S–7185	Sub. Code 22VSD5E1

B.Voc. DEGREE EXAMINATION, APRIL 2025.

Fifth Semester

Software Development

Elective : SOFTWARE ENGINEERING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Software Engineering.
2. What is the Classical Waterfall Model?
3. List any two Project Estimation Techniques.
4. Mention any two metrics for Project Size Estimation.
5. Define Coupling in the context of software design.
6. List the components of UML Diagrams.
7. What is Unit Testing?
8. Define Black-Box Testing.
9. What are CASE tools?
10. Define Software Maintenance.

Part B (5 × 5 = 25)

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

11. (a) Compare the Classical Waterfall Model with Iterative Waterfall Model.

Or

(b) Discuss the significance of the Prototyping Model in software development.

12. (a) Discuss the role of a Software Project Manager in ensuring project success.

Or

(b) Explain how COCOMO is used for project estimation.

13. (a) Discuss the importance of Requirements Gathering and Analysis in software development.

Or

(b) Explain the relationship between Cohesion and Coupling in software design.

14. (a) Discuss the differences between Black-Box Testing and White-Box Testing.

Or

(b) Explain the importance of Unit Testing in the software development process.

15. (a) Describe the importance of Maintenance Cost Estimation in managing long-term software projects.

Or

(b) Evaluate the role of CASE tools in improving the efficiency and effectiveness of software development.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Critically analyze the advantages and limitations of the Waterfall Model in software development.

17. Evaluate the importance of Risk Management in software development, discussing how it mitigates potential project failures.

18. Describe the role of UML Diagrams in visualizing software architecture and design, with a focus on Activity and State Chart Diagrams.

19. Compare Black-Box Testing and White-Box Testing, providing examples of their applications in real-world projects.

20. Describe the role of Maintenance Cost Estimation in planning and managing software maintenance activities.

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S–7187

Sub. Code
22VSD5C1

B.Voc. DEGREE EXAMINATION, APRIL 2025

Fifth Semester

Software Development

JAVA PROGRAMMING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the following.

1. What are Java tokens?

2. Define constants and variables in Java.

3. Define constructors in Java.

4. What is method overloading?

5. What is the purpose of the stop( ) method in an applet?

6. Mention any two components of the Abstract Windowing Toolkit (AWT).

7. List the different states in the life cycle of a thread.

8. What is a custom exception?

9. What is an input stream in Java?

10. Define JDBC.

Part B

$(5 \times 5 = 25)$

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

11. (a) Compare OOP concepts with procedural programming.

Or

(b) Explain how Java's switch statement works with an example.

12. (a) Discuss the importance of constructors in object creation.

Or

(b) Explain the concept of inheritance with a real-life analogy.

13. (a) Describe the role of event listeners in handling user interactions.

Or

(b) Compare the init( ) and destroy( ) methods in the applet life cycle.

14. (a) Discuss the difference between checked and unchecked exceptions.

Or

(b) Explain the significance of thread priority in Java.

15. (a) Explain the role of JDBC in connecting Java applications to databases.

Or

(b) Compare the Reader and Writer classes, highlighting their use cases.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain with examples, the various operators available in Java and how they are used in expressions.

17. Compare applets and standalone applications, focusing on their use cases and limitations.

18. Explain the life cycle of a thread in Java, with emphasis on how threads are created and executed.

19. Evaluate JDBC with other database connectivity methods, discussing their relative advantages and limitations.

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

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S–7188

Sub. Code
22VSD5G1

B.Voc DEGREE EXAMINATION, APRIL 2025

Fifth Semester

Software Development

PYTHON PROGRAMMING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What you meant by Reversed Keywords?
2. Write syntax and example for WHILE Loop.
3. Define Function.
4. State the use of len() function in String.
5. How to access values in tuple?
6. Write syntax and example for delete operation in list.
7. Write the python code for Dictionary creation.
8. Write a note on file open operation.
9. Define Polymorphism.
10. What is meant by method overriding?

Part B

$(5 \times 5 = 25)$

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

11. (a) Define variable. Write down the rules for naming a variable.

Or

(b) Discuss various statements in python.

