HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN

B.C.A. Semester – IV

BCA-401 : Object Oriented Programming using C++

Teaching Scheme (Per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit - I **[18 Marks]**

Fundamentals of Programming

Concept of Procedural, structured and objects oriented programming .Concept of Encapsulation, Data hiding, Inheritance and Polymorphism. Classes and objects. Data types, variable and constants, Expression and operator. Simple I/O statements- reading and writing. Reference variable. Control statements, Looping statements, Array.

Unit - II **[17 Marks]**

Functions, Class, Object, Constructor and Destructor

Functions: Call by reference, call by value, return by reference, inline function, constant argument, function overloading, static member function, static data member. **Classes:** Implementing class, Classes and members, Accessing class members, implements class methods, array of object, friend function. **Constructor & Distracters:** Parameterized constructor, multiple constructor, constructor with default argument, copy constructor, destructor.

Unit - III **[18 Marks]**

Operator Overloading & Type Casting

Operator overloading, unary operator overloading, binary operator overloading, manipulates string using operator overloading. type conversions : basic to class, class to basic, class to class.

Unit - IV **[17 Marks]**

Inheritance, Virtual Function

Inheritance: single Inheritance, multilevel Inheritance, multiple Inheritance, hybrid Inheritance, hierarchical Inheritance, virtual base class, abstract class. **Pointers**: pointer to object, this pointer, virtual function and pure virtual function.

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Text & Reference Book:

1. E. Blagurusamy: Object Oriented Programming with C++, Tata McGraw Hill.

2. V. Rajaraman: Object Oriented Programming with C++, New age International Publishers.

Question Paper Scheme:

University Examination Duration: 2:30 Hours

Q.1 - Unit-I (18 Marks)

A. Objective/ Short Questions.

B. Descriptive/ Long questions.

Q.2 - Unit-II (17 Marks)

A. Objective/ Short Questions.

B. Descriptive/ Long questions.

Q.3 - Unit-III (18 Marks)

A. Objective/ Short Questions.

B. Descriptive/ Long questions.

Q.4 - Unit-IV (17 Marks)

A. Objective/ Short Questions.

B. Descriptive/ Long questions.

Note: All Objective/ Short Questions are compulsory, no option will be given.

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B.C.A. Semester — IV

BCA-402 : Building Application Using PHP

Teaching Scheme (Per Week)		Teaching Scheme (Per Semester)		Examination Schedule					
				INT		EXT		TOTAL	
Th. (Hours)	Pr. (Hours)	Total Hours	Credit	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)
4	-	40	4	30	-	70	-	100	-

Unit — I **[18 MARKS]**

Introduction to PHP:

Web-Technologies, Server side technologies, Web -server, Web-browser,Introduction PHP, Future of PHP, Client-side scripting, Server-side scripting, adding PHP to HTML Syntax and variable, control and function, Passing information between page,Variable Function: Get type, set type, isset, unset, strval, floatval, inval, print_r,String, Array and Array Function, Date function, String Function. Working with Forms: Creating form, Handling form, Validating form data,Accessing form data, use of Hidden fields to save State, Redirecting user, file Upload and Sending Mail on Form Submission.

Unit-2 **[17 MARKS]**

Object oriented Programming with PHP and Error Handling:

Basic PHP construction for GOP, Advance OOP future, File and File system Function, Session, cookies. Error Handling and Debugging: General error types and debugging, displaying PHP errors, Adjusting Error Reporting, Creating Custom error handler, PHP debugging techniques

Unit — 3 **[18 MARKS]**

Data Access with MySql Email, Web Services :

Using MySQL with PHP: Connecting to MySQL and selecting the database,executing simple queries, retrieving query results, counting return Records,updating, Record Addition, Viewing Record, and Deletion Record with PHP.E-Mail: Understanding E-mail, Receiving E-mail with PHP, Sending E-mail Web Services: Introduction to Web Services, Web Services Model, Web Services, Platform Elements

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B.C.A. Semester — IV

BCA-402 : Building Application Using PHP

Teaching Scheme (Per Week)		Teaching Scheme (Per Semester)		Examination Schedule					
				INT		EXT		TOTAL	
Th. (Hours)	Pr. (Hours)	Total Hours	Credit	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)
4	-	40	4	30	-	70	-	100	-

Unit — 4 **[17 MARKS]**

Joomla:

What is Joomla and why to use Joomla CMS? Setting up Joomla Environment, Administrator Settings and User Management , Organizing Menus and Navigation, Managing Articles, Joomla Components Basics, Joomla Modules and Plugins Basics, Configuring Joomla Templates.

