

जगद्गुरु रामानन्दाचार्य राजस्थान संस्कृत विश्वविद्यालय, जयपुर

NEP 2020 के अनुसार त्रिवर्षीय स्नातक स्तरीय पाठ्यक्रम

शास्त्री द्वितीय वर्ष – तृतीय सेमेस्टर

कम्प्यूटर एप्लीकेशन (ऐच्छिक)

Paper- I



सत्र – 2024-25

जगद्गुरु रामानन्दाचार्य राजस्थान संस्कृत विश्वविद्यालय

जयपुर

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**SHASTRI Part II (Semester III)**  
**COMPUTER APPLICATION (Optional)**  
**PAPER- FIRST**  
**Introduction to Object Oriented**  
**Programming with C++**

Marks: 100

<b>Questions Pattern</b>	<b>Questions Papers</b>	<b>70</b>
	<b>Internal Assessment</b>	<b>30</b>
	<b>Total Marks</b>	<b>100</b>
	<b>Min. Passing Marks</b>	<b>40</b>

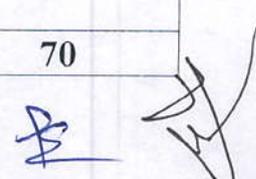
**Question paper divination.**

1. This question paper is divided into three sections A, B and C.
2. Part A will have 10 very short answer compulsory questions, each question will be of 02 marks.
3. Part B will have 03 short answer compulsory questions out of 06 questions, each question will be of 10 marks.
4. Part C will have 01 objective type questions out of 02 questions, each question will be of 20 marks.

**Thus, there will be total of 18 Questions in all three parts.**

1. Describe the very short type Questions objective are Factual knowledge testing.
2. Short Type Questions objective are Concepts and Objects of C++ Language.
3. Essay Type Questions objective are Concepts and Objects, Types and Advantages of C++ and applied theory knowledge of C++ Language.

<b>Parts of Questions</b>	<b>Type of Questions</b>	<b>Total Questions</b>	<b>Attempt no. of Questions</b>	<b>Marks</b>
<b>Part- A</b>	Very Short Type Questions	10	10	$10 \times 02 = 20$
<b>Part- B</b>	Short Type Questions	06	03	$03 \times 10 = 30$
<b>Part- C</b>	Essay Type Questions	02	01	$01 \times 20 = 20$
	<b>Total</b>	<b>18</b>	<b>14</b>	<b>70</b>



## Unit – I

OOP PARADIGM: Data abstraction - encapsulation - class - inheritance - polymorphism-reusability.

## Unit - II

C++ Fundamentals, Data types, Operators, Pre-processor directives, Declarations, input & Output, control structures, functions and arrays, Objects and Classes: Structures and Classes, Unions and Classes, Data hiding and encapsulation, Private and public members, Member functions, Accessing class members, Objects as function parameters, Static data and member functions, friend functions and friend classes.

## Unit - III

Arrays, Pointers and References: Array of Objects, Initialized and Uninitialized Arrays, Pointer to Object, this, pointer, Pointer to derived types, Pointer to Class Member, Reference Parameters, Passing Reference to Objects, Returning References, Independent References, Dynamic Allocation Operators, Allocating Objects.

### TEXT BOOKS

1. Bjarne Stroustrup, the C++ Programming Language, Addison Wesley, 2000.
2. Ken Arnold, James Gosling, The JAVA language, II edition, Addison Wesley, 1998.
3. E. Balaguruswamy, Object Oriented Programming with C++, II edition, TMH, 2001.

### REFERENCES

1. Herbert Schildt, C++ The complete reference, TMH, 1997.
2. Stanley B. Lippman, Jore Lajoie, C++ Primer, III edition, Addison Wesley, 2000.
3. Barkakati N, Object Oriented Programming in C++, PHI, 1995.
4. Kris Jamsa, Java Programming - A Complete reference, Galgotia Publication, 1994.
5. Patrick Naughton, Herbert Schildt, Java The complete reference, TMH, 1997.



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कम्प्यूटर एप्लीकेशन (ऐच्छिक)

Paper- II



सत्र – 2024-25

जगद्गुरु रामानन्दाचार्य राजस्थान संस्कृत विश्वविद्यालय

जयपुर-302026

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**SHASTRI Part II (Semester III)**  
**COMPUTER APPLICATION (Optional)**  
**PAPER- SECOND**  
**DATABASE MANAGEMENT SYSTEM**

Marks: 100

<b>Questions Pattern</b>	<b>Questions Papers</b>	<b>70</b>
	<b>Internal Assessment</b>	<b>30</b>
	<b>Total Marks</b>	<b>100</b>
	<b>Min. Passing Marks</b>	<b>40</b>

**Question paper Dividation**

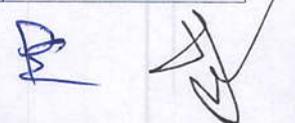
1. This question paper is divided into three sections A, B and C.
2. Part A will have 10 very short answer compulsory questions, each question will be of 02 marks.
3. Part B will have 03 short answer compulsory questions out of 06 questions, each question will be of 10 marks.

