**(PGDCA 01)**

ASSIGNMENT-1
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

INFORMATION TECHNOLOGY
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Discuss the capabilities expected of information systems in modern organizations.

2. State and explain five representative business models of the digital age and three types of business pressures.

3. Explain the components of CPU and describe computer hierarchy.

4. Explain the working of following input and output devices:

   (a) Scanner

   (b) Joysticks

   (c) Trackball

   (d) Optical mark reader

   (e) Touch screen

5. Discuss different services provided by Operating system.

ASSIGNMENT-2
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

INFORMATION TECHNOLOGY
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. (a) What is open source software and what are its advantages? Give the example for open soft wares.

   (b) Write short notes on procedural languages and hypertext transfer languages.

2. What is data model? Describe different types of data models with suitable example.

3. Write about different types of networks and network communication software.

4. Discuss different services and challenges of internet.

5. Discuss various services are provided by the internet and its applications.

---

**(PGDCA02)**

ASSIGNMENT-1
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

Computer Applications

PROGRAMMING WITH C++
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Discuss the features of C++ and also differentiate C and C++.

2. (a) Explain about scope resolution operator

   (b) What is static data member? What are the important characteristics of the static member variable?

3. How to declare and access two dimensional matrices? Write a C++ program to addition of two matrices.

4. (a) What is a destructor? Illustrate memory allocation to an object using Destructor.

   (b) Illustrate parameter constructor with suitable example.

5. (a) What is pointer? Give the syntax and describe advantages of pointers.

   (b) Write a C++ program to concatenation of two string.

**(PGDCA02)**

ASSIGNMENT-2
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

Computer Applications

PROGRAMMING WITH C++
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. What is polymorphism? Discuss different types of polymorphisms allowed C++.

2. (a) Explain static members of a class. Demonstrate with an example

   (b) Write visibility of inherited members based on public, private and protected keywords

3. What are the different types of Binding? Explain them with suitable example.

4. What are the friend functions? Write a C++ program to overload the post and pre-- increment '++' operator using friend function.

5. Write a C++ Program to add two integers, two floats and two complex numbers using class templates.

---

**(PGDCA03)**

ASSIGNMENT-1
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

# First Year

Computer Applications

COMPUTER ORGANIZATION
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Explain about structural view and functional view of digital computer with neat diagrams.

2. Explain IAS computer instruction set with suitable flow chart.

3. Explain about bus inter connection scheme and multiple bus hierarchies.

4. Write about instruction fetch, execute and I/O function.

5. Describe physical characteristics of magnetic disk and also specify disk performance parameters.

ASSIGNMENT-2
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

# First Year

Computer Applications

COMPUTER ORGANIZATION
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Explain the working of Compact Disk and Digital Versatile Disks.

2. Explain floating point division and multiplication with suitable example.

3. Explain about fixed point representation and perform multiplication of two fixed point numbers.

4. Explain about instruction pipeline with timing diagram.

5. Explain hardwired control unit of CPU.

---

**(PGDCA04)**

ASSIGNMENT-1
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

DATA STRUCTURES
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Discuss different classification of data structures and explain each of it in brief.

2. Explain sequential, selection and iterative logic for implementing the algorithm with example.

3. Write about fixed length storage and variable length storage of strings with an example.

4. What is an array? Describe the various array operations and how it represents in computer memory?

5. What is queue? Describe different types of queues and queue operations.

**(PGDCA04)**

ASSIGNMENT-2
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

DATA STRUCTURES
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. What is Double linked list? Describe creation and operations of Double linked list.

2. (a) Explain Right-in-threaded, left-in-threaded and full-in-threaded binary trees.

   (b) What is B-tree? Mention the properties of a B-Trees.

3. (a) Construct a binary tree from the traversals given below :

   In-order : 1 3 4 6 7 8 10 13 14

   Pre-order : 8 3 1 6 4 7 10 14 13

   (b) Explain Breadth First Search in graphs with an example.

4. What is hash function? Discuss about different hashing functions.

5. What is hashing? Write about various Hash collision resolution techniques with examples.

———————

**(PGDCA05)**

ASSIGNMENT-1
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

Computer Applications

OPERATING SYSTEMS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Write about different types of operating systems.

2. (a) Explain the Round Robin scheduling algorithm with a suitable example.

   (b) Describe the steps involved in process creation and process termination.

3. Write about inter – process communication in client – server systems.

4. What is dead lock? What are causes of deadlocks? Explain the Banker's algorithm for deadlock avoidance.

5. Explain Banker's deadlock-avoidance algorithm with an illustration.

**(PGDCA05)**

ASSIGNMENT-2
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

Computer Applications

OPERATING SYSTEMS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Explain different issues in demand paging.
2. Discuss in detail the file allocation techniques: sequential, indexed and linked.
3. (a) Describe life cycle of I/O request in detail.
   (b) Briefly explain about application I/O interface.
4. Write about Shortest Seek Time First (SSTF) and SCAN disk scheduling algorithms.
5. Explain the following security concepts of Operating systems.
   (a) Authentication
   (b) Detection
   (c) Correction
   (d) Program threat

---

**(PGDCA06)**

ASSIGNMENT-1
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

DATABASE MANAGEMENT SYSTEMS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. What is information system? Describe different components of information system and also give various types of information system.

