

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BCA DEGREE EXAMINATION DECEMBER 2024
(First Semester)
Branch – **COMPUTER APPLICATIONS**
PRINCIPLES OF COMPUTER PROGRAMMING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Which header file is required to use the printf() function? a) stdio.h b) stdlib.h c) string.h d) conio.h	K1	CO1
	2	Which operator is used for logical AND in C? a) && b) c) ! d) &	K2	CO1
2	3	Which of the following is true about the continue statement in C? a) It exits the loop b) It restarts the loop c) It ends the program d) It skips the current iteration and moves to the next iteration	K1	CO2
	4	Which of the following correctly explains the function of the strcmp() function in C? a) Compares two strings for equality b) Concatenates two strings c) Reverses a string d) Returns the length of a string	K2	CO2
3	5	What does the return statement do in a C function? a) Jumps to another function b) Continues the function execution c) Terminates the program d) Exits the function and returns a value to the caller	K1	CO3
	6	Which of the following correctly describes a structure in C? a) A collection of elements of the same data type b) A function that returns multiple values c) A collection of elements of different data types d) A pointer to an array	K2	CO3
4	7	What is the default access specifier for data members in a class? a) public b) private c) protected d) global	K1	CO4
	8	Which of the following defines a class in C++? a) struct b) object c) template d) class	K2	CO4
5	9	What is the correct syntax to declare a constructor in C++? a) ClassName() b) void ClassName() c) constructor() d) void constructor()	K1	CO5

Cont...

5	10	What is the output of the following program? <pre> class A { public: A() { cout << "A"; } }; class B : public A { public: B() { cout << "B"; } }; int main() { B obj; } </pre> a) A b) B c) AB d) BA	K2	CO5
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SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Analyze the structure of C Program.	K4	CO1
		(OR)		
	11.b.	Categorize the constants available in C.		
2	12.a.	Construct a C program to illustrate two-dimensional array with example.	K3	CO2
		(OR)		
	12.b.	Apply the pointers and arrays in a C Program.		
3	13.a.	Develop a C Program to find the factorial of a given number using recursion.	K3	CO3
		(OR)		
	13.b.	Identify and explain the steps of file operations in C.		
4	14.a.	List down the advantages of Object-oriented programming.		
		(OR)		
	14.b.	Classify the access specifiers in C++ with example.		
5	15.a.	Demonstrate the use of constructor overloading with example.	K2	CO5
		(OR)		
	15.b.	Explain about virtual base classes with example.		

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Classify the operators available in C with example.	K4	CO1
2	17	Categorize the different forms of IF statement with example.	K4	CO2
3	18	Categorize the different types of functions in C.	K4	CO3
4	19	Analyze the concept of function overloading.	K4	CO4
5	20	Compare the binary operator overloading with unary operator overloading.	K4	CO5

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BCA DEGREE EXAMINATION DECEMEER 2024
(First Semester)

Branch- **COMPUTER APPLICATIONS**
COMPUTER ORGANIZATION AND ARCHITECTURE

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	_____ is register that contains memory address of the next instruction to be fetched and executed. a) Program Counter b) Memory address register c) Memory data register d) Instruction Register	K1	CO1
	2	CISC stands for a) Register Instruction Set Computers b) Reduced Instruction Set Computers c) Reduced Institute Set Computers d) Recurrence Instruction Set Computers	K2	CO1
2	3	Programs written in assembly language can be automatically translated into a sequence of machine instructions by a program called an _____. a) loader b) linker c) assembler d) compiler	K1	CO2
	4	In _____ representation, negative values are obtained by complementing each bit of the corresponding positive number. a) 1's complement b) 2's complement c) 9's complement d) 10's complement	K2	CO2
3	5	The _____ holds the data being transferred to or from the processor. a) address register b) data register c) address decoder d) status register	K1	CO3
	6	An _____ is an event that causes the exception of one program to be suspended and the execution of another program to begin. a) exception b) scheduler c) interrupt d) operating system	K2	CO3
4	7	The term _____ is used to refer to the amount of time it takes to transfer a word of data to or from the memory. a) memory latency b) jitter c) response time d) throughput	K1	CO4
	8	Techniques that automatically move program and data blocks into the physical when they are required for execution is called _____. a) cache memory b) virtual memory c) secondary storage d) RAM	K2	CO4

Cont...

