate PL/SQL control structures and cursors with example.

———————

S–2963

Sub. Code
23BDS1S1

B.Sc. DEGREE EXAMINATION, APRIL 2024

First Semester

Data Science

FUNDAMENTALS OF INFORMATION TECHNOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions

1. List out the uses of a Computer.
2. Give a detail note on application used in computer.
3. Write a note on keyboard.
4. What is a voice recognition systems?
5. Define data storage.
6. State some retrieval methods in storage.
7. What is a programming language?
8. List out the functions of word processing.
9. Define Operating System.
10. What is DOS?

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

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

11. (a) Explain generations of computer.

Or

(b) What are the capabilities and limitations of computer?

12. (a) Describe scanner and its types.

Or

(b) Discuss about printer and its types.

13. (a) Give a brief note on optical disk and compact disk.

Or

(b) List out different types of RAM.

14. (a) State some valuable points on utility programs.

Or

(b) Elaborate briefly about spread sheets and word processing.

15. (a) What is a batch processing?

Or

(b) Write a short on interpreters.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss about Applications of computers.

17. Illustrate the role of I/O devices in a computer system.

18. Give a brief comparison about primary and secondary storage.

19. Explain briefly about machine and assembly language.

20. Illustrate the concepts of Multiprogramming and multitasking.

———————

S–2964	Sub. Code
	23BDS1FC

B.Sc. DEGREE EXAMINATION, APRIL 2024

First Semester

Data Science

QUANTITATIVE APTITUDE

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. What is the sum of first 45 natural numbers?

2. What is the LCM of 54 and 60?

3. The total age of X and Y is 15 years more than the sum of ages of Y and Z. X is how many years older than Z?

4. 26 men complete a piece of work in 24-days working 9 hours a day. In how many days will 36 men complete the work working 6 hours a day?

5. The compound interest on Rs. 30,000 at 7% per annum is Rs. 4,347. What is period in years?

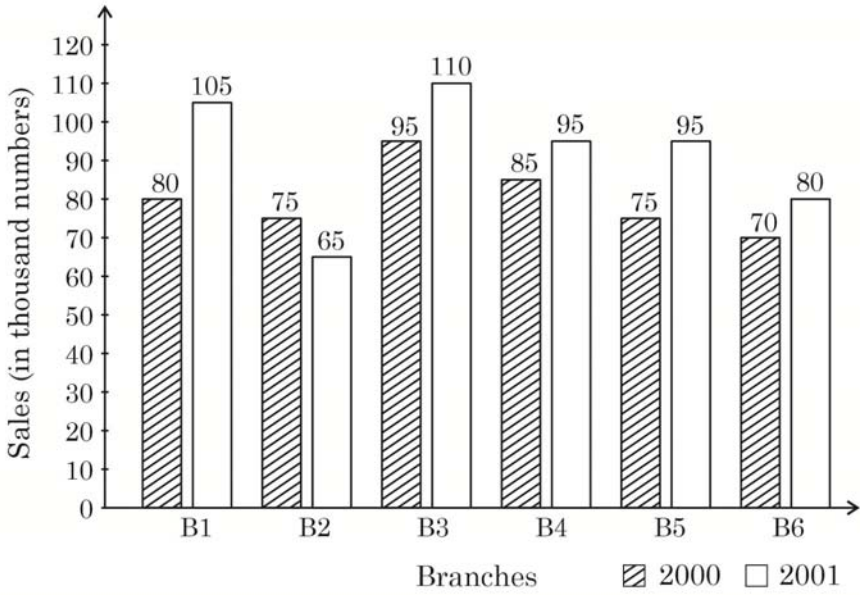
6. In a 50 m race, A can give a start of 5 m to B and a-start of 14 m to C. In the same race, how much start can B give to C?

7. Look at this series: 58, 52, 46, 40, 34, ... What number should come next?

8. A man purchased a cow for Rs. 3,000 and sold it the same day for Rs. 3,600, allowing the buyer a credit of 2 years. If the rate of interest be 10% per annum, then the man has a gain of?

9. An accurate clock shows 8 o'clock in the morning. Through how may degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?

10. What is the average sales of all the branches (in thousand numbers) for the year 2000?



Sales of Books (in thousand numbers) from Six Branches - B1, B2, B3, B4, B5 and B6 of a publishing company in 2000 and 2001.

Part B (5 × 5 = 25)

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

11. (a) What is the H.C.F. of 4/9, 10/21 and 20/63?

Or

(b) A group of students decided to collect as many paise from each member of group as is the number of members. If the total collection amounts to Rs. 59.29, the number of the member in the group is?

