S–4749

Sub. Code
23VSD1C1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

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 structure of C program.
2. Define operator precedence.
3. What is formatted I/O?
4. Mention about Do statement in C.
5. Distinguish getchar () and getch () .
6. How to declare the string in C.
7. What is meant by life time of variables?
8. State the difference between Structure and Union.
9. Mention about scale factors.
10. Specify how to handle files in C program.

Part B (5 × 5 = 25)

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

11. (a) Illustrate in detail about declaration of variables.

Or

(b) Narrate Bitwise Operators in C.

12. (a) Enumerate about If-else in C.

Or

(b) Write a C program using Switch statement to calculate the electricity charges as given below:

(i) If units <=100 then amount is NIL.

(ii) If units 101 to 200 then Rs. 1 per unit

(iii) If units 201 to 300 then Rs. 1.5 per unit

(iv) If units 301 to 400 then Rs. 2 per unit

(v) If units > 500 then Rs. 3 per unit.

13. (a) Explain about one dimensional array.

Or

(b) Write note on reading and writing strings.

14. (a) Narrate the different classification of user defined functions based on parameter passing and return types.

Or

(b) Elucidate briefly about Recursion.

15. (a) Write a C program to find sum and mean of all elements in an array using Pointers.

Or

(b) Discuss about I/O operations on files with example.

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

Answer any **three** questions.

16. Write note on type conversions in expressions.

17. Narrate the jumps in loops in C.

18. Discuss about 2-D array with example.

19. Write a C program using structures to read write, compute average marks and display students scoring above and below average marks of 50 students in a class.

20. Explain in detail about command line arguments.

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S–4750

Sub. Code
23VSDA1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

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** the questions.

1. State any two characteristics of computer.

2. Define Radix number system.

3. What are logic gates?

4. Mention about K-map.

5. What is the use of Demultiplexor?

6. Expand ROM and mention its characteristics.

7. What is unsigned binary?

8. Define Flip-Flop.

9. Mention about Pseudo code.

10. State the use of Flowchart.

Part B (5 × 5 = 25)

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

11. (a) Discuss in detail about types of computer memory.

Or

(b) Describe Binary to decimal conversion with suitable example.

12. (a) Write note on Boolean Laws and Theorems.

Or

(b) Differentiate NAND and NOR gates.

13. (a) Narrate the seven segment Decoders.

Or

(b) Describe about Parity generator checkers.

14. (a) Illustrate about subtractor.

Or

(b) Discuss about types of registers.

15. (a) Elucidate about flow chart for solving simple problems.

Or

(b) Describe about iterative program structure.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Narrate the role of CPU in computer.

17. Discuss about sum of product and product of sum.

18. Draw the block diagram of dual 4 to 1 line multiplexes and explain its operation with function table.

19. Draw the schematic diagram of RS- Flip-Flop with its working principle.

20. Explain in detail about developing algorithms for solving simple problems.

S–4751

Sub. Code
23VSD2C1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

Second Semester

Software Development

WEB TECHNOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define WWW.
2. State the function of web browser.
3. What is the use of markup languages?
4. Differentiate ordered and unordered list.
5. What are Style sheets?
6. Define conflict resolution.
7. Mention about JavaScript.
8. Define switch structure in JavaScript.
9. State Event handlers.
10. Define XML

Part B (5 × 5 = 25)

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

11. (a) Illustrate in detail about SMTP server.

Or

(b) Narrate the applications of web technology.

12. (a) Write note on HTML table tags.

Or

(b) Discuss about the significance of frame tag in HTML with example.

13. (a) Explain about style specification formats.

Or

(b) Illustrate about how to handle images in web pages using HTML tags.

14. (a) Explain how to handle assignment operators in JavaScript with example.

Or

(b) Describe about break and continue statements in JavaScript.

15. (a) Write a JavaScript program to demonstrate the JavaScript Events.

Or

(b) What do you mean XML namespace? Discuss in detail.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Elucidate about types of web browser

17. Discuss about nested and ordered lists.

18. Design an interactive web page for student registration to participate in online seminar using style sheets with suitable design and colors.

19. Enumerate about Logical operators in JavaScript with suitable examples.

20. Narrate in detail about representing and processing XML using Java Script.

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S–4752

Sub. Code
23VSDA2

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

Software Development

Allied – OPERATIONS RESEARCH

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions

1. Define Operations Research?
2. What are the main objectives of Operations Research?
3. What does objective function represent?
4. What are constraints in LPP?
5. What is an assignment problem?
6. What is Travelling salesman assignment problem?
7. What are non-basic cells?
8. What is MODI method?
9. What is free float?
10. What is independent float?

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

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

11. (a) Discuss the statement that OR is science and an art both.

Or

(b) What is the importance of sensitivity analysis in Operations Research?

12. (a) A company has three operational departments, viz., weaving, processing and packing with capacity to produce three different types of clothes namely suiting, shirting and woolens yielding a profit of Rs.2, Rs.4 and Rs.3 per meter respectively. One meter of suiting requires 3 minutes in weaving, 2 minutes in processing and 1 minute in packing. Similarly, one meter of shining requires 4 minutes in weaving, 1 minute in processing and 3 minutes in packing. One meter of woolen requires 3 minutes in each of the departments. In a week, total run time of each department is 60, 40 and 80 hours for weaving, processing and packing respectively. Formulate the LPP to find the product mix to maximize the profit.

