Total No. of Printed Pages:02

SUBJECT CODE NO- NEPHR-01-2025

FACULTY OF SCIENCE AND TECHNOLOGY

EXAMINATION WINTER 2025

M.SC (FIRST YEAR) (SEM-I)

COMMON PAPER

SVECRM-401-RESEARCH METHODOLOGY(COMPULSORY)

[Time: 3:00 Hours] **[Max.Marks:45]**

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

N.B.
1. Question No. 1 is Compulsory.
2. Solve any TWO questions from Question No. 2 to 5.
3. Calculator and log table allowed.

Q.1 Write notes on: **5X3=15**

1. Research objectives
2. Features of good research designing
3. Editing processing operations
4. statistical measures in research
5. Variables

Q.2 1. Describe various steps involved in research. **08**

2. Explain types of research hypothesis. **07**

Q.3 1. Explain meaning and need of good research designing. **08**

2. Describe descriptive and fundamental types of research. **07**

Q.4 1. Calculate, mean, median and mode of the following data. **08**

Class Interval (CI)	Frequency (F)
50-54	2
45-49	5
40-44	8
35-39	7
30-34	10
25-29	5
20-24	9
15-19	2
10-14	1
5-9	1

2. Describe observation method for collection of primary data. **07**

Q.5 1. calculate chi square (x^2) value of the following data. **08**

Excellent	Average	Poor	Total
58	32	30	120

2. Explain in detail case study. **07**

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

NEPHR—67—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (NEP) (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

Paper SCMPSC-401

(Computer Architecture and Microprocessor)

(Monday, 15-12-2025) **Time : 10.00 a.m. to 12.30 p.m.**

Time— 2.30 *Hours* *Maximum Marks*—60

N.B. :— (*i*) Question No. **1** is compulsory.

(*ii*) Attempt any *three* questions from Q. No. **2** to Q. No. **6**.

1. Attempt the following questions : 15

(*a*) Discuss instruction format.

(*b*) Explain the concept of registers.

(*c*) Explain the concept of virtual memory.

(*d*) Explain execute cycle of 8085,

(*e*) Write the features of 8086.

P.T.O.

2. (*a*) Explain CPU organization in detail. 5

(*b*) Write an ALP to subtract two 8-bit binary numbers. 5

(*c*) Multiply the following binary numbers : 5

(1) 1101 × 101

(2) 1010 × 1010

3. (*a*) Discuss architecture of 8085 with neat and labelled diagram. 5

(*b*) Discuss the types of instruction sets. 5

(*c*) Explain main memory allocation. 5

4. (*a*) Differentiate between CICS and RISC. 5

(*b*) Add the following binary numbers : 5

(1) 110101 + 111001

(2) 101011 + 110101

(*c*) Discuss Op code fetch machine cycle of 8085. 5

5. (*a*) Explain pin configuration of 8086. 5

(*b*) Explain the concept of interleaved memories. 5

(*c*) Discuss microprogrammed control unit. 5

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

(*a*) Explain memory hierarchies.

(*b*) Explain pipeline control.

(*c*) Discuss addressing modes of 8086

(*d*) Discuss featuers of 8085 microprocessor.

Total No. of Printed Pages:01

SUBJECT CODE NO- NEPHR-275-2025

FACULTY OF SCIENCE AND TECHNOLOGY

EXAMINATION WINTER 2025

M.SC (FIRST YEAR) (SEM-I)

COMPUTER SCIENCE

ADVANCE JAVA

[Time: 3:00 Hours] **[Max.Marks:60]**

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

N.B. I. Question No. 1 is compulsory.
II. Attempt any three from Q. No. 2 to Q. No. 6

Q.1 Attempt the following. **15**

a) What is thread Priorities?
b) What is Collection interface?
c) Define JDBC
d) Explain the concept of Servlets.
e) What is JavaBeans in JSP

