This question paper contains **3** printed pages]

SD—24—2025

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Fifth Semester) EXAMINATION

APRIL/MAY, 2025

(Revised/CBCS Pattern)

BASICS OF LINUX

Paper–BCS-504-B

(Wednesday, 9-4-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (3 marks each) : 15

(*a*) OS

(*b*) History of Linux

(*c*) UNIX

(*d*) Features of Linux.

P.T.O.

X365Y261D1BX365Y261D1BX365Y261D1BX365Y261D1B

(*e*) Features of VI

(*f*) DU Commands

(*g*) Installation steps of Linux.

2. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain in detail Linux Standard Directories.

(*b*) Explain in detail Boot Loaders.

(*c*) Explain in detail Free Command and Top Utility.

(*d*) Explain in detail types of process and PS Command.

(*e*) Explain in detail GUI with KDE.

3. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain in detail History and Development of Linux.

(*b*) Explain in detail Linux and Windows.

(*c*) Describe Basic Filters.

(*d*) Explain in detail Locating Unused Files.

(*e*) Explain in detail Setting System Clock.

4. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain in detail advantages and disadvantages of Linux.

(*b*) Explain in detail Additional Free Disk Space.

(*c*) Explain in detail Hardware Requirement for Linux.

X365Y261D1BX365Y261D1BX365Y261D1BX365Y261D1B

(*d*) Explain in detail File Processing Commands.

(*e*) Explain in detail Input Mode.

5. Write short notes on any *three* of the following (5 marks each) : 15

(*a*) Login

(*b*) rc.sysinit & rc

(*c*) Remote Login

(*d*) GNOME

(*e*) Printing Files.

X365Y261D1BX365Y261D1BX365Y261D1BX365Y261D1B

Total No. of Printed Pages: 2

SUBJECT CODE NO:-SD-28
FACULTY OF SCIENCE & TECHNOLOGY
EXAMINATION APRIL / MAY 2025
B.Sc. (COMPUTER SCIENCE) (THIRD YEAR) (SEM –V)
(CBCS / REVISED) PATTERN
DATA SCIENCE

[Time: 3:00 Hours] **[Max.Marks:75]**

"Please check whether you have got the right question paper."

N.B.
1) All questions are compulsory.
2) Figures to right indicate full marks.
3) Assume suitable data, if required.
4) Use of any electronic media such as mobile phones, digital diary and calculator is not permitted.

Q.1 Attempt any five of the following (3 marks each) **15**

a) Explain scalable & non- scalable data.
b) Explain Big data fundamentals
c) Explain optimization of data science
d) Explain computational techniques
e) Explain importance of data science in future.
f) Explain DBMS in detail.
g) Explain Hypothesis in detail.

Q.2 Attempt any three of the following (5 marks each) **15**

a) What is algorithm? Explain importance of algorithms.
b) Explain Big Data technique.
c) Explain Programming Paradigm with different types.
d) Explain the difference between classification & clustering
e) Explain Data Analysis in detail.

Q.3 Attempt any three of the following (5 marks each) **15**

a) What is Research Methodology? Explain different methods.
b) Explain various applications of data science?
c) What s AI? Explain in detail.
d) Explain Data Science lifecycle
e) Explain Regression with example.

X303Y7ABA87X303Y7ABA87X303Y7ABA87X303Y7ABA87

Q.4 Attempt any three of the following (5 marks each) **15**

a) Explain EDA.
b) What is Decision support system? How it is related with data ware house
c) Explain data structure in detail.
d) Explain data visualization techniques
e) Explain data mining & data science

Q.5 Write short notes on any three **15**

1. Machine learning
2. ANN
3. Data mining models
4. Software engineering techniques
5. Modern computational techniques

X303Y7ABA87X303Y7ABA87X303Y7ABA87X303Y7ABA87

This question paper contains **3** printed pages]

SD—12—2025

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Fifth Semester) EXAMINATION

APRIL/MAY, 2025

(Revised/CBCS Pattern)

COMPUTER SCIENCE

Paper–BCS-501

(Windows Programming)

(Saturday, 5-4-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

1. Attempt any *five* of the following (3 marks each) : 15

(*a*) Explain the CLR.

(*b*) Explain the .Net Architecture.

(*c*) Explain the Array class.

(*d*) Explain the advantages of ADO.NET.

(*e*) Explain the .Net Technology.

P.T.O.

X303Y659402X303Y659402X303Y659402X303Y659402

(*f*) Explain the TextBox and Label control.

