S–2692	Sub. Code
	23BCA1C1

B.C.A. DEGREE EXAMINATION, APRIL 2024

First Semester

Computer Application

PYTHON PROGRAMMING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List the standard data types in Python.

2. What is variable?

3. Define selection statement.

4. Define continue statement.

5. What do you mean by scope of a variable?

6. How to compare strings in Python?

7. Define list.

8. Define dictionary.

9. List few types of file.

10. What you mean by file position?

Part B (5 × 5 = 25)

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

11. (a) Explain input and output statements in Python.

Or

(b) Explain type conversions in Python.

12. (a) Explain while loop with suitable example.

Or

(b) Write a Python program using nested loops.

13. (a) Explain recursive function with suitable example.

Or

(b) How to define your own modules?

14. (a) Explain List methods.

Or

(b) Explain briefly about tuples.

15. (a) Explain various modes that can be used while opening a file.

Or

(b) Explain writing files.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Define and explain arrays and array methods.

17. Explain Control statements with suitable examples.

18. Explain in detail about Python Strings.

19. Explain in detail about Dictionaries with suitable example.

20. Explain file methods, renaming and deleting files with suitable program.

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S–2693	Sub. Code
	23BCAA1

B.C.A. DEGREE EXAMINATION, APRIL 2024

Computer Application

Allied – DIGITAL LOGIC FUNDAMENTALS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Convert the Binary number 111010 into Decimal number.

2. Give the truth table of NOR logic gates.

3. Define DeMorgan's law.

4. What is Half Adder?

5. What is Decoder?

6. What is a Parity Bit?

7. Define Sequential logic.

8. What is Shift Register?

9. Define Ripple Counter.

10. Define RAM.

Part B (5 × 5 = 25)

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

11. (a) Explain ASCII Code.

Or

(b) Explain Universal Logic Gates.

12. (a) Explain Boolean Laws.

Or

(b) Write a short notes on Full Adder.

13. (a) Explain Mutiplexers.

Or

(b) Explain briefly about Parity Generator.

14. (a) Explain RS and JK flipflop.

Or

(b) Explain Master Slave flip flops.

15. (a) Write short notes on Memory.

Or

(b) Explain Types of ROM.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain Decimal to Binary, Octal and Hexadecimal number conversions with suitable examples.

17. Find a minimal SOP representation for f(A,B,C,D,E) = Σm(1,4,6,10,20,22,24,26) + d(0,1 1,16,27) using K-map method.

18. Explain Encoders and Decoders.

19. Explain in detail about types of Registers.

20. Explain in detail about various Counters.

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S–2694	Sub. Code
	23BCA1S1

B.C.A. DEGREE EXAMINATION, APRIL 2024

First Semester

Computer Application

WEB DESIGNING

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define HTML.
2. Define Heading Tag.
3. What is image map?
4. How to read password in HTML?
5. What do you mean by CSS?
6. What is XML?
7. What do you mean by data binding?
8. What is the scope of the variables in JavaScript?
9. Define DOM.
10. What is client side scripting?

Part B (5 × 5 = 25)

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

11. (a) Explain list.

Or

(b) Explain frames.

12. (a) Write a short notes on Graphics in HTML.

Or

(b) Write short notes on list box and checkbox in HTML.

13. (a) Explain various CSS styles.

Or

(b) Explain briefly about DHTML.

14. (a) Explain DOM elements.

Or

(b) Write a JavaScript to find factorial of a given number.

15. (a) Write short notes on JavaScript object models.

Or

(b) Explain JavaScript document object.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe ordered and unordered list.

17. Develop a user interactive web page using form objects and form elements.

18. Explain the various concepts of CSS properties with neat example.

19. Explain events associated with DHTML

20. Write a JavaScript program with forms and validation.

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S–2695	Sub. Code 23BCA1FC

B.C.A. DEGREE EXAMINATION, APRIL 2024

First Semester

Computer Application

STRUCTURED PROGRAMMING IN C

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define token.
2. What is the need for variable declaration?
3. What is branching?
4. Write the syntax of switch statement.
5. What is array?
6. How to declare two dimensional array?
7. Define function.
8. What is Call by reference?
9. What is Pointer?
10. What is Structure?

Part B (5 × 5 = 25)

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

11. (a) Explain C program structure.

Or

(b) Explain various operators in C.

12. (a) Explain for loop with suitable program.

Or

(b) Explain while and do-while loop with example.