Q.2 a) How to Creating the Threads in Java? Explain in Detail. **05**

b) Define Array List? Explain with suitable Example. **05**

c) Explain an executing Query and Processing Results. **05**

Q.3 a) Explain the Servlet Life Cycle with diagram. **05**

b) How to deploying Simple Servlet with suitable example. **05**

c) Describe the Scripting Elements- Expressions. **05**

Q.4 a) Explain Thread Life Cycle. **05**

b) Describe Treemap & Treeset with example. **05**

c) Write a program to check Prime Number. **05**

Q.5 a) Explain the Callable Statement with example. **05**

b) Describe the Thread Synchronization in Java. **05**

c) Write a program to Factorial number. **05**

Q.6 Attempt any three of the following. **15**

a) HashMap
b) Metadata
c) Get and Post Requests
d) Sessions in JSP

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

NEPHR—465—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

SCMPSE-401A

(Data Analysis Using Power BI)

(Wednesday, 24-12-2025) **Time : 10.00 a.m. to 12.00 noon**

Time— 2 *Hours* *Maximum Marks*—45

N.B. :— (*i*) Question No. **1** is compulsory.

(*ii*) Solve any *two* questions from Q. No. **2** to Q. No. **5**.

(*iii*) Assume your own data if required.

1. Attempt the following questions : 15

(*a*) Explain features of power BI.

(*b*) What is data splitting ?

(*c*) Explain star schema.

(*d*) Explain math functions in DAX.

(*e*) Explain combo chart.

P.T.O.

2. Solve the following questions : 15

(*a*) Explain power BI desktop interface.

(*b*) Explain how to import data from text file.

(*c*) What is analytics engine ?

3. Attempt the following questions : 15

(*a*) What do you mean by denormalization of data ?

(*b*) What do you mean by unpivoting data ?

(*c*) Explain how to create table relations in power BI.

4. Attempt the following questions : 15

(*a*) Explain logical functions in power BI

(*b*) Explain DAX operators

(*c*) Explain text functions in BI.

5. Attempt the following questions : 15

(*a*) Explain data visualization types.

(*b*) Explain with example pie chart.

(*c*) Explain waterfall chart.

Total No. of Printed Pages:02

SUBJECT CODE NO- NEPHR-466-2025

FACULTY OF SCIENCE AND TECHNOLOGY

EXAMINATION WINTER 2025

M.SC. (FIRST YEAR) (SEM-I)

COMPUTER SCIENCE

STATISTICAL METHOD

[Time: 2:00 Hours] **[Max.Marks:45]**

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

N.B.
1. Question No. 1. is compulsory.
2. Attempt any two questions from Q.no. 2 to Q.no.5.
3. All questions carry equal marks.

Q.1 Explain the following terms: **15**

a) Probability
b) Scope of statistics in computer science.
c) Regression
d) Relative frequency
e) Dispersion

Q.2 Attempt the following: **15**

a) Explain frequency polygon.
b) Calculate mean of the following data:

Marks	14	18	30	35	42	32	12
No.of student	10	19	20	31	22	15	8

c) Calculate variance of the following data:

Wages	0-50	50-100	100-150	150-200	200-250	250-300	300-350
Frequency	5	41	20	31	23	10	8

Q.3 Attempt the following: **15**

a) Describe statistics.
b) Two dice are rolled together. What is the probability that:
   i) The sum is 7
   ii) The sum is less than 5
   iii) The two numbers are the same
c) Calculate median of the following data:

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of workers	8	11	15	21	17	10	7

Q.4 Attempt the following: **15**

a) Describe simple bar diagram.
b) Explain merits and demerits of mode.
c) Calculate correlation coefficient between P and Q:

P	4	9	7	2	10	3	5
Q	2	5	8	4	9	6	3

Q.5 Attempt the following: **15**

a) Explain graphical representation of frequency distribution.

b) If A be any event then prove that,

$$0 \leq P(A) \leq 1$$

c) Calculate standard deviation of the following data:

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	16	31	45	39	16	13	8

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

NEPHR—467—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

Paper SCMPSE-401C

(Web Technology)

(Wednesday, 24-12-2025) **Time : 10.00 a.m. to 12.00 noon**

Time— 2 *Hours* *Maximum Marks*—45

N.B. :— (*i*) Question No. **1** is compulsory.

