S–6157	Sub. Code
	23VSD1C1

B.Voc. DEGREE EXAMINATION, APRIL 2025

First Semester

Software Development

FUNDAMENTALS OF C PROGRAMMING

(CBCS – 2023 onwards)

Time : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** the questions.

1. State the data types in C.

2. What are Bitwise operators?

3. Write the syntax of if-else statement.

4. Denote the use of switch statement.

5. What do you understand by initialization of string variables?

6. Define Array.

7. Mention about Recursive Function.

8. State the use of structures.

9. What is chain of pointers?

10. Define the use of error handling.

Part B (5 × 5 = 25)

Answer **all** the questions choosing either (a) or (b).

11. (a) Enumerate the basic data types with range in C.

Or

(b) Describe about relational operators in C.

12. (a) Write note on formatted I/O in detail.

Or

(b) Explain about else-if ladder.

13. (a) Explain how 2-D declared and initialized.

Or

(b) Narrate string handling functions.

14. (a) Write a C program to convert from Binary to Decimal number using recursive function

Or

(b) Illustrate about Unions.

15. (a) Explain how the pointer variable is declared and initialized.

Or

(b) Write note on fscanf() and fprintf() functions.

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Answer any **three** questions.

16. Elucidate about C tokens with suitable examples.

17. Discuss about nesting of If-else statements with example.

18. Write a C program to check whether a string is palindrome or not.

19. Describe about the importance of arrays with in structures.

20. Write note on pointers and structures with examples.

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U.G. DEGREE EXAMINATION, APRIL 2025

SOFTWARE DEVELOPMENT

Allied – FUNDAMENTALS OF DIGITAL COMPUTERS AND PROGRAMMING

(CBCS – 2023 onwards)

Time : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1. Mention about software.

2. What is communication pathway?

3. Define negative logic.

4. State about truth table.

5. Differentiate Binary and BCD number system.

6. What is meant by Encoder?

7. Define 2's complement.

8. State the function of Fast Adder.

9. Define algorithm.

10. What is system flowchart?

Part B $(5 \times 5 = 25)$

Answer **all** questions choosing either (a) or (b).

11. (a) Enumerate the functions of address bus, data bus and control bus.

Or

(b) Explain the concept of excess-3 code.

12. (a) Illustrate about the use of Boolean Theorem with respect to logic design.

Or

(b) Simplify the expression (A'B+ABC'+ABC) using Boolean algebra.

13. (a) Discuss about BCD to Decimal Decoders.

Or

(b) Prove that $(A \oplus B) \oplus C = A(B \oplus C)$

14. (a) Write note on Encoder.

Or

(b) Illustrate the difference between Multiplexer and Demultiplexer.

15. (a) Write note on Programming Task.

Or

(b) Explain about Pseudo Code.

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Answer any **three** questions.

16. Draw the schematic block diagram of a computer showing.

17. Prove that (A+B)' (A'+B')' = 0 using Demorgan's theorm.

18. Illustrate about 1 to 16 Decoder with suitable diagram.

19. Narrate about Full adder with suitable diagram.

20. Describe about selection and iterative programming structures.

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		23VSD2C1

B.Voc. DEGREE EXAMINATION, APRIL 2025

Second Semester

Software Development

WEB TECHNOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1.   What are the basic components of a URL?

2.   Give two examples of Internet-based services.

3.   How do you create a hyperlink in HTML?

4.   List two attributes of the '<img>' tag.

5.   Mention two properties that control the background in CSS.

6.   What is the purpose of the 'float' property in CSS?

7.   How do you declare a variable in JavaScript?

8.   Write an example of a loop in JavaScript.

9.   What is the purpose of a Document Type Definition (DTD) in XML?

10. Give an example of a JavaScript event.

Part B $(5 \times 5 = 25)$

Answer **all** questions choosing either (a) or (b).

11. (a) Compare and contrast the functions of a Web Browser and a Web Server.

    Or

    (b) Illustrate the process of how a web page is rendered in a browser.

12. (a) Compare the '<div>' and '<span>' tags in HTML.

    Or

    (b) Illustrate how to used multimedia content (like video or audio) in an HTML document.