2. Explain about various file organization approaches with neat diagrams.

3. Explain about queue, ring, multi list and tree data structures with example.

4. What is data model? Discuss different data models with suitable example.

5. Describe the guideline mapping conceptual data model relations and hierarchical data models.

**(PGDCA06)**

ASSIGNMENT-2
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

DATABASE MANAGEMENT SYSTEMS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Discuss about various symbols used to represent database actions diagrams.

2. Describe the guidelines for mapping conceptual data model to hierarchical and network models.

3. Write about 1st, 2nd, 3rd and BCNF normal forms with example.

4. Write about project, select and join operations in relational algebra.

5. Explain the concept of database recovery in detail.

———————

**(PGDCA07)**

ASSIGNMENT-1
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

ACCOUNTS AND FINANCE
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Define accounting. Explain different concepts and conventions of Accounting.

2. Journalise the following transactions in the book of Viswanath

| 2012 October | | Rs. |
|---|---|---|
| 1 | Viswanath started business with | 65,000 |
| 4 | Purchased goods for cash | 14,000 |
| 5 | Deposited into bank | 2,400 |
| 6 | Goods sold for cash | 18,000 |
| 10 | Cash paid to Niranjan | 1,000 |
| 13 | Goods purchased for cash | 15,000 |
| 16 | Goods sold to kishore kumar | 4,000 |
| 19 | Purchased furniture for cash | 2,000 |
| 20 | Received cash from kishore kumar | 750 |
| 24 | Goods purchased from dinesh | 2,000 |
| 28 | Cash paid to dinesh | 2,000 |
| 30 | Withdraw from bank | 1,000 |

3. Explain the objectives of Budgetary Control and state the characteristics of good Budgeting.

4. Explain the objectives of Financial Decision making.

5. Draw a chart showing the elements in a

   (a) Statement of changes in working capital.

   (b) Profit and Loss Adjustment account and a Funds Flow Statement.

ASSIGNMENT-2
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

ACCOUNTS AND FINANCE
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. From the following information. Pass journal entries in pursuance of accounting principles practising and conventions.

| | Rs. |
|---|---|
| Interest receivable on investment | 27,000 |
| Rent Received in advance | 1,00,000 |
| Income Tax Prepaid | 40,000 |
| Transfer to General Reserve | 2,00,000 from P and L A/c |
| Provide depreciation on plant | 64,000 |
| Advance paid for acquision of fixed Asset | 10,00,000 |
| Write off Fictitious assets accounting to | 35,000 |
| Against share premium of | 60,000 |
| Write off goodwill accounting to | 20,000 |
| A fixed Asset having book value of | 4,25,000 |
| Was revalued | 4,50,000 |
| Royalty payable accounting to | 80,000 |

2. Explain the following:
   (a) Current Ratio
   (b) Quick Ratio
   (c) Inventory Turnover Ratio
   (d) Debt-equity Ratio
   (e) Proprietary Ratio
3. What do you understand by financial decisions? Discuss the major financial decisions.

4. Prepare the Trading, Profit and Loss a/c of Prabhu for the year ending 31st December 2012 from the following trial balance.

| | Debit | Credit |
|---|---|---|
| | Rs. | Rs. |
| Salaries | 12,000 | |
| Capital | | 50,000 |
| Purchase | 52,000 | |
| Sales | | 94,000 |
| Trade expenses | 2,000 | |
| Discount | | 400 |
| Wages | 15,600 | |
| Creditors | | 42,000 |
| Carriage | 800 | |
| Office expenses | 1,000 | |
| Commission | 1,200 | |
| Bad debts | 2,400 | |
| Bills payable | | 13,600 |
| Debtors | 60,000 | |
| Furniture | 6,000 | |
| Machinery | 20,000 | |
| Insurance | 800 | |
| Bills-receivable | 4,000 | |
| Opening stock | 14,000 | |
| Cash in hand | 1,000 | |
| Cash at bank | 7,200 | |
| | 2,00,000 | 2,00,000 |

Adjustments:

(a) Closing stock Rs. 22,000

(b) Outstanding wages Rs. 4,000

(c) Prepaid insurance Rs. 100

(d) Provide Bad debts reserve at 5%

(e) Depreciate machinery and furniture by 5%.

5. What do you mean by cash flow statement? What is the method of preparing cash flow statements?

**(PGDCA08)**

ASSIGNMENT-1
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

COMPUTER GRAPHICS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Consider a line from (0,0) to (6,6). Using simple DDA algorithm, rasterize this line.

2. Draw the CRT with neat sketch. Explain the various components and working mechanism of CRT.

3. A triangle is defined by P(2,2), Q(4,2) and R(5,5). Find the transformed coordinates after
$90^o$ clockwise rotation followed by reflection about line $y = -x$.

4. Explain about midpoint subdivision line clipping algorithm with suitable example.

5. (a) What is posting and unposting segment and also write segment naming schemes.

   (b) Describe windowing functions of graphic package.

**(PGDCA08)**

ASSIGNMENT-2
P.G. DIPLOMA EXAMINATION, MAY/JUNE-2025

First Year

Computer Applications

COMPUTER GRAPHICS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. What is the structure of display file? How to compiling display file? Explain detail.

2. (a) Explain about picture structure with neat sketch.

   (b) Write about advantages and limitations of display procedures.

3. Briefly explain about the working of following input devices

   (a) Tablets

   (b) Light pen

   (c) Comparators.

4. What is event queue? Discuss the functions for handling the events.

5. Explain about the concept of realism in three - dimensional graphics.

---