S–5259

Sub. Code
22VSD1C1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

First Semester

Software Development

FUNDAMENTALS OF C PROGRAMMING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define constant.
2. List out the input and output statements in C.
3. Write syntax for statement with example program.
4. What is the difference between getchar( ) and getch( )?
5. What is the use of register variable?
6. How do character array is declared?
7. Differentiate structure and union.
8. What is function prototype?
9. What is typedef?
10. How to declare pointer variables?

Part B (5 × 5 = 25)

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

11. (a) List out keywords in C program with example.

Or

(b) Write a C program to print the factorial of a given number.

12. (a) Explain formatted I/O statements.

Or

(b) Explain about do-while statement with example.

13. (a) Write a short notes on array with example.

Or

(b) How do you put two strings together? Explain with example.

14. (a) Explain how to initialize union with example.

Or

(b) Explain nesting of function in detail.

15. (a) Explain accessing values through pointers with example program.

Or

(b) Write a short note on opening and closing a file.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Briefly explain about C operators with example program.

17. Describe in detail about decision making and branching with example program.

18. Explain about one dimensional array with example program.

19. Write a C program to implement array of structures.

20. Explain command line arguments in detail.

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S–5260

Sub. Code
22VSDA2

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

Software Development

Allied — OPERATIONS RESEARCH

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define optimal solution.

2. When a solution is said to be optimum solution?

3. What is basic feasible solution to the general LPP?

4. How are the constraints involving '≤' sign reduced to equations when getting the standard form of LPP?

5. Write down the mathematical formulation of an assignment problem.

6. When an assignment problem is said to be unbalanced?

7. What is an transportation problem?

8. Define feasible solution.

9. Expansion of CPM and PERT.

10. Write down the different types of floats.

Part B (5 × 5 = 25)

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

11. (a) Write a advantages of operations research.

Or

(b) List out features of operations research.

12. (a) Solve graphically,

Maximize $Z = 2x_1 + 10x_2$

Subject to :

$2x_1 + 5x_2 \leq 16$;
$6x_1 \leq 30$;
$x_1, x_2 \geq 0$.

Or

(b) Explain the simplex procedure to solve a LPP.

13. (a) Write a short note on traveling salesman problem.

Or

(b) Solve the assignment problem :

	1	2	3
I	9	26	15
II	13	27	6
III	35	20	15
IV	18	30	20

14. (a) Obtain the initial solution for the following transportation problem using North-West Corner rule.

	A	B	C	Supply
1	2	7	4	5
2	3	3	1	8
3	5	4	7	7
4	1	6	2	14
Demand	7	9	18	34

Or

(b) Explain about mathematical formulation of transportation problem.

15. (a) Explain the PERT algorithm. Give an example.

Or

(b) Draw a network diagram for the following data :

Activity	A	B	C	D	E	F	G	H	I	J
Preceding Activities	—	A	A	B	A	B, E	C	D, F	G	H, I

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Briefly explain in detail about scope of operations research.

17. Using LPP Big-M method,

Maximize $Z = 6x_1 + 4x_2$

Subject to :

$2x_1 + 3x_2 \leq 30$;

$3x_1 + 2x_2 \leq 24$;

$x_1 + x_2 \geq 3$;

$x_1, x_2 \geq 0$.

18. Solve the assignment problem :

	A	B	C	D
I	1	4	6	3
II	9	7	10	9
III	4	5	11	7
IV	8	7	8	5

19. Determine an initial basic feasible solution to the following transportation problem using least cost method :

	D_1	D_2	D_3	D_4	Capacity
O_1	1	2	3	4	6
O_2	4	3	2	0	8
O_3	0	2	2	1	10
Demand	4	6	8	6	

20. The following table gives the activities of a construction project and duration.

Activity :	1-2	1-3	2-3	2-4	3-4	4-5
Duration :	20	25	10	12	6	10

(a) Draw the network for the project.

(b) Find the critical path.

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Sub. Code
22VSD3C1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

Third Semester

Software Development

OPERATING SYSTEMS

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions

1. Define operating system.
2. List the types of system calls.
3. Distinguish Job and process.
4. What is Throughput?
5. State about thread scheduling.
6. Define semaphore.
7. What is meant by swapping?
8. Define file structure.
9. Expand RAID in OS.
10. Mention about file recovery.