Part C will have 01 objective type questions out of 02 questions, each question will be of 20 marks.

**Thus, there will be total of 18 Questions in all three parts.**

1. Describe the very short type Questions objective are Factual knowledge Testing.
2. Short Type Questions objective are Concepts and Objects of DBMS.
3. Essay Type Questions objective are Concepts and Objects, Types and Advantages of DBMS and applied theory knowledge of DBMS.

<b>Parts of Questions</b>	Type of Questions	Total Questions	Attempt no. of Questions	Marks
<b>Part- A</b>	Very Short Type Questions	10	10	$10 \times 02 = 20$
<b>Part- B</b>	Short Type Questions	06	03	$03 \times 10 = 30$
<b>Part- C</b>	Essay Type	02	01	$01 \times 20 = 20$



	Questions			
	<b>Total</b>	<b>18</b>	<b>14</b>	<b>70</b>

### **Unit - I**

Basic concepts: database, database management system, data independence - Architecture of Database system. Database administrator - Database languages: DDL, DML & DCL.

### **Unit - II**

Data models: Relational Data Model, Network model, Hierarchical model - Entity Relationship Model: concepts, ER Diagram.

### **Unit - III**

SQL: Basic Structure, Features, Set Operations, Aggregate functions, Nested Sub queries, views, Joined Relations, DDL, DML, Domain Constraints, Referential Integrity, Assertions, Triggers, Security and Authorization.

### **Prescribed Text Books:**

- Henry F. Korth, Abraham Silberschatz, Database System concepts, 3rd edition, and Mc Graw Hill Publishing company Limited.
- Gaurav Sharma, Data Base Management System, Asian Publication.



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कम्प्यूटर एप्लीकेशन (ऐच्छिक)

Paper- I



सत्र – 2024-25

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जगद्गुरु रामानन्दाचार्य राजस्थान संस्कृत विश्वविद्यालय

जयपुर-302026

**SHASTRI Part II (Semester IV)**  
**COMPUTER APPLICATION (Optional)**  
**PAPER- FIRST**  
**Introduction to Object Oriented**  
**Programming with C++**

Marks: 100

Questions Pattern	Questions Papers	70
	Internal Assisment	30
	Total Marks	100
	Min. Passing Marks	40

**Question paper Dividation**

1. This question paper is divided into three sections A, B and C.
2. Part A will have 10 very short answer compulsory questions, each question will be of 02 marks.
3. Part B will have 03 short answer compulsory questions out of 06 questions, each question will be of 10 marks.

Part C will have 01 objective type questions out of 02 questions, each question will be of 20 marks.

Thus, there will be total of 18 Questions in all three parts.

1. Describe the very short type Questions objective are Factual knowledge testing.
2. Short Type Questions objective are Concepts and Objects of C++ Language.
3. Essay Type Questions objective are Concepts and Objects, Types and Advantages of C++ and applied theory knowledge of C++ Language.

Parts of Questions	Type of Questions	Total Questions	Attempt no. of Questions	Marks
Part- A	Very Short Type Questions	10	10	10X02 = 20
Part- B	Short Type	06	03	03X10 = 30

	Questions			
<b>Part- C</b>	Essay Type Questions	02	01	01X20=20
	<b>Total</b>	<b>18</b>	<b>14</b>	<b>70</b>

### Unit - IV

Object Initialization and Clean-up. Constructors, Parameterized constructors, Destructor, Constructor overloading, Constructors with default arguments, Constructors with dynamic operations. Function and Operator Overloading: Function Overloading, functions with default arguments, Inline functions, Unary operator overloading, Operator returning value, Binary operator overloading, Overloading Arithmetic, relational and assignment operators.

### Unit - V

Derived class and base class- derived class-constructor-modes of inheritance multiple inheritance - virtual function-polymorphism-dynamic binding - abstract class.

### TEXT BOOKS

1. Bjarne Stroustrup, the C++ Programming Language, Addison Wesley, 2000.
2. Ken Arnold, James Gosling, The JAVA language, II edition, Addison Wesley, 1998.
3. E. Balaguruswamy, Object Oriented Programming with C++, II edition, TMH, 2001.