12. (a) A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, then how old is B?

Or

(b) Divya made a profit of 25% when selling a Salwar Kameez at Rs. 4,000. Find the cost price of the same dress?

13. (a) A can do a work in 15 days and B in 20 days. If they work on it together for 4 days, then the fraction of the work that is left is?

Or

(b) A tank is filled 5 hours by three pipes A, B and C. The pipe C is twice as fast as B and B is twice as fast as A. How much time will pipe A alone-take to fill the tank?

14. (a) The true discount on a bill of Rs: 540 is Rs. 90. The banker's discount is?

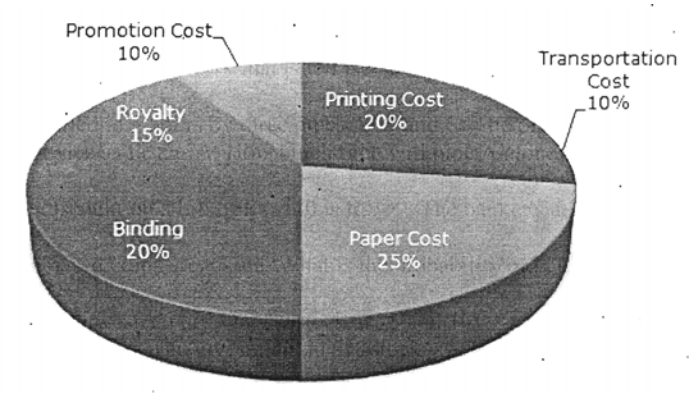
Or

(b) Three unbiased coins are tossed. What is the probability of getting at most two heads?

15. (a) Rs. 9,800 are invested partly in 9% stock at 75 and 10% stock at 80 to have equal amount of incomes. The investment in 9% stock is?

Or

(b) The following pie-chart shows the percentage distribution of the expenditure incurred in publishing a book. Study the pie-chart and the answer the questions based on it.



From the above chart Identify the price of the book is marked 20% above the C.P. If the marked price of the book is Rs.180, then what is the cost of the paper used in a single copy of the book?

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

Answer any **three** questions.

16. The sum of the squares of three numbers is 138, while the sum of their products taken two at a time is 131. What is their sum?

17. (a) If the population of a town is 926100 and it has been growing annually-at 5 %, what was the population 3 years ago?

(b) Which number when added to each of the numbers 24, 32 and 42 would make the sums to be in continued proportion?

18. A train can travel 50% faster than a car. Both start from point. A at the same time and reach point B 75 kms away from A at the same time. On the way, however, the train lost about 12.5 minutes while stopping at the stations. The speed of the car is?

19. In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?

20. Study the following table carefully and answer the questions given below it: Number of Different categories of-vehicles sold in the country over the years (in thousands)

Year	Heavy	Light Commercial Vehicles	Cars	Jeeps	Two Wheelers
1990	26	64	232	153	340
1991	45	60	242	172	336
1992	72	79	248	210	404
1993	81	93	280	241	411
1994	107	112	266	235	442
Total	331	408	1268	1011	1933

(a) In which of the following years was the number of light commercial vehicles sold approximately 25% of the number of 2-wheelers sold?

(b) If the same percentage increase in the number of Heavy Vehicle as in 1994 over 1993 is expected in 1995, approximately how many heavy vehicles will be sold in 1995?

(c) The number of Heavy Vehicles sold in 1993 was approximately what percent of the total number of Vehicles sold in 1992?

(d) In which year was the number of 2-wheelers sold as a percentage of the total number of Vehicles sold during that year, the highest?

(e) The percentage increase in the sales in 1993 over the previous year was maximum for which of the following categories of vehicles?

S–2965

Sub. Code
23BDS2C1

B.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

Data Science

PYTHON PROGRAMMING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions

1. How to Run Python?
2. What is the purpose of reserved keywords?
3. What is Flow control?
4. Define Recursive function.
5. What is module?
6. Define namespaces.
7. What is an object?
8. Define Encapsulation.
9. Define Exception.
10. What is an assertion?

Part B (5 × 5 = 25)

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

11. (a) Describe indentation in Python with example.

Or

(b) Discuss the concept of Strings with example.

12. (a) Illustrate about loops and its types with example.

Or

(b) Explain the function calling with example.

13. (a) Illustrate the dir() and reload() function with example.

Or

(b) Write notes about Directories in Python with example.

14. (a) Discuss built–in attribute methods.

Or

(b) Write about method overriding with example.

15. (a) Discuss about built-in exceptions.

Or

(b) Illustrate search and replace with example.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the various input, output and import function with example.