(*ii*) Attempt any *two* questions from Q. No. **2** to Q. No. **5**.

1. Attempt the following questions (**3** marks each) : 15

(*a*) What is web browser ?

(*b*) Explain JavaScript.

(*c*) Explain web server and web protocol.

(*d*) Explain email hyperlink.

(*e*) Explain JavaScript.

P.T.O.

2. Attempt the following questions :

(*a*) Explain structure of HTML. 8

(*b*) Explain list tag with example. 7

3. Attempt the following questions :

(*a*) Explain table tag with example. 8

(*b*) Explain web protocols. 7

4. Attempt the following questions :

(*a*) Explain frameset tag with their attribute. 8

(*b*) Explain form controls. 7

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

(*a*) Types of CSS

(*b*) DHTML

(*c*) Web server

(*d*) WWW

(*e*) Marquee tag.

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

NEPHR—376—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (CS) (First Year) (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

(SCMPSE-451-C

(PHP and MySQL)

(Tuesday, 23-12-2025) **Time : 10.00 a.m. to 12.00 noon**

Time— 2 *Hours* *Maximum Marks*—45

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

(*ii*) Question No. **1** is compulsory.

(*iii*) Attempt any *two* questions from Q. No. **2** to Q. No. **5**.

1. Solve the following questions (**3** marks each) : 15

(*a*) History of PHP.

(*b*) Explain the if-else with syntax.

(*c*) Explain the creating HTML form.

(*d*) What is form validation ?

(*e*) Explain the executing simple queries.

P.T.O.

2. Solve the following questions : 15

(*a*) Explain the sessions and cookies.

(*b*) Explain the retrieving query results.

(*c*) Explain the inheritances with a suitable example.

3. Solve the following questions : 15

(*a*) Explain the string functions with syntax.

(*b*) Explain the do-while looping statement with a suitable example.

(*c*) Explain the sending data to the web browser.

4. Solve the following questions : 15

(*a*) Explain the embedding PHP code in your web pages.

(*b*) Explain the destructor with a suitable example.

(*c*) Explain the connecting to MySQL and selecting the database.

5. Solve the following questions : 15

(*a*) Explain the function overloading with a suitable example.

(*b*) Explain the handling HTML form data in PHP.

(*c*) Explain the form validation with JavaScript.

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

NEPHR—465—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

SCMPSE-401A

(Data Analysis Using Power BI)

(Wednesday, 24-12-2025) **Time : 10.00 a.m. to 12.00 noon**

Time— 2 *Hours* *Maximum Marks*—45

N.B. :— (*i*) Question No. **1** is compulsory.

(*ii*) Solve any *two* questions from Q. No. **2** to Q. No. **5**.

(*iii*) Assume your own data if required.

1. Attempt the following questions : 15

(*a*) Explain features of power BI.

(*b*) What is data splitting ?

(*c*) Explain star schema.

(*d*) Explain math functions in DAX.

(*e*) Explain combo chart.

P.T.O.

2. Solve the following questions : 15

(*a*) Explain power BI desktop interface.

(*b*) Explain how to import data from text file.

(*c*) What is analytics engine ?

3. Attempt the following questions : 15

(*a*) What do you mean by denormalization of data ?

(*b*) What do you mean by unpivoting data ?

(*c*) Explain how to create table relations in power BI.

4. Attempt the following questions : 15

(*a*) Explain logical functions in power BI

(*b*) Explain DAX operators

(*c*) Explain text functions in BI.

5. Attempt the following questions : 15

(*a*) Explain data visualization types.

(*b*) Explain with example pie chart.

(*c*) Explain waterfall chart.

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

NEPHR—467—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

Paper SCMPSE-401C

(Web Technology)

(Wednesday, 24-12-2025) **Time : 10.00 a.m. to 12.00 noon**

Time— 2 *Hours* *Maximum Marks*—45

N.B. :— (*i*) Question No. **1** is compulsory.

(*ii*) Attempt any *two* questions from Q. No. **2** to Q. No. **5**.

