

Roll No.

Total No. of Pages : 03

Total No. of Questions : 07

B.Sc. (Cyber Security) (Sem-1)

HUMAN VALUES, DE-ADDICTION AND TRAFFIC RULES

Subject Code : HVPE101-18

M.Code : 92577

Date of Examination : 03-07-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students has to attempt any FOUR questions.

SECTION-A

(10 × 2 = 20)

- 1. Explain briefly :**

- (i) What is Utility-Value?

उपयोगिता-मूल्य क्या हैं?

ਉਪਯੋਗਿਤਾ-ਮੱਲ ਕੀ ਹੈ?

- (ii) Explain Natural Acceptance.

સહજ સ્વીકૃતિ સમજાઓ ।

ਕੁਦਰਤੀ ਮੰਜੁਰੀ ਸਮਝਾਓ।

- (iii) How the value “care” is related with body?

मूल्य “ध्यान” शरीर के साथ कैसे संबंधित है।

ਮੱਲ ਧਿਆਨ ਸਰੀਰ ਦੇ ਨਾਲ ਕਿਵੇਂ ਸਬੰਧਤ ਹੈ?

- (iv) What are the different patterns of differentiation?

भेदभाव के विभिन्न पैटर्न क्या हैं?

ਫਰਕ ਦੇ ਵੱਖ ਵੱਖ ਪੈਟਰਨ ਕੀ ਹਨ?

- (v) What is Gratitude?

कृतज्ञता क्या है?

ਕਿਤਗਿਅਤਾ ਕੀ ਹੈ?

(vi) What is Innateness?

स्वाभाविकता क्या है?

ਸਵਾਭਾਵਿਕਤਾ ਕੀ ਹੈ?

(vii) What do you mean by values or human values?

मूल्यों या मानवीय मूल्यों से आप क्या समझते हैं?

ਕਦਰਾਂ-ਕੀਮਤਾਂ ਜਾਂ ਮਨੁੱਖੀ ਕਦਰਾਂ-ਕੀਮਤਾਂ ਤੋਂ ਤੁਹਾਡਾ ਕੀ ਭਾਵ ਹੈ?

(viii) What is the difference between prosperity and wealth?

समृद्धि और धन के बीच क्या अंतर है?

ਖੁਸ਼ਹਾਲੀ ਅਤੇ ਅਮੀਰੀ ਦੇ ਵਿੱਚ ਕੀ ਅੰਤਰ ਹੈ?

(ix) What is cyclic production?

चक्रीय उत्पादन क्या है?

ਚੱਕਰੀ ਉਤਪਾਦ ਕੀ ਹੈ?

(x) What is Existence?

अस्तित्व क्या है?

ਅਸਤੀਤਵ ਕੀ ਹੈ?

SECTION-B

(4 × 10 = 40)

2. What is the need of Value-Education?

मूल्य शिक्षा की क्या ज़रूरत है?

ਮੁੱਲਾਂ ਸਿੱਖਿਆ ਦੀ ਕੀ ਜ਼ਰੂਰਤ ਹੈ?

3. What is harmony in family?

परिवार में तालमेल के बारे में बताएं।

ਪਰਿਵਾਰ ਵਿੱਚ ਤਾਲਮੇਲ ਦੇ ਬਾਰੇ ਵਿੱਚ ਦੱਸੋ।

4. What are the basic guidelines of value education?

ਮੂਲ੍‍ਯੁ ਸ਼ਿਕਸ਼ਾ ਕੀ ਬੁਨਿਯਾਦੀ ਦਿਸ਼ਾਨਿਰ್ದੇਸ਼ ਕਯਾ ਹੈਂ?

ਮੁੱਲ ਸਿੱਖਿਆ ਦੀ ਬੁਨਿਆਦੀ ਦਿਸ਼ਾਨਿਰਦੇਸ਼ ਕੀ ਹਨ?

5. What is prosperity? What is the difference between prosperity and wealth?

ਸਮ੍ਰਥਿ ਕਯਾ ਹੈ? ਸਮ੍ਰਥਿ ਔਰ ਧਨ ਕੇ ਬੀਚ ਕਯਾ ਅੰਤਰ ਹੈ?

ਖੁਸ਼ਹਾਲੀ ਕੀ ਹੈ? ਖੁਸ਼ਹਾਲੀ ਅਤੇ ਪੈਸੇ ਦੇ ਵਿੱਚ ਕੀ ਅੰਤਰ ਹੈ?

6. Differentiate between intention and competence. How do we come to confuse between the two?

ਝਰਾਦਾ ਔਰ ਕਸ਼ਮਤਾ ਕੇ ਬੀਚ ਕਯਾ ਅੰਤਰ ਹੈ? ਕੈਸੇ ਹਮ ਗਲਤੀ ਕਰਤੇ ਹੈਂ?

ਇਰਾਦਾ ਅਤੇ ਸਮਰੱਥਾ ਦੇ ਵਿੱਚ ਕੀ ਅੰਤਰ ਹੈ? ਕਿਵੇਂ ਅਸੀਂ ਗਲਤੀ ਕਰਦੇ ਹਾਂ?

7. What are the broad holistic criteria for evaluation of technologies, management models and production systems?

ਪ੍ਰਾਯੋਗਿਕੀ, ਪ੍ਰਬੰਧਨ ਮਾਡਲ ਔਰ ਉਤਪਾਦਨ ਪ੍ਰਣਾਲੀਓਂ ਕੇ ਮੂਲ੍‍ਯਾਂਕਨ ਕੇ ਲਿਏ ਕ੍ਰਿਯਾਪਕ ਸਮਗ੍ਰ ਮਾਪਦੰਡ ਕਯਾ ਹੈਂ?

ਸਰਬਾਂਗੀ ਤਕਨੀਕੀ, ਪਰਬੰਧਨ ਮਾਡਲ ਅਤੇ ਉਤਪਾਦਨ ਪ੍ਰਣਾਲੀਆਂ ਦੇ ਲੇਖੇ ਜੋਖਾ ਲੀ ਵਿਆਪਕ ਮਾਪਦੰਡ ਕੀ ਹਨ?

Note : Disclosure of Identity by writing Mobile No. or Making of Passing request on any page of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Science (Cyber Security) (Sem.-1)

ENGLISH

Subject Code : BTHU103-18

M.Code : 92575

Date of Examination : 16-06-2025

Time : 3 Hrs.

Max. Marks : 60

SECTION - B

2. Explain the differences between intrapersonal, interpersonal and group communication.
3. Explain how effective communication both verbal and non-verbal contributes to building strong relationships, improving learning and achieving career success. Use examples from daily experiences.
4. **Read the paragraph and answer the questions given below :**

Good communication involves not only expressing yourself but also understanding others. Intrapersonal communication allows us to think, reflect and make decisions. It includes self-talk and internal dialogue. This type of communication helps people manage their emotions and plan their actions. On the other hand, business communication requires clarity, formality and accuracy. It is often done through emails, reports, meetings and presentations. Whether personal or professional, communication is most effective when it is respectful, thoughtful and responsive.

Questions :

- a. What is intrapersonal communication and why is it important?
 - b. How is business communication different from casual conversation?
 - c. List two qualities of effective communication as mentioned in the passage.
 - d. How does intrapersonal communication help in decision-making?
 - e. Why are clarity and formality important in business communication?
5. Explain with examples how non-verbal communication can enhance or change the meaning of spoken words.
 6. Write a detailed conversation between you and a friend who is nervous before a job interview.
 7. Describe at least two settings where group communication is essential. Explain challenges like domination, lack of focus or misunderstanding and suggest solutions for effective group discussions.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

1 | M-92575

(S3) - 1581

2 | M-92575

(S3) - 1581

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Science (Cyber Security) (Sem.-1)

MATHEMATICS

Subject Code : UGCA1901

M.Code : 92569

Date of Examination : 20-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- Find 10th term of sequence 5, 2, -1,
- If A and B are two sets then prove that $A - B = A \cap B^c$
- What is Difference and Symmetric difference of two Sets?
- State and Prove Idempotent Laws of Logic of Proposition.
- Define Rectangular Matrix.
- Construct 2×3 matrix whose elements are given by $a_{ij} = i + 2j$
- Translate statement into symbolic form : "number 7 is prime and odd".**
- Find the AM between 8 and 26.
- Write down the truth table for $(p \wedge q) \wedge \sim (p \vee q)$
- Define the Tautology proposition.

