

P.G. DIPLOMA EXAMINATION - DECEMBER – 2020
COMPUTER APPLICATION
FIRST YEAR
COMPUTER FUNDAMENTALS

Time: 3 Hours

Maximum Marks: 75

PART – A

(5 × 5 = 25 Marks)

Answer any FIVE questions.

1. What are the four types of Number Systems?
Explain Them.
2. Write about the logic gates.
3. Discuss about the shift operators with suitable Example.
4. Briefly describe the fundamentals of control unit.
5. Explain the characteristics of instruction set.
6. Illustrate the stack addressing schemes.
7. Describe about the inter process arbitration.

PART - B

(5 × 10 = 50 Marks)

Answer any FIVE questions.

8. Discuss about the computer generations.
9. Explain detail about the input output peripherals.
10. Discuss about the basic structure of CPU.
11. Briefly explain about the ALU organization.
12. Describe about the cpu components and CPU registers.
13. Discuss about the inter process communication and cache coherence.

PG-C-892

PGDCA-02

**P.G. DEGREE EXAMINATION
DECEMBER 2020**

Computer Science

DATA STRUCTURES THROUGH “C”

Time : 3 hours

Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. What is meant by library functions? List out its importance.
2. Explain the syntax and use of do-while loop with an example.
3. Write the procedure to insert an element in the middle of an array.
4. What are the various operations possible on stacks?
5. How will you check whether the queue is full or empty? Discuss.

6. What are the different file organizations?
7. Write an algorithm to determine the number of elements in a tree.

PART B — ($5 \times 10 = 50$ marks)

Answer any FIVE questions.

8. List out the logical operators and relational operators available in C and explain their use with suitable examples.
9. Discuss about the storage classes in C. Explain with suitable example.
10. Explain the differences between structure and union.
11. Write an algorithm to concatenate two singly linked lists.
12. Explain in detail about the graph traversal techniques with suitable example.
13. How an AVL tree differ from a binary search tree? How AVL trees are represented in computer memory?
14. Define sorting. Write an algorithm for merge sort explain with suitable example.

M.C.A. DEGREE EXAMINATION -DECEMBER – 2020

COMPUTER APPLICATION

FIRST YEAR

ELEMENTS OF SYSTEMS ANALYSIS AND DESIGN

Time: 3 Hours

Maximum Marks: 75

PART – A

(5 × 2 = 10 Marks)

Answer any FIVE questions.

1. Explain the Elements of Systems Analysis.
2. Write about the Role of System Analyst
3. Discuss the Cost Benefit Analysis.
4. Mention about the types of Code. Explain them
5. Explain the Benchmark testing.
6. Illustrate the Impact of MIS.
7. Discuss about the Ergonomics.

PART - B

(4 × 5 = 20 Marks)

Answer any FIVE questions.

8. Discuss about the System development life cycle
and Software crisis.

Explain detail about the Feasibility study.

9. Describe about the Input design and control.
 10. Explain about the Designing screen output/report.
 11. Write the System Maintenance and MIS.
 12. Discuss about the Components of Multimedia.
-

**PG DIPLOMA EXAMINATION –
DECEMBER – 2020
COMPUTER APPLICATIONS**

**INTRODUCTION TO DATABASE MANAGEMENT
SYSTEM**

Time: 3 Hours

Maximum Marks: 75

PART A (5 × 5 = 25 Marks)

Answer any FIVE questions.

1. Explain three views of data.
2. Describe the five major components of DBMS.
3. Discuss the advantages and disadvantages of sequential file organization.
4. Explain administration of DBMS.
5. Discuss the concept of Relational Model.
6. Draw the architecture of Distributed Databases.
7. Summarize the applications of DBMS.

PART B (5 x 10 = 50 Marks)

Answer any FIVE questions.

8. Discuss briefly ER Model, Hierarchical Model and
 9. Discuss the advantages and Disadvantages of DBMS.
 10. Discriminate on Multi key file organization.
 11. Explain in detail about first three normal forms.
 12. Explain the types of SQL Commands.
 13. Differentiate RDBMS and OODBMS.
 14. Explain the importance of Knowledge Management system.
-

PG-C-895

PGDCA-05

P.G. DIPLOMA EXAMINATION

DECEMBER 2020

INTRODUCTION TO COMPUTER ORGANIZATION

Time : 3 hours

Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Covert the Decimal number 225.25 to binary.
2. Explain briefly fixed point arithmetic.
3. Explain ROM and its types.
4. Explain Instruction format.
5. Discuss about CPU components.
6. Discuss about Arrays with example.
7. Draw and explain the working principle of DMA.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

8. Discuss about Error detection and Error correction codes.
9. Explain working of Associate memory with diagram.
10. Explain control unit organization with example.
11. Draw and explain Microcomputer Architecture.
12. Write shorts on I/O process.
13. Write an assembly language program for addition of two numbers.
14. Explain general register organization with example.

