Assignment-I

P.G. DIPLOMA EXAMINATIONJUNE 2022.

First Year

Computer Applications

INFORMATION TECHNOLOGY
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Explain the Components of computer–based information systems and its evaluation.

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

3. What is CPU? Explain different components of CPU with neat sketch.

4. Write about various input devices and its working mechanism with neat sketches.

5. Discuss different services provided by Operating system.

Assignment-2

P.G. DIPLOMA EXAMINATIONJUNE 2022.

First Year

Computer Applications

INFORMATION TECHNOLOGY
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. (a) Differentiate application software's and system software's.

   (b) Differentiate object oriented and procedure oriented programming languages.

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

3. Explain about different communication channels and different layers of TCP/IP protocol.

4. Discuss different services and challenges of internet.

5. Write short notes on:
   (a) WWW
   (b) Extranet
   (c) Types of DNS.

Assignment-I

P.G. DIPLOMA EXAMINATION JUNE 2022.

First Year

Computer Applications

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

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1. (a) What are the major advantages of object oriented programming paradigm?

    (b) Differentiate between user defined data types and derived data types.

2. (a) Explain about scope resolution operator.

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

3. (a) What is the difference between pointer and reference variable?

    (b) Write a program for adding two numbers using function overloading.

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

    (b) Illustrate parameter constructor with suitable example.

5. Write a C++ Program to swap two numbers using call by value, call by reference and call by address mechanism?

Assignment-2

P.G. DIPLOMA EXAMINATION JUNE 2022.

First Year

Computer Applications

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

1.   Explain how inline function differ from a preprocessor macro? Explain significant Advantage of inline Function.

2.   Illustrate container classes with suitable example.

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

4.   What is Virtual function? What are the rules for Virtual functions?

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

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(PGDCA 03)

Assignment-I

P.G. DIPLOMA EXAMINATION,
JUNE 2022

First Year

Computer Applications

COMPUTER ORGANIZATION
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

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1. What is functional view computer? Explain each block in it with neat sketch.

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

3. What is bus structure of PCI? State and explain various PCI commands.

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

5. What is the principle of optical memory? Explain various optical memory devices.

(PGDCA 03)

Assignment-2

P.G. DIPLOMA EXAMINATION,
JUNE 2022.

First Year

Computer Applications

COMPUTER ORGANIZATION
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1.   Explain about magnetic read / write mechanism and disk layout.

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

3.   Write the IEEE floating point representation and also find addition of two floating numbers.

4.   Explain ARM processor organization with neat flowchart.

5.   Explain hardwired control unit of CPU.

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Assignment-I

P.G. **DIPLOMA** EXAMINATION,
JUNE 2022.

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. Write about sequential, selection and iterative logic for implementing the algorithm proper flow charts.

3. What is string? Explain different string processing algorithms with suitable example.

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

5. What is Stack? Explain the implementation of stacks using linked lists. Write the pseudo code for PUSH and POP operations on the Stack.

Assignment-2

P.G. **DIPLOMA** EXAMINATION,
JUNE 2022.

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. What is Binary tree? Differentiate from the trees. Briefly Explain the Array representation of the binary tree. Give an example.

3. (a) Write the algorithm for insertion and deletion of binary search trees.

   (b) Explain the Construction of Tree from given In-order and Preorder traversals
       In – order sequence :   D   B   E   A   F   C
       Pre – order sequence :   A   B   D   E   C   F

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

5. Sort the following elements using Bubble sort algorithm and write algorithm: 2, 9, 4, 1, 5, 8 And also write its pseudo code

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(PGDCA 05)

Assignment-I

1. Explain evolution 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. What is a Critical Section problem? Give the conditions that a solution to the critical section problem must satisfy.

4. What is Producer Consumer problem? How it can illustrate the classical problem of synchronization? Explain.

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

(PGDCA 05)

Assignment-2

P.G. DIPLOMA EXAMINATION,
JUNE 2022

First Year

Computer Applications

OPERATING SYSTEMS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Explain different issues in paging and segmentation.

2. Discuss in detail the file allocation techniques: sequential, indexed and linked.

3. (a) Explain about Direct Memory Access (DMA)

   (b) Write about application I/O interface.

4. Write about Shortest Seek Time First(SSTF) and SCAN disk scheduling algorithms.

5. Write short note on the following:

   (a) Operating system security threats.

   (b) Data encryption and decryption.

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Assignment-I

P.G. DIPLOMA EXAMINATION, JUNE 2022

First Year

Computer Applications

DATA BASE MANAGEMENT SYSTEMS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1.   Discuss advantages and disadvantages of file processing systems and how they overcome by DBMS.

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

3.   Write about ring, list and tree data structures with example.

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

5.   State and explain various database design steps.

Assignment-2

P.G. DIPLOMA EXAMINATION, JUNE 2022

First Year

Computer Applications

DATA BASE MANAGEMENT SYSTEMS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Discuss various commands of data description language.