### REFERENCES

1. Herbert Schildt, C++ The complete reference, TMH, 1997.
2. Stanley B. Lippman. Jore Lajoie, C++ Primer, III edition. Addison Wesley, 2000.
3. Barkakati N, Object Oriented Programming in C++, PHI, 1995.
4. Kris Jamsa, Java Programming - A Complete reference, Galgotia Publication, 1994.
5. Patrick Naughton, Herbert Schildt, Java The complete reference, TMH, 1997.




जगद्गुरु रामानन्दाचार्य राजस्थान संस्कृत विश्वविद्यालय, जयपुर

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कम्प्यूटर एप्लीकेशन (ऐच्छिक)

Paper- II



सत्र – 2024-25

जगद्गुरु रामानन्दाचार्य राजस्थान संस्कृत विश्वविद्यालय

जयपुर-302026

**SHASTRI Part II (Semester IV)**  
**COMPUTER APPLICATION (Optional)**  
**PAPER- SECOND**  
**DATABASE MANAGEMENT SYSTEM**

Marks: 100

<b>Questions Pattern</b>	<b>Questions Papers</b>	<b>70</b>
	<b>Internal assessments</b>	<b>30</b>
	<b>Total Marks</b>	<b>100</b>
	<b>Min. Passing Marks</b>	<b>40</b>

**Question paper Dividation**

1. This question paper is divided into three sections A, B and C.
2. Part A will have 10 very short answer compulsory questions, each question will be of 02 marks.
3. Part B will have 03 short answer compulsory questions out of 06 questions, each question will be of 10 marks.

Part C will have 01 objective type questions out of 02 questions, each question will be of 20 marks.

**Thus, there will be total of 18 Questions in all three parts.**

1. Describe the very short type Questions objective are Factual knowledge Testing.
2. Short Type Questions objective are Concepts and Objects of DBMS.
3. Essay Type Questions objective are Concepts and Objects, Types and Advantages of DBMS and applied theory knowledge of DBMS.

<b>Parts of Questions</b>	<b>Type of Questions</b>	<b>Total Questions</b>	<b>Attempt no. of Questions</b>	<b>Marks</b>
<b>Part- A</b>	Very Short Type Questions	10	10	$10 \times 02 = 20$
<b>Part- B</b>	Short Type Questions	06	03	$03 \times 10 = 30$
<b>Part- C</b>	Essay Type Questions	02	01	$01 \times 20 = 20$
	<b>Total</b>	<b>18</b>	<b>14</b>	<b>70</b>




### **Unit - IV**

Relational Database Design: Normalization: First Normal Form, Functional Dependencies, Decomposition, BCNF, Third Normal Form, Fourth Normal form.

### **Unit -V**

Transaction Management: Transaction: Concept, State, Concurrent Executions, Serializability, Recoverability, Concurrency Control: Lock-Based Protocols, Timestamp Based Protocols, Deadlock Handling. Recovery System: Failure Classification, Storage Structure, Recovery and Atomicity, Log-Based Recovery, Shadow Paging, Recovery with Concurrent Transactions, Buffer Management, Failure with Loss of Non-volatile Storage, Advanced Recovery Techniques, Remote Backup Systems.

### **Prescribed Text Books:**

- Henry F. Korth, Abraham Silberschatz, Database System concepts, 3rd edition, and Mc Graw Hill Publishing company Limited.
- Gaurav Sharma, Data Base Management System, Asian Publication.



जगद्गुरु रामानन्दाचार्य राजस्थान संस्कृत विश्वविद्यालय, जयपुर

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सत्र – 2024-25

जगद्गुरु रामानन्दाचार्य राजस्थान संस्कृत विश्वविद्यालय

जयपुर

# ELEMENTARY COMPUTER APPLICATION SHASTRI Part II (Semester III) Compulsory 2024-25

**Marks: 50**

<b>Questions Pattern</b>	<b>Theory Questions Papers</b>	<b>35</b>
	<b>Internal assessments</b>	<b>15</b>
	<b>Total Marks</b>	<b>50</b>
	<b>Min. Passing Marks</b>	<b>20</b>

### **Question paper Dividation**

1. This question paper is divided into three sections A, B and C.
2. Part A will have 10 very short answer compulsory questions, each question will be of 02 marks.
3. Part B will have 05 short answer compulsory questions, each question will be of 07 marks.
4. Part C will have 03 objective type questions as internal choices, each question will be of 15 marks.

**Thus, there will be total of 18 Questions in all three parts.**

1. Describe the very short type Questions objective are Factual knowledge Testing.
2. Short Type Questions objective are Concepts and Objects of Computer Hardware, software, Operating System and Internet.
3. Essay Type Questions objective are Concepts and Objects, Types and Advantages of Computer Hardware, Software and Operating System and applied theory knowledge of Internet.