1. Attempt the following questions (**3** marks each) : 15

(*a*) What is web browser ?

(*b*) Explain JavaScript.

(*c*) Explain web server and web protocol.

(*d*) Explain email hyperlink.

(*e*) Explain JavaScript.

P.T.O.

2. Attempt the following questions :

(*a*) Explain structure of HTML. 8

(*b*) Explain list tag with example. 7

3. Attempt the following questions :

(*a*) Explain table tag with example. 8

(*b*) Explain web protocols. 7

4. Attempt the following questions :

(*a*) Explain frameset tag with their attribute. 8

(*b*) Explain form controls. 7

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

(*a*) Types of CSS

(*b*) DHTML

(*c*) Web server

(*d*) WWW

(*e*) Marquee tag.

Total No. of Printed Pages:2

SUBJECT CODE NO:- NEPHR-115-2025
FACULTY OF SCIENCE & TECHNOLOGY
EXAMINATION WINTER 2025
M.Sc. (FIRST YEAR) (SEM –II)
COMPUTER SCIENCE
SCMPSC – 452 CLOUD COMPUTING

[Time: 2:00 Hours] **[Max.Marks:60]**

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

N.B. 1. First Question is compulsory

2. Solve any three questions from Q.No 2 to Q.No 6

3. Assume suitable data if necessary.

Q1 Attempt the following **[15]**

A) What is Cloud Computing? Discuss its characteristics.

B) Explain in brief hybrid Cloud.

C) Discuss the merits and demerits of virtualization

D) Explain the concept of resource bundling.

E) Explain the concept of Cloud Security

Q2 Attempt the following **[15]**

A) Discuss the applications of Cloud Computing

B) Explain the programming Model in Cloud Computing

C) Discuss the utility computing.

Q3 Attempt the following **[15]**

A) Describe the taxonomy of virtual machines.

B) Explain the policies and mechanisms for cloud resource management

C) Explain the Key uses of Azure.

Q4 Attempt the following **[15]**

A) Discuss virtualization system security issues.

B) Explain the concept of AWS elastic computing.

C) Explain the concept of application scaling in cloud computing.

Q5 Attempt the following **[15]**

A) Explain Microsoft Azure Cloud Services

B) Describe the types of Virtualization Techniques

C) Discuss the technologies for virtualization-based security enhancements

Q6 Attempt the following (Any Three) **[15]**

A) Explain the Public Vs Private Cloud.

B) Explain Non Redundant cloud architectural style in cloud applications

C) Explain the Concept of Fair Queuing

D) Discuss the Virtualization System Security Issues.

Total No. of Printed Pages:01

SUBJECT CODE NO- NEPHR-375-2025

FACULTY OF SCIENCE AND TECHNOLOGY

EXAMINATION WINTER 2025

M.SC. (FIRST YEAR) (SEM-II)

COMPUTER SCIENCE

SOFTWARE TESTING

[Time: 2:00 Hours] **[Max.Marks:45]**

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

N.B.
1. First Question is compulsory.
2. Solve any two questions from Q.No 2 to Q.No 5.
3. Assume suitable data if necessary.

Q.1 Attempt the following. **15**
1. Explain the McCall's Quality Factors.
2. Describe the Internal and External Views of Testing.
3. Describe the Advantages of Automation testing.
4. Explain Test Plan Template.
5. Discuss History of Selenium.

Q.2 Attempt the following. **15**
1. Explain Integration Testing in detail.
2. What is Debugging? Explain The Art of Debugging.
3. Explain types of System testing.

Q.3 Attempt the following. **15**
1. Discuss challenges in automation and explain in brief STLC Phases.
2. Explain the Black Box Testing in detail.
3. Explain basis path testing.

Q.4 Attempt the following. **15**
1. Explain the use Case Testing.
2. What is a defect? Explain Defect Life Cycle.
3. Explain Defect Tracking System.

Q.5 Attempt the following. **15**
1. Explain Different components in Selenium
2. Describe the Control Structural Testing.
3. Explain the Key aspects of Web Elements in Selenium.