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

3. Explain about integrated database management system (IDMS).

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

5. Explain the concept of database recovery in detail.

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(PGDCA 07)

Assignment-I

P.G. DIPLOMA EXAMINATION JUNE 2022.

First Year

Accounts and Finance

COMPUTER APPLICATIONS

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

1. Enunciate the advantages and limitations of Accounting.

2. Draw the format of Company Final Accounts.

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

1. From the following information. Pass journal entries in pursuance of Accounting Principles. Practising and conventions.

	₹
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 & 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. XYZ firm furnished the following information for the year ended March 31, 2019. Prepare a Profit and Loss Account and Balance Sheet as on that data.

	Dr. ₹	Cr. ₹
Gross Profit		23,70,000
Salaries	11,10,000	
Rent	2,64,000	
Stationery	32,000	
GST	1,20,000	
Depreciation	77,000	

Fixed Assets	63,50,000	
Cash at Bank	5,02,000	
Debtors	4,34,000	
Creditors		4,16,000
Bills Receivable	1,80,000	
Share Capital		50,00,000
Secured loan		10,00,000
Capital Reserve		2,80,000
Audit fees	60,000	
Profit on Sale of a Car		1,10,000
Income tax	72,000	
Interest on Bank deposits		25,000
	92,01,000	92,01,000

Other information :

(a)   Salaries outstanding ₹ 2,00,000

(b)   Rent includes ₹ 64,000 paid in advance.

3. From the following information, prepare a cash budget and ascertain cash balance at the end of each month.

	August	September	October	November	December
	₹	₹	₹	₹	₹
Credit Sales	20,00,000	24,00,000	26,00,000	30,00,000	28,00,000
Credit Purchases	8,70,000	9,10,000	9,50,000	10,80,000	11,20,000
Salaries	5,40,000	5,80,000	6,00,000	6,30,000	6,50,000
Rent paid	–	1,20,000	–	–	1,40,000
Income tax paid	–	60,000	–	–	80,000
Interest on investments received	32,000	–	–	54,000	–

Other information:

(a)   70% of credit sales was received in cash in the some month and the rest was received in the following month.

(b)   50% of credit purchases was paid in the same month and the rest was paid in the next month.

(c)   Salary was paid on the First day of the following month.

4. From the following information, prepare a comparative Income statement and analyse the operating result.

	2018-2019	2019-2020
	₹	₹
Sales	22,00,000	25,00,000
Cost of goods sold	12,50,000	13,75,000

	9,50,000	11,25,000
Salaries	4,50,000	4,80,000
Rent	1,20,000	1,20,000
Insurance	30,000	20,000
Depreciation	70,000	60,000
Income tax	40,000	50,000
Interest on OD	26,000	20,000
Net profit	2,14,000	3,75,000

5.From the following, Balance sheet of IJK limited, prepare a cash flow statement As per As 3.

Liabilities	2018-2019	2019-2020	Assets	2018-19	2019-2020
	₹	₹		₹	₹
Equity share capital ₹ 100 per share fully paid	1,40,00,000	1,50,00,000	Plant	1,40,00,000	1,50,00,000
Retained Earnings	29,00,000	30,00,000	Furniture	15,00,000	14,20,000
P & L A/c	12,90,000	16,00,000	Motor Car	42,00,000	45,00,000
Long term secured 100mg	25,00,000	15,00,000	Good will	1,50,000	1,20,000
Sundry Creditors	50,000	1,70,000	Investments	6,00,000	3,00,000
GST outstanding	2,50,000	–	Inventory	4,02,000	1,73,000
Bank over draft	3,00,000	4,85,000	Debtors	2,15,000	1,20,000
			Bills receivable	77,000	22,000
			Cash at Bank	1,46,000	1,00,000
	2,12,90,000	2,17,55,000		2,12,90,000	2,17,55,000

Additional Information:

(a)   Plant purchased during the current year for ₹ 10,00,000

(b)   ₹ 3,00,000 worth of investments were sold for ₹ 3,20,000 during the Financial Year.

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Assignment-I

P.G. DIPLOMA EXAMINATION JUNE 2022

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. (a)   Explain about CRT monitors with neat diagram.

   (b)   Explain beam-penetration and shadow mask technique.

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

4. Find the clipping co — ordinates to clip the line segment AB against the window using Cohen – Suderland line clipping algorithm. Line – A (120, 60), B (160, 92).

      Window : Xwmin = 100, Xwmax = 150,
      Ywmin = 80, Ywmax = 100.

5. Write about various windowing functions of graphic package.

Assignment-2

P.G. DIPLOMA EXAMINATION JUNE 2022

First Year

Computer Applications

COMPUTER GRAPHICS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Discuss different data structures implementing segmented display files.

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) Joysticks   (b) Light pen   (c) Scanners

4. Derive the transformation matrix for rotation about any axis in 3 - D.

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

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