**RAJARSHI JANAK UNIVERSITY**
**OFFICE OF THE CENTRAL EXAMINATION**
**End Semester Examination - 2022**

Bachelor of Science in Computer Science and Information Technology
Course Title: Object-Oriented programming with C++
Course Code: SCIT 201
Year/Semester: Second/III

Full Marks: 60
Pass Marks: 24
Time: 3 hours

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*Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.*

## [Group A]

Write very short notes on: [5x2=10]

1. Ternary operator
2. Typecasting
3. Default arguments
4. Union
5. seekg() and tellg() functions for manipulation of file pointers

## [Group B]

Short answer questions (Attempt any six): [6x5=30]

6. Differentiate between the procedure oriented programming and object oriented programming language. Describe the main benefits provided by OOP. [3+2]
7. What is an array? Write a program to add two matrices. [1+4]
8. What is friend function? Explain with the help of program in C++. [1+4]
9. Explain the visibility of base class members for the access specifiers: private, protected and public while creating the derived class. [5]
10. What is copy constructor? Explain. [5]
11. Explain the use of try, catch and throw for exception handling with example. [5]
12. Explain read and write operations on text File in C++. [5]

## [Group C]

Long answer questions (Attempt any two): [2x10=20]

13. What is function Overloading & Operator Overloading? Write a program in C++ to overload a unary operator. [4+6]
14. What is Inheritance? Explain different types of Inheritance. [1+9]
15. What is the need of templates? Explain function templates and class template with example? [2+4+4]

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**Bachelor of Science in Computer Science and Information Technology**
**Course Title: System Analysis and Design**
**Course Code: SCIT-204**
**Year/Semester: Second/ III**

Full Marks: 60
Pass Marks: 24
Time: 3 hours

*Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.*

## [Group A]

**Very short answer questions:**

[5x2 = 10]

1. What is strong and weak entity?
2. State with importance the various building blocks of UML.
3. State the purpose for preparing data dictionary.
4. Define Event. State methods for generating events.
5. What are the different kinds of audit?

## [Group B]

**Short answer questions: (Attempt any Six)**

[6x5 = 30]

6. Define SDLC. Explain about different phases of SDLC.
7. What is aim of Information Gathering Techniques? Discuss about different Information Gathering Techniques.
8. Draw Context level, (o-Level and 1-Level) diagram for a Restaurant Management System.
9. Describe the role of System Analyst.
10. Why is documentation important to the Information System Life Cycle? Explain.
11. Describe components of CASE Tools, including the function performed by each.
12. Write short notes on:
    a. Essential features in EDP organization
    b. Use case modeling

## [Group C]

**Long answer questions: (Attempt any Two)**

[2x10=20]

13. Draw the Decision Table and Decision Tree for the following:
    A College XYZ Library will issue book under the following conditions:
    a. If a Student has ID proof and has not issued more than one book.
    b. If a Student has ID proof and has issued more than one books but has management approval then book will be issued.
    c. Reject book issue request in all other cases.
14. What is Feasibility study? Explain different types of Feasibility study
15. Explain major threats in System Security? Which are most serious and why?

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Bachelor of Science in Computer Science and Information Technology
Course Title: Computer Organization and Architecture
Course Code: SCIT 202
Year/Semester: Second/III

Full Marks: 60
Pass Marks: 24
Time: 3 hours

*Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.*

[Group A]

[5x2=10]

Very short answer questions:

1. PCI
2. List few advantages of the memory –mapped I/O techniques.
3. Interrupts
4. Compilers and interpreters
5. Characteristics of Multiprocessor

[Group B]

[6x5=30]

Short answer questions (Attempt any Six):

6. Distinguish among computer organization and computer architecture.
7. Explain with example of Data transfer instructions.
8. What are the typical characteristics of RISC and CISC architecture? Explain
9. Explain the microinstruction format. Differentiate between horizontal and vertical microinstruction formats.
10. Explain Booths multiplication algorithm with the help of an example.
11. What is mapping? Differentiate between isolated I/O and Memory Mapped I/O.
12. What is RAID? Explain any two RAID levels.

[Group C]

[2x10=20]

Long answer questions (Attempt any Two):

13. Draw and explain multiple organization of CPU.
14. a. Illustrate with an example an instruction pipeline.
    b. Explain with example how data transfers performed in direct memory access (DMA).
15. With a block diagram, describe the organization of a micro programmed control unit.

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