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

NEPHR—350—2025

FACULTY OF SCIENCE

M.Sc. (First Year) (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

BIOTECHNOLOGY

Paper SBTTE-451

(Enzymology)

(Tuesday, 23-12-2025 **Time : 10.00 a.m. to 12.00 noon**

Time— 2 *Hours* *Maximum Marks*—45

N.B. :— (*i*) Question No. **1** is compulsory.

(*ii*) From the remaining solve any *two*.

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

1. Write short notes on : 15

(*a*) Ligases

(*b*) Fatty acid synthase

(*c*) Significance of Vmax

(*d*) Enzymeproximity

(*e*) Turnover number.

P.T.O.

2.	(*a*)	Explain stereospecificity of enzymes.	8
	(*b*)	Explain transition state theory.	7
3.	(*a*)	Give steady state kinetic for enzymes.	8
	(*b*)	Explain different ways of analysis of binding isotherms.	7
4.	(*a*)	Describe mode of action of competitive inhibitors.	8
	(*b*)	Explain occurrence isolation and properties of pyruvate dehydrogenase complex.	7
5.	(*a*)	Write down effect of partition on kinetics of enzymes performance.	8
	(*b*)	Describe covalent bonding of enzyme immobilization.	7

Total No. of Printed Pages:01

SUBJECT CODE NO- NEPHR-374-2025

FACULTY OF SCIENCE AND TECHNOLOGY

EXAMINATION WINTER 2025

M.SC. (FIRST YEAR) (SEM-II)

COMPUTER SCIENCE

DATA STRUCTURE

[Time: 2:00 Hours] **[Max.Marks:45]**

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

N.B. 1. Question No. 1 is compulsory.
2. Attempt any two from Q. No. 2 to Q. No. 5.

Q.1 Attempt the following. **15**

1. Define Algorithm, and Explain Complexity of Algorithm.
2. Explain Binary Search Tree.
3. Explain Stack with its operations.
4. Explain Singly Linked List in detail.
5. Explain Graph.

Q.2 Attempt the following. **15**

1. Explain Bubble Sort with example.
2. Explain Binary Tree.
3. Explain Function Recursion.

Q.3 Attempt the following. **15**

1. Explain Array and their types.
2. What is string? Explain string library functions.
3. Explain Queue and different operations on queue.

Q.4 Attempt the following. **15**

1. Explain linked list with memory representation.
2. Explain tree traversal and threaded binary tree.
3. Explain Static and Dynamic Memory allocation.

Q.5 Attempt the following. **15**

1. Define flowchart and explain with example.
2. Explain concept of multistack with their implementation.
3. Explain Complete Binary Tree.

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

NEPHR—376—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (CS) (First Year) (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

(SCMPSE-451-C

(PHP and MySQL)

(Tuesday, 23-12-2025) **Time : 10.00 a.m. to 12.00 noon**

Time— 2 *Hours* *Maximum Marks*—45

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

(*ii*) Question No. **1** is compulsory.

(*iii*) Attempt any *two* questions from Q. No. **2** to Q. No. **5**.

1. Solve the following questions (**3** marks each) : 15

(*a*) History of PHP.

(*b*) Explain the if-else with syntax.

(*c*) Explain the creating HTML form.

(*d*) What is form validation ?

(*e*) Explain the executing simple queries.

P.T.O.

2. Solve the following questions : 15

(*a*) Explain the sessions and cookies.

(*b*) Explain the retrieving query results.

(*c*) Explain the inheritances with a suitable example.

3. Solve the following questions : 15

(*a*) Explain the string functions with syntax.

(*b*) Explain the do-while looping statement with a suitable example.

(*c*) Explain the sending data to the web browser.

4. Solve the following questions : 15

(*a*) Explain the embedding PHP code in your web pages.

(*b*) Explain the destructor with a suitable example.

(*c*) Explain the connecting to MySQL and selecting the database.

5. Solve the following questions : 15

(*a*) Explain the function overloading with a suitable example.