13. (a) Illustrate how CSS is used to style a navigation menu.

    Or

    (b) Analyze the impact of using 'position : absolute; versus position: relative; in CSS layout design.

14. (a) Compare different data types in JavaScript with examples.

    Or

    (b) Illustrate how to manipulate the DOM (Document Object Model) using JavaScript.

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15. (a) Explain how to validate XML documents using DTD.

Or

(b) Analyze the importance of XML in data interchange between systems.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the steps involved in creating a dynamic website using HTML. CSS, and JavaScript with a real-time example.

17. Evaluate the role of semantic elements in HTML5 and their impact on web accessibility.

18. How to create a responsive web design using CSS, explaining the key techniques involved.

19. Describe a real-time example where Javascript is used to create dynamic content on a web page.

20. Discuss the use JavaScript to dynamically manipulate XML data and present it on a web page.

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U.G. DEGREE EXAMINATION, APRIL 2025

Software Development

Allied – OPERATIONS RESEARCH

(CBCS – 2023 onwards)

Time : 3 Hours   Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** the questions.

1.   State the limitations of Operations Research.

2.   Define the scope of OR.

3.   What is surplus variable?

4.   Define Big-M method

5.   State about unbalanced assignment problem.

6.   List the features of assignment problems.

7.   Mention about Optimality in Transportation Model.

8.   Define North-West Corner Method.

9.   Mention the use of Forward Pass computation Method.

10.   Write note on Latest time in PERT/CPM.

Part B $(5 \times 5 = 25)$

Answer **all** the questions choosing either (a) or (b).

11. (a) Narrate the general methods for solving OR models.

    Or

    (b) Explain the features of OR.

12. (a) Solve the linear programming problem using two-phase simplex method,

    Maximize $Z = 10X_1 + 6X_2 + 2X_3$

    Subject to constraints

    $-X_1 + X_2 + X_3 \geq 1$,

    $3X_1 + X_2 + X_3 \geq 2$ and $X_1, X_2, X_3 \geq 0$.

    Or

    (b) Find the dual of the LPP.

    Maximize $Z = 3X_1 - X_2 + X_3$

    Subject to the constraints

    $4X_1 - X_2 \leq 8$,

    $8X_1 + X_2 + 3X_3 \geq 12$,

    $5X_1 - 6X_3 \leq 13$ and $X_1, X_2, X_3 \geq 0$

13. (a) Enumerate the steps involved in Assignment problem.

    Or

    (b) A travelling salesman has to visit five cities. He wishes to start from a particular city, visit each city once and then return to his starting point. The travelling cost (in Rs. 100) of each city from a particular city is given below:

    To city

		A	B	C	D	E
	A	∞	2	5	7	1
	B	6	∞	3	8	2
From city	C	8	7	∞	4	7
	D	12	4	6	∞	5
	E	1	3	2	8	∞

    What should be the sequence of visit of the salesman so that the cost is minimum?

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14. (a) Find the Transportation cost for the following problem using column minima method.

		To			
		D	E	F	Supply
	A	6	4	1	50
From	B	3	8	7	40
	C	4	4	2	60
Demand		20	95	35	

Or

(b) Differentiate initial feasible solution and optimal solution.

15. (a) Compare and contrast CPM and PERT.

Or

(b) Explain about critical path in PERT/CPM.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Solve the following linear programming problem by using simplex method:

Maximize $Z = 3X_1 + 2X_2$,

Subject to $4X_1 + 3X_2 \leq 12$,

$4X_1 + X_2 \leq 8$,

$4X_1 - X_2 \leq 8$ and $X_1, X_2 \geq 0$.

17. Use penalty method or Big M method to solve Linear Programming Problem.

Minimize $Z = 4X_1 + X_2$

Subject to $3X_1 + X_2 = 3$,

$4X_1 + 3X_2 \geq 6$,

$X_1 + 2X_2 \leq 3$,

$X_1, X_2 \geq 0$.

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18. Solve the following unbalanced assignment and calculate the assignment cost.