(*g*) Explain the Label control with properties.

2. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain the exception handing with example.

(*b*) Explain in detail Customizing Windows Form.

(*c*) Explain in detail Radio Button with example.

(*d*) Explain in detail combobox control with example.

(*e*) Explain in detail Creating interface with example.

3. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain in detail Array list class methods.

(*b*) Explain in detail Checkbox with example.

(*c*) Explain in detail creating and using namespace with example.

(*d*) Explain in detail Multicast Delegates with example.

(*e*) Write a window application to demonstrate on Button Control.

4. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain in detail call by reference with example.

(*b*) Explain in detail out parameter with example.

X303Y659402X303Y659402X303Y659402X303Y659402

(*c*) Explain in detail indexers with example.

(*d*) Explain in detail Delegates with example.

(*e*) Explain in detail Properties with example.

5. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain in detail jagged array with example.

(*b*) Explain in detail StringBuffer class methods.

(*c*) Explain in detail Try and Catch Block.

(*d*) Explain in detail Customs events with example.

(*e*) Explain the disconnected data access through dataset objects.

X303Y659402X303Y659402X303Y659402X303Y659402

This question paper contains **3** printed pages]

SD—23—2025

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Fifth Semester) EXAMINATION

APRIL/MAY, 2025

(Revised/CBCS Pattern)

COMPUTER APPLICATION

Paper–BCS-504-A

(Software Testing)

(Wednesday, 9-4-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Assume suitable data, if required.

(*iii*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (3 marks each) : 15

(*a*) What are the Metrics for testing ?

(*b*) What is Security Testing ?

(*c*) Explain Basic Path Testing.

(*d*) What is The Art of Debugging ? Explain.

P.T.O.

X303YE2AED2X303YE2AED2X303YE2AED2X303YE2AED2

(*e*) What is Software Reliability ?

(*f*) What is Software Quality ? Explain.

(*g*) Explain concept of Cost of Quality.

2. Attempt any *three* of the following : 15

(*a*) Explain Metrics for the requirements mode.

(*b*) Discuss Testing Concepts for WebApps.

(*c*) Explain in detail Blank Box Testing.

(*d*) Explain Validation Testing in detail.

(*e*) What is Software Quality Assurance Plan ? Explain.

3. Attempt any *three* of the following : 15

(*a*) Explain in detail McCall's Quality Factors.

(*b*) Explain Software Quality Assurance.

(*c*) Explain in detail Unit Testing.

(*d*) Explain Internal and External Views of Testing.

(*e*) What is Content testing ? Explain.

4. Attempt any *three* of the following : 15

(*a*) Explain Overview The Testing Process for WebApps.

(*b*) Explain A framework for product metrics.

(*c*) What is Integration Testing ? Describe in brief.

X303YE2AED2X303YE2AED2X303YE2AED2X303YE2AED2

(*d*) Explain Targeted Quality Factors.

(*e*) Explain Software Reviews and its type.

5. Write short notes on any *three* : 15

(*a*) ISO 9126 Quality Factors

(*b*) A Strategic Approach to Software Testing

(*c*) Control Structural Testing

(*d*) User interface testing

(*e*) Metrics for source code.

X303YE2AED2X303YE2AED2X303YE2AED2X303YE2AED2

This question paper contains **2** printed pages]

SA—1001—2025

FACULTY OF ALL

B.A./B.Com./B.Sc. (Third Year) (Fifth Semester) EXAMINATION

APRIAL/MAY, 2025

(CBCS/New Pattern)

ENVIRONMENTAL STUDIES (Compulsory)

Paper-V

(Monday, 28-4-2025) **Time : 10.00 a.m. to 12.00 noon**

Time—2 *Hours* *Maximum Marks*—40

N.B. :— (*i*) Attempt *all* questions.

(*ii*) Illustrate your answer with suitable well labelled diagram wherever necessary.

(*i*) **सर्व** प्रश्न सोडवा.

(*ii*) आवश्यक असेल तेथे आकृती काढून नावे द्या.

1. Write in detail uses and overexploitation of forest resources. 15

वनसंपदेचे उपयोग व त्याचा अतिरिक्त वापर यावर सविस्तर माहिती लिहा.

Or/**किंवा**

(*a*) Describe soil pollution. 8

मृदा प्रदूषणाची माहिती लिहा.

(*b*) Development of wasteland. 7

पडीक जमिनीचा विकास.