(*b*) Explain the handling HTML form data in PHP.

(*c*) Explain the form validation with JavaScript.

Total No. of Printed Pages:01

SUBJECT CODE NO- NEPHR-10-2025

FACULTY OF SCIENCE AND TECHNOLOGY

EXAMINATION WINTER 2025

M.SC(SECOND YEAR) (SEM-III)

COMPUTER SCIENCE

IMAGE PROCESSING USING PYTHON

[Time: 3:00 Hours] **[Max.Marks:80]**

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

N.B. 1. Question No. 1 is Compulsory.
2. Attempt any three from Q.No.2 to Q.No.6.

Q.1 Attempt the following. **20**

1. What is digital image? Discuss image sampling.
2. Explain edge detection of Image.
3. Discuss about basic image operations.
4. Explain Fourier descriptors.

Q.2 Answer the following.

1. Explain spatial domain methods. **10**
2. Discuss Thresholding techniques. **10**

Q.3 Answer the following.

1. Discuss loading and displaying images with OpenCV. **10**
2. Explain texture analysis using gray-level co-occurrence matrix. **10**

Q.4 Answer the following.

1. Discuss about medical image processing. **10**
2. Explain Fourier transform. **10**

Q.5 Answer the following.

1. Explain image degradation models. **10**
2. Explain image manipulation and transformation. **10**

Q.6 Answer the following.

1. Explain satellite image processing. **10**
2. Explain region-based segmentation. **10**

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

NEPHR—276—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (NEP) (CS) (Second Year) (Third Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

Paper SCMPSE-501-A

(Data Science with Python)

(Monday, 22-12-2025) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—60

N.B. :— (1) *All* questions carry equal marks.

(2) Question No. **1** is compulsory.

(3) Answer any *three* questions from Q. No. **2** to Q. No. **6**.

1. Solve the following questions : 15

(*a*) Explain EDA in detail.

(*b*) What is data science and its applications ?

(*c*) Explain Hands-On Analysis.

2. Solve the following questions :

(*a*) Explain descriptive statistics and data profiling. 8

(*b*) Explain Python data types and variables. 7

P.T.O.

3. Solve the following questions :

(*a*) Explain data presentation through visualizations. 8

(*b*) What is data structure ? Explain list and tuple in detail. 7

4. Solve the following questions :

(*a*) Explain supervised and unsupervised learning. 8

(*b*) Explain building and evaluating machine learning models in scikit-learn. 7

5. Solve the following questions :

(*a*) Explain linear regression for predictive modeling. 8

(*b*) Explain Case studies in Data science. 7

6. Solve the following questions :

(*a*) Explain Data manipulation using Pandas. 8

(*b*) Explain outliers in detail. 7

Total No. of Printed Pages:01

SUBJECT CODE NO- NEPHR-10-2025

FACULTY OF SCIENCE AND TECHNOLOGY

EXAMINATION WINTER 2025

M.SC(SECOND YEAR) (SEM-III)

COMPUTER SCIENCE

IMAGE PROCESSING USING PYTHON

[Time: 3:00 Hours] **[Max.Marks:80]**

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

N.B. 1. Question No. 1 is Compulsory.
2. Attempt any three from Q.No.2 to Q.No.6.

Q.1 Attempt the following. **20**

1. What is digital image? Discuss image sampling.
2. Explain edge detection of Image.
3. Discuss about basic image operations.
4. Explain Fourier descriptors.

Q.2 Answer the following.

1. Explain spatial domain methods. **10**
2. Discuss Thresholding techniques. **10**

Q.3 Answer the following.

1. Discuss loading and displaying images with OpenCV. **10**
2. Explain texture analysis using gray-level co-occurrence matrix. **10**

Q.4 Answer the following.

1. Discuss about medical image processing. **10**
2. Explain Fourier transform. **10**

Q.5 Answer the following.

1. Explain image degradation models. **10**
2. Explain image manipulation and transformation. **10**

Q.6 Answer the following.