12. (a) Illustrate string traversal operation with an example.

Or

(b) Give a note on type conversion in python.

13. (a) Explain how to create, update and delete values in tuple with examples.

Or

(b) How can you access and update values in list?

14. (a) With suitable example explain how to add, modify and delete an item in a dictionary.

Or

(b) Explain in details about file input operation.

15. (a) Write about class and object concept in python.

Or

(b) Demonstrate data encapsulation.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain operators with examples.

17. Demonstrate any FIVE string built-in function with example.

18. Illustrate various list operations.

19. Briefly explain about various built-in functions and methods in dictionary.

20. With suitable example explain inheritance.

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S–7189

Sub. Code
22VSD6G3

B.Voc. DEGREE EXAMINATION, APRIL 2025

Sixth Semester

Software Development

CORPORATE GROOMING AND FINISHING SKILLS

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is professionalism?

2. What are the key components of professionalism?

3. What is business formal attire for women?

4. Define housekeeping skills.

5. Write shorts on: Office Files.

6. What is Spatial Utility?

7. Define Scheduling.

8. What is Documentation?

9. What is primary purpose of a report?

10. Write short notes on: Report for media.

Part B (5 × 5 = 25)

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

11. (a) How can organizations promote professionalism among employees?

Or

(b) What role does communication play in professionalism?

12. (a) What should you do if you're unsure where to sit at a formal dining event?

Or

(b) Is it acceptable to use your phone during a business meal?

13. (a) Analyze the importance of time management in housekeeping.

Or

(b) Discuss the role of organizations effective housekeeping.

14. (a) What key skill are necessary for effective communication at the front desk?

Or

(b) How con a receptionist manage multiple tasks report?

15. (a) List the essential components of a standard report.

Or

(b) Describe the difference between qualitative and quantitative data in reports.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Evaluate the impact of technology on professionalism.

17. Examine the relationship between corporate culture and dining etiquette. How do different organizational cultures influence expectations around formal and informal dining behaviors? Provide examples to support your analysis.

18. What are the different types of cleaning equipment used in Office?

19. Compare and contrast the advantages and disadvantages if using digital appointment management tools versus paper-based systems.

20. Describe the essential components of well-structure report and explain the purpose of each component.

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S–7486	Sub. Code 22VSD1C1

B.Voc. DEGREE EXAMINATION, APRIL 2025

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. Write a structure of C Program.

2. List out the input and output statements in C.

3. Differentiate while and if ... else statement.

4. Write a syntax for statement with example program.

5. Define array.

6. How do character array is declared?

7. What is function prototype?

8. Define recursion.

9. What is type def?

10. What is the purpose of ftell()?

Part B (5 × 5 = 25)

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

11. (a) Discuss about logical operators with example program.

Or

(b) List out keywords in C program with example.

12. (a) Explain about formatted input and output statements.

Or

(b) Discuss in detail about conditional operator with example.

13. (a) How do you compare two strings?

Or

(b) With an example explain how to declare and initialize a single dimensional array.

14. (a) Write a short note on user defined functions.

Or

(b) Explain how to initialize union with example.

15. (a) How to increment pointers with example program? Explain.

Or

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

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss in detail about C tokens with example program.

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

18. Explain about string handling functions with example program.

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

20. Explain about command line arguments in detail.

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S–7488

Sub. Code
22VSDA1

U.G. DEGREE EXAMINATION, APRIL 2025

Software Development

Allied – FUNDAMENTALS OF DIGITAL COMPUTERS AND PROGRAMMING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Computers.

2. What are the basic operations of computer?

3. What is logic gate?

4. Define pairs and assets.

5. Define multiplexers.

6. What is encoder?

7. What is a half-adder?

8. Why does a serial adder require only one full-adder?

9. Write an designing the algorithm.

10. Define flow charts.

Part B (5 × 5 = 25)

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

11. (a) Explain about computer registers.

Or

(b) Describe about the octal number system.

12. (a) Explain in detail about AND gate with example.

Or

(b) Explain about Karnaugh simplification with example.

13. (a) Write a short note parity generator checkers.

Or

(b) Describe in detail about exclusive OR gates.