Or

(b) A person wants to decide the constituents of a diet which will fulfill his daily requirements of protein, fats and carbohydrates at the minimum cost. The choice is to be made from four different types of foods. The nutrients per unit of these foods are given below:

Food type	Nutrient per unit			Cost per Unit (Rs.)
	Proteins	Facts	Carbohydrates	
1	3	2	6	45
2	4	2	4	40
3	8	7	7	85
4	6	5	4	65
Nutrient needed	800	200	700	

Formulate LP model for problem.

13. (a) Consider the following assignment problem. 5 different jobs are to be assigned to 5 different operators in such a way as to minimize the total processing time. The matrix entries represent processing time in hours:

Job	Operator 1	Operator 2	Operator 3	Operator 4	Operator 5
1	10	12	15	12	8
2	7	16	14	14	11
3	13	14	7	9	9
4	12	10	11	13	10
5	8	13	15	11	15

Or

(b) An automobile dealer wishes to put four repairmen to four different jobs. The repairmen have some what different kinds of skills and they exhibit different levels of efficiency from one job to another. The dealer has estimated the number of man-hours that would be required for each job-man combination. This is given in the matrix from below:

Job	A	B	C	D
1	5	3	2	8
2	7	9	2	6
3	6	4	5	7
4	5	7	7	8

You are required to find the optimum assignment that will result in minimum man-hours needed.

14. (a) Determine the initial basic feasible solution to the following transportation problem using least cost method:

From	To				Supply
	1	2	3	4	
1	1	2	1	4	30
2	3	3	2	1	50
3	4	2	5	9	20
Demand	20	40	30	10	

Or

(b) Find the non-degenerate basic feasible solution for the following transportation problem using lest cost Method.

Source	Destination				Supply QTY
	1	2	3	4	
1	10	20	5	7	10
2	13	9	12	8	20
3	4	5	7	9	30
4	14	7	1	0	40
5	3	12	5	19	50
Demand QTY	60	60	20	10	150

15. (a) From the following data, you are required to draw network diagram.

Activity	A	B	C	D
Immediate predecessors	-	-	A	B

Or

(b) From the following data, you are required to draw a network diagram:

Activity	A	B	C	D	E
Immediate predecessors	-	-	A	A	C,B

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

Answer any **three** questions.

16. State the different types of models used in OR. Explain briefly the general methods for solving these OR models.

17. Use graphical method to solve the following LP problem:

Maximize $z = 7x_1 + 3x_2$

Subject to the constraints: $x_1 + 2x_2 \geq 3$

$x_1 + x_2 \leq 4$

$0 \leq x_1 + \leq 5 / 2$

$0 \leq x_2 \leq 3 / 2$

Where $x_1, x_2 \geq 0$

18. Solve the following travelling salesman assignment so as to minimize the cost per cycle:

From	To				
	A	B	C	D	E
A	-	3	6	2	3
B	3	-	5	2	3
C	6	5	-	6	4
D	2	2	6	-	6
E	3	3	4	6	-

19. Solve the following transportation problem by MODI method.

Source	Destination				Supply QTY
	D1	D2	D3	D4	
SS1	21	16	25	13	11
SS2	17	18	14	23	13
SS3	32	27	18	41	19
Demand QTY	6	10	12	15	43

20. A small manufacturing project consists of the following jobs whose precedence relations are identified with their node numbers:

Job (from-to)	Duration (hours)
1-2	10
1-3	4
1-4	6
2-3	5
2-5	12
2-6	9
3-7	12
4-5	15
5-6	6
6-7	5
6-8	4
7-8	7

You are required to:

(a) Draw an arrow diagram (network) representing above project work.

(b) Tabulate EST, EFT, LST, LFT for the above activities.

(c) Tabulate total float, free float and independent float.

Find critical path and the total assembly duration.

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S–4753

Sub. Code
23VSD3C1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

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 Operating System.
2. Provide meaning of memory management?
3. Define Interprocess communication.
4. What do you mean by Mutex locks?
5. Define Scheduling.
6. Define is called deadlock?
7. Give definition of segmentation.
8. What is the meaning of virtual memory?
9. Expand RAID
10. Mention the importance of life.

Part B (5 × 5 = 25)

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

11. (a) Write short note on process management.

Or

(b) List out the types of system calls.

12. (a) Write short notes on the critical section problem.

Or

(b) List out the classic problems of synchronization.

13. (a) Explain in detail about any one scheduling algorithm.

Or

(b) Write short notes on deadlock prevention and avoidance.

14. (a) Give an account on contiguous memory allocation.

Or

(b) Write short notes on Page Replacement.

15. (a) Illustrate the qualities of disk management.

Or

(b) Write short notes on free space management.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write short note on operations on processes.

17. Write short note on hardware synchronization.

18. Explain Real-time CPU scheduling.

19. List out the steps for allocating kernel memory.

20. Explain the need of swap space management.

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