1. Explain satellite image processing. **10**
2. Explain region-based segmentation. **10**

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

NEPHR—276—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (NEP) (CS) (Second Year) (Third Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

Paper SCMPSE-501-A

(Data Science with Python)

(Monday, 22-12-2025) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—60

N.B. :— (1) *All* questions carry equal marks.

(2) Question No. **1** is compulsory.

(3) Answer any *three* questions from Q. No. **2** to Q. No. **6**.

1. Solve the following questions : 15

(*a*) Explain EDA in detail.

(*b*) What is data science and its applications ?

(*c*) Explain Hands-On Analysis.

2. Solve the following questions :

(*a*) Explain descriptive statistics and data profiling. 8

(*b*) Explain Python data types and variables. 7

P.T.O.

3. Solve the following questions :

(*a*) Explain data presentation through visualizations. 8

(*b*) What is data structure ? Explain list and tuple in detail. 7

4. Solve the following questions :

(*a*) Explain supervised and unsupervised learning. 8

(*b*) Explain building and evaluating machine learning models in scikit-learn. 7

5. Solve the following questions :

(*a*) Explain linear regression for predictive modeling. 8

(*b*) Explain Case studies in Data science. 7

6. Solve the following questions :

(*a*) Explain Data manipulation using Pandas. 8

(*b*) Explain outliers in detail. 7

Total No. of Printed Pages:1

SUBJECT CODE NO:- NEPHR-44-2025
FACULTY OF SCIENCE & TECHNOLOGY
EXAMINATION WINTER 2025
M.Sc.(SECOND YEAR) (SEM –IV)
(COMMON PAPER)
RESEARCH PUBLICATION ETHICS (NEPPE - 1002)

[Time: 2:00 Hours] **[Max.Marks:40]**

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

N.B. i) Question number 1 is compulsory.
ii) Solve any three questions from Question NO.2 to 6.

Q1 Explain: **5×2=10**
a) Nature of philosophy
b) Intellectual honesty
c) World association of medical editor's.
d) Open access publications.
e) Web of Science

Q2 a) What do you mean by philosophy? Gives the IR branches. **2x5=10**
b) Write an essay on scientific misconduct.

Q3 a) Define publication ethics? Why publication of research paper is important. Explain. **2x5=10**
b) SHERPA / ROMEO is an excellent online resource. Explain.

Q4 a) What are predatory Journals? How to identify a predatory Journals! **2×5=10**
b) What is impact Factor? How it calculate? Explain it with suitable example.

Q5 a) Give an account on violation of publications ethics. **2x5=10**
b) What is plagiarism? Describe different software of plagiarism.

Q6 Write short notes on: **4×2.5=10**
a) Scope of ethics
b) Salami slicing
c) Springer
d) h-index

Total No. of Printed Pages:1

SUBJECT CODE NO:- NEPHR-116-2025
FACULTY OF SCIENCE & TECHNOLOGY
EXAMINATION WINTER 2025
M.Sc.(SECOND YEAR) (SEM –IV)
COMPUTER APPLICATION
SCMPSC – 551 WEB APPLICATION WITH MVC CORE

[Time: 3:00 Hours] **[Max.Marks:80]**

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

N.B.
1. Q.1 is Compulsory.
2. Attempt any 03 questions from Q.2 to Q.6.
3. Draw neat & labelled diagrams, wherever necessary.

Q.1 Answer the following question: **20**
a) What are the advantages of ASP.NET care.
b) Explain Controller in ASP.NET Core MNC.
c) What are URL Helpers & Explain.
d) What are cookies Explain?

Q.2 Answer the following quests: **20**
a) Differentiate between ASP.NET Core & ASP.NET MVC
b) Explain the ASP.NET care project layout.

Q.3 Answer the following questions: **20**
a) Explain Built-in HTML Helpers.
b) Describe the role of the Default Model Binder.

Q.4 Answer the following questions: **20**
a) Explain in detail Custom server side Validation.
b) What are Data Annotations in ASP.NET care MVC & Explain.

Q.5 Answer the following questions: **20**
a) Explain in detail Business Object (BO) classes.
b) What is memory caching? Explain in detail.