SECTION - B

2. If $A = \begin{bmatrix} 2 & 0 & -1 \\ 5 & 1 & 0 \\ 0 & -1 & 3 \end{bmatrix}$ Evaluate $A^3 - 6A^2 + 11A - I$
3. If p^{th} term of an AP is a and q^{th} term is b then show that the sum of $(p + q)$ terms is
$$\frac{p+q}{2} \left[a + b + \frac{a-b}{p-q} \right]$$
4. Suppose 120 students studies Hindi, English and Punjabi. It is given that 60 students study Hindi, 45 studies English, 42 study Punjabi, 20 study Hindi and English, 25 study Hindi and Punjabi and 15 study English and Punjabi. Find the number of students who studies all the three languages.
5. **Test the Validity of statement :**
If Wages Increases, then there will be Inflation. The cost of living will not increase if there is no Inflation. Wages will increase. Therefore, the cost of living will increase.
6. a) If $A = \{a, b, c, d\}$ and $B = \{a, e, i, o, u\}$, then determine (i) $B - \phi$ (ii) $A \cup B$
b) Prove that if $A \subseteq B$, then $A \cup B = B$.
7. If $A = \begin{bmatrix} 8 & 0 \\ 3 & 5 \\ 3 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 70 \\ -2 & 6 \\ 3 & 4 \end{bmatrix}$. Find a Matrix X such that $A - 5X = 2B$.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Science (Cyber Security) (Sem.-1)

FUNDAMENTALS OF COMPUTER AND IT

Subject Code : UGCA1902

M.Code : 92570

Date of Examination : 23-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- Difference between data and information.
- What is the role of SMPS?
- What is USB?
- What is the purpose of OCR?
- Define ROM.
- Convert $(25)_{10}$ to binary.
- Differentiate between machine language and high-level language.
- How is "Mail merge" useful in MS Word?
- What is UPI? How does it simplify digital payments?
- What is big data?

SECTION - B

2. a. Explain all types of computer memory (Primary, Secondary, Cache) with advantages and disadvantages.
- b. What are the functions and components of an operating system?
3. a. Describe any five input and output devices with their functions.
- b. What is the significance of MS Excel in data analysis? Explain with examples.
4. Discuss the role of Cloud Computing in Modern computing era.
5. Compare different number systems (Binary, Decimal, Octal, Hexadecimal) with at least one conversion example for each.
6. Explain different types of Electronic Payment Systems. Discuss security concern over these payments systems.
7. **Write a short note on :**
 - a. IOT
 - b. Digital signatures

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Science (Cyber Security) (Sem.-1)

PROBLEM SOLVING USING C

Subject Code : UGCA1903

M.Code : 92571

Date of Examination : 18-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write short notes on :

- What is the purpose of pseudo code in problem solving?
- What are symbolic constants in C?
- List any four keywords used in C programming.
- Write the syntax of scanf() and printf() functions.
- What is the difference between while and do-while loops?
- What is a function prototype? Why is it important?
- How are strings declared and initialized in C?
- Differentiate between Single and Multidimensional Array.
- What is a pointer? Mention its syntax.
- Define a structure. How is it different from a union?

SECTION - B

2. Describe the steps of problem-solving using flowcharts and algorithms with an example.
3. What do you mean by operators? Explain the following C operators with suitable examples :
 - a) Arithmetic Operators
 - b) Logical Operators
 - c) Unary Operators
4. **Write a C Program to print Fibonacci series up to n terms using :**
 - a) While loop
 - b) For loop
5. What do you mean by Recursion? What is the use of Recursion in C programs? Write a program to find factorial of a number using Recursion.
6. Discuss different types of storage classes in C with examples.
7. Explain file handling in C. Write a program to read and write data to a text file.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Questions : 07

Total No. of Pages : 02

B.Sc. (Cyber Security) (Sem.-2)

ENVIRONMENTAL STUDIES

Subject Code : EVS-102-18

M.Code : 91721

Date of Examination : 26-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Write briefly :
- Define ecosystem.
 - Define ecological succession.
 - What is meant by food chain?
 - What are the causes of soil erosion?
 - List any two major global effects of air pollution.
 - What is meant by desertification?
 - How does acid rain occur?
 - What are GHGs? Name any four GHGs in the descending order of their global warming potential.
 - List any four effects of radiation pollution.
 - Why is biodiversity important?

SECTION-B

- 2 How would you explain environmental studies as a multidisciplinary subject? Discuss the case study of a polluted site which you have visited in proving your point.
- 3 Sketch and explain the types of ecological pyramids. Discuss the 10% rule.
- 4 Discuss the uses, functions and values of forest resources. List the causes and effects of its degradation.
- 5 List and contrast between renewable and non-renewable energy sources. Consider economic and environmental viability.
- 6 Discuss a step by step protocol to develop the strategies to address environmental issues in your region/village. Explain how important the public hearing in this process is.
- 7 **Write notes on :**
 - a) Rising Sea Levels and Associated Global Disasters.
 - b) Nuclear hazards and health risks.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Science (Cyber Security) (Sem.-2)
OBJECT ORIENTED PROGRAMMING USING C++

Subject Code : UGCA1909

M.Code : 91717

Date of Examination : 22-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Explain the following :

- a) Class
- b) Dynamic polymorphism
- c) File reading
- d) Constructor
- e) Ambiguity
- f) Friend function
- g) Protected
- h) Abstraction
- i) Pure virtual function
- j) Encapsulation.

SECTION - B

2. Explain the features on OOP.
3. Discuss the components and program structure of C++.
4. Write a program to copy from one file to another character by character.
5. Define order of destructor calling during inheritance.
6. Explain different types of inheritance.
7. Write a program to overload binary operator.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (Cyber Security) (Sem-2)

OPERATING SYSTEMS

Subject Code : UGCA1923

M.Code : 91715

Date of Examination : 05-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Write briefly :
 - a) What is operating system?
 - b) Differentiate process vs. program.
 - c) Define Shell.
 - d) What is file protection?
 - e) Define loading.
 - f) Discuss Threads.
 - g) What is Non Preemptive scheduling?
 - h) Discuss types of operating system.
 - i) What are storage services?
 - j) Give introduction of Process synchronization.

SECTION - B

2. What is Process Control Box? Discuss the different states of Process.
3. Discuss the use of Round Robin algorithm in scheduling.
4. Explain the Demand Paging and the role of Page replacement algorithms in it.
5. Discuss various file operations in operating system.
6. Explain the characteristics and architecture of Multiprocessor operating system.
7. Discuss the important features of Real Time operating system.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (Cyber Security) (Sem-2)
FUNDAMENTALS OF CYBER SECURITY

Subject Code : UGCA1971

M.Code : 91716

Date of Examination : 19-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Answer Briefly :

- a. What principles govern information ethics and security?
- b. What advantages does two-step password security offer for online accounts?
- c. What are the fundamentals of social media security and why is it important in cyber security?
- d. How does India respond to cyber threats?
- e. What are the crucial elements of Android security?
- f. What steps are taken to manage cyber security incidents in the country?
- g. How can security in mobile banking transactions be improved?
- h. What are the key considerations for debit and credit card security?
- i. How do firewalls contribute to cyber security?
- j. How can hackers be countered and what counter measures can be employed against them?

1 | M-91716

(S3) - 348

SECTION - B

2. How important are computer and security policies in protecting the digital environments?
3. What cyber security initiatives has India taken to combat evolving threats?
4. What is the role of Wi-Fi security principles in securing wireless networks?
5. How can debit and credit cards be secured in a digital financial landscape?
6. Do various cyber security techniques effectively prevent and mitigate cyber attacks?
7. What are the methods employed by hackers and attackers and how can we counteract their activities?

