**(PGDCA 01)**

**ASSIGNMENT 1**

P.G. DIPLOMA EXAMINATION,
DECEMBER 2020.

First Year

Computer Applicatons

INFORMATION TECHNOLOGY
**MAXIMUM MARKS : 30**
**ANSWER ALL QUESTIONS**

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

2.  How to manage information technology in organizations and also describe structure and IT support?

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.  What is system software? Discuss about different system software's.

**(PGDCA 01)**

**ASSIGNMENT 2**

P.G. DIPLOMA EXAMINATION,
DECEMBER 2020.

First Year

Computer Applicatons

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 traditional file environment? Give the limitations of it and also features of modern database approach.

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

4.  Write about evaluation of internet and operation of the internet.

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

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**(PGDCA 01)**

**(PGDCA 02)**

**ASSIGNMENT 1**

P.G. DIPLOMA EXAMINATION,
DECEMBER 2020.

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) What is variable? How to declare variables in C++? Define local and global variables.

   (b) Write about bitwise, relational and logical operators in C++.

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

4. Illustrate functional overloading 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.

**(PGDCA 02)**

**ASSIGNMENT 2**

P.G. DIPLOMA EXAMINATION,
DECEMBER 2020.

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.  Discuss the concept of virtual functions with an example.

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

5.  Discuss about standard C++ vectors and container classes.

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**(PGDCA 02)**

**(PGDCA03)**

**ASSIGNMENT 1**

P.G.DIPLOMA EXAMINATION,
DECEMBER 2020.

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.  Write about evaluation of digital computer and its features.

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

4.  What is PCI? Explain about PCI configuration and arbitration.

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

**(PGDCA03)**

**ASSIGNMENT 2**

P.G.DIPLOMA EXAMINATION,
DECEMBER 2020.

First year

Computer Applications

COMPUTER ORGANIZATION
**MAXIMUM MARKS : 30**
**ANSWER ALL QUESTIONS**

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

2.  What is meant by normalization in floating point representation? Why do we need it? What normalization is used in IEEE 754 standard?

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

4.  Explain about instruction pipeline with timing diagram.

5.  Explain different states of instruction cycle with neat diagram.

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**(PGDCA 04)**

**ASSIGNMENT 1**

P.G. DIPLOMA EXAMINATION,
DECEMBER 2020.

First Year

Computer Applications

DATA STRUCTURES
**MAXIMUM MARKS : 30**
**ANSWER ALL QUESTIONS**

1.  Discuss different notations used to represent algorithm efficiency.

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.  How to represent various types of arrays and records in computer memory? Explain.

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

**(PGDCA 04)**

**ASSIGNMENT 2**

P.G. DIPLOMA EXAMINATION,
DECEMBER 2020.

First Year

Computer Applications

DATA STRUCTURES
**MAXIMUM MARKS : 30**
**ANSWER ALL QUESTIONS**

1. What is circular linked list? Write a subroutine to insert, delete and traverse operations of circular 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.  Sort the following elements using Quick sort algorithm and write algorithm: 2, 9, 4, 1, 5, 8

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

**(PGDCA 04)**

**(PGDCA 05)**

**ASSIGNMENT 1**

P.G. DIPLOMA EXAMINATION,
DECEMBER 2020.

Computer Applications

OPERATING SYSTEMS
**MAXIMUM MARKS : 30**
**ANSWER ALL QUESTIONS**

1.  Write about different types of operating systems.

2.  Define process. Describe different process states and also give various process attributes.

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.  (a)    Write about segmentation of paging.

    (b)    Write note on swapping and overlaying.

**(PGDCA 05)**

**ASSIGNMENT 2**

P.G. DIPLOMA EXAMINATION,
DECEMBER 2020.

Computer Applications

OPERATING SYSTEMS
**MAXIMUM MARKS : 30**
**ANSWER ALL QUESTIONS**

1. Explain different issues in demand paging.

2 Discuss various schemes for defining the logical structure of directory

3  (a)    Describe life cycle of I/O request in detail.

   (b)    Briefly explain about application I/O interface.

4 Explain the various disk scheduling techniques.

5. Explain the following security concepts of Operating systems.

   (a)    Authentication

   (b)    Detection

   (c)    Correction

   (d)    Program threat

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**(PGDCA 06)**

**ASSIGNMENT 1**

P.G.DIPLOMA EXAMINATION, DECEMBER 2020.

First year

Computer Applications

DATA BASE 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. Describe the following associations between files with an example.

    (a) One–to–one association

    (b) One–to–one conditional

    (c) Many–to–many

    (d) Multiple associations

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

4. Briefly explain about different data models with neat architecture.

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

**(PGDCA 06)**

**ASSIGNMENT 2**

P.G.DIPLOMA EXAMINATION, DECEMBER 2020.

First year

Computer Applications

DATA BASE MANAGEMENT SYSTEMS
**MAXIMUM MARKS : 30**
**ANSWER ALL QUESTIONS**

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

2. Explain different commands of data manipulation language with syntax.

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

4. Explain working of two-phase commit protocol.

5. What is concurrency in DBMS? Explain concurrency control mechanism in DBMS.

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**(PGDCA07)**

## ASSIGNMENT 1

P.G. (DCA) DIPLOMA EXAMINATION, DECEMBER 2020.

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 Oct | | 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. Define cost accounting. Give it's functions and advantages.

4. From the following particulars find out pass book balance:

   (a) Bank balance as per cash book Rs.15,000

   (b) Cheques issued before 31.12.10 Rs.2,000 not presented for payment.

   (c) On the above data cheques deposited but not collected and credited in pass book Rs.2,800

   (d) Cheque received from customer in Dec Rs.1,200 entered in cash book but sent to bank in January.

   (e) Interest on investments collected by bank credited in pass book but not entered in cash book Rs.800.

   (f) Bank charges Rs.20 debited in pass book only.

5. What is working capital? Explain kinds of working capital in detail.

**(PGDCA07)**

### ASSIGNMENT 2

P.G. (DCA) DIPLOMA EXAMINATION, DECEMBER 2020.

First Year

Computer Applications

ACCOUNTS AND FINANCE
**MAXIMUM MARKS : 30**
**ANSWER ALL QUESTIONS**

1. What is Budgetory control? Explain briefly it's advantages and limitations?

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 Dec.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 | 1000 | |
| 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?

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**(PGDCA 08)**

**ASSIGNMENT 1**

P.G. DIPLOMA EXAMINATION, DECEMBER 2020.

First Year

Computer Applications

COMPUTER GRAPHICS
**MAXIMUM MARKS : 30**
**ANSWER ALL QUESTIONS**

1. Write down and explain the midpoint circle drawing algorithm. Assume 10 cm as the radius and co-ordinate as the center of the circle.

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

3. Discuss about 2-D transformation principles and with example.

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.

**(PGDCA 08)**

**ASSIGNMENT 2**

P.G. DIPLOMA EXAMINATION, DECEMBER 2020.

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) Write short notes on geometric modeling.

(b) Describe the 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 scan conversion polygons with suitable example.

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