Part B (5 × 5 = 25)

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

11. (a) Explain about Operating system services.

Or

(b) Write note on system programs.

12. (a) Narrate the critical section problem.

Or

(b) Illustrate about the concept of process scheduling and how maximizes the multiprogramming in a CPU.

13. (a) Explain the basic concepts of CPU scheduling strategy.

Or

(b) Discuss about the process of deadlock prevention.

14. (a) Elucidate the concept of virtual memory.

Or

(b) Consider the following page reference string 1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 7,8, 9, 5, 4, 5, 4, 2 With four Frames. How many page faults would occur for the FIFO, Optimal page replacement algorithms? Which algorithm is efficient? (Assume all frame are initially empty).

15. (a) Give a note on stable storage implementation.

Or

(b) Narrate the different types of file attributes with its operations.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write note on protection and security.

17. Illustrate about inter process communication.

18. Explain the Banker's algorithm with an example.

19. Narrate the description on paging technique with structure of the page table.

20. Enumerate the various allocation methods to use optimum disk space.

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S–5262

Sub. Code
22VSD4C1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

Fourth Semester

Software Development

FUNDAMENTALS OF ACCOUNTING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name any two bases of recording accounting information.

2. Define book-keeping.

3. From the following balances taken from the books of Saravanan, calculate gross profit for the year ended December 31, 2024

Particulars	Rs.	Particulars	Rs.
Opening stock	1,50,000	Net sales during the year	4,00,000
Direct expenses	8,000	Net purchases during the year	1,50,000
Closing stock	25,000		

4. Prepare trading account in the books of Mr. Sanjay for the year ended 31st December 2024:

Particulars	Rs.	Particulars	Rs.
Opening stock	570	Purchases	15,800
Sales	26,200	Purchase returns	90
Sales returns	60	Closing stock	860

5. Give the formula to find out the amount and rate of depreciation under straight line method of depreciation.

6. What is annuity method?

7. Define Group.

8. How will you shut a company in Tally ERP.9?

9. How will you alter a company in Tally ERP.9?

10. How will you select a company in Tally ERP.9?

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

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

11. (a) Discuss briefly the branches of accounting.

Or

(b) Discuss in detail the importance of accounting.

12. (a) From the following balances of Niruban, prepare balance sheet as on 31st December, 2024.

Particulars	Dr. Rs.	Cr. Rs.
Plant and machinery	8,00,000	
Land and building	6,00,000	
Furniture	1,50,000	
Cash in hand	20,000	
Bank overdraft		1,80,000

Particulars	Dr. Rs.	Cr. Rs.
Debtors and Creditors	3,20,000	2,40,000
Bills receivable and Bills payable	1,00,000	60,000
Closing stock	4,00,000	
Investments (short-term)	80,000	
Capital		15,00,000
Drawings	1,30,000	
Net profit		6,20,000
	26,00,000	26,00,000

Or

(b) From the following details, prepare profit and loss account.

Particulars	Rs.	Particulars	Rs.
Gross profit	50,000	Interest received	2,000
Office rent	10,000	Discount received	3,000
Depreciation on office assets	8,000	Carriage outwards	2,500
Discount allowed	12,000	Insurance on office building	3,500
Advertisement	4,000	General expenses	3,000
Audit lees	1,000	Freight inwards	1,000

13. (a) Ramu Brothers purchased a machine on 1st July 2016 at a cost of Rs. 14,000 and spent Rs. 1,000 on its installation. The firm writes off depreciation at 10% of original cost every year. The books are closed on 31st December every year. Give journal entries and prepare machinery account and depreciation account for 2 years.

Or

(b) On 1st April 2015, Kumar purchased a machine for Rs. 80,000 and spent Rs. 20,000 on its installation. The residual value at the end of its expected useful life of 8 years is estimated at Rs. 4,000. On 30th September 2017, the machine is sold for Rs. 50,000. Depreciation is to be provided according to straight line method. Prepare Machinery Account. Accounts are closed on 31st December every year.

14. (a) Write about the various inventory vouchers in Tally? Explain.