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

2 | M-91716

(S3) - 348

[illegible]

Total No. of Pages : 02

Total No. of Questions : 06

B.Sc. (Cyber Security) (Sem.-3)

PROGRAMMING IN PYTHON

Subject Code : UGCA1914

M.Code : 92756

Date of Examination : 23-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- What is an IDE (Integrated Development Environment), and how is it used in programming?
- Explain the purpose of the '`__init__`' method in Python classes.
- What is the '`__str__`' method in Python, and when is it used?
- Define the term "class" in the context of object-oriented programming.
- What is inheritance in programming and how is it implemented in Python?
- Describe the different data types available in Python.
- Explain the concept of exception handling in Python and its importance.
- Describe four methods from the `math` module in Python and their uses.
- How does indexing of strings work in Python?
- What is type conversion in Python, and when might it be necessary?

SECTION - B

2. Compare local and global variables in Python. What are the key differences between them?
3. Explain the different types of loops available in Python with suitable examples.
4. Describe the various modes available for file objects in Python. Explain any two modes in detail.
5. Discuss the following methods associated with file objects in Python: 'read()', 'readline()', 'readlines()', 'tell()', 'seek()' and 'write()'.
6. Illustrate the use of method overriding in Python with an example.
7. a) Design a Python program that throws an exception if the value entered by the user is less than 10.
b) Explain the concepts of object-oriented programming in Python.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (Cyber Security) (Sem.-3)

DATA STRUCTURES

Subject Code : UGCA1915

M.Code : 92752

Date of Examination : 16-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :
- Define B+ tree.
 - What is recursion? Give an example.
 - What is the time complexity of binary search algorithm?
 - Write some applications of stacks.
 - What is the importance of pointer in passing an array to a function?
 - A binary tree has n leaf nodes. What is the number of nodes of degree 2 in this tree?
 - What is the basic purpose of the header of linked list?
 - Define double linked list.
 - There are 100 records in a hash table. What is the probability of collision before the table is 10% full?
 - Define directed acyclic graph with example.

SECTION - B

2. Write the algorithms for insertion and deletion in a queue.
3. What do you mean by Link list? Write an algorithm to insert and delete a node in Singly Linked List.
4. a) What are the different representations of graphs in memory?
b) Explain the process of depth first traversal of a graph by taking a suitable example.
5. a) What is a threaded binary tree? Explain with example of its traversal.
b) Write an algorithm to find the longest palindromic substring from a given string. Return the substring.
6. **Differentiate the following :**
a) Linear vs. Non Linear Data Structure.
b) Static vs. Dynamic Memory Allocation.
7. Explain with example Dijkstra's Algorithm.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (Cyber Security) (Sem-3)

ETHICAL HACKING

Subject Code : UGCA-1988

M.Code : 92753

Date of Examination : 03-07-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- a) Define Hacker with its types.
- b) What is information gathering?
- c) Define UDP traceroute.
- d) What is Internet footprinting?
- e) What is remote exploitation?
- f) What is Information Security?
- g) Define threat.
- h) Distinguish hacking with ethical hacking.
- i) What is meant by Reconnaissance?
- j) What is ARP spoofing?

SECTION- B

2. Classify the categories of information security threat. Explain each category in detail.
3. a) What are the different types of threats due to footprinting? Explain.
b) Write short note on :
 - i) Open source or passive information gathering
 - ii) Pseudonymous footprinting.
4. What is network scanning? What are different types of scanning?
5. a) What are the different techniques to crack passwords? Explain.
b) What are the countermeasures against different types of keyloggers?
6. What is ARP spoofing attack? How does ARP spoofing work?
7. How can an attacker hack network using sniffers?

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (Cyber Security) (Sem-4)

CYBER LAWS AND IPR

Subject Code : UGCA-1949

M.Code : 93439

Date of Examination: 27-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Write briefly :

- a. What is cyber jurisprudence?
- b. What is cyber stalking?
- c. Give the introduction legal framework.
- d. Write a short note on open source software.
- e. What is the cyber world?
- f. Explain role of Certificate Authority.
- g. What is IPR?
- h. How to protect the invention?
- i. What are related rights?
- j. How is trademark protected?

SECTION - B

2. What do you mean by Cyber Crimes? Discuss the nature and types of Cyber Crimes.
3. Discuss the concept of Privacy and threat to privacy on Internet.
4. Write in detail about trademark. Write the types of trademark.
5. Explain the documentation of cybercrimes offences and contraventions written in IT ACT 2000.
6. Discuss the self-regulation approach to privacy on Internet.
7. What is cyber terrorism? How it can be overcome to secure the data on cyber?

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (Cyber Security) (Sem.-4)

NETWORK SECURITY

Subject Code : UGCA-2001

M.Code : 93437

Date of Examination : 20-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. **Write briefly :**
 - a. Define confidentiality.
 - b. Discuss malwares.
 - c. What is digital envelope?
 - d. Write a short note on Transposition cipher.
 - e. Define authentication protocol.
 - f. Explain the use of Access control.
 - g. Define TLS.
 - h. Write a short note on MD5.
 - i. Differentiate Symmetric and Asymmetric Key.
 - j. For what purpose RSA is used?

SECTION - B

2. What are the key elements and components of Network Security?
3. Define Virus and other related threats. How would you secure your computer from these threats?
4. Discuss the role of Firewalls in providing the security to Networks.
5. Write a short note on IP Security. Which are the best security practices?
6. Define Cryptography. Explain the use of DES Symmetric Key Cipher Algorithm.
7. What is Digital Signatures and how it works? Give example for it.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

Total No. of Questions : 07

Total No. of Pages : 02

B.Sc. (Cyber Security) (Sem-4)

DIGITAL FORENSICS

Subject Code : UGCA-2002

M.Code : 93438

Date of Examination : 23-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- INSTRUCTIONS TO CANDIDATES :**
1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
 2. SECTION-B contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. Write briefly:

- What is open source software?
- What is the use of digital forensic?
- Explain copyright violation.
- Write about 2 disk and data capture tools.
- Write the use of Criminalistic trace evidence.
- Where is android operating system used?
- What precautions are needed while Conducting an Investigation?
- What is a ransom-ware?
- Which are the tools for capturing and analyzing the network traffic?
- How reverse engineering is done?

SECTION - B

2. Explain the requirements for preservation of network data.
3. Write a detailed note on recent trends in mobile forensics techniques.
4. Write about the IT Act, 2000 in detail.
5. Explain in detail the holistic approach to cyber-forensics.
6. Explain in detail the laws and principles of forensic science.
7. Explain the different open source security tools available for network forensic analysis.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc. (Cyber Security) (Sem.-4)

WEB TECHNOLOGIES

Subject Code : UGCA 1927

M.Code : 93442

Date of Examination : 31-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :

- What is an IP address?
- What do you mean by Hyperlink?
- List few text formatting HTML tags.
- How you can add graphics to HTML documents?
- What is the difference between internal and external document reference?
- How to use COLSPAN and ROWSPAN attribute in HTML?
- Define DHTML.
- What is the importance of Form tag in HTML?
- What is a JavaScript statement? Give an example.
- How to Write a Function in JavaScript?

SECTION - B

2. What is Internet? How can we communicate on internet? How the internet works in a client-server environment?
3. What is the general structure of an HTML document? Give an example of an HTML document in its simplest form making use of the commonly used tags. Describe the purpose of all the tags used in the document.
4.
 - a) Describe the types of List used in HTML along with example.
 - b) Describe how frames are created using a suitable example. What are the disadvantages of Frames?
5. How tables are created in HTML? Write down the various tags used while creating a table in HTML.
6. When are HTML Forms required in a Web Site? What are the various Form elements available? Discuss.
7. **Write a short notes on the following in the context of JavaScript :**
 - a) Conditional statements
 - b) Loops
 - c) Arrays

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

Total No. of Questions : 07

Total No. of Pages : 02

*Subject Code : UGCA-2019

M.Code : 94063

Date of Exmination : 26-06-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Explain the following :
 - a) What do you mean by Client Side Scripting?
 - b) What is PHP and why is it widely used in server-side scripting?
 - c) What is the basic syntax for PHP scripts?
 - d) How can information be passed between PHP pages using GET and POST methods?
 - e) What are some common array functions in PHP?
 - f) What are the differences between sessions and cookies in PHP?
 - g) What is Ajax, and how does it improve user experience on websites?
 - h) What are the core components of Bootstrap framework?
 - i) What is Node.js and how does it differ from traditional web servers?
 - j) Define XML.