5	9	Which one of the following is a set of processors simultaneously execute different instruction sequences on different data sets? a) SISD b) SIMD c) MISD d) MIMD	K1	CO5
	10	A collection of interdependent uniprocessors or SMPs may be interconnected to form a _____. a) network b) cluster c) zone d) group	K2	CO5

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry **EQUAL** Marks

$$(5 \times 7 = 35)$$

Module No.	Question No.	Question	K Level	CO
1	11.a.	Classify the functional units of a computer.	K2	CO1
		(OR)		
	11.b.	Explain about the booth algorithm.		
2	12.a.	Identify the basic instruction types.	K3	CO2
		(OR)		
	12.b.	Explain about stack and queue.		
3	13.a.	Identify the uses of interrupts.	K3	CO3
		(OR)		
	13.b.	Interpret about multiple bus organization.		
4	14.a.	Examine the static memories.	K4	CO4
		(OR)		
	14.b.	Classify the mapping functions in cache memory.		
5	15.a.	Analyze the MESI protocol.	K4	CO5
		(OR)		
	15.b.	Examine the multicore organization.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks

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

Module No.	Question No.	Question	K Level	CO
1	16	Examine the design of fast adder.	K4	CO1
2	17	Categorize the types of addressing modes.	K4	CO2
3	18	Examine about direct memory access.	K4	CO3
4	19	Classify the types read only memory.	K4	CO4
5	20	Analyze the symmetric multiprocessor system.	K4	CO5

Z-Z-Z END

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BCA DEGREE EXAMINATION DECEMBER 2024
(Second Semester)**

Branch – COMPUTER APPLICATIONS

JAVA PROGRAMMING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	A default constructor has _____. (a) no arguments (b) no return type (c) has one argument (d) has two arguments	K1	CO1
	2	Which function is used to perform some action when the object is to be destroyed? (a) finalize() (b) delete() (c) main() (d) throw()	K2	CO1
2	3	Which of these access specifiers can be used for an interface? (a) Public (b) Protected (c) private (d) Int	K1	CO2
	4	Which of this keyword must be used to inherit a class? (a) super (b) this (c) extent (d) extends	K2	CO2
3	5	Which will contain the body of the thread? (a) run() (b) start() (c) stop() (d) main()	K1	CO3
	6	Which is a superclass of all exception classes? (a) Throwable (b) Exception (c) RuntimeException (d) IOException	K2	CO3
4	7	Which class is used to establish a database connection in JDBC? (a) java.sql.Connection (b) java.sql.DriverManager (c) java.sql.Statement (d) java.sql.ResultSet	K1	CO4
	8	Which of the following is not a valid statement in JDBC? (a) Statement (b) PreparedStatement (c) QueryStatement (d) CallableStatement	K2	CO4
5	9	_____ is a container for other components and is used to build bespoke panels for organizing and arranging components? (a) JPanel (b) JFrame (c) JCombo (d) JBox	K1	CO5
	10	The _____ function allows you to paint with a Graphics object. (a) AllPaint() (b) Jpaint() (c) Repaint() (d) paint()	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Outline the importance of finalize() method. Give examples.	K2	CO1
	(OR)			
	11.b.	Explain the features of Type conversion and casting.		
2	12.a.	Compare Method Overloading with Method Overriding.	K2	CO2
	(OR)			
	12.b.	Illustrate an example for Importing Packages in Java.		
3	13.a.	Model on Interthread Communication with example	K3	CO3
	(OR)			
	13.b.	Comment on Thread in Java. Explain about creation of a thread with example.		
4	14.a.	Inspect on the Life cycle of Applet with example	K4	CO4
	(OR)			
	14.b.	Create a Java Applet program with the concept 5of Applet Initialization and Termination		
5	15.a.	Examine the use of JList. Give example.	K4	CO5
	(OR)			
	15.b.	Analyze Delegation event model with examples.		