Or

(b) How units of measures are used in Tally? Explain it with some examples.

15. (a) Enlist various accounting, inventory and statutory features in Tally.

Or

(b) How do you create a company in Tally? Mention the details to be filled in the creation screen.

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

Answer any **three** questions.

16. Ananth is a trader dealing in textiles. For the following transactions, pass journal entries for the month of January, 2024.

Jan		Rs.
1	Commenced business with cash	70,000
2	Purchased goods from X and Co. on credit	30,000
3	Cash deposited into bank	40,000

Jan		Rs.
4	Bought a building from L and Co. on credit	95,000
5	Cash withdrawn from bank for office use	5,000
6	Cash withdrawn from bank for personal use of Ananthu	4,000
7	Towels given as charities	3,000
8	Shirts taken over by Ananth for personal use	12,000
9	Sarees distributed as free samples	3,000
10	Goods (table clothes) used for office use	200

17. Edward's books show the following balances. Prepare his trading and profit and loss A/c for the year ended 31st December, 2016 and a balance sheet on at that date.

Debit balance	Rs.	Credit balances	Rs.
Drawings	5,000	Capital	1,31,500
Sundry debtors	60,000	Loan at 6% p.a.	20,000
Coal, gas and water	10,500	Sales	3,56,500
Returns inward	2,500	Interest on investments	2,550
Purchases	2,56,500	Sundry creditors	40,000
Stock on 1-1-2016	89,700		
Travelling expenses	51,250		
Interest on loan paid	300		
Petty cash	710		
Repairs	4,090		
Investments	70,000		
	5,50,550		5,50,550

Adjustments:

(a) Closing stock was Rs. 1,30,000 on 31st December 2016.

(b) Create 5% provision for bad and doubtful debts on sundry debtors

(c) Create provision at 2% for discount on debtors.

(d) Interest on loan due for 9 months.

18. A firm acquired a machine on 1st April 2015 at a cost of Rs. 50,000. Its life is 6 years. The firm writes off depreciation @ 30% p.a. on the diminishing balance method. The firm closes its books on 31st December every year. Show the machinery account and depreciation account for three ears starting from 1st April 2015.

19. Explain about the different kinds of vouchers in Tally.

20. Explain about the significance of F11 statutory features in Tally. Portray its different options.

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S–5263

Sub. Code
22VSD4E1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

Fourth Semester

Software Development

DATA COMMUNICATION NETWORKS

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions

1. List out distinct components.
2. Define the terms baseband and passband?
3. Mention the various components of telephone system.
4. What are the error corrections methods available in Datalink layer?
5. What is biggybacking?
6. Write the key assumptions for dynamic allocation channel.
7. Compare static and dynamic routing.
8. What is broadcasting?
9. List out the primitives used for Transport Service.
10. What is meant by Cipher Block Chaining Mode?

Part B (5 × 5 = 25)

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

11. (a) Write a short note on Local Area Networks.

Or

(b) Illustrate Twisted Pair Cable with neat diagram.

12. (a) With diagram explain circuit switching.

Or

(b) What are the services provided by the Datalink layer to the network layer?

13. (a) Explain one-bit sliding window protocol with examples.

Or

(b) Describe Carrier Sense Multiple Access protocol.

14. (a) Explain the IP Address with suitable diagram.

Or

(b) Explain in details about hierarchical routing.

15. (a) Write about SMTP Protocol.

Or

(b) Demonstrate Transposition Ciphers.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain OSI Reference Model with neat diagram.

17. Illustrate framing concept in Datalink layer.

18. Discuss ALOHA and its various version.

19. Briefly explain about distance vector algorithm.

20. Discuss Real-Time Transport Protocols.

S–5264

Sub. Code
22VSD5E1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

Fifth Semester

Software Development

SOFTWARE ENGINEERING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions

1. Mention any two characteristics of the Prototyping Model.

2. List the phases of the Spiral Model.

3. What is Project Planning?

4. What is COCOMO?

5. Mention the significance of Object-Oriented Modeling in software design.

6. What is an Activity Diagram?

7. List the types of Software Testing.

8. Define Software Reliability.

9. Explain the significance of CASE Environment.

10. What are the different types of Software Maintenance?

Part B (5 × 5 = 25)

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

11. (a) Evaluate the role of Software Life Cycle Models in managing software projects.