SECTION - B

2. Explain how PHP can be embedded within HTML files and describe the ways in which server-side scripting with PHP enhances web application functionality.
3. Analyze the specific PHP functions that facilitate interactions with MySQL databases, focusing on how these functions contribute to the security and efficiency of database queries?
4. Detail how PHP implements Object-Oriented Programming principles and discuss the benefits of using OOP techniques in the development of large-scale PHP applications.
5. Explore the different types of web services, emphasizing their roles in the integration of various systems and technologies across the internet.
6. Describe the key features of jQuery UI, such as the date picker and auto-complete and explain their impact on improving user interface experiences in web applications.
7. Detail the lifecycle of components in React.js, from their initialization to their unmounting and discuss the importance of each stage.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

Total No. of Questions : 07

Questions : 07
Bachelor of Science (Cyber Security) (Sem.-5)

LINUX OPERATING SYSTEM

Subject Code : UGCA2021

M.Code : 94068

Date of Examination : 28-06-2025

Max. Marks : 60

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

- INSTRUCTIONS TO CANDIDATES :**
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
 2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :
 - a. What is KDE?
 - b. Write use of pipes in Linux.
 - c. How shell script accepts the input?
 - d. What is variable?
 - e. What is directory in Linux?
 - f. Write a short note on Multimedia.
 - g. Discuss FTP.
 - h. Give concept of File system.
 - i. What is role of Linux Administrator?
 - j. What is super user control?

SECTION - B

2. Describe the basic structure of the Linux Operating System.
3. What is the use of vi editor? Write its commands.
4. How does standard input and output work in a Linux shell and how can you redirect them?
5. What are some common control statements used in shell scripting?
6. Discuss popular office suite software that is commonly used on Linux distributions.
7. What are the steps involved in installing a Linux kernel on a system?

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Science(Cyber Security) (Sem.-6)

MACHINE LEARNING

Subject Code : UGCA1950

M.Code : 94316

Date of Examination : 05-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :
 - a) Name three types of machine learning.
 - b) What is the difference between AI and machine learning?
 - c) How do you measure accuracy in the supervised learning?
 - d) What is a centroid in clustering?
 - e) What is a policy in reinforcement learning?
 - f) Name a common application of reinforcement learning.
 - g) What is the main objective of using an SVM?
 - h) How does Naïve Bayes handle continuous data?
 - i) What is the difference between parameter and hyperparameter?
 - j) What is a reward function in MDP?

SECTION-B

2. Describe the process of building a supervised learning model from data collection to model evaluation.
3. Discuss Naïve Bayes classification algorithm. How can Naïve Bayes be used for text classification?
4. Discuss the role of cross-validation in hyperparameter optimization.
5. Explain the concept and computational approach of the K-means algorithm and discuss its limitations.
6. What is the epsilon-greedy algorithm? Discuss its limitations.
7. **Write a short note on :**
 - a) Exploration vs Exploitation dilemma.
 - b) Confusion Matrix

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Science (Cyber Security) (Sem.- 6)

SOCIAL MEDIA SECURITY

Subject Code : UGCA2043

M.Code : 94320

Date of Examination : 19-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- Define the term Social media security.
- What is the role of semantic in of emergence of social web?
- Explain the need of social network analysis.
- Differentiate privacy and security.
- What is the significance of web community?
- List the methods of community detection.
- What is the use of mining algorithm?
- What is the function of firewalls in Networks?
- Define the term Authentication?
- What is access control list?

SECTION-B

2. Explain in detail about Sematic web and its development.
3. Describe about the evolution of big data and privacy in social networks.
4. Write in detail about security issues in social networks.
5. What is web community and explain its detection methods.
6. Explain in detail about Social network analysis and its development.
7. Explain in detail about fake accounts and passwords.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Science (Cyber Security) (Sem.-6)

CLOUD SECURITY ARCHITECTURE

Subject Code : UGCA2045

M.Code : 94322

Date of Examination : 22-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :
- a) Cloud Computing
 - b) SaaS
 - c) Virtualization
 - d) Cloud Migration
 - e) Data Center
 - f) Hybrid Cloud
 - g) Data Security
 - h) Grid Computing
 - i) DaaS
 - j) Instance

SECTION-B

2. Explain in detail Cloud Architecture and the services it provides.
3. Write a note on "Importance of Virtualization in Cloud Environment".
4. How Live Migration of Virtual Machines is Performed? Explain in detail.
5. Explain in detail various techniques to secure various Storage services.
6. Discuss various Data privacy and Security issues available in Cloud Environment.
7. Explain various steps for achieving Security in Enterprise and Large scale Environments.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages : 02

Total No. of Questions : 07

Bachelor of Science (Cyber Security) (Sem.-6)

CYBER ATTACKS

Subject Code : UGCA2049

M.Code : 94327

Date of Examination : 29-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION - A

1. Write briefly :
 - a) Define Threats.
 - b) Discuss worms.
 - c) Briefly explain Cryptography.
 - d) Define Email attacks.
 - e) Write a short note on NAT.
 - f) Give the meaning of Trapdoors.
 - g) Explain the role of Firewalls.
 - h) What is Digital Forensic?
 - i) Write the significance of Steganography.
 - j) Define SQL Injection.

SECTION - B

2. Discuss the Web and Browser attacks on computer system with example.
3. What are access controls? Discuss the authentication mechanism used in the access controls.
4. Give the overview of Firewalls. Write its types and their working.
5. What are Detection Systems? Discuss how they are used.
6. Explain the role of Web Application tools. Write about any two tools in detail.
7. Give the introduction to Cyber Attack, law and investigation method.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc. CS, Semester- 1st
PROBLEM SOLVING USING C
Subject Code: 25C2CSU-101

M. Code:

Date of Examination: 23-12-2025

Time: 3 Hrs.

Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define algorithm with example.	CO-1	L1
b.	Explain assignment operators.	CO-1	L2
c.	What is a nested if statement? Give an example.	CO-2	L1
d.	Explain the use of continue statement with example.	CO-2	L2
e.	Define the term 'constant'.	CO-1	L1
f.	What is the difference between a user-defined function and a library function?	CO-3	L1
g.	Compare function declaration and function definition.	CO-3	L2
h.	List the advantages of using structures.	CO-4	L1
i.	Explain reading and writing data files in C.	CO-4	L2
j.	Illustrate the concept of call by reference with an example.	CO-3	L2
SECTION-B			
2.	Identify arithmetic, relational, and logical operators in C with examples.	CO-1	L3
3.	Explain conditional statements (if, if-else, switch) in C with syntax and examples.	CO-2	L5
4.	Classify different storage classes: auto, static, extern, and register.	CO-3	L4
5.	Explain how to open, close, and append data in files using C.	CO-4	L5
6.	Organize a program using switch to perform calculator operations.	CO-2	L3
7.	Analyze string handling functions like strlen(), strcpy(), and strcat().	CO-3	L4

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 02

Total No. of Questions: 07

B.Sc. CS, Semester-1st

HUMAN VALUES, DE-ADDICTION & TRAFFIC RULES

Subject Code: 25C2HVC-C01

M.Code:

Date of Examination: 19-12-2025

Time: 3 Hrs.

Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B consists of SIX questions, carrying TEN marks each and student have to attempt any FOUR questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Name two sources of respect. ਸਮਾਨ ਦੇ ਦੋ ਸਰੋਤ ਦੱਸੋ। ਸਮਾਨ ਦੇ ਦੋ ਸਰੋਤ ਦੱਸੋ।	CO1	L1
b.	Summarize the basic steps involved in honesty. ਈਮਾਨਦਾਰੀ ਵਿੱਚ ਸ਼ਾਮਲ ਬੁਨਿਆਦੀ ਕਦਮਾਂ ਦਾ ਸਾਰ ਸਾਂਝਾ ਕਰੋ। ईमानदारी में शामिल मूलभूत कदमों का सारांश दें।	CO1	L2
c.	Define the needs of the 'Body'. 'ਸਰੀਰ' ਦੀਆਂ ਜ਼ਰੂਰਤਾਂ ਨੂੰ ਪਰਿਭਾਸ਼ਿਤ ਕਰੋ। 'शरीर' की आवश्यकताओं को परिभाषित करें।	CO2	L1
d.	Explain the term harmony in I with an example. 'ਆਤਮ' ਵਿੱਚ ਸਥਿਰਤਾ ਦੀ ਸ਼ਬਦਾਰਥ ਨੂੰ ਇੱਕ ਉਦਾਹਰਨ ਨਾਲ ਸਮਝਾਓ। "स्व" में सामंजस्य शब्द की व्याख्या एक उदाहरण के साथ करें।	CO2	L2
e.	List four benefit of self-discipline. ਆਪਣੇ ਆਪ ਤੇ ਕਾਬੂ ਹੋਣ ਦੇ ਚਾਰ ਫਾਇਦੇ ਦੱਸੋ। स्व-नियंत्रण के चार लाभ बताइए।	CO3	L1
f.	Explain an individual contribute to an undivided society. ਇੱਕ ਵਿਅਕਤੀ ਬਿਨਾਂ ਵੰਡ ਵਾਲੇ ਸਮਾਜ ਵਿੱਚ ਕਿਵੇਂ ਯੋਗਦਾਨ ਪਾ ਸਕਦਾ ਹੈ, ਸਮਝਾਓ। व्यक्ति का एक अभाज्य समाज में योगदान कैसे होता है, समझाइए।	CO3	L2
g.	Identify the importance of Vishwas (trust) in maintaining harmony in the family. ਪਰਿਵਾਰ ਵਿੱਚ ਸਾਂਤੁਲਨ ਬਣਾਈ ਰੱਖਣ ਵਿੱਚ ਵਿਸ਼ਵਾਸ ਦੀ ਮਹੱਤਤਾ ਦੀ ਪਰਿਚਾਣ ਕਰੋ। परिवार में सामंजस्य बनाए रखने में विश्वास (ट्रस्ट) का महत्व पहचानें।	CO3	L1
h.	Explain the importance of counselling. ਸਲਾਹ-ਮਸ਼ਵਰੇ ਦੀ ਮਹੱਤਤਾ ਬਾਰੇ ਸਮਝਾਓ। सलाह-मशवरे के महत्व को समझाइए।	CO4	L2
i.	Define a simple example of leadership. ਅਗਵਾਈ ਦਾ ਇੱਕ ਸਧਾਰਣ ਉਦਾਹਰਨ ਦਿੱਤੋ। नेतृत्व का एक सरल उदाहरण बताएं।	CO4	L1

j.	Explain the meaning of volunteering. ਸੇਵਾ ਦਾ ਅਰਥ ਵਿਆਖਿਆ ਕਰੋ। स्वयंसेवा का अर्थ समझाइए।	CO4	L2
SECTION-B			
2.	Apply the concept of harmony at various levels (individual, family, society, nature) to solve a conflict situation. ਕਿਸੇ ਵਿਵਾਦੀ ਸਥਿਤੀ ਨੂੰ ਸੁਲਝਾਉਣ ਲਈ ਵੱਖ-ਵੱਖ ਪੱਧਰਾਂ (ਵਿਅਕਤੀਗਤ, ਪਰਿਵਾਰ, ਸਮਾਜ, ਕੁਦਰਤ) 'ਤੇ ਸਮਰੱਥਤਾ ਦੇ ਸੰਕਲਪ ਨੂੰ ਲਾਗੂ ਕਰੋ। संघर्ष की स्थिति को हल करने के लिए विभिन्न स्तरों (व्यक्ति, परिवार, समाज, प्रकृति) पर सद्भाव का विचार लागू करें।	CO1	L3
3.	Justify why harmony between 'I' and 'Body' is essential for a fulfilling life. ਇੱਕ ਪੂਰਨ ਜੀਵਨ ਲਈ 'ਮੈਂ' ਅਤੇ 'ਸਰੀਰ' ਦੇ ਵਿਚਕਾਰ ਸਾਂਝ ਸਹਿਮਤੀ ਕਿਉਂ ਜ਼ਰੂਰੀ ਹੈ, ਇਸ ਦਾ ਤਰਕ ਦਿੱਤਾ ਜਾਵੇ। व्याख्या करें कि क्यों 'मैं' और 'शरीर' के बीच संतुलन एक संतोषजनक जीवन के लिए आवश्यक है।	CO2	L5
4.	Construct right understanding to improve your relationship with others. ਦੂਜਿਆਂ ਨਾਲ ਆਪਣੇ ਰਿਸ਼ਤੇ ਨੂੰ ਬਿਹਤਰ ਬਣਾਉਣ ਲਈ ਸਹੀ ਸਮਝ ਬਣਾਓ। दूसरों के साथ अपने रिश्तों को सुधारने के लिए सही समझ विकसित करें।	CO2	L3
5.	Classify how every element of nature - Plant, Animal, Water, Air and Soil contributor to maintaining overall harmony. ਕੁਦਰਤ ਦੇ ਹਰ ਤੱਤ - ਪੌਦਾ, ਜੀਵ, ਪਾਣੀ, ਹਵਾ ਅਤੇ ਮਿੱਟੀ - ਕਿਸ ਤਰ੍ਹਾਂ ਕੁੱਲ ਸਹਿਯੋਗ ਕਾਇਮ ਰੱਖਣ ਵਿੱਚ ਯੋਗਦਾਨ ਪਾਉਂਦੇ ਹਨ, ਨੂੰ ਵਰਗੀਕ੍ਰਿਤ ਕਰੋ। प्रकृति के हर तत्व - पौधा, पशु, जल, वायु और मिट्टी यह बताएं कि वे समग्र संतुलन बनाए रखने में कैसे योगदान देते हैं।	CO4	L4
6.	Analyze the roles of Vishwas and Samman in building harmonious relationships. Why are both equally important? ਸਮਾਨਜਸੂ ਨਹਿਰਮਾਨੀਆਂ ਰਿਸ਼ਤਿਆਂ ਬਣਾਉਣ ਵਿੱਚ ਵਿਸ਼ਵਾਸ ਅਤੇ ਸਤਕਾਰ ਦੀ ਭੂਮਿਕਾ ਦਾ ਵਿਸ਼ਲੇਸ਼ਣ ਕਰੋ। ਦੋਵੇਂ ਹੀ ਕਿਉਂ ਬਰਾਬਰ ਮਹੱਤਵਪੂਰਨ ਹਨ? समान और विश्वास की भूमिकाओं का विश्लेषण करें कि कैसे ये संतुलित संबंध बनाने में मदद करते हैं। दोनों उतने ही महत्वपूर्ण क्यों हैं?	CO3	L4
7.	Explain the role of education in promoting teamwork. ਟੀਮਵਰਕ ਨੂੰ ਪ੍ਰਮੋਟ ਕਰਨ ਵਿੱਚ ਸਿੱਖਿਆ ਦੀ ਭੂਮਿਕਾ ਦੀ ਵਿਆਖਿਆ ਕਰੋ। टीमवर्क को बढ़ावा देने में शिक्षा की भूमिका समझाइए।	CO4	L5

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc. CS, Semester-1st

ENGLISH

Subject Code: BTHU103-18

M. Code: 92575

Date of Examination: 13-12-2025

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Explain the process of communication.	CO1	L2
b.	List any two elements of communication.	CO1	L1
c.	What is meant by 'Decoder' in the communication process?	CO2	L1
d.	Interpret the physical barrier to communication.	CO5	L2
e.	Find out the importance of 'context' in communication.	CO4	L1
f.	Define any two modes of modern communication.	CO3	L1
g.	Recall 7C's of communication.	CO4	L1
h.	Illustrate note-taking.	CO5	L2
i.	Summarize why writing is important.	CO2	L2
j.	Classify any two types of report.	CO3	L2
SECTION-B			
2.	Critique the relevance of written communication at work place or offices.	CO1	L5
3.	Classify modern tools of communication in an online business meeting.	CO4	L4
4.	Examine the process of communication with the help of a diagram.	CO2	L4
5.	Justify the importance of disagreement in group discussions.	CO3	L5
6.	Analyze the format of an effective report.	CO5	L3
7.	Evaluate the role of communication in leadership.	CO4	L5