14. (a) Explain the Logic diagram of JK flip-flop.

Or

(b) Explain about Shift Registers.

15. (a) Write a short note on program flow chart.

Or

(b) How to develop algorithms for solving simple problems.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Briefly explain about the excess-3 code.

17. Discuss in detail about basic gates with example.

18. Describe about the demultiplexers.

19. Briefly describe the design of a 4 bit binary counter with parallel load in detail.

20. Explain about flow charts for sequential programming structures.

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S–7489

Sub. Code
22VSDA2

U.G. DEGREE EXAMINATION, APRIL 2025

Software Development

Allied — OPERATIONS RESEARCH

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the difference between deterministic and stochastic models?

2. What is a linear programming model?

3. What is feasible region?

4. What is pivot column?

5. What is Travelling salesman assignment problem?

6. What is maximisation problem?

7. What is transportation problem?

8. What is degenerate solution?

9. What is critical path?

10. Expand EST.

Part B (5 × 5 = 25)

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

11. (a) What is the purpose of queuing theory in Operations Research?

Or

(b) What are some common applications of Operations Research?

12. (a) A factory manufactures two articles A and B. To manufacture the article A, a certain machine has to be worked for 1.5 hours and in addition a craftsman has to work for 2 hours. To manufacture the article B, the machine has to be worked for 2.5 hours and in addition the craftsman has to work for 1.5 hours. In a week the factory can avail of 80 hours of machine time and 70 hours of craftsman time. The profit on each article of A is Rs.5 and that on each article of B is Rs.4.If all the articles produced can be sold away, find how many of each kind should be produced to earn maximum profit per week. Formulate the linear programming problem.

Or

(b) Old hens can be bought at Rs.2 each and young ones at Rs.5 each. The old hens lay 3 eggs per week and the young ones lay 5 eggs per week, each egg being worth 30 paise. A hen costs Rs. 1 per week to feed. A person has only Rs.80 to spend for hens. How many of each kind should he buy to give a profit of more than Rs.6 per week, assuming that he cannot house more than 20 hens? Formulate this as a Linear Programming Problem.

13. (a) A company has four machines to do three jobs. Each can be assigned to one and only machine. The cost of each job on each machine is given in the following table.

Job	Machine 1	Machine 2	Machine 3	Machine 4
A	18	24	28	32
B	8	13	17	19
C	10	15	19	22

You are required to identify the job assignments that will minimize the cost.

Or

(b) A machine purchased a drilling machine and two lathes of different capacities. The positioning of the machines among 3 possible locations on the shop floor is important from the standpoint of material handling. Given the cost estimate per unit time of materials below, determine the optimal location of the machines :

Machines	Location			
	1	2	3	4
Lathe 1	12	9	12	9
Drill	15	–	13	20
Lathe 2	4	8	10	6

14. (a) Determine an initial basic feasible solution to the following transportation problem using Vogle's Approximation Method :

Source	Destination				Supply Qty
	D1	D2	D3	D4	
S1	21	16	15	3	11
S2	17	18	14	13	13
S3	32	27	18	41	19
Demand Qty	6	10	12	15	43

Also determine the initial cost of transportation.

Or

(b) From the following IBST pertaining to a transportation problem, find the optimal solution and the minimum cost of transportation.

	D1	D2	D3	D4	SQty
SS1	[5] 10	[10] 12	20	11	15
SS2	12	[5] 7	[15] 9	[5] 20	25
SS3	4	14	16	[10] 18	10
DQty	5	15	15	15	50

15. (a) From the following data you are required to develop a network diagram :

Beginning Event	Ending Event	Activity
1	2	1-2
1	3	2-4
2	4	2-4
3	4	3-4
3	5	3-5
4	6	4-6
5	6	5-6

Or

(b) A project schedule has the following characteristics :

Activity	Time	Activity	Time
1-2	4	5-6	4
1-3	1	5-7	8
2-4	1	6-8	1
3-4	1	7-8	2
3-5	6	8-10	5
4-9	5	9-10	7

You are required to construct a network diagram.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss the historical development of Operations Research.