	A	B	C	D	E
A	30	39	31	38	40
B	43	37	32	35	38
C	34	41	33	41	34
D	39	36	43	32	36
E	32	49	35	40	37
F	36	42	35	44	42

19. Find the transportation cost for the following by using matrix-minima method.

	A	B	C	D	E	F	G	Supply
A	5	6	4	3	7	5	1	3500
B	9	4	3	4	3	2	1	2000
C	8	4	2	5	4	8	3	5000
Demand	750	1000	2250	2000	1250	1750	1500	

20. Write notes on the various steps involved in the applications of PERT and CPM.

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B.Voc. DEGREE EXAMINATION, APRIL 2025

Third Semester

Software Development

OPERATING SYSTEMS

(CBCS – 2023 onwards)

Time : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1. Define computer system organisation.

2. Provide definition for system calls.

3. Define scheduling.

4. What is Peterson's solution?

5. Define thread scheduling.

6. List out the types scheduling algorithms.

7. Define paging.

8. What do you mean by kernel?

9. Define disk scheduling.

10. Define Recovery.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Explain the operating system operations.

Or

(b) Write short notes on memory management.

12. (a) Write short notes on Interprocess communication.

Or

(b) Provide detailed explanation of semaphores.

13. (a) Illustrate Multi-processor scheduling.

Or

(b) Write short notes on deadlock detection and recovery.

14. (a) Give an account on swapping in main memory.

Or

(b) Write short notes on demand paging.

15. (a) Provide an overview of mass-storage structure.

Or

(b) Write short notes on RAID structure.

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Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Illustrate with a case study for protection and security.

17. Illustrate mutex locks in detail.

18. Explain deadlock characterization in detail.

19. Provide a detailed explanation for allocation of frames.

20. Explain the importance of directory implementation.

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B.Voc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Software Development

DATA COMMUNICATION NETWORKS

(CBCS – 2023 onwards)

Time : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1. What is UTP?

2. Difference between MAN and WAN

3. What is Multiplexing?

4. List out the flaming methods.

5. How to work with simple pairing method?

6. What is meant by Piggybacking?

7. What do you mean by Triangle Routing?

8. Define flooding in routing algorithm.

9. What is flow control?

10. Write a note on mono-alphabetic Substitution cipher.

Part B   (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Write a now on Coaxial Cable.

Or

   (b) Illustrate the layers of TCP/IP reference model with neat sketch.

12. (a) Compare GEO, MEO and LEO.

Or

   (b) How will you examine the error correcting code? Explain.

13. (a) How Gigabyte differs from 10 Gigabyte? Explain.

Or

   (b) Difference between Bluetooth Radio and Link layer.

14. (a) Describe in detail about Link State Routing.

Or

   (b) Illustrate the architecture of ARP with neat sketch.

15. (a) Compare SIP and IT.

Or

   (b) What are the services provided by Transport layer to upper layers?

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Answer any **three** questions.

16. Illustrate the working procedure of Fiber Optics with neat sketch.

17. Demonstrate the structure of Telephone system with neat diagram.

18. Write a detailed note on ALOHA.

19. How routing works in Ad-Hoc Networks? Explain.

20. Write a note on

     (a) Substitution Cipher

     (b) Transport Cipher.

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B.Voc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Software Development

FUNDAMENTALS OF ACCOUNTING

(CBCS – 2023 onwards)

Time : 3 Hours　　　　　　　Maximum : 75 Marks

Part A　　　　　　　(10 × 2 = 20)

Answer **all** questions.

1. What are the steps involved in the process of accounting?

2. Who are the parties interested in accounting information?

3. Find out the amount of sales from the following information.

Particulars	Rs.
Opening stock	20,000
Purchases less returns	70,000
Direct expenses	10,000
Closing stock	30,000
Gross profit margin (un sales)	20%

4. Sundry debtors as per trial balance Rs. 26,000

   Bad debts as per trial balance Rs. 1,000

   Adjustment:　Additional bad debts amounted to Rs. 2,500

   Give adjusting entry and show how these appear in the final accounts on 31st March, 2023.

5. What is sinking fund method?

6. What are the objectives of providing depreciation?

7. Define Tally.

8. What is ledger?

9. How will you alter multiple ledger in Tally ERP.9?

10. How will you delete a group?

Part B $(5 \times 5 = 25)$

Answer **all** questions choosing either (a) or (b).