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Infer the importance of Constructors in Java. Give examples.	K2	CO1
2	17	Explain in detail on Inheritance in Java. Give its types.	K3	CO2
3	18	Model the process of handling exception in JAVA with the help of an example using try-catch-finally block.	K3	CO3
4	19	Write a Java program to delete data from the database using JDBC.	K4	CO4
5	20	Elaborate with an example the concept of Inserting and Deleting values in Swing List.	K5	CO5

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BCA DEGREE EXAMINATION DECEMBER 2024
(Third Semester)**

Branch – **COMPUTER APPLICATIONS**

RELATIONAL DATABASE MANAGEMENT SYSTEMS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	What is RDBMS? (i) Database that stores data elements that are not linked (ii) Database that accesses data elements that are not linked (iii) Database that stores and allows access to data elements that are linked (iv) None of the above	K1	CO1
	2	Extend your understanding of transaction management by identifying the correct statement that makes updates permanent (i) Finalize work (ii) Finish work (iii) Commit work (iv) None of the mentioned	K2	CO1
2	3	What does a directed line (→) from a relationship set to two entity sets means? (i) One-one (ii) Many-one (iii) Many-many (iv) One-many	K1	CO2
	4	Show which command is used to change the data in a table? (i) Append (ii) Alter (iii) Update (iv) Browse	K2	CO2
3	5	The join operations that do not retain mismatched tuples are called as ----- operations. (i) Outer join (ii) natural join (iii) Full outer join (iv) inner join	K1	CO3
	6	Extend your understanding of normalization by identifying which forms are based on functional dependency. (i) 1NF (ii) 2NF (iii) 3NF (iv) 4NF	K2	CO3
4	7	How many primary keys can be in a table? (i) Only 1 (ii) Only 2 (iii) Depends on number of columns (iv) Depends on DBA	K1	CO4
	8	Rephrase the statement: SQL views are also known as ----- (i) Simple table (ii) Virtual table (iii) Complex table (iv) Actual table	K2	CO4
5	9	The SQL/PSM stands for (i) SQL/Policy Standard modules (ii) SQL/Persistent Stored Modules (iii) SQL/Policies Stored Modules (iv) SQL/Priority Standard Modules	K1	CO5
	10	Rephrase the statement: Web interface also known as ----- (i) Web UI (ii) Web GUI (iii) Google Interface (iv) Web users	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Infer the purpose of Database systems.	K2	CO1
	(OR)			
	11.b.	Interpret the ACID properties of a transaction management and explain their significance .		
2	12.a.	Build the overview of design process in database design.	K3	CO2
	(OR)			
	12.b.	Develop an ER-diagram for a company's HR database with example.		
3	13.a.	Build a query using SELECT and PROJECT operation with suitable example.	K3	CO3
	(OR)			
	13.b.	Develop and demonstrate second and third normal forms with suitable example.		
4	14.a.	Examine and categorize basic SQL queries.	K4	CO4
	(OR)			
	14.b.	Compare and contrast the different types of views in SQL.		
5	15.a.	Analyze and outline the key aspects of database programming in SQL.	K4	CO5
	(OR)			
	15.b.	Examine the concept of database stored procedures in SOL.		