17. Find the non-negative values of X_1, X_2, and X_3

Maximize $Z = 3X_1 + 2X_2 + 5X_3$

Subject to :

$X_1 + 4X_2 \leq 420$

$3X_1 + 2X_3 \leq 460$

$X_1 + 2X_2 + X_3 \leq 430$

Where $X_1, X_2, X_3 \geq 0$.

Solve by simplex method.

18. A manufacturing company has four zones A, B, C, and D and four sales engineers, P, Q, R and S respectively for assignment. Since the zones are not equally rich in sales potential, it is estimated that a particular engineer operating in a particular zone will bring the following sales :

Zone A : Rs. 4,20,000

Zone B : Rs. 3,36,000

Zone C : Rs. 2,94,000

Zone D : Rs. 4,62,000

The engineers are having different sales ability. Working under the same conditions, their yearly sales are proportional to 14, 9, 11 and 8 respectively. The criteria of maximum expected total sales is to be met by assigning the best engineer to the richest zone, the next best to the second richest zone and so on. Find the optimum assignment and maximum sales.

19. From the following information pertaining to a transportation problem, you are required to find:

(a) IBFS using the VAM

(b) Optimal solution and

(c) Total minimum cost of transportation.

Source	Destination				Supply Qty
	D1	D2	D3	D4	
S1	6	1	9	3	70
S2	11	5	2	8	55
S3	10	12	4	7	70
Demand Qty	85	35	50	40	

20. A small assembly plant assembles PCs through 9 interlinked stages according to the following precedence/process :

Stage (from-to)	Duration (hours)
1-2	4
1-3	12
1-4	10
2-4	8
2-5	6
3-6	8
4-6	10
5-7	10
6-7	0
6-8	8
7-8	10
8-9	6

You are required to :

(a) Draw an arrow diagram (network) representing above assembly 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–7490

Sub. Code
22VSD3C1

B.Voc. DEGREE EXAMINATION, APRIL 2025

Third Semester

Software Development

OPERATING SYSTEMS

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What are special types of matrices? Give examples.

2. List the benefits of a linked list over an array.

3. Define a circular linked list and give its applications.

4. List the applications of stacks in data structures.

5. Differentiate between linear queue and circular queue.

6. State the term 'expression tree' with an example.

7. Define threaded binary trees and their usage in traversal.

8. Write the general method of the greedy technique.

9. Define a connected graph and explain its significance.

10. What are the applications of graph traversal techniques?

Part B

$(5 \times 5 = 25)$

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

11. (a) Describe the structure of an operating system.

Or

(b) Explain the role of system programs in an operating system.

12. (a) Discuss the different process scheduling algorithms.

Or

(b) Explain the concept of interprocess communication.

13. (a) Describe the various deadlock handling techniques.

Or

(b) Explain the concept of CPU scheduling and its criteria.

14. (a) Differentiate between segmentation and paging in memory management.

Or

(b) Describe the significance of demand paging in virtual memory.

15. (a) Explain the different disk scheduling algorithms.

Or

(b) Discuss the key principles of file-system implementation.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the structure and different components of an operating system.

17. Discuss the different types of system calls and their significance.

18. Explain the concept of process synchronization and the critical-section problem.

19. Describe the various memory management techniques used in modern operating systems.

20. Discuss file-system structure, implementation, and recovery methods.

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S–7491	Sub. Code 22VSD4C1

B.Voc. DEGREE EXAMINATION, APRIL 2025

Fourth Semester

Software Development

FUNDAMENTALS OF ACCOUNTING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Section A (10 × 2 = 20)

Answer **all** the questions.

1. Write the meaning of Journal.

2. What do you mean Ledger?

3. What is Profit?

4. Give the meaning of Trial Balance.

5. Write the meaning of Depreciation.

6. What do you meant by Annuity Method?

7. Define the meaning of Manual Accounting.

8. Write the meaning of Computerized Accounting.

9. How to create Ledger in tally ERP 9?

10. How to create Voucher in tally ERP 9?

Section B (5 × 5 = 25)

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

11. (a) Prepare the journal entries from the following transaction :

1995		Rs.
Jan 5	Mr.Ragu Started business with Cash	15,00,000
8	Goods purchase from	
	Mr. Kannan for Cash	15,000
10	Goods sold to Mr.Kumaran for cash	7,500
10	Paid rent to Kumar	1,500
11	Wages paid	900
11	Commission received	100

Or

(b) Write the Accounting Concept.