Text & Reference Books:

1. PHP 5 And MYSQL- Bible Publication
2. Beginning PHP And MYSQL-By W. Jason Gilmore,Apress
3. Learning PHP,MySQL,Javascript, And CSS, Second Edition by Robin Nixon
4. The Complete Reference PHP By Steven Holzner
5. Julie C. Meloni,PHP MySQL And Apache, SAMS Teach Yourself ,Pearson Education
6. Programming PHP by Rasmus Lerdorf,Kevin Tatroe,Peter Maclntyre.
7. Joomla:Bible,Wiley India Pvt.Ltd.-Ric Shreves

Question Paper Scheme :

University Examination Duration:- 2.5 Hours

Q-1 – Unit-1 (18 Marks)

O. Objetcive/Short Questions
P. Descriptive/ Long Questions

Q-1 – Unit-2 (17 Marks)

O. Objetcive/Short Questions
P. Descriptive/ Long Questions

Q-1 – Unit-3 (18 Marks)

O. Objetcive/Short Questions
P. Descriptive/ Long Questions

Q-1 – Unit-4 (17 Marks)

O. Objetcive/Short Questions
P. Descriptive/ Long Questions

Note: All Objective/ Short Questions are compulsory, no option will be given.

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B.C.A. Semester – IV

BCA-403 : Electronic Commerce (E-Commerce)

Teaching Scheme (Per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit – I		**[17 Marks]**
	Introduction to E – Commerce, Pure Vs Partial E-Commerce, History and Development (Evolution) of E-Commerce , Difference between traditional commerce and e-commerce, Advantages and Limitations, E – Commerce – Indian Scenario/E– commerce in India, Various Technologies of E-Commerce, Future of E-Commerce	
Unit – II		**[18 Marks]**
	Types of E-commerce and Electronic Data Inter-change (EDI), Driving Forces of E-Commerce, **Introduction Various Model of E-Commerce :** B2C, B2B, C2B, C2C, B2G and G2C, **Electronic Data Inter-change (EDI)** – Concept, Meaning & Definition, Features and Benefits. **Network Security(Only Concepts):** Firewalls, IP security, Virtual Private Networks ,HTTPs, SSL, SETP	
Unit – III		**[17 Marks]**
	E – Payments and Security: A brief overview of the following: Credit card ,Debit card, Smart Card (Electronic Credit Card),EFT ,E–wallet, e-check and e-cash, Payment Gateway ,Security in cyberspace – Kinds of threats and crimes, Credit Card Frauds and Internet security using VPN and firewalls.	
Unit – IV		**[18 Marks]**
	Technology in E – Commerce: Networking – Concept, Meaning and Features, Classification of Networks: LAN, WAN, Internet, Intranet and Extranet (Concept, Meaning and Benefits), Virtual Private Networks (VPNs) – Overview, **Recent Trends in E – Commerce:** M–commerce – Introduction, growth and future, advantages and limitations , Introduction and management of e–enterprises, Ethical issues in e-commerce.	