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Analyze and illustrate the database architecture with neat diagram.	K4	CO1
2	17	Examine and analyze different notations used for modelling data in RDBMS and highlight its advantages and limitations.	K4	CO2
3	18	Classify and analyze the different types of normal forms in RDBMS, providing examples.	K4	CO3
4	19	Examine and categorize the different types of triggers in a database with suitable example.	K4	CO4
5	20	Compare and contrast Embedded SQL, Dynamic SQL, and SQLJ, analyzing their features and providing examples.	K4	CO5

Z-Z-Z

END

PYTHON FOR COMPUTER APPLICATIONS

Maximum: 50 Marks

$$(5 \times 1 = 5)$$

- Which of the following is not a part of the process of computational problem-solving?
 - Computer Algorithms
 - Computer Hardware
 - Database Management
 - Computer Software
- What type of loop runs indefinitely if the stopping condition is never met?
 - For loop
 - Finite loop
 - Infinite loop
 - Conditional loop
- Which of the following is true about recursion in Python?
 - Recursion is a way of defining functions within loops.
 - Recursive functions call themselves.
 - Recursion does not require a base case.
 - Recursive functions cannot return values.
- Which of the following commands is used to read the contents of a text file in Python?
 - file.read()
 - file.input()
 - file.open()
 - file.get()
- Which of the following is a feature of object-oriented programming in Python?
 - Encapsulation
 - Looping
 - Conditional Statements
 - Modules

(5 x 3 = 15)

- 6 a) Show literals, variables, and identifiers in Python.
OR
b) Explain the importance of operators and expressions in computational problem-solving.
- 7 a) Bring out Boolean expression, and how is it used in selection control?
OR
b) Classify the role of indentation in Python control structures.
- 8 a) Organize a function and explain how parameters are passed to functions in Python.
OR
b) Analyze the significance of default arguments in Python.

Cont...

- 9 a) Prepare a modular design, and how are modules used in Python.
OR
b) Outline the basic operations of database programming in Python.
- 10 a) Describe dictionaries in Python and explain their basic operations.
OR
b) Narrate the role of inheritance in object-oriented programming.

SECTION -C (30 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 6 = 30)

- 11 a) Enumerate limits of computational problem solving with examples.
OR
b) Differentiate the different data types in Python and their significance in programming.
- 12 a) Compare the difference between definite and indefinite loops with examples.
OR
b) Elucidate string manipulation and list operations in Python with simple code.
- 13 a) Categorize the difference between value-returning functions and non-value-returning functions in Python.
OR
b) Examine recursion with an example of a recursive function in Python.
- 14 a) Point out the steps for connecting and performing CRUD operations (Create, Read, Update, Delete) on a database in Python.
OR
b) Eradicate the common exceptions in Python, and how can they be handled?
- 15 a) Trace the encapsulation, inheritance, and polymorphism are implemented in Python with examples.
OR
b) Demonstrate how Python packages like matplotlib, numpy, and pandas can be used in data processing with example code.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BCA DEGREE EXAMINATION DECEMBER 2024
(Fourth Semester)

Branch – COMPUTER APPLICATIONS
DISTRIBUTED TECHNOLOGIES

Time: Three Hours

Maximum: 50 Marks

SECTION- A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5x1=5)

1. .NET Framework _____ a comprehensive library accessible across all .NET languages.
 - i. Class Library
 - ii. Language
 - iii. CLR
 - iv. None of the Above
2. In .NET, _____ are templates that encapsulate data and behavior, and enable object-oriented programming. .
 - i. Behaviors
 - ii. Classes
 - iii. Functions
 - iv. Data
3. _____ means to run your code step by step in a debugging tool like Visual Studio, to find the exact point where you made a programming mistake.
 - i. Error
 - ii. Code
 - iii. Debugging
 - iv. Compiling
4. The _____ control is used for displaying images on the form.
 - i. Message Box
 - ii. Black-box
 - iii. Timer
 - iv. Picture Box
5. _____ is a Microsoft API that lets applications access and manipulate data from different sources.
 - i. OLE DB
 - ii. DB
 - iii. Data Grid
 - iv. Data Set

SECTION-B (15 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5x3=15)

6. a) Enumerate the Data Types.
OR
b) Brief note on ASP.NET.
7. a) Discuss on ASP.NET Applications.
OR
b) To illustrate Global.asax.
8. a) Explain the AdRotator.
OR
b) Illustrate the Visual Studio .NET Debugging.
9. a) Write note on Scrollbar Controls.
OR
b) Brief note on The MsgBox() Function in VB .NET.
10. a) Discuss on Connecting to a SQL Server Database.
OR
b) Describe the Binding a Dataset to a Web Forms Data Grid.

