

**P.G. DEGREE EXAMINATION – JUNE 2021**  
**MASTER OF COMPUTER APPLICATION**  
**FIRST YEAR**  
**COMPUTER FUNDAMENTALS**

Time : 3 Hours

Maximum Marks : 75

**PART – A**

**(5 x 5 = 25 Marks)**

**Answer any FIVE questions**

1. Discuss about the decimal fixed point with suitable example.
2. Write about the I/O techniques.
3. Describe about the control unit organization.
4. Briefly describe the CPU components.
5. Explain the HLL program.
6. Describe about the inter process communication.
7. Explain the method of vector processing.

**PART – B**

**(5 x 10 = 50 Marks)**

**Answer any FIVE questions**

8. Mention about the computer generations. Explain them.
9. Describe detail about the memory organization.
10. Explain about the micro programmed control unit.
11. Discuss about the introduction to assembly language.
12. Describe about the pipeline vector processing.
13. Explain the organization of Array processor.
14. Discuss about the basic structure of CPU

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**Time : 3 Hours**

**Maximum Marks : 70**

**PART — A**

**(5 × 2 = 10 Marks)**

**Answer all FIVE questions in 50 words.**

1. What are the four most common number system types?
2. What are logic gates?
3. List the four types of micro operations.
4. What are array processors?
5. State the characteristics of RISC machines.

**PART — B**

**(4 × 5 = 20 Marks)**

**Answer any FOUR questions in 150 words.**

6. Describe the elements of sequential circuits.
7. Compare fixed point and floating point number representation.
8. With an example, explain the format of microinstruction.
9. List and explain various logic and shift operations.
10. Explain the uses of direct and indirect addressing modes.
11. Describe the various program development tools.
12. Write about interconnection structures

**PART — C**

**(4 × 10 = 40 Marks)**

**Answer any FOUR questions in 400 words.**

13. Describe the basic identities of Boolean Algebra.
14. Discuss the concept of I/O organization.
15. Explain the function of micro programmed control unit.
16. Discuss the components of micro-computer with a neat sketch.
17. Classify the types of microprocessor instructions based on its functionality.
18. Explain about inter process communication.
19. Describe the operation of data flow architecture.

**P.G. DEGREE EXAMINATION – JUNE 2021**  
**MASTER OF COMPUTER APPLICATION**  
**FIRST YEAR**  
**INTRODUCTION TO SOFTWARE**

Time: 3 Hours

Maximum Marks: 75

**PART – A**

**(5 x 5 = 25 Marks)**

**Answer any FIVE questions**

1. Write about the Graphical User Interface (GUD).
2. Discuss about the Swapping.
3. Mention the Different types of files. Explain them.
4. Illustrate the Text Editor.
5. Explain the operators in Shell Programming.
6. Discuss about the File system mounting.
7. Explain the Principles of software engineering.

**PART – B**

**(5 x 10 = 50 Marks)**

**Answer any FIVE questions**

8. Explain the Problem solving stages and Pseudo code.
9. Discuss detail about the Page management and File Management.
10. Discuss about the Text Editor and vi Screen editor.
11. Briefly explain about the Environment variables and Parameter passing.
12. Describe in detail about the Qualities of a software product.
13. Discuss about the 4GL and Natural Languages.
14. Explain the role of system administrator.

**P.G DEGREE EXAMINATION – JUNE 2021****COMPUTER APPLICATION****FIRST YEAR****INTRODUCTION TO SOFTWARE****Time : 3 Hours****Maximum Marks : 70****PART - A****(5 × 2 = 10 Marks)****Answer all FIVE questions in 50 words.**

1. What is Flowchart?
2. Define File system.
3. What is a Shell?
4. What is a 4L?
5. What do you mean by Partition?

**PART — B****4 × 5 = 20 Marks)****Answer any FOUR questions in 150 words.**

6. Write short notes on problem solving.
7. Explain the file permissions.
8. Describe the adding user accounts
9. Discuss about the core tools.
10. Explain the Graphical User Interface.
11. Write short note on expression evaluation with example.
12. What are different types of file? List and explain.