12. (a) From the following information Prepare Trading A/c for the period ending 31.12.2022 of Mr. Ganesh Company Ltd.

	Rs.
Purchases	20,000
Sales	1,00,000
Opening stock	10,000
Wages	2,000

	Rs.
Fuel	2,000
Purchase return	100
Carriage in	1,000
Sales return	2,000
Closing stock	1,000

Or

(b) Write the format of Profit and Loss Account.

13. (a) On 1.1.2017 a firm purchased a machine at a cost of Rs. 1,00,000. Its life was estimated to be 10 years with a scrap value of Rs. 10,000. Compute the amount of depreciation to be charged at the end of each year.

Or

(b) What are the Causes of depreciation?

14. (a) Write the distinguish between Manual Accounting and Computerized Accounting.

Or

(b) What are the advantages of computerized accounting?

15. (a) Write the different types of Voucher.

Or

(b) Write short notes on :
(i) Voucher (ii) Ledger
(iii) ERP.

Section C (3 × 10 = 30)

Answer any **three** questions.

16. C Mr. Kannan is a proprietor for X Corn Ltd. From the following transactions, pass journal entries and prepare ledger for the month of March, 2018.

March	1	Commenced business with cash Rs 4,00,000
	2	Cash deposited into bank Rs 3,00,000
	3	Purchased goods from Ravi and payment made through net banking Rs. 90,000
	4	Sales made to Kumar, who deposited the money through net banking Rs. 10,000
	5	Wages paid Rs 10,000.

17. Prepare Final Accounts for the year ending 31-03-2022 :

	Rs.		Rs.
Stock (1.4.2021)	55,000	Discount received	1,200
Purchases	1,92,500	Sales	2,93,500
Wages	12,500	Bills payable	18,500
Carriage inwards	4,000	Sundry creditors	93,250
Insurance	3,500	Capital	1,93,500
Bills receivable	22,500		

	Rs.	Rs.
Sundry debtors	1,50,000	
Commission	4,000	
Interest	3,500	
Trade expenses	3,450	
Furniture	6,000	
Cash in hand	42,250	
Rent and Rates	12,750	
Office expenses	8,000	
Buildings	20,000	
Plant and Machinery	60,000	
	5,99,950	5,99,950

Adjustments :

(a) Stock 31-03-2022 Rs.50,000.

(b) Outstanding Expenses on 31-03-1996. Rent Rs.200; Office Expenses Rs.400

(c) Prepaid Insurance Rs. 100.

(d) Provide Rs.600 for doubtful debts.

(e) Depreciate: Building 2.5%; Machinery 10%.

18. 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.

19. Write the steps for creating new company and alteration of company.

20. Write the steps for creating single and multiple ledger in Tally ERP 9.

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S–7492

Sub. Code
22VSD4E1

B.Voc. DEGREE EXAMINATION, APRIL 2025

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. What is mean by Data Communication?

2. Why are protocols needed?

3. Mention the types of errors.

4. What is local loop?

5. Define protocol.

6. What is datalink layer?

7. Define algorithm.

8. What is IP address?

9. What is Connection?

10. Define transport layer.

Part B (5 × 5 = 25)

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

11. (a) What are the design issued for layers? Explain.

Or

(b) Write a short note on twisted pair cable.

12. (a) Explain about low-earth orbit satellites.

Or

(b) Write a short note on switching in telephone network.

13. (a) Explain about simples stop and wait protocol for an error-free channel.

Or

(b) Discuss in detail about collision free protocols.

14. (a) Explain about store and forward packet switching.

Or

(b) Write a short note on shortest path algorithm.

15. (a) Explain about transport service primitives.

Or

(b) Discuss in detail about establishing and releasing a connection.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Briefly explain about OSI reference model.

17. Explain about error – correcting codes.

18. Explain about bluetooth architecture.

19. Discuss in detail about IP protocol.

20. Describe in detail about cryptography.

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