Cont...

SECTION-C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5x6 = 30)

11. a) Analyze the Common Language Runtime in detail.
OR
b) Write brief note on Functions and Subroutines.
12. a) Explain about IIS Web Server.
OR
b) Describe the Value Types and Reference Types.
13. a) Enumerate the Validation With example.
OR
b) Discuss on Rich Controls in Visual Studio .NET.
14. a) Describe about Any Two controls in VB .NET.
OR
b) To illustrate the Function Call and Arguments.
15. a) Discuss on Connecting to an OLE DB Data source.
OR
b) Enumerate the Reading Data Using a Data Reader.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCA DEGREE EXAMINATION DECEMBER 2024
(Fifth Semester)

Branch – COMPUTER APPLICATIONS

MAJOR ELECTIVE COURSE – I NATURAL LANGUAGE PROCESSING

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 What is the main challenge/s of NLP?
a) Handling Ambiguity of Sentences b) Handling Tokenization
c) Handling POS-Tagging d) Sentiment analysis
- 2 _____ is the step in which an input sentence is converted into a hierarchical structure that corresponds to the units of meaning in the sentence.
a) Syntactic Processing b) Semantic Processing
c) Graph Processing d) data Processing
- 3 What is the purpose of stemming in natural language processing?
a) To convert words to their base or root form
b) To identify the parts of speech in a sentence
c) To group similar words together based on their meaning
d) To remove stop words from a sentence
- 4 Which of the following is an example of a natural language processing task?
a) Creating a website layout b) Designing a logo
c) Identifying named entities in a text d) Generating a musical composition
- 5 Which of the following is an example of a language model that uses a probabilistic approach?
a) Hidden Markov model (HMM) b) Rule-based model
c) Decision tree d) Convolutional neural network (CNN)

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a) Explain the origins of natural language processing.
OR
b) Elaborate the statistical language model for information retrieval.
- 7 a) Summarize the process of unsmoothed N-grams.
OR
b) Illustrate the need of part-of-speech tagging.
- 8 a) Explain the concept of context free grammars.
OR
b) Outline the importance of dependency grammar with example.
- 9 a) State and explain the thematic roles in word senses.
OR
b) Discuss the dictionary and thesaurus methods in WSD implementation.

Cont...

- 10 a) Illustrate the process of discourse segmentation.
OR
b) Explain the components of WordNet in NLP.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

- 11 a) Analyze the regular expressions in Natural Language Processing.
OR
b) Enumerate about the transducers for lexicon and rules.
- 12 a) Compare and construct the stochastic and transformation based tagging.
OR
b) Discuss the hidden Markov and maximum entropy models.
- 13 a) Interpret the functions of syntactic parsing and ambiguity.
OR
b) Elucidate the need of probabilistic lexicalized CFGs.
- 14 a) Illustrate the importance of syntax driven semantic analysis.
OR
b) Explain the Supervised methods for Word Sense Disambiguation (WSD).
- 15 a) Examine the anaphora resolution using Hobbs and centering algorithm.
OR
b) Distinguish between the Penn Treebank and Brill's Tagger.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE

(AUTONOMOUS)

BCA DEGREE EXAMINATION DECEMBER 2024

(Fifth Semester)