Q.6 Answer the following questions: **20**
a) What is Attribute Routing? Explain.
b) What is AJAX? Explain in detail.

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

NEPHR—377—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (CS) (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

Paper SCMPSE-551

(Database Administration)

(Tuesday, 23-12-2025) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—80

N.B. :— (1) *All* questions carry equal marks.

(2) Question No. **1** is compulsory.

(3) Solve any *three* questions from remaining five questions (Q. No. **2** to Q. No. **6**).

1. Answer the following questions : 20

(*a*) What is SGA ? Explain it in detail.

(*b*) Explain Standalone host.

(*c*) Explain I/O connections among data files.

(*d*) Explain OMF in detail.

P.T.O.

2. Answer the following questions : 20

(*a*) Explain other files in oracle architecture.

(*b*) Explain the steps to creating database manually.

3. Answer the following questions : 20

(*a*) Explain architectural overview of hardware configuration of oracle database.

(*b*) Explain Client/Server database Application.

4. Answer the following questions : 20

(*a*) Explain concurrent I/O among Background processes.

(*b*) Explain Table segment.

5. Answer the following questions : 20

(*a*) What is physical backup ? Explain it in detail.

(*b*) Explain different types of tablespaces.

6. Answer the following questions : 20

(*a*) Explain Recovery in NOARCHIEVELOG mode.

(*b*) Explain oracle shared server.

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

NEPHR—378—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (CS) (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

SCMPSE-551

(Data Mining and Data Warehousing)

(Tuesday, 23-12-2025) **Time : 2.00 p.m. to 5.00 p.m.**

Time— 3 *Hours* *Maximum Marks*—60

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

(*ii*) Question No. **1** is compulsory.

(*iii*) Attempt any *three* questions from remaining five questions (Q. No. **2** to Q. No. **6**).

1. Answer the following questions : 15

(*a*) Explain data mining metrics.

(*b*) Expain information retrieval in data mining.

(*c*) Describe the hierarchical algorithms.

P.T.O.

2. Answer the following questions : 15

(*a*) Explain basic data mining tasks. 8

(*b*) Explain social implication of data mining. 7

3. Answer the following questions : 15

(*a*) Explain decision support systems. 8

(*b*) Explain OLAP and Web search engine. 7

4. Answer the following questions : 15

(*a*) Explain statistical based algorithms. 8

(*b*) Explain decision tree based algorithms. 7

5. Answer the following questions : 15

(*a*) Explain the concept of clustering large databases. 8

(*b*) Explain web structuring mining. 7

6. Answer the following questions : 15

(*a*) What is data warehousing ? Explain its components. 8

(*b*) Explain data warehousing architecture. 7

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

NEPHR—379—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (CS) (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2025

COMPUTER SCIENCE

(SCMPSE-551)

(DevOps Fundamental)

(Tuesday, 23-12-2025) **Time : 2.00 p.m. to 5.00 p.m.**

Time— 3 *Hours* *Maximum Marks*—60

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

(*ii*) Question No. **1** is compulsory.

(*iii*) Attempt any *three* questions from Q. No. **2** to Q. No. **6**.

1. Solve the following questions : 15

(*a*) Explain the DevOps Main objectives.

(*b*) Creating Postman collection with requests.

(*c*) Branching and merging in Git preview.

P.T.O.

2. Solve the following questions :

(*a*) What is DevOps ? Write benefits of working in a DevOps environment. 8

(*b*) Explain the Terraform command line and life cycle. 7

3. Solve the following questions :

(*a*) Explain the commonly used commands in Git. 8

(*b*) Explain the Maven architecture. 7

4. Solve the following questions :

(*a*) Explain the building and running container on a local machine. 8

(*b*) First example of Kubernetes application deployments. 7

5. Solve the following questions :

(*a*) Explain the using environments and variables to dynamize requests. 8

(*b*) Explain the creating packer template for Azure VMs with scripts. 7

6. Solve the following questions :

(*a*) Explain the configuration management tools. 8

(*b*) Explain the Executing's postman request tests locally. 7