2. Describe in detail causes, effects and control measures of Air Pollution. 15

वायु प्रदूषणाची कारणे, परिणाम व त्याचे नियंत्रण यावर सविस्तर माहिती लिहा.

P.T.O.

X301Y5D76F6X301Y5D76F6X301Y5D76F6X301Y5D76F6

Or/**किंवा**

(*a*) Productive use of biodiversity. 8

जैवविविधतेचे उत्पादक महत्त्व.

(*b*) Sustainable development process. 7

शाश्वत विकास प्रक्रिया.

3. Write short notes on any *two* : 10

(*a*) Nuclear hazards

(*b*) Soil erosion

(*c*) Ozone layer depletion

(*d*) Watershed management.

कोणत्याही **दोन**वर थोडक्यात टिपा लिहा :

(*a*) आण्विक संकटे

(*b*) जमिनीची धूप

(*c*) ओझोन स्तराचा क्षय

(*d*) पाणलोट क्षेत्र विकास.

X301Y5D76F6X301Y5D76F6X301Y5D76F6X301Y5D76F6

This question paper contains **3** printed pages]

SD—19—2025

FACULTY OF COMPUTER SCIENCE

B.Sc. (CS) (Third Year) (Fifth Semester) EXAMINATION

APRIL/MAY, 2025

(Revised/CBCS Pattern)

COMPUTER SCIENCE

Paper–BCS-502

(Python)

(Tuesday, 8-4-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

1. Attempt any *five* of the following (3 marks each) : 15

(*a*) Explain Object Oriented Programming.

(*b*) Describe Dictionary.

(*c*) Explain Python Interpreter.

(*d*) Explain Error Processing.

(*e*) Explain Packages.

P.T.O.

X303YB91C74X303YB91C74X303YB91C74X303YB91C74

(*f*) Explain Pickling data in Python.

(*g*) Explain Functions.

2. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain Python Operators.

(*b*) Explain how to install Python on windows.

(*c*) Explain features of Python.

(*d*) Explain Exception handling in detail.

(*e*) Describe Class with syntax.

3. Attempt any *three* of the following (5 marks each) : 15

(*a*) What is string ? Explain string operator in Python.

(*b*) Explain array with example.

(*c*) Explain List with example.

(*d*) Write a program to check prime number or not.

(*e*) Explain Casting data types in detail.

4. Attempt any *three* of the following (5 marks each) : 15

(*a*) What is Inheritance ? Explain hybrid inheritance with example.

(*b*) Explain Standard Modules.

(*c*) Write a program to find the factorial of a number.

X303YB91C74X303YB91C74X303YB91C74X303YB91C74

(*d*) Explain Function and Arguments in detail.

(*e*) Explain Polymorphism with example.

5. Write short notes on any *three* of the following (5 marks each) : 15

(*a*) Explain Exception raising with suitable example.

(*b*) Explain connecting with a database in Python.

(*c*) Explain Web using flask.

(*d*) Explain Reading data from CSV/EXCEL file in Python.

(*e*) Explain Math Functions in detail.

X303YB91C74X303YB91C74X303YB91C74X303YB91C74

This question paper contains **3** printed pages]

SD—02—2025

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Sixth Semester) EXAMINATION

APRIL/MAY, 2025

(Revised/CBCS Pattern)

COMPUTER SCIENCE

Paper–BCS-602

(Mobile Application Development)

(Saturday, 12-4-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (3 marks each) : 15

(*a*) Discuss the features of Android operating system.

(*b*) What is Content Provider ? Explain in short.

(*c*) What is activity in Android ? Explain.

(*d*) Explain helper methods in android.

(*e*) Enlist various operating systems used on different mobile devices.

P.T.O.

X303YEC6091X303YEC6091X303YEC6091X303YEC6091

(*f*) Discuss the use of Shared preferences.

(*g*) Explain Toast.

2. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain Android applications structure.

(*b*) Explain AnalogClock and DigitalClock views in short.

(*c*) What is Intent ? Explain its types in detail.

(*d*) Discuss Dialogs in Android.

(*e*) Discuss the use of Download Manager.

3. Attempt any *three* of the following (5 marks each) : 15

(*a*) Discuss layouts of a Screen.

(*b*) Explain SMS Messaging.

(*c*) Explain Activity life cycle.

(*d*) Discuss RadioButton and RadioGroup views with suitable example.

(*e*) Explain displaying maps on Android application.

4. Attempt any *three* of the following (5 marks each) : 15

(*a*) Explain WebView.

(*b*) Discuss the concept of Android Stack.