**PART — C**

**(4 × 10 = 40 Marks)**

**Answer any FOUR questions in 400 words.**

13. What are different types CPU Scheduling?
14. Explain about the communication between users.
15. Discuss about the running background process.
16. Describe the Software Life Cycle.
17. Write short note on the trend in software development.
18. Explain about the file management.
19. Discuss about the Shell programming language constructs.

**P.G DEGREE EXAMINATION – JUNE 2021****COMPUTER APPLICATION****FIRST YEAR****DATA STRUCTURES THROUGH “C”****Time: 3 Hours****Maximum Marks: 70****PART - A****(5 × 2 = 10 Marks)****Answer all FIVE questions.**

1. What is string constant in C? Give an example.
2. Show the syntax of ternary operator.
3. Define union.
4. List the two methods of representing graph.
5. Differentiate sequential file and indexed sequential file organization.

**PART - B****(4 × 5 = 20 Marks)****Answer any FOUR questions.**

6. Show and explain the structure of a C program with an example.
7. Explain the syntax of switch statement in C.
8. Explain the use of structures with an example.
9. Compare call by value and call by reference.
10. What is queue? List its application.
11. Outline the concept of B-tree.
12. Write a C program for selection sort.

**PART - C**

**(4 × 10 = 40 Marks)**

**Answer any FOUR questions.**

13. Elaborate on types of operators in C.
14. Illustrate the concept of function in C.
15. Discuss in detail about storage classes in C.
16. Explain the array implementation of stack with C code.
17. Describe how to implement directed graph.
18. Explain the binary tree traversal methods with examples.
19. Write a C program for Heap sort. Illustrate with an example.



**P.G DEGREE EXAMINATION – JUNE 2021****MASTER OF COMPUTER APPLICATION****SECOND YEAR****COMPUTER GRAPHICS****Time : 3 Hours****Maximum Marks : 70****PART****(5 × 2 = 10 Marks)****Answer all FIVE questions in 50 words.**

1. What is hard copy device?
2. What is an Ellipse?
3. Define Scaling.
4. What is interface?
5. What is a shape?

**PART —****(4 × 5 = 20 Marks)****Answer any FOUR questions in 150 words.**

6. Write short notes on Video display Generation.
7. Discuss about the Aspect Ratio. Give example.
8. Explain the composite transformation.
9. Write about window-to-viewport coordinate transformation.
10. Explain about the information display.
11. Give outline about light pen with a neat diagram.
12. Write a note on Depth Comparison.

**PART — C**

**(4 × 10 = 40 Marks)**

**Answer any FOUR questions in 400 words.**

13. Explain the working principles of input device with example.
14. Draw and explain the matrix representation.
15. Explain about the Cohen Sutherland algorithm.
16. Explain about the Specifying projection plane and view volume.
17. Summarise any four output devices with example.
18. Discuss about the styles of command language. Give example.
19. Describe in detail about the hidden surface algorithm.

**P.G. DEGREE EXAMINATION – JUNE 2021****COMPUTER APPLICATIONS****SECOND YEAR****COMPUTER GRAPHICS****Time : 3 Hours****Maximum Marks : 75****PART — A****(5 × 5 = 25 Marks)****Answer any FIVE questions.**

1. What are the Input Devices in Computer Graphics?
2. Describe Z-Buffer Algorithm.
3. Explain the concept of Line segment clipping.
4. Briefly describe the Matrix Representation.
5. Explain the Circle generation Algorithms.
6. What are the Components of User Interface in CG and explain?
7. Discuss about the 3-D Viewing and Clipping.