Text & Reference Books:

1. Web Commerce Technology Hand Book by: Daniel Minoli, Emma Minoli
2. Internet and Web designing by Rajesh Maheta, Ronak patel,Rajendra patel and Shyam Chavda (Nirav Prakashan),1st Edition.
3. E-commerce by Bhadresh Patel, Bharat Publication
4. E – Commerce by Mamta Bhusry, Firewall Media
5. Cryptography & Network Security by Atul Kahate (Tata McGraw Hill)

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B.C.A. Semester – IV

BCA-403 : Electronic Commerce (E-Commerce)

Teaching Scheme (Per week)		**Teaching Scheme (Per semester)**		**Examination Scheme**					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Question Paper Scheme:

University Examination Duration: 2:30 Hours

Q.1 - Unit-I (18 Marks)

A. Objective/ Short Questions.

B. Descriptive/ Long questions.

Q.2 - Unit-II (17 Marks)

A. Objective/ Short Questions.

B. Descriptive/ Long questions.

Q.3 - Unit-III (18 Marks)

A. Objective/ Short Questions.

B. Descriptive/ Long questions.

Q.4 - Unit-IV (17 Marks)

A. Objective/ Short Questions.

B. Descriptive/ Long questions.

Note: All Objective/ Short Questions are compulsory, no option will be given.

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HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN
B.C.A. Semester — IV
BCA-404 : Data Mining And Data Ware Housing

Teaching Scheme (Per Week)		Teaching Scheme (Per Semester)		Examination Schedule					
				INT		EXT		TOTAL	
Th. (Hours)	Pr. (Hours)	Total Hours	Credit	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)
4	-	40	4	30	-	70	-	100	-

Unit : 1 **[18]**

Introduction: What motivated data mining? Why it is important? Data Mining-one kind of data? Data mining functionalities? Are all patterns interesting? Classification of data mining, Data mining task primitive, integration of data mining system with a database or data warehouse system, major issues in data mining.

Data Processing: Why process the data? Descriptive data summarization, data cleansing, data integration and transformation, data reduction, data discretization and concept hierarchy generation.

Unit : 2 **[17]**

Data warehouse and OLAP Technology: What is data warehouse? A multidimensional data model, data warehouse architecture, data warehouse implementation, from data warehousing to data mining.

Data Generalization : Attribute oriented Induction.

Mining frequent patterns, Associations, and correlation : Basic concepts and a road map, efficient and scalable frequent item-set mining method, mining various kind of association rule, from association mining to correlation analysis, constraints based association mining.

Unit : 3 **[18]**

Classification and prediction : what is classification ? what is prediction? Issues regarding classification and prediction, classification by decision tree, rule based classification, prediction, accuracy and error measures, evaluating the accuracy of a classifier or predictor

Cluster analysis : is cluster analysis? Types of data in cluster analysis, a categorization of major clustering method, partitioning method, Hierarchical method.

Unit-4 **[17]**

Mining Object, Spatial, Multimedia, Text, and web data : Spatial data mining, Multimedia data mining, Text mining, Mining the world wide web

Application and Trends in Data Mining: Data mining application, Data mining system products and research prototypes, additional themes on data mining, social impacts of data mining, Trends in data mining.

Text Book:

1. Data Mining, concept and techniques by jiawei Han and Micheline Kamber.

Reference Book:

1. Data Mining by Reema Theraja.

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HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN

B.C.A. Semester — IV

BCA-406 : Building Application Using PHP

Teaching Scheme (Per Week)		Teaching Scheme (Per Semester)		Examination Schedule					
				INT		EXT		TOTAL	
Th. (Hours)	Pr. (Hours)	Total Hours	Credit	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)
-	4	40	4	-	30	-	70	-	100

University Examination Duration: 3 Hours (Per Batch) (Practical List)

(Practical List) PHP

1. Write a PHP program to display 'Hello World" Message on Screen.
2. Write a PHP program to display the today's date and current time.
3. Write a PHP program to display the Fibonacci series
4. Write a PHP program to calculate sum of given number.
5. Write a PHP Program that will use the concept form.
6. Write a PHP program to read the employee detail using form component.
7. Write a PHP program to demonstrate the use of array.
8. Write a PHP program to prepare student Mark sheet using Switch statement.
9. Write a PHP program to generate the multiplication of matrix.
10. Write a PHP program to send Mail from PHP Script.
11. Write a PHP Program for Create, Delete, and Copying file from PHP Script.
12. Write a PHP Program to Recursive Traversals of Directory.
13. Write a PHP Program to Validate Input Data
14. Write a PHP Program to Upload File.
15. Write a PHP program to perform demonstrates the college Website.
16. Write a PHP program for Error Handling.
17. Write a PHP Program for Session and Cookies.
18. Write a PHP program for connection with my Sql and display all record from the database
19. Write a PHP program for add record into database
20. Write a PHP program for search record from the database