X303YEC6091X303YEC6091X303YEC6091X303YEC6091

(*c*) How do you get location data using Android ? Explain.

(*d*) Discuss the steps to publish the android app.

(*e*) How do you create a table using SQLite ? Explain.

5. Write short notes on any *three* of the following (5 marks each) : 15

(*a*) Parsing Internet Resources

(*b*) Mobile Programming

(*c*) Android Manifest File

(*d*) AutoCompleteTextView view.

(*e*) Versions of Android.

X303YEC6091X303YEC6091X303YEC6091X303YEC6091

This question paper contains **3** printed pages]

SD—08—2025

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2025

(Revised/CBCS Pattern)

COMPUTER SCIENCE

(Fundamentals of Image Processing)

(Friday, 4-4-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions carry equal marks.

(*ii*) Figures to the right indicate full marks.

(*iii*) *All* questions are compulsory.

1. Attempt any *five* of the following : 15

(*a*) What is digital image processing ? Explain any *three* applications of image processing.

(*b*) Describe matrix representation.

(*c*) Explain color image representation.

(*d*) Explain filtering concept for image processing.

P.T.O.

X303Y15C682X303Y15C682X303Y15C682X303Y15C682

(*e*) Describe image reading and displaying in DIP.

(*f*) Explain M function Programming.

(*g*) Describe representing Digital image in DIP.

2. Attempt any *three* of the following : 15

(*a*) Explain fundamental steps in digital image processing.

(*b*) Describe components of an image processing system.

(*c*) Explain HSV color model.

(*d*) Describe basic intensity transformation function using imadjust().

(*e*) Explain MATLAB environment.

3. Attempt any *three* of the following : 15

(*a*) Explain data classes in DIP.

(*b*) Describe pseuo color image processing.

(*c*) What is Histogram ? Explain its types.

(*d*) Explain Noise model.

(*e*) Describe MATLAB search pad concepts.

X303Y15C682X303Y15C682X303Y15C682X303Y15C682

4. Attempt any *three* of the following : 15

(*a*) Explain image types in digital image processing.

(*b*) Explain RGB color model.

(*c*) Describe fspecial() and imfilter() function in DIP.

(*d*) Explain image registration concept.

(*e*) Describe advantages of MATLAB.

5. Write short notes on any *three* of the following : 15

(*a*) Sampling

(*b*) Color spaces

(*c*) Linear spatial filtering

(*d*) Restoration techniques

(*e*) MATLAB operator.

X303Y15C682X303Y15C682X303Y15C682X303Y15C682

This question paper contains **3** printed pages]

SD—16—2025

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2025

(Revised CBCS Pattern)

COMPUTER SCIENCE

(Linux Administration)

(Monday, 7-4-2025) **Time : 10.00 a.m. to 1.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Draw neat labelled diagram wherever necessary.

1. Attempt the following (any *five*) : 15

(*a*) What is Linux ?

(*b*) Explain Managing Passwords.

(*c*) Explain init scripts.

(*d*) Explain KDE Process.

(*e*) Explain Kill command.

P.T.O.

X365Y3F797AX365Y3F797AX365Y3F797AX365Y3F797A

(*f*) What is Operating System ?

(*g*) Explain Starting Services Manually.

2. Attempt the following (any *three*) : 15

(*a*) Explain Managing User Accounts.

(*b*) Explain Run level.

(*c*) Explain Administrative Tools in Linux.

(*d*) Explain Console-Based Monitoring.

(*e*) Explain System-Monitoring Tools.

3. Attempt the following (any *three*) : 15

(*a*) Explain Linux Boot Process.

(*b*) Explain Backup Software.

(*c*) Explain difference modes in Linux.

(*d*) Explain Dynamic Host Configuration Protocol.

(*e*) Explain Network File System.

4. Attempt the following (any *three*) : 15

(*a*) Explain Configuring Samba.

X365Y3F797AX365Y3F797AX365Y3F797AX365Y3F797A

(*b*) Explain Configuring and Managing Print Services.

(*c*) Explain Advanced Wireless Networking.

(*d*) Explain Choosing a Backup Strategy.

(*e*) Explain Granting System Administrator Privileges to Regular Users.

5. Write short notes on (any *three*) : 15

(*a*) Managing Groups

(*b*) Scheduling Tasks

(*c*) Priority Scheduling

(*d*) Telnet Server

(*e*) Apache Server.

X365Y3F797AX365Y3F797AX365Y3F797AX365Y3F797A