**PART — B**

**(5 × 10 = 50 marks)**

**Answer any FIVE questions.**

8. Discuss about DDA – Bresenham's algorithms.
9. Explain about Sutherland Hodgman Algorithm.
10. Write the Short notes on Translation, Scaling and Rotation.
11. What are the Styles of Command Language in CG.
12. Discuss the random scan display and Flat Panel Display system.
13. Describe the Hidden Surface Algorithm.
14. Explain the concept of Clipping and Shielding.

**P.G.DEGREE EXAMINATION – JUNE 2021**

**COMPUTER APPLICATIONS**

**SECOND YEAR**

**DESIGN AND ANALYSIS OF ALGORITHMS**

**Time: 3 Hours**

**Maximum Marks: 75**

**PART — A**

**(5 × 5 = 25 Marks)**

**Answer any FIVE questions.**

1. Describe the four stages of design and analysis of algorithm.
2. Briefly describe the Knight's Tour – Networks Graphs.
3. Discuss the Binary Search with example.
4. Explain any one of the Basic Problem Solving Methods.
5. Discuss about the linked list with example.
6. Explain about  $N \log N$  Sorting Algorithm.
7. Describe the Characteristics of Algorithms.

**PART — B**

**(5 × 10 = 50 Marks)**

**Answer any FIVE questions.**

8. Write short notes on Adjacency Lists and Push-down Lists.
9. Explain about Backtracking problem with example.
10. Write the Short notes on basic Development of a Model in DAA.
11. Write short notes on Quick sort and Heap sort.
12. Discuss the Top-down structured Programming.
13. Explain the binary search tree with suitable example.
14. Explain the concept of Traveling Salesman Problem.

**P.G DEGREE EXAMINATION – JUNE 2021**  
**MASTER OF COMPUTER APPLICATION**  
**SECOND YEAR**  
**DESIGN AND ANALYSIS OF ALGORITHMS**

**Time: 3 Hours**

**Maximum marks : 70**

**PART — A**

**(5 × 2 = 10 Marks)**

**Answer all FIVE questions.**

1. What is Algorithm?
2. Define Top-Down
3. What is a Jeep problem?
4. Define Queue?
5. What mean by Insertion sort?

**PART — B**

**(4 × 5 = 20 Marks)**

**Answer any FOUR questions.**

6. Discuss the importance of Algorithms in detail.
7. Write short notes on correctness of the Algorithms.
8. Discuss about the Linked Lists with algorithm and example.
9. Explain about the basic Problem Solving Methods.
10. Describe the concept of Quick Sort in detail.
11. Discuss Single Server Problem in detail.
12. Explain programming testing in detail.

**PART — C**

**(4 × 10 = 40 Marks)**

**Answer any FOUR questions.**

13. Write short notes Algorithms and its Development.
14. With suitable example, Explain the Adjacency list in detail.
15. Explain about the Binary Search Trees in detail.
16. Discuss about the Traveling Salesman Problem for five-city network-Recursion.
17. Explain about the Sorting Techniques in details.
18. Explain the Top-down structured Programming.
19. Explain Performance Analysis of Straight Insertion Sort in detail.



**P.G. DEGREE EXAMINATION – JUNE 2021**  
**COMPUTER APPLICATIONS (LATERAL ENTRY)**  
**SECOND YEAR**  
**ACCOUNTING AND FINANCE ON COMPUTERS**

**Time: 3 Hours**

**Maximum marks: 75**

**PART – A**

**(5 x 5 = 25 Marks)**

**Answer any FIVE questions.**

1. What is double entry system? What are its advantages?
2. What is meant by comparative financial statements?
3. How do you calculate ABC analysis? Explain.
4. Briefly explain the different types of budgets.
5. A Manufacturing company shows the trading result for two periods

Particular	Sales	Profit
2018	20,000	1,000
2019	18,000	400

Calculate

- a. P/V Ratio
- b. Fixed Cost
- c. Break Even Points.