13. (a) Explain one dimensional array with an example.

Or

(b) Write a C program to sort numbers.

14. (a) Explain user defined function with example.

Or

(b) List string handling functions.

15. (a) How to declare pointers and increment pointer variable in C?

Or

(b) Explain structures in C.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain various data types and keywords and identifiers in C.

17. Explain decision making statements in C with example programs.

18. Explain declaration and accessing two dimensional array with suitable program.

19. Write a program in C to find factorial using recursion.

20. Explain pointers and function in C with suitable example.

S–2696

Sub. Code
23BCA2C1

B.C.A. DEGREE EXAMINATION, APRIL 2024

Second Semester

Computer Application

OBJECT ORIENTED PROGRAMMING CONCEPTS USING C++

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions

1. Explain the key concepts of OOPS.
2. Write the syntax of if... else statement.
3. How to declare objects in C++?
4. Write a simple syntax of bit fields and classes.
5. What is abstract class?
6. Explain type conversion in C++.
7. Write the declaration syntax used in C++.
8. Give a short note on memory models.
9. Simply explain the importance of file modes.
10. What is string attributes?

Part B (5 × 5 = 25)

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

11. (a) Write the simple program for GOTO statement.

Or

(b) Explain function overloading with syntax.

12. (a) Briefly explain the static member variables and functions.

Or

(b) Write a note on overloading member functions.

13. (a) Explain the overloading friend functions with syntax.

Or

(b) Give a note on overloading unary operators.

14. (a) Describe the array of classes.

Or

(b) Explain the characteristics of array.

15. (a) Write a simple program exception handling.

Or

(b) Give a note on random access operations.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Elaborately explain decision making statements.

17. Illustrate constructor and destructor with static members.

18. Explain the types of inheritance.

19. Describe the polymorphism and virtual functions.

20. Discuss the sequential read and write operations in C++.

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S–2697	Sub. Code
	23BCAA2

B.C.A. DEGREE EXAMINATION, APRIL 2024

Computer Application

Allied — RESOURCE MANAGEMENT TECHNIQUES

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define feasible region.

2. When can we use the graphical Method for solving a LPP?

3. Define optimal solution in Transportation problem.

4. Explain basic feasible solution.

5. Define balance and unbalanced Assignment problem.

6. Explain how maximization problem are solved using Assignment problem.

7. Define sequencing problem.

8. Define Idle time.

9. What is Dummy activity?

10. What is Critical Path?

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

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

11. (a) Write Scope of operation Research.

Or

(b) Solve the LPP using graphical Method :

Maximize $z = 3x_1 + 5x_2$

Subject to

$x_1 + 2x_2 \leq 2000$
$x_1 + x_2 \leq 1500$
$x_2 \leq 600$
$x_1 \geq 0 \; ; \; x_2 \geq 0$

12. (a) Solve the Transportation problem by Least cost Method :

	D_1	D_2	D_3	D_4	Available
O_1	1	2	1	4	30
O_2	3	3	2	1	50
O_3	4	2	5	9	20
Required	20	40	30	10	

Or

(b) Explain :

(i) Northwest Corner Rule

(ii) VAM Method

13. (a) Explain Hungarian Method procedure for Assignment problem.

Or

(b) Solve the Assignment problem.

	1	2	3	4
I	12	30	21	15
II	18	33	09	31
III	44	25	24	21
IV	23	30	28	14

14. (a) Explain :

(i) Processing n jobs through two Machines.

(ii) Processing n jobs through m machines.

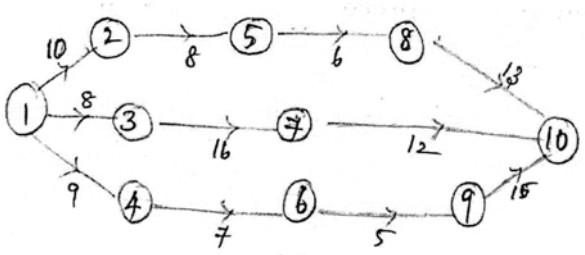
Or

(b) There are five jobs, each of which must go through the two machines A and B in the order AB processing times are given below :

	Processing time hours				
Job	1	2	3	4	5
Time for A	5	1	9	3	10
Time for B	2	6	7	8	4

Determine a sequence for five jobs that will minimize the elapsed time.

15. (a) Determine Earliest start and latest start in respect of all node points and identify Critical path of the following Network.