Branch — **COMPUTER APPLICATIONS**

PHP and MySQL

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry **EQUAL** marks

$$(5 \times 1 = 5)$$

- Which of the following is the correct way to declare a variable in PHP?
i) variable \$name; ii) \$name = variable;
iii) var \$name; iv) \$name = "value";
- How do you define a function in PHP?
i) function myFunction() { // code } ii) define myFunction() { // code }
iii) function: myFunction() { // code } iv) func myFunction() { // code }
- Which PHP function is used to sort an associative array by its values?
i) asort() ii) ksort() iii) sort() iv) rsort()
- What does the time() function return in PHP?
i) The current date and time in "Y-m-d H:i" format
ii) The current UNIX timestamp
iii) The current day of the week
iv) The current year
- Which SQL statement is used to retrieve data from a MySQL table?
i) GET ii) RETRIEVE iii) SELECT iv) FETCH

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a) Explain the different types of comments in PHP with examples.
OR
b) What are predefined constants in PHP? List and explain at least three commonly used predefined constants with examples.
- 7 a) Evaluate the concept of classes in PHP. How do you define a class, and what are the key components of a PHP class? Provide an example.
OR
b) Elucidate the concept of cloning objects in PHP. How do you clone an object, and what is the purpose of the clone() method? Provide an example.
- 8 a) Examine the arrays in PHP. What are the different types of arrays in PHP, and how are they used? Provide examples for each type.
OR
b) What is an associative array in PHP? How do you create and access associative arrays? Provide an example to explain its usage.

Cont...

- 9 a) Examine file handling in PHP. What are the main functions used for file handling in PHP, and how do they work? Provide examples for reading and writing to a file.
OR
b) How do you read a file in PHP? Explain the different methods to read a file, and provide examples for each method.
- 10 a) Explain how MySQL can be used in PHP to interact with databases
OR
b) Create a PHP script for a basic login system using MySQL.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a) Explain the different types of operators available in PHP. Provide examples and discuss their precedence and associativity.
OR
b) Evaluate implicit and explicit type conversion in PHP. How do PHP handles type conversion in different scenarios?
- 12 a) Discuss parameters and return values in function.
OR
b) Analyze the concept of constructors in PHP. How are they defined and used in object-oriented programming?
- 13 a) Examine the use of command-line interfaces (CLI) in PHP. Describe how PHP scripts can be executed from the command line.
OR
b) Describe about multidimensional arrays with example.
- 14 a) Elucidate how to copy a file in PHP. Describe the copy() function and its usage.
OR
b) Examine how to update the contents of a file in PHP. Discuss different methods for updating files, including overwriting, appending, and inserting data at specific locations.
- 15 a) Describe how to establish a connection to a MySQL database in PHP.
OR
b) Determine how to handle transactions in MySQL using PHP.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCA DEGREE EXAMINATION DECEMBER 2024
(Fifth Semester)

Branch -- COMPUTER APPLICATIONS

R PROGRAMMING

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. R has a large collection of _____ contributed by a community of developers
 - (i) Packages and libraries
 - (ii) Packages only
 - (iii) Libraries only
 - (iv) None of these
2. What does dplyr do in R programming?
 - (i) Provides set of tools
 - (ii) Focus on data frames
 - (iii) It is faster
 - (iv) All the above
3. When vectorizing a function in R, which method is typically preferred?
 - i) Using apply()
 - ii) Using for loops
 - iii) Using sapply() or lapply()
 - iv) Writing the function to work with vectors directly
4. sapply() in R?
 - i) Applies a function over a list or vector and always returns a list.
 - ii) Applies a function over a list or vector and always returns a matrix.
 - iii) Applies a function over a list or vector and attempts to simplify the result to a vector or matrix.
 - iv) Applies a function over a data frame and always returns a matrix.
5. Which of the following is a commonly used graphical parameter in R?
 - i) cex
 - ii) sum()
 - iii) apply()
 - iv) mean()

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a What is the basic features of R?
OR
b What are the 3 important applications of R programming in the real world? Explain.
- 7 a What is matrix subsetting in R?
OR
b What is the function of a DataFrame?

Cont...