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

1|M-92575

[illegible]

Total No. of Pages: 02

Total No. of Questions: 07

B.Sc.(CS) / B.Sc.(AIML), Semester-1st

MATHEMATICS

Subject Code: UGCA1901

M.Code: 92569/79003

Date of Examination: 10-12-2025

Time: 3 Hrs.**Max. Marks: 60**

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define infinite set with examples in tabular and roaster form.	CO1	L1
b.	Write the following sets in roaster form: $A = \{x \in N : x^2 = 25\}$ $B = \left\{x \in \mathcal{R} : \frac{x-2}{x-3} = 2\right\}.$	CO1	L2
c.	Which of the following is sentence or statement (i) Today is Sunday. (ii) May God bless you with success.	CO2	L1
d.	Interpret the following statement in symbolic form: You can ride the roller coaster if you are under 4 feet tall unless you are older than 16.	CO2	L2
e.	Recall triangular matrices and its types.	CO3	L1
f.	Demonstrate the product BA where $A = \begin{bmatrix} 2 & -2 & 1 \\ -2 & 1 & 2 \\ 1 & 2 & -6 \end{bmatrix}$ and $B = \begin{bmatrix} -3 & 2 & 1 \\ 5 & -1 & 2 \\ -1 & 2 & 1 \end{bmatrix}$.	CO3	L2
g.	What is geometric progression?	CO4	L1
h.	Insert 5 arithmetic means between 9 and 27.	CO4	L2
i.	Differentiate Exclusive OR and disjunction.	CO2	L2
j.	Define series.	CO4	L1
SECTION-B			
2.	If A and B are two sets then prove that (ii) $A - B = A \cap B^c$ (ii) $B \subseteq A \Rightarrow A^c \subseteq B^c$.	CO1	L3
3.	Apply the rules of inference to determine the validity of the following argument: If the battery is charged, the phone will turn on. The phone did not turn on. Therefore, the battery is not charged.	CO2	L4

4.	Evaluate two suitable matrices to express $\begin{bmatrix} 2 & 5 & -7 \\ 9 & 12 & 4 \\ 15 & -13 & 6 \end{bmatrix}$ as the sum of a lower triangular matrix and an upper triangular matrix with zero leading diagonal.	CO3	L5
5.	The sum of first n terms of two arithmetical series is in the ratio of $7n+1:4n+27$. Apply the concept of AP to find the ratio of their 11 th term.	CO4	L3
6.	There are 200 individuals with a skin disorder, 120 had been exposed to the Chemical G_1 , 50 to chemical G_2 and 30 to both the Chemical G_1 and G_2 . Find the number of individuals exposed to (i) Chemical C_1 but not chemical C_2 . (ii) Chemical C_2 but not chemical C_1 . (iii) Chemical C_1 or chemical C_2 .	CO1	L5
7.	Analyse the characteristics of given matrix to find the values of x, y, z if $A = \begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ obeys the law $A^T A = I$.	CO3	L4

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 1

Total No. of Questions: 07

B.Sc. (AIML/CS), Semester-1st
FUNDAMENTALS OF COMPUTER AND IT

Subject Code: UGCA1902

M.Code: 79004/92570

Date of Examination: 11-12-2025

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and students have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Name the main functional units of a computer.	CO1	L1
b.	Explain advantages of primary and secondary memory.	CO1	L2
c.	Compare RAM and ROM with details.	CO2	L2
d.	What is an optical disk?	CO2	L1
e.	List different types of computer languages?	CO3	L1
f.	Classify the binary arithmetic addition and subtraction.	CO3	L2
g.	Demonstrate Charts & Graphs in MS Excel.	CO4	L2
h.	How can you save and print a document?	CO4	L1
i.	Define Bluetooth.	CO5	L1
j.	Explain cloud computing?	CO5	L2
SECTION-B			
2.	Compare Joystick and Scanner with a diagram.	CO1	L4
3.	Identify the advantages and features of printers and plotters.	CO1	L3
4.	Explain Decimal, Octal and Hexadecimal number system with truth table.	CO2	L5
5.	Analyze the difference between primary and secondary memory in detail.	CO3	L4
6.	Justify the role of Artificial Intelligence and Machine Learning in education.	CO4	L5
7.	Identify the advantages of Smart Card, Credit Card, Debit Card and E-Money with diagrams and examples.	CO5	L3

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages:02

Total No. of Questions: 07

B.Sc. Cyber Security ,Semester-2nd
FUNDAMENTALS OF CYBER SECURITY

Subject Code: UGCA 1971

M.Code : 91716

Date of Examination: 20-12-2025

Time: 3 Hrs.

Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B consists of SIX questions, carrying TEN marks each and students have to attempt any FOUR questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	What is encryption?	CO1	L-1
b.	Define ethical hacking.	CO1	L-1
c.	Illustrate real-time scanning.	CO2	L-2
d.	Summarize social media privacy.	CO2	L-2
e.	List any two guidelines for creating a secure password.	CO2	L-1
f.	Recall online banking security.	CO3	L-1
g.	Outline Malware.	CO3	L-2
h.	Classify the function of a firewall in network security.	CO4	L-2
i.	Define the main objective of the IT Act 2000 in India.	CO4	L-1
j.	Explain web security.	CO4	L-2
SECTION-B			
2.	Identify the guidelines for setting up a secure password. Also describe a two-step password authentication scheme.	CO1	L-3
3.	Analyze how the rise of the Internet has led to an increase in cybercrime by explaining the history of the internet.	CO1	L-4
4.	Explain the role of smartphones in modern society and discuss the various security threats that smartphones face. What are the general guidelines for securing a smartphone against these threats?	CO2	L-5

5.	Discuss the security measures associated with debit and credit cards, including EMV chips, PINs, and OTPs.	CO3	L-6
6.	Explain the firewall and its different types. How does it work to protect a network from unauthorized access?	CO4	L-5
7.	Elaborate the terms hackers, attackers, and ethical hackers. Discuss the common methods used by attackers and the countermeasures that organizations can implement to defend against cyber attacks.	CO4	L-6

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 02

Total No. of Questions: 07

B.Sc. CS, Semester-2nd
OPERATING SYSTEM
Subject Code: UGCA-1923
M. Code: 91715

Date of Examination: 15-12-2025

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B consists of SIX questions, each carrying TEN marks each and student has to attempt any FOUR questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	List any two major functions of an operating system.	CO1	L1
b.	Compare single-user and multi-user operating systems with one example each.	CO1	L2
c.	What is the file management system? List various attributes of a file.	CO2	L1
d.	Illustrate the difference between a program and a process.	CO2	L2
e.	Define the term kernel and shell.	CO3	L1
f.	Interpret any two functions of device drivers.	CO3	L2
g.	Name any two file access methods.	CO4	L1
h.	Demonstrate how directory structures help manage files.	CO4	L2
i.	State any two characteristics of Distributed operating System.	CO5	L1
j.	Contrast single-processor and multiprocessor scheduling.	CO5	L2
SECTION-B			
2.	Identify in detail the various functions of an operating system with suitable examples.	CO1	L3
3.	Examine the term directory structure. Also list different types of directory structures.	CO2	L4
4.	Explain the advantages of using virtual memory in multitasking systems.	CO3	L5
5.	Make a use of virtual memory in detail and discuss various page replacement algorithms (FIFO, LRU) with examples.	CO4	L3
6.	Differentiate the following operating system concepts by breaking down their key properties, functionalities, and areas of application: a) Real-Time Operating Systems (RTOS) b) Disk Storage Management Systems c) Distributed Operating Systems d) Multiprocessor Operating Systems.	CO5	L4