Or

(b) A project has the for lowing time schedule :

Activity	(1-2)	(1-3)	(1-4)	(2-5)	(3-6)	(3-7)	(4-6)	(5-8)	(6-9)	(7-9)	(8-9)
Time in months	2	2	1	4	8	5	3	1	5	4	3

Find critical path and calculate Float for each activity.

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

Answer any **three** questions.

16. Solve the LPP by graphical Method

Maximize $z = 8000x_1 + 7000x_2$

Subject to $3x_1 + x_2 \leq 66$

$x_1 + x_2 \leq 45$

$x_1 \leq 20$

$x_2 \leq 40$

where $x_1, x_2 \geq 0$.

17. Determine the optimum basic feasible solution to the following transportation problem.

	A	B	C	Available
I	50	30	220	1
II	90	45	170	3
III	250	200	50	4
Required	4	2	2	

18. Find the optimal assignment for the given assignment.

	J_1	J_2	J_3	J_4	J_5
M_1	7	5	9	8	11
M_2	9	12	7	11	10
M_3	8	5	4	6	9
M_4	7	3	6	9	5
M_5	4	6	7	5	11

19. There are five jobs, each of which must go through machines A, B and C in the order ABC. Processing times are given below :

	Processing Time		
Job	A_i	B_i	C_i
1	8	5	4
2	10	6	9
3	6	2	8
4	7	3	6
5	11	4	5

Determine the sequence for 5 jobs that will minimize the elapsed time T.

20. A project has the following times schedule :

Activity	Times in weeks	Activity	Times in
1-2	4	5-7	8
1-3	1	6-8	1
2-4	1	7-8	2
3-4	1	8-9	1
3-5	6	8-10	8
4-9	5	9-10	7
5-6	4		

(a) Construct PERT network.

(b) Compute T_E and T_L for each event and Float for each activity.

(c) Critical path and its duration.

S–2698	Sub. Code
	23BCA2S1

B.C.A. DEGREE EXAMINATION, APRIL 2024.

Second Semester

Computer Applications

FUNDAMENTALS OF INFORMATION TECHNOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Data.

2. What are the basic Components of Computer?

3. What is a Document?

4. Write short notes on watermark.

5. What is a cell in Excel?

6. Explain chart in Excel.

7. What is the part of an animation?

8. Explain a multimedia.

9. Define Digital Signature.

10. Elaborate an URL.

Part B (5 × 5 = 25)

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

11. (a) Describe the Input devices.

Or

(b) Explain the Components of computer.

12. (a) Describe how to create a table using word.

Or

(b) How to format a Text?

13. (a) How to insert an object in Excel?

Or

(b) How to insert a rows and columns in MsExcel?

14. (a) How to customize a Template in MS Power Point?

Or

(b) Explain the types of views in MS Power Point.

15. (a) Explain the search engines.

Or

(b) Explain the components of E-mail.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the types Operating System.

17. Describe Mail merge in MS-Word.

18. Explain how to create a chart in MS-Excel.

19. Illustrate how to create and work with a slides show in MS-power point.

20. Describe an E-Commerce.

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S–2699

Sub. Code
23BCA2S2

B.C.A. DEGREE EXAMINATION, APRIL 2024

Second Semester

Computer Application

MULTIMEDIA SYSTEMS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions

1. What is Font face?
2. What is Hypertext?
3. What is a Still Image?
4. Define MIDI Audio.
5. What is a Digital Video?
6. What is video editing?
7. What hardware is required for Multimedia Project?
8. Define Multimedia production team.
9. What is Estimating?
10. What is ownership of content?

Part B (5 × 5 = 25)

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

11. (a) What is delivery in Multimedia?

Or

(b) Discuss about Hypermedia.

12. (a) Discuss Image file formats.

Or

(b) Explain different Audio file formats.

13. (a) Discuss on how to make Animations to work.

Or

(b) Write a note on editing Videos.

14. (a) Explain the stages of Multimedia Project.

Or

(b) Write a note authoring System needs.

15. (a) Discuss RFP's and Bid Proposals.

Or

(b) Write briefly about designing and producing a Multimedia.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss how Multimedia is delivered.

17. Discuss Vaughan's Law of Multimedia Minimums.

18. Explain elaborately on how Digital Video is created.

19. Discuss the Needs of a Multimedia Project.

20. Explain the Planning and costing factors in making multimedia.

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