- 8 a What is lazy evaluation in R, and why is it useful?
OR
b Write down the step-by-step procedure on how to plot the likelihood function in R.
- 9 a What is the purpose of the split() function in R?
OR
b Explain the purpose of the debug() function in R.
- 10 a What are low-level plotting commands in R?
OR
b What are graphical parameters in R?

SECTION-C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Mark

(5 x 6 = 30)

- 11 a Describe what a data frame is in R and how it differs from a matrix. Provide an example of creating a data frame.

OR

- b In R, how you can read data from a URL connection?. List and explain with example.

- 12 a What is a vectorized operations in R? Write a code to record the age of 5 employees.

OR

- b Discuss on Select () and filter () in dplyr package with examples.

- 13 a Explain the concept of functions in R. How do you define a function and call it? Provide an example.

OR

- b Explain the concept of lexical scoping in R. How does it differ from dynamic scoping? Write an example of Lexical Scoping.

- 14 a Explain on lapply(), sapply() and tapply() functions in R with examples

OR

- b. Explain how trace() and recover() functions can be used for debugging in R. Include examples to illustrate their usage.

- 15 a Describe the purpose and usage of the plot() function in R. With an example create a scatter plot and customizing its appearance with titles and colors

OR

- b Explain the pdf() device driver in R. Provide an example to create a PDF file with a plot and specify dimensions and resolution.

- 13 a Explain the concept of functions in R. How do you define a function and call it? Provide an example.

Z-Z-Z

END

OR

- b Explain the concept of lexical scoping in R. How does it differ from dynamic scoping? Write an example of Lexical Scoping.

- 14 a Explain on lapply(), sapply() and tapply() functions in R with examples

OR

- b. Explain how trace() and recover() functions can be used for debugging in R. Include examples to illustrate their usage.

- b In R, how you can read data from a URL connection?. List and explain with

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCA DEGREE EXAMINATION DECEMBER 2024
(Fifth Semester)

Branch – COMPUTER APPLICATIONS

PRINCIPLES OF NETWORKING

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

- 1 In _____ mode both stations can transmit and receive simultaneously.
(i) Full-duplex (ii) Half-duplex
(iii) Bi-duplex (iv) Fully-duplex
- 2 _____ is a cable that accepts and transports signals in the form of light.
(i) Nerve fiber (ii) Ultraviolet wave
(iii) Infra-red (iv) Optical fiber
- 3 _____ is a bit-oriented protocol for communication over point-to-point and multipoint link.
(i) DDLC (ii) HHLC
(iii) HDLC (iv) HLDC
- 4 A link-layer switch has a _____ used in filtering decisions.
(i) Link (ii) Table
(iii) Model (iv) Structure
- 5 _____ coding assigns shorter codes to symbols that occur more frequently and longer codes to those that occur less frequently.
(i) DNS (ii) Huff-lay
(iii) FTP (iv) Huffman

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a Relate Mesh topology with Star topology. Give examples.
OR
b State the importance of Protocol Layering.
- 7 a Sketch the features of Coaxial cables.
OR
b State the characteristics of Microwave propagation.
- 8 a Identify the efficiency of Standard Ethernet.
OR
b Bring out the purpose of Satellite networks.
- 9 a Bring out the differences between Router and Repeater.
OR
b Narrate the advantages of Virtual LAN.
- 10 a Show an example of a Proxy server.
OR
b Classify the purpose of DNS with a neat diagram.

Cont...

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a Compare OSI Model with TCP/IP Model. Give examples.
OR
b Discuss on the Components of Data Communication.
- 12 a Examine the Advantages and Disadvantages of Optical fiber.
OR
b Highlight on the Structure of Packet Switches.
- 13 a Infer the process of Forward error correction. Give examples.
OR
b Trace the process of Ethernet frame with a neat diagram.
- 14 a Explain IP Datagram Packets with a neat diagram.
OR
b Point out the services in the Transport Layer Protocols.
- 15 a Trace in detail on the working of FTP.
OR
b Discuss on the Iterative resolution in Domain Name Space.

Z-Z-Z

END