<b>Parts of Questions</b>	<b>Type of Questions</b>	<b>Total Questions</b>	<b>Marks</b>
<b>Part- A</b>	Very Short Type Questions	10	$10 \times 01 = 10$
<b>Part- B</b>	Short Type Questions	05	$05 \times 02 = 10$
<b>Part- C</b>	Essay Type Questions	03	$03 \times 05 = 15$
	<b>Total</b>	<b>18</b>	<b>35</b>



## Unit – I

Introduction to Computer and Related Terminology (Basic Information only)  
(a) Hardware: CPU (Motherboard, Microprocessor. The Intel Pentium III. AMD and Cyrix), MMX Technology. System clock Address Bus, Data Bus (PCI and EISA) Cache Memory, Processing, Speed, Expansion Slots (Video Controller, Sound Cards, SCSI. Network Card) Memory- (Unit, RAM, ROM, EDORAM, SD RAM). Input and Output Devices (Keyboard, The standard keyboard Layout), Mouse, Printers- (Dot matrix, Ink-jet, Laser-jet) Microphone, Speakers, Modem, Scanner, Density, Formatting Boot Record, FAT-Folder Directory). Hard Disk Drive CD ROM Drive (CD ROM Speeds) CD-R Drive-DVD ROM Drive, Tape Drive). (b) Software: Introduction to Programming languages System Software (Operating Systems and Utilities). Application Software (Word Processors, DBMS). Presentation Graphic, Browsers. Personal Information Managers) Introduction to Multilingual Word processors. (c) Communications and Connectivity: Data Communication systems. Data Transmission (Serial Parallel, bandwidth. Protocols). E-Mail, FAX, Voice and Video massaging. Video conferencing Online Services user connection (types) Networking of Computers (Node. Client, Server Lan, Wan). Using the network. The Internet and the web.

## Unit-2

Operating System (Working Knowledge at Common Users Level Only).  
Overview of Important DOS commands, Windows 98: Installation, Scandisk, Control panel, Taskbars, Tool bars Display, Settings (Background, Wallpaper, Screensaver, Desktop Themes). Files and Folder managements, window Explorer, finding files and folders, formatting Disks and Copying files, Printer Settings, Modem Installation, Mouse Installation, Adding and Removing Programs, Active Desktop Concepts, Win Zip and its applications, Norton Antivirus and its use. Use of Calculator, Paintbrush, Win amp MPEG Player and windows help.

## Unit- 3

Application Software (Working knowledge at Common Users Level Only).  
(a) Word Processing, Software MS word, Entering, Edition and Formatting Text. Document formats (Page Size and Orientation, Headers and Footers. Columns and sections page layout Spelling and grammar checkers the saurus, find the Replace, Cut and paste. Tables and Formatting tables, Mail Merge, Styles and Templates.  
(b) Spread sheet Program - MS Excel 2 Entering data, Labels, Values Dates, Formulas, Cell references, Formats, Functions, Templates, Charts and Maps, Analysing data in a spread sheet.

(c) DBMS-Microsoft Access Database, entering data into the database, Creating Database tables, editing data. Viewing Records, sorting records, querying a database, generating reports.

#### Unit- 4

The Internet and Online Resources (Working knowledge at Common Users Level Only).

1. How the Internet work, Introduction to TCP/IP/Ip and DNS Address, Features of the Internet (E-Mail, News, Telnet, FTP, Chat, Channel, WWW, Online Services Bulletin Board Services), Connecting to a PC to the Internet (Setting dial up and Internet connection wizard) Overviews to Internet Explorer 5 and features therein, use of search engines, surfing, creating and use of E-Mail, Awareness about ecommerce and its advantages.

2. Introduction of Cyber Crime, Various type of Cyber Crime, Protecting your pc from various theft, Face guarding of your PC, Personnel information & social engineering, Cyber Stalking, Cyber Terrorism, Cyber Warfare, Identity Fraud, Malware, The Blues-Blue bugging, Blue jacking and Blue snafuing.

#### Prescribed Text Books:

1. Henry F. Korth, Abraham Silberschatz, Database System concepts, 3rd edition, and Mc Graw Hill Publishing Company Limited.
2. S. Shrivastava, Computer General Knowledge, Ravi Prakashan, Martha U.P.
3. Pradeep K Sinha, Computer Fundamental, BPB Publication.
4. Dr. P.K Sharma, कम्प्यूटर के डेटा प्रस्तुतिकरण और भाषा सिद्धान्त, पी.के. पब्लिकेशन।