PG DIPLOMA EXAMINATION - DECEMBER – 2020**COMPUTER APPLICATION****INTRODUCTION TO SOFTWARE ENGINEERING****Time: 3 Hours****Maximum Marks: 75****PART – A****(5 × 5 = 5 Marks)****Answer any FIVE questions.**

1. What are the merits of incremental model? Explain briefly.
2. Describe the advantages of fourth generation techniques in software engineering.
3. Explain the key people involved in the software process development.
4. What is meant by FP-based estimation? Give an example.
5. Explain the role of ISO 9000 quality standards in software quality assurance.
6. Describe the role of functional modeling and information flow.
7. Explain various design principles of good design.

PART - B**(5 × 10 = 50 Marks)****Answer any FIVE questions.**

8. Discuss various phases involved in sequential process model.
9. Describe the phases of rapid application development model in detail.
10. Explain various empirical estimation models in detail.
11. Explain risk identification process in detail with appropriate examples.
12. Discuss how software reviews help in uncovering error in the software engineering process.
13. Explain in detail the basic concepts of software design.
14. Explain black box testing and white box testing in detail with suitable examples.

PG-C-898

PGDCA-07

PG DIPLOMA EXAMINATION - DECEMBER – 2020

COMPUTER APPLICATION

C++ AND OBJECT ORIENTED PROGRAMMING

Time: 3 Hours

Maximum Marks: 75

PART – A

(5 × 5 = 25 Marks)

Answer any FIVE questions.

1. What is identifier? Explain how they are created in C++ and their naming conventions.
2. Briefly explain the bitwise logical operators with sample C++ code.
3. Compare and contrast hierarchical inheritance and hybrid inheritance.
4. List out the different types visibility labels of a member class in C++. Give the example program.
5. What is function template? Explain its syntax and semantics?
6. Discuss on conditional expressions with example.
7. What are the disadvantages of Conventional Programming?

PART - B

(5 × 10 = 50 Marks)

Answer any FIVE questions.

8. Discuss in detail about various fundamental types corresponding to basic storage units of a computer with suitable C++ program.
9. a) Discuss about Member functions and Non-Member functions.

- b) Write a program for finding the roots of given expression.
10. a) Write a C++ program to generate Fibonacci series using recursion with member function.
- b) Explain about the different types of methods to pass an argument to a function with an example.
11. Explain in detail about single dimensional array and multi dimensional array with suitable C++ examples.
12. Explain in elaborate about the overview of C++ and structure of C++ program with suitable C++ code.
13. a) Write a multi catch C++ program for Array Index exception.
- b) Explain about the various error trapping functions.
14. Define polymorphism. Discuss in detail about function overloading and operator overloading.
-

PG DIPLOMA EXAMINATION - DECEMBER - 2020

First Year

THEORY OF COMPUTER SCIENCE

Time: 3 Hours

Maximum Marks: 75

PART A ($5 \times 5 = 25$ Marks)

Answer any FIVE questions.

1. Discuss the properties of UNION operation on sets.
2. What is Composite function? Give example
3. Write the truth table for $\neg(P \vee Q)$
4. Write down any three formulas for Equivalent in mathematical logic.
5. Let $G = (\{S, C\}, \{a, b\}, P, S)$ where P consists of $S \rightarrow aCa$, $C \rightarrow aCa / b$. Find $L(G)$.
6. What is the complement of a graph. Give example
7. What is a path? Give example.

PART B ($5 \times 10 = 50$ Marks)

Answer any FIVE questions.

6. Define Equivalence relation. Let $A=\{x,y\}$ and $R=\{(y,y)\}$. Test whether the given relation R is equivalent or not.
7. Prove that the function $f:X \rightarrow X$, where $X=\{x \in \mathbb{R}, x \neq 0\}$, defined by $f(x) = 1/x$ is one to one and onto.
8. Indicate which ones are tautologies and which ones are contradictions.
 - i. $(P \rightarrow \neg P) \rightarrow \neg P$
 - a. $(P \rightarrow (P \vee Q))$
 - b. $(P \rightarrow (Q \rightarrow P))$
 - c. $(\neg Q \wedge P) \wedge Q$
9. Prove the following
 - a. $P \rightarrow R \Leftrightarrow \neg P \rightarrow Q$
 - b. $P \rightarrow (Q \rightarrow R) \Leftrightarrow P \wedge Q \rightarrow R$
10. Construct a NFA with ϵ moves for the regular expression 10^*+1 .
11. Is context free language is closed under Union? Justify.
12. Write short note on matrix representation of graphs