11. (a) Why are the following parties interested in accounting information?
    (i) Investors
    (ii) Government.

Or

(b) Discuss the role of an accountant in the modern business world.

12. (a) From the following information, prepare profit and loss account for the year ended 31st March, 2024

Particulars	Rs.	Particulars	Rs.
Gross profit b/d	1,50,000	Advertisement expenses	3,800
Carriage outward	25,500	Bad debts	8,500
Office rent	7,000	Dividend received	9,000
Office stationary	3,500	Discount received	4,600
Distribution expenses	2,000	Rent received	7,000

Or

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(b)   From the following information, prepare profit and loss account for the year ended 31st December, 2024.

Particulars	Rs.	Particulars	Rs.
Gross profit b/d	60,000	Interest received	2,100
Freight outward	15,000	Financial charges	4,000
Packing charges (on sales)	12,000	Repairs on vehicles used in office	8,000
Salesman commission paid	1,300	Depreciation on vehicles used in office	3,000
Promotional expenses	10,200	Interest paid	9,000
Office telephone expenses	22,400	Rent received	7,000
Bad debts recovered	4,000	Carriage inwards	4,000

13. (a)   A firm purchased a plant on 1.1.2018 for Rs. 9,000 and spent Rs. 1,000 as erection charges. Calculate the amount of depreciation for the year 2018 @ 15% per annum under the written down value method. Accounts are closed on 31st March every year.

Or

(b)   Calculate the amount of depreciation and depreciation rate from the following by using 'straight line method'. Also give journal entries for the first two years. The books are closed on 31st December every year.

January 1, 2016   Payment to vendor for purchase of machinery Rs. 1,40,000

January 1, 2016   Transportation cost Rs. 1,000

January 1, 2016   Installation cost Rs. 9,000

Estimated scrap value at the end of the life Rs. 45,000

Estimated life 7 years

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14. (a) Highlight the salient features of Tally.

Or

(b) Narrate the advantages of computerized accounting.

15. (a) State the method of preparing receipt voucher.

Or

(b) How will you create / delete / alter companies?

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Bragathish is a trader dealing in electronic goods who commenced his business in 2020. For the following transactions took place in the month of March 2024, pass journal entries.

March 1	Purchased goods from Y and Co. on credit	60,000
2	Sold goods to D and Co. on credit	30,000
3	Paid Y and Co. through bank in full settlement	58,000
4	D and Co. accepted a bill drawn by Bragathish	30,000
5	Sold goods to L on credit	20,000
6	Sold goods to M on credit	40,000
7	Received a cheque from M in full settlement and deposited the same to the bank	39,000
8	Goods returned to Y and Co.	3,000
9	L became insolvent and only 90 paise per rupee is received by cash in final settlement	4,000
10	Goods returned by M	3,000

4

17. Given below are the balances of Pandian as on 31st March, 2016

Particulars	Debit Rs.	Credit Rs.
Capital		1,20,000
Sundry debtors and creditors	22,000	22,500
Sales		59,700
Drawings	2,000	
Cash in hand	8,200	
Cash at bank	30,000	
Wages	2,500	
Purchases	10,000	
Opening stock	30,000	
Business premises	60,000	
Bills receivable	14,500	
Office telephone expenses	3,500	
General expenses	9,000	
Goodwill	10,500	
	2,02,200	2,02,200

Adjustments

(a) The stock value at the end of the accounting period was Rs. 5,000
(b) Interest on capital at 6% is to be provided
(c) Interest on drawing at 5% is to be provided
(d) Write off bad debts amounting to Rs. 2,000
(e) Create provision for bad and doubtful debts on sundry debtors @ 10%

Prepare final accounts for the year ended 31st March, 2016.

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18. On 1st October 2014, a truck was purchased for Rs. 8,00,000 by Laxmi Transports Ltd. Depreciation was provided @ 15% p.a. under diminishing balance method. On 31st March 2017, the above truck was sold for Rs. 5,00,000. Accounts are closed on 31st March every year. Find out the profit or loss made on the sale of the truck.

19. Briefly explain the details to be filled in creation of company.

20. Describe various accounting vouchers with appropriate examples.

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