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B.C.A. Semester — IV

BCA-406 : Building Application Using PHP

Teaching Scheme (Per Week)		Teaching Scheme (Per Semester)		Examination Schedule					
				INT		EXT		TOTAL	
Th. (Hours)	Pr. (Hours)	Total Hours	Credit	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)	Th. (Marks)	Pr. (Marks)
-	4	40	4	-	30	-	70	-	100

21. Write a PHP program for delete, update record from the database

22. Develop a PHP application to make following Operation

I. Registration of user.

ii. Insert the details of user.

iii. Modify the details

23. Write down steps to install joomla on local server.

24. Creating a Drop-down Menu with joomla.

25. Create and adding a new article.

26. Create basic joomla Template.

Practical Exam Scheme:

Practical	Viva	Journal	Total
40 Marks	20 Marks	10 Marks	70 Marks

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B.C.A. Semester – IV

BCA-405 : Object Oriented Programming using C++

Teaching Scheme (Per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
--	4	40	4	--	30	--	70	--	100

Practical based on Fundamentals of Programming Language - C++'

University Examination Duration: 3 Hours (Per Batch)

(Practical List)

[1] Write a cpp program which explains the use of a scope resolution operator.
[2] Write a cpp program which explains the use of a manipulators operator.
[3] Write a cpp program which explain the use of reference variable.
[4] Write a cpp program which explain the feature of a inline function.
[5] Write a cpp program which explains the concept of default arguments.
[6] Write a cpp program for function overloading.
[7] Write a cpp program for arrays within a class. (How to use a array in a class).
[8] Write a cpp program for static class member. (Class member should be a static variable)
[9] Write a cpp program which shows use of "static member function".
[10] Write a cpp program which explain concept of a "array of object".
[11] Write a cpp program which explain concept of " object as a arguments".
[12] Write a cpp program for a friend function.
[13] Write a cpp program for a function friendly to two classes.
[14] Write a cpp program of a swapping private data of classes.
[15] Write a cpp program which explain concept of a returning objects.
[16] Write a cpp program for class with constructors.
[17] Write a cpp program for overloaded constructors.
[18] Write a cpp program of copy constructors.
[19] Write a cpp program of a constructing matrix objects.
[20] Write a cpp program of implementation of destructors.
[21] Write a cpp program for implementation of unary minus operator.
[22] Write a cpp program for implementation of binary plus (+) operator.
[23] Write a cpp program for implementation of overloading operators using friends function.
[24] Write a cpp program for implementation of mathematical operations on strings.. {overloads two operators + and <=}
[25] Write a cpp program for implementation of a single inheritance of public data member.

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B.C.A. Semester – IV
BCA-405 : Object Oriented Programming using C++

Teaching Scheme (Per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
--	4	40	4	--	30	--	70	--	100

[26] Write a cpp program for implementation of a single inheritance of private data member.
[27] Write a cpp program of multilevel inheritance.
[28] Write a cpp program of multiple inheritances.
[29] Write a cpp program of hybrid inheritance.
[30] Write a cpp program of virtual base class.
[31] Write a cpp program in which use constructors in derived class.
[32] Write a cpp program of initialization list in constructors.
[33] Write a cpp program for implementation of pointers to objects.
[34] Write a cpp program for implementation of array of pointer to objects.
[35] Write a cpp program for implementation of a this pointer.
[36] Write a cpp program for implementation of virtual function.
[37] Write a cpp program which explains a concept of runtime polymorphism.

Practical Exam Scheme:

Practical	Viva	Journal	Total
40 Marks	20 Marks	10 Marks	70 Marks

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