Or

(b) Describe the impact of the emergence of Software Engineering on modern software development practices.

12. (a) Compare different Project Estimation Techniques and their applications.

Or

(b) Describe the importance of Risk Management in Software Project Management.

13. (a) Compare Function-oriented Software Design with Object-Oriented Software Design.

Or

(b) Describe the role of UML Diagrams in software design and documentation.

14. (a) Describe the impact of Software Documentation on project maintenance and knowledge transfer.

Or

(b) Evaluate the role of Software Quality Management in ensuring reliable software products.

15. (a) Discuss the role of CASE tools in modem software development.

Or

(b) Explain the significance of Software Maintenance in the software life cycle.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Evaluate the role of Software Life Cycle Models in ensuring software quality and project success.

17. Compare the advantages and disadvantages of Empirical Estimation Techniques in software project estimation.

18. Discuss the relationship between Cohesion and Coupling, and how they influence software design quality.

19. Evaluate the importance of Software Reliability and how it impacts the long-term success of software applications.

20. Explain the significance of Software Reuse in reducing development costs and improving software quality.

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S–5266

Sub. Code
22VSD5C1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

Fifth Semester

Software Development

JAVA PROGRAMMING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List any two benefits of Object-Oriented Programming (OOP).

2. Mention any two features of Java.

3. Give an example of a string in Java.

4. What is an abstract class?

5. What is the significance of the Applet tag?

6. Give note on the term “event listener”.

7. Define the term synchronization” in the context of threads.

8. What is a deadlock in threading?

9. Explain the use of the Reader class in Java.

10. What is the role of the Writer class?

Part B (5 × 5 = 25)

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

11. (a) Evaluate the impact of the break and continue statements in loop control.

Or

(b) Describe the role of the try-catch block in handling exceptions.

12. (a) Compare and contrast method overloading and method overriding in Java

Or

(b) Analyze the role of abstract classes in Java with an example.

13. (a) Discuss the significance of applets in web-based applications.

Or

(b) Explain the life cycle of an applet with an example.

14. (a) Describe the use of the try-catch-finally block in managing exceptions.

Or

(b) Evaluate the role of synchronization in preventing thread-related issues.

15. (a) Give Brief about the advantages of using the Data Output Stream class for data handling.

Or

(b) Describe how the JDBC-ODBC connection works in Java applications.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Evaluate the significance of branching statements in controlling the flow of a Java program.

17. Discuss the importance of the Abstract Windowing Toolkit (AWT) in building Java applications with graphical interfaces.

18. Compare and contrast exception handling mechanisms in Java with those in other programming languages.

19. Evaluate the role of I/O streams in real-time data processing applications in Java.

20. Describe the role of inter-thread communication in multithreaded programming and its practical applications

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S–5267

Sub. Code
22VSD5G1

B.Voc. DEGREE EXAMINATION, NOVEMBER 2024

Fifth Semester

Software Development

PYTHON PROGRAMMING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write a python code to display “HELLO WORLD”.
2. Mention the use of “+” and “*” operators in string.
3. How to define a function in python?
4. List various escape characters.
5. Write syntax and example for delete operation in tuple.
6. State the use of ALL and ANY operation in list.
7. Illustrate Dict.get(key) function.
8. Write about file close operation.
9. How to create objects in python?
10. What is meant by inheritance?

Part B (5 × 5 = 25)

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

11. (a) Write a brief note on Data types in python.

Or

(b) Demonstrate while and for loop with example.

12. (a) Explain in details about Recursion function.

Or

(b) Write a python program to determine whether the given string is palindrome or not.

13. (a) Explain any five basic operations in tuple.

Or

(b) Illustrate built-in function in list.

14. (a) With suitable example explain basic operation in dictionary.

Or

(b) Explain in details about output operation in file.

15. (a) Give a brief note on multiple inheritance.

Or

(b) Illustrate method overriding with example.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. With example, explain Control statements.

17. Illustrate string built-in function with suitable example.

18. Discuss built-in functions on tuple.

19. Discuss dictionary in python.

20. Briefly explain about class and objects in python.