6. Amar Ltd., presents the following results for one year. Calculate the P/V ratio, BEP and margin of safety.

	Rs.
Sales	2,00,000
Variable costs	1,20,000
Fixed cost	50,000
Net Profit	30,000

7. What is financial leverage? What are the significance of financial leverage?

**PART – B**

**(5 x 10 = 50 Marks)**

**Answer any FIVE questions.**

8. What are accounting concepts? Name them and explain in details.
9. From the following balance sheets of XYZ Co. Ltd., prepare funds flow statement:

	(₹ '000)				
Liabilities	2015	2016	Assets	2015	2016
Equity share capital	600	800	Goodwill	230	180
Preference capital	300	200	Land and buildings	400	340
General reserve	80	140	Plant and machinery	160	400
Profit and loss a/c	60	96	Debtors	320	400
Proposed dividend	84	100	Stock	154	218
Creditors	110	166	Bills receivable	40	60
Bills payable	40	32	Cash	30	20
Tax provision	80	100	Bank	20	16
	1,354	1,634		1,354	1,634

- (i) Proposed dividend made during 2015 has been paid during 2016.
- (ii) Depreciation – (a) Rs.20,000 on plant and machinery, and (b) Rs.40,000 on land and buildings.
- (iii) Interim dividend has been paid Rs.40,000 in 2016.
- (iv) Income-tax Rs.70,000 has been paid during 2016.

10. Explain the treatment of over and under absorption of overheads in cost accounts.

11. The following details are obtained from Vinoth and Bindhu Co.

Present production and sales 80,000 units

Selling price per unit Rs. 20

Variable cost per unit

D. Material 5.00

D. Labour 2.50

Variable overhead 100% on Direct Labour

Fixed cost total 4,00,000

(a) Calculate P/V ratio, Break event point, margin of safety

(b) Find the effect of P/V Ratio, Break-even point and margin of safety of change when 10% increase in selling price.

12. From the following forecast information, prepare cash budget for the month April, May and June 2007.

Months	Sales	Purchases	Expenses on wages	Other expenses
	(Rs.)	(Rs.)	(Rs.)	(Rs.)
February	90,000	66,000	4,000	6,000
March	80,000	60,000	4,000	6,000
April	96,000	88,000	6,000	7,000
May	1,00,000	60,000	5,000	8,000
June	1,20,000	70,000	6,000	7,200

Additional information :

(a) Customers are allowed a credit period of one month

(b) Creditors allow a time lag of two months for making payment

(c) Wages of a month are paid in the next month

- (d) Other expenses of a month are paid with first week of the next month
- (e) A machinery is to be bought for cash in May for Rs. 32,000
- (f) Balance of cash on 1st April 2007 is Rs. 8,000.

13. What is working capital? What are the factors which influencing working capital?

14. The following is the balance sheet of XYZ Ltd. as on 31st March 2007.

Liabilities	Rs.	Assets	Rs.
Equity share capital	2,00,000	Land and building	1,50,000
Preference share capital	2,00,000	Plant and machinery	2,50,000
General reserve	80,000	Furniture and	
Profit and loss A/c	40,000	fittings	50,000
12% debentures	2,20,000	Stock	1,50,000
Creditors	1,00,000	Debtors	70,000
Bills payable	50,000	Bills receivable	80,000
		Cash at bank	1,00,000
		Cash in hand	40,000
	_____		_____
	8,90,000		8,90,000
	_____		_____

Calculate :

- (a) Current ratio
- (b) Quick ratio
- (c) Debt-equity ratio
- (d) Proprietary ratio
- (e) Fixed assets to net worth ratio.