7.	Assess the strengths and weaknesses of multiprogramming operating systems.	CO1	L5
----	--	-----	----

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc CS, Semester-2nd

OBJECT ORIENTED PROGRAMMING USING C++

Subject Code: UGCA1909

M.Code: 91717

Date of Examination: 23-12-2025

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B consists of SIX questions, each carrying TEN marks each and student has to attempt any FOUR questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Illustrate the different data types in C++.	CO2	L2
b.	Define message passing.	CO1	L1
c.	Write any two rules for naming variables.	CO1	L1
d.	Compare public and private access specifiers.	CO3	L2
e.	Summarize the concept of function overloading.	CO4	L2
f.	Outline the concept of friend function with example.	CO3	L2
g.	Compare ostream and istream class.	CO5	L2
h.	Define file handling in C++.	CO5	L1
i.	What is polymorphism?	CO4	L1
j.	List uses of constructor & destructor.	CO2	L1
SECTION-B			
2.	Explain various statements in C++ and write a program to check the number is prime or not using different statements.	CO1	L5
3.	Identify the components and structure of C++ program.	CO1	L3
4.	Distinguish different type of constructor and write a program using class and constructors to add two complex numbers.	CO2	L4
5.	Examine how the different types of inheritance are implemented in C++ using program.	CO3	L4
6.	Make use of file operations like open, close, read and write function in C++.	CO5	L3
7.	Interpret the concept of operator overloading with suitable examples.	CO3	L5

Note: Disclosure of Identify by writing mobile no. or making of passing request on any page of answer sheet will lead to UMC against the students

[illegible]

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc. (CYBER SECURITY), Semester-3rd

COMPUTER NETWORKS

Subject Code: UGCA 1913

M.Code: 92750

Date of Examination: 26-11-2025

Time: 3 Hrs.

Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

- INSTRUCTIONS TO CANDIDATES:**
1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
 2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define CSMA/CA.	CO1	L1
b.	Explain the concept of internetworking.	CO1	L2
c.	Define SLIP (Serial Line Internet Protocol).	CO2	L1
d.	List the advantages of FDM.	CO2	L2
e.	What is baseband transmission?	CO3	L1
f.	Explain the difference between MAN and WAN with examples.	CO3	L2
g.	What is the Session Layer?	CO4	L1
h.	Define TCP.	CO4	L2
i.	Name the functions of HTTP.	CO5	L1
j.	What is remote login?	CO5	L2
SECTION-B			
2.	Apply the leaky bucket and token bucket algorithm to control congestion ?	CO1	L3
3.	Examine whether combining OSI and TCP/IP features could lead to a more robust model.	CO2	L4
4.	Evaluate which routing algorithm (distance vector or link state) provides better network optimization.	CO4	L5
5.	Explain unguided medium in details with their range, advantages and disadvantages?	CO3	L5
6.	Apply the concept of CSMA/CD to explain how collisions are handled in Ethernet networks.	CO1	L3
7.	Analyze how email protocols (SMTP, POP, IMAP) function together for message delivery.	CO5	L4

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages:01

Total No. of Questions: 07

B.Sc. (Cyber Security), Semester-3rd

PROGRAMMING IN PYTHON

Subject Code: UGCA 1914

M.Code: 92757

Date of Examination: 08-12-2025

Time: 3 Hrs.

Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B consists of SIX questions, carrying TEN marks each and student have to attempt any FOUR questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define a Python identifier.	CO-1	L1
b.	Compare assignment operator (=) and the equality operator (==).	CO-1	L2
c.	State one primary limitation of Python as an interpreted language.	CO-2	L1
d.	Interpret how does Python support object-oriented programming?	CO-2	L2
e.	How do you access the last element of a list named 'my list'?	CO-3	L1
f.	Explain how nested control statements work.	CO-3	L2
g.	Name one standard module used for date and time operations.	CO-4	L1
h.	Explain the role of the 'finally' block in exception handling.	CO-4	L2
i.	Define the 'self' parameter.	CO-5	L1
j.	Explain Polymorphism & Inheritance in Python OOP.	CO-5	L2
SECTION-B			
2.	Apply conditional and looping structures to design a Python program for generating a student grade report.	CO-1	L3
3.	Examine the syntax and structural differences between Python's high-level control structures and their equivalents in Java or C, focusing on readability.	CO-2	L4
4.	Evaluate the use of sets in Python with suitable examples.	CO-3	L5
5.	Explain user defined exceptions and built in exceptions with suitable examples.	CO-4	L5
6.	Construct a program to compute the factorial of a given number.	CO-4	L3
7.	Analyze how encapsulation helps in maintaining data security in Python class design.	CO-5	L4

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc. (CYBER SECURITY), Semester-3rd

DATA STRUCTURES

Subject Code: UGCA 1915

M.Code: 92752

Date of Examination: 02-12-2025

Time: 3 Hrs.**Max. Marks:60**

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	What is the syntax for array declaration in C?	CO1	L1
b.	Explain string with the help of suitable example.	CO1	L2
c.	What is FIFO? Explain with an example.	CO2	L1
d.	Explain pointer with the help of an example.	CO2	L2
e.	Define enqueue and dequeue operations.	CO3	L1
f.	Explain in-order traversal with an example..	CO3	L2
g.	List two types of searching techniques.	CO4	L1
h.	Compare linear and binary search.	CO4	L2
i.	Define the term “algorithm”.	CO5	L1
j.	Compare primitive and non-primitive data structures.	CO5	L2
SECTION-B			
2.	Construct C++ program to find the largest element in a one-dimensional array with its output.	CO1	L3
3.	Identify queue data structure and its types with examples.	CO2	L3
4.	Explain stack data structure and evaluate the algorithms for the different operations performed on stack.	CO2	L5
5.	Explain AVL tree and perform insertion and rotation operations to maintain balance.	CO3	L5
6.	Compare the process of bubble sort and selection sort with the help of examples.	CO4	L4
7.	Classify different types of data structures and explain each type briefly.	CO5	L4

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc.CS, Semester-3rd

MATHEMATICAL FOUNDATIONS FOR CRYPTOGRAPHY

Subject Code: UGCA1987

M.Code: 92751

Date of Examination: 29-11-2025

Time: 3 Hrs.

Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define Linear congruence.	CO1	L1
b.	Outline the last digit of 7^{103} .	CO1	L2
c.	What do you understand by field?	CO2	L1
d.	Interpret the composition table for Z_3 under addition.	CO2	L2
e.	Find multiplicative inverse of 6 under (mod 7)	CO2	L1
f.	Compare the TRNG and PRNG.	CO3	L2
g.	Name one algorithm used in PRNG.	CO3	L1
h.	Explain substitution cipher.	CO4	L2
i.	Define cryptanalysis.	CO4	L1
j.	Explain an example of a true random number source.	CO3	L2
SECTION-B			
2.	Apply the Euclidean algorithm, compute $\gcd(414, 662)$. Then, apply the extended Euclidean algorithm to find integers x, y such that $\gcd(414, 662) = 414x + 662y$.	CO1	L3
3.	Determine the multiplicative inverse of each element in $GF(2^3)$, with irreducible polynomial $x^3 + x + 1$.	CO2	L5
4.	Convert the decimal numbers 25 and 18 into binary. Apply the following operations: (i) Binary Addition (ii) Binary Subtraction	CO3	L3
5.	(a) Compare symmetric and asymmetric encryption based on key usage. (b) List the major security goals achieved by cryptography.	CO4	L4
6.	Given $A = 45, B = 27, C = 12$. Simplify: $R = (A \mid B) - (B \& C)$.	CO3	L4
7.	Explain the terms with an example of each : Ransomware, Spyware, Trojan Horse, Malware, Virus.	CO4	L5

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

1|M- 92751

Roll No.

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc. (CYBER SECURITY), Semester-3rd

ETHICAL HACKING

Subject Code: UGCA 1988

M.Code: 92753

Date of Examination: 05-12-2025

Time: 3 Hrs.