17. Discuss about function with more than one return value with example.

18. Explain the file handling and its operations.

19. Explain the Destructors in python and program to illustrate destructor.

20. Discuss the repetition cases, findall(), compile() methods.

———————

S–2966

Sub. Code
23BDSA2

B.Sc. DEGREE EXAMINATION, APRIL 2024

Data Science

Allied – OFFICE AUTOMATION

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define header and footer.

2. How will you do cut, copy and paste the text in MS word?

3. What is the use of page layout?

4. What is the difference between page break and section break?

5. Define splitting and merging of cells.

6. What is the use of autosum in excel?

7. What are the major features in MS Access?

8. Define the term “Relationships”.

9. How to apply transition in presentation?

10. What is animation?

Part B (5 × 5 = 25)

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

11. (a) Describe the process of saving and renaming a document.

Or

(b) Explain the importance of using find and replace the text.

12. (a) Discuss about presenting information in a table.

Or

(b) Write short notes on formatting table information.

13. (a) What is grouping of data? How it can be done in excel?

Or

(b) How will you correct errors in calculations?

14. (a) Discuss about parts of a window in MS Access.

Or

(b) Define forms and reports with example.

15. (a) Discuss about the process of changing the layout of a slide.

Or

(b) Write short notes on adding and manipulating text boxes in the slides.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss about editing and proof–reading features in MS Word.

17. Explain in detail about manually changing the look of characters and paragraphs.

18. Briefly discuss about creating formulas to calculate values and summarizing data in excel.

19. Explain the purpose of MS Access and its role in database management.

20. Discuss about adding shades and textures to the background and rearranging of slides.

———————

S–2967	Sub. Code 23BDS2S1

B.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

Data Science

OPEN SOURCE SOFTWARE TECHNOLOGIES

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is an open source?
2. Define free software.
3. What is Linux?
4. What is the purpose of mkdir and pwd commands?
5. What is an Apache license?
6. What is Apache web server used for?
7. Define MySQL.
8. What is the command for MySQL database list?
9. Define PHP.
10. What is the default file extension for PHP files?

Part B (5 × 5 = 25)

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

11. (a) Discuss the various features of commercial software.

Or

(b) Illustrate the features of Linux.

12. (a) Describe the file system concepts.

Or

(b) Explain the three main parts of Unix.

13. (a) Explain how to start, stop or restart Apache Server.

Or

(b) Describe the setuser and group in Apache.

14. (a) Explain how to show a list of databases in MySQL with example.

Or

(b) Describe the modify command in MySQL with example.

15. (a) Illustrate the various PHP operators with example.

Or

(b) Describe how to insert records into a database using PHP with example.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Illustrate a Linux distribution and its components.

17. Discuss the Linux security model with diagram.

18. Explain Apache system and its uses with diagram.

19. Explain the various types of command in MySQL with example.

20. Describe the various MySQL functions with example.

———————

S–2968

Sub. Code
23BDS2S2

B.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

Data Science

INTRODUCTION TO HTML

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define the Internet and its basic function.

2. Differentiate between opening and closing HTML tags.

3. Define the <head> tag.

4. What is the purpose of the tag.

5. Give an example of nesting lists.

6. How does the <hr> tag differ from the <br> tag in HTML?

7. What elements are essential for defining a table in HTML?

8. What are the uses of the rowspan and colspan attributes in HTML tables.

9. Define a frameset in HTML.

10. What is the <textarea>tag in HTML form?

Section B (5 × 5 = 25)

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

11. (a) Explain the concept of the internet and its role in web communication.

Or

(b) Discuss the fundamental principles of HTML.

12. (a) Compare and contrast the <head> and <body> tags in an HTML document.

Or

(b) Differentiate between block-level and inline elements in HTML with examples.

13. (a) What is nesting in the context of HTML lists, and why is it useful?

Or

(b) Write short notes on the <u1> and <o1> tags in HTML.

14. (a) How do you create a basic table structure in HTML?

Or

(b) Discuss the significance of cell padding in HTML tables for spacing and readability.

15. (a) Discuss the advantages and disadvantages of using frames in web design.

Or

(b) Describe the functionality of the <iframe> tag in HTML with an example.

Section C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Compare and contrast different web browsers, examining their features, market share, and impact on user experience.

17. Discuss the role of the <small> tag in HTML and its application in detail.

18. Explain the <marquee>, <hr>, and <br> tags in HTML.

19. Illustrate the creation of a simple form using HTML form elements with input fields and submit buttons.

20. Discuss the importance of headings and paragraphs in organizing content on a web page.

———————