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**SECOND YEAR**  
**ACCOUNTING AND FINANCE ON COMPUTERS**

**Time: 3 Hours**

**Maximum Marks: 70**

**PART — A**

**(5 × 2 = 10 Marks)**

**Answer all FIVE questions.**

1. What is accounting?
2. Define Double entry
3. What is Fund flow Analysis?
4. What is a ABC?
5. What mean by Budget?

**PART — B**

**(4 × 5 = 20 Marks)**

**Answer any FOUR questions.**

6. State four functions of Accounting.
7. How cash flow statement differs from funds flow statement?
8. Write short notes on :
  - (a) Fixed cost
  - (b) Contribution.
9. What is meant by working capital? Explain the dangerous of Excess working capital.



**PART — C**

**(4 × 10 = 40 Marks)**

**Answer any FOUR questions.**

13. Define different types of accounting. What are the advantages of it?
14. Define budgetary control and state its advantages.
15. From the following Trial Balance, prepare Trading, Profit and Loss account for the year ended 31.1.2005 and Balance Sheet as on that date.

	Rs.		Rs.
Purchases	11,870	Capital	8,000
Debtors	7,580	Bad debts recovered	250
Returns inward	450	Creditors	1,250
Bank Deposit	2,750	Returns outwards	350
Rent	360	Bank overdraft	1,570
Salaries	850	Sales	14,690
Travelling expenses	300	Bills payable	1,350
Cash	210		
Stock	2,450		
Discount allowed	40		
Drawings	600		
	<hr/>		<hr/>
	27,460		27,460
	<hr/>		<hr/>

Adjustments :

- (a) Closing stock on 31.12.2005 was Rs. 4,200.
- (b) Write off Rs. 80 as bad debts and create a reserve for bad debts at 5% on sundry debtors.
- (c) Three months rent is outstanding.
16. You are given the following data for the year 2004 of the company.
- Variable cost Rs. 6,00,000

Fixed cost	Rs. 3,00,000	
Net profit	Rs. 1,00,000	
Sales		Rs. 10,00,000

Find (a) P/V Ratio (b) Break-even point (c) Profit when sales amounted to Rs. 12,00,000 (d) Sales required to earn a profit of Rs. 2,00,000.

17. The expenses budget for production of 10,000 units in a factory are given below :

	Rs. per unit
Materials	70
Labour	25
Variable overheads	20
Fixed overheads (1,00,000)	10
Variable overheads (Direct)	5
Selling expenses (10% fixed)	13
Administration expenses (Rs. 50,000)	5
Distribution expenses (20% fixed)	7
	<u>155</u>

Prepare a budget of production (a) 8,000 units (b) 6,000 units. Assume that the administration expenses are rigid for all levels of production.

18. Debtor velocity : 3 months

Creditor velocity : 2 months

Stock velocity : 8 times

Fixed assets turnover ratio : 8 times

Gross profit turnover ratio : 25%

Gross profit in a year amounted to Rs. 80,000. Closing stock is 2,000 than the opening stock. Bills receivable and bills payable are Rs. 5,000 and Rs. 2,000 respectively. Find out (a) Sales (b) Sundry debtors (c) Closing stock (d) Sundry creditors (e) Fixed assets.

19. The following are the summarized Balance Sheet of Pravin Ltd. as at 31.12.2001.



Liabilities	2000	2001	Assets	2000	2001
Share Capital	2,00,000	2,50,000	Land & Bldgs.	2,00,000	1,90,000
General Reserve	50,000	60,000	Plant	1,50,000	1,74,000
P/L A/c	30,500	30,600	Stock	1,00,000	74,000
Bank loan	70,000	—	Debtors	80,000	64,200
Creditors	1,50,000	1,35,200	Cash	500	600
Provision for tax	30,000	35,000	Bank	—	8,000
	<u>5,30,500</u>	<u>5,10,800</u>		<u>5,30,500</u>	<u>5,10,800</u>

- (a) Depreciation written off on plant Rs. 14,000.
- (b) Dividend of Rs. 20,000 was paid during the year 2001.
- (c) An income tax for provision made during the year was Rs. 25,000.
- (d) A piece of land has been sold during the year at cost.

Prepare Fund Flow Statement.