Max. Marks:60**INSTRUCTIONS TO CANDIDATES:**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B consists of SIX questions, carrying TEN marks each and student have to attempt any FOUR questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define two essential terminologies used in ethical hacking.	CO-1	L1
b.	Summarize attacks with example.	CO-1	L2
c.	List two difference Between authoritative DNS and non-authoritative DNS.	CO-2	L1
d.	Explain why footprinting is important for a Hacker.	CO-2	L2
e.	Define NULL scan.	CO-3	L1
f.	Explain one method to validate scanning results.	CO-3	L2
g.	Define keystroke logger (key logger).	CO-4	L1
h.	Summarize ARP Spoofing and Redirection.	CO-4	L2
i.	What is the used of 802.11.	CO-5	L1
j.	Explain how sniffing tools can be used to analyze wireless traffic.	CO-5	L2
SECTION-B			
2.	Identify what is an exploit is with an example and its Vulnerabilities.	CO-1	L3
3.	Explain the term Target of Evaluation (ToE) in simple words and active and passive footprinting.	CO-2	L3
4.	Compare active and passive fingerprinting with the help of examples.	CO-3	L5
5.	Criticize the weaknesses of WEP and similar outdated security protocols in protecting against modern sniffing methods.	CO-4	L5
6.	Identify the role of encryption algorithms in preventing password-cracking attempts.	CO-4	L3
7.	Analyze the relationships between key management, authentication, and encryption in establishing secure wireless communication.	CO-5	L4

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Total No. of Questions: 07

B.Sc. (CS), Semester-4th
WEB TECHNOLOGIES
Subject Code: UGCA1927
M.Code: 93442

Date of Examination: 08-12-2025

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

- INSTRUCTIONS TO CANDIDATES:**
1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
 2. **SECTION B** contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer Briefly		
a.	Define Internet domains.	CO1	L1
b.	How do we establish connectivity on the internet client IP address?	CO1	L1
c.	Compare Unordered and Ordered list.	CO2	L2
d.	Name any 2 string functions with syntax in JavaScript.	CO4	L1
e.	What is <a> tag in HTML?	CO3	L1
f.	Demonstrate < FRAMESET> tag with syntax in HTML.	CO2	L2
g.	List Date functions in JavaScript.	CO4	L1
h.	Show the use of the <tr> and <td> tag in HTML tables.	CO3	L2
i.	Illustrate the Button elements.	CO5	L2
j.	Explain Multi Choice Select lists element of forms in HTML.	CO5	L2
SECTION-B			
2.	Compare Paired and Unpaired HTML tags with the help of examples.	CO1	L5
3.	Analyze how different types of hyperlinks that can be used together to design a fully connected multipage website.	CO3	L4
4.	Develop an HTML code snippet that creates a table with merged cells using 'COLSPAN' and 'ROWSPAN'. Explain the purpose of each attribute.	CO3	L4
5.	Build a program of targeting Named Frames in HTML and also give output with explanation.	CO2	L3
6.	Demonstrate the use of <select> and <option> elements for user input selection.	CO5	L5
7.	Make use of JS Functions with its definition, parameters, call and apply in JavaScript.	CO4	L3

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc.-CS, Semester-4th

CYBER LAWS AND IPR

Subject Code: UGCA1949

M. Code: 93439

Date of Examination: 05-12-2025

Time: 3 Hrs.**Max. Marks: 60**

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, each carrying **TEN** marks each and student has to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define the term "OSS".	CO3	L1
b.	Explain cyber stalking.	CO2	L2
c.	What do you mean by identity theft?	CO2	L1
d.	Explain the term "IPR".	CO3	L2
e.	Define the concept of threat to privacy.	CO2	L1
f.	Classify "Cyber Defamation".	CO2	L2
g.	What do you mean by copyright?	CO4	L1
h.	Explain minimum contacts theory.	CO1	L2
i.	Recall related rights and copyright.	CO4	L1
j.	Classify different types of jurisdiction.	CO1	L2
SECTION-B			
2.	Make use of self-regulation approach to privacy.	CO2	L3
3.	Identify the term "Patent", granting of patent and kind of inventions protected by patent.	CO3	L3
4.	Analyze copyright and also discuss how long does copyright last?	CO4	L4
5.	Explain the term "Cyber Laws" also explain the need for cyber laws in digital world.	CO1	L5
6.	Analyze different intellectual property rights and also classify trademark and its registration process.	CO4	L4
7.	Evaluate the following terms: (i) Web Technology (ii) Jurisprudence at Indian and International Level.	CO1	L5

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

1|M- 93439

Roll No.

Total No. of Pages: 02

Total No. of Questions: 07

B.Sc. CS, Semester-4th
NETWORK SECURITY
Subject Code: UGCA2001
M.Code:93437

Date of Examination: 29-11-2025

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, each carrying **TEN** marks each and student has to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define Network Security.	CO1	L1
b.	Explain malwares.	CO1	L2
c.	List various hashing Algorithms.	CO2	L1
d.	Infer Digital Signature.	CO3	L2
e.	Outline the roles of AH and ESP in IPSec.	CO4	L2
f.	Recall the term IDS.	CO4	L1
g.	Interpret Transposition Cipher.	CO2	L2
h.	What is authentication?	CO3	L1
i.	Summarize IP security.	CO4	L2
j.	Extend the terms DES and RSA.	CO2	L2
SECTION-B			
2.	Identify the architecture and working of SSL and TLS protocols, and explain how they provide secure communication over the Internet.	CO4	L3
3.	Evaluate the functioning and significance of basic authentication protocols, with particular emphasis on the concept of a Key Distribution Centre (KDC) and the Needham-Schroeder Authentication Protocol	CO3	L5
4.	Explain the concepts of stream ciphers and block ciphers. Compare their characteristics and discuss the fundamental principles of block cipher design.	CO2	L5
5.	Apply the key network security terminologies—identification, authentication, authorization, access control, confidentiality, integrity, non-repudiation, freshness, and availability—to real-world network scenarios. Explain each term and illustrate its significance in securing a network against potential threats and vulnerabilities.	CO1	L3

6.	Classify the popular Message Digest and Hash Algorithms such as SHA-1, SHA-2, MD4, and MD5, and explain their structures, working principles, strengths, weaknesses, and their applications in modern cryptographic systems.	CO2	L4
7.	Examine the reliability of digital signatures in comparison to traditional authentication methods, and recommend scenarios where digital signatures provide a superior security advantage.	CO3	L4

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 1

Total No. of Questions: 07

B.Sc. (Cyber Security), Semester-4th

DIGITAL FORENSICS

Subject Code: UGCA 2002

M.Code: 93438

Date of Examination: 02-12-2025

Time: 3 Hrs.

Max. Mark: 60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, each carrying **TEN** marks each and student has to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Explain role of Digital forensics.	CO1	L2
b.	Define parts of gathering evidence.	CO2	L1
c.	Write the holistic approach to cyber forensics.	CO1	L1
d.	What is “Evidence Management & Presentation”?	CO3	L1
e.	Summarize search and seizure electronic evidence.	CO2	L2
f.	Demonstrate how law enforcement should manage and collect digital evidence at a crime scene.	CO3	L2
g.	Compare retrieved and un-retrieved communications.	CO2	L2
h.	Recall the importance of forensic mind-set.	CO3	L1
i.	Classify Legal Aspects of Digital Forensics (IT Act 2000).	CO4	L2
j.	List any two “mobile forensics tools”.	CO4	L1
SECTION-B			
2.	Explain the different tools and techniques used in digital forensics with suitable examples.	CO1	L5
3.	Choose the best method for collecting physical evidence at a crime scene and explain the reason for the same.	CO2	L3
4.	Organize the report on importance of understanding the court documents that required for a criminal investigation.	CO3	L3
5.	Classify computer forensics workstations and its software.	CO3	L4
6.	Explain Mobile Forensics with its techniques.	CO4	L5
7.	Distinguish between court orders and search warrants in cybercrime investigations.	CO2	L4

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc.(CS) / B.Sc. AIML, Semester- 5th

CLOUD COMPUTING

Subject Code: UGCA 1936

M.Code: 94071 / 92418

Date of Examination: 01-12-2025

Time: 3 Hrs.

Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define the term "Cloud Vision".	CO1	L1
b.	Explain any two names of cloud delivery models.	CO1	L2
c.	Compare cluster computing and cloud computing.	CO2	L1
d.	Illustrate two benefits of migrating to cloud.	CO2	L2
e.	List any four characteristics of virtualization.	CO3	L1
f.	Explain the term "virtual machine".	CO3	L2
g.	What is the data tenancy in cloud storage?	CO5	L1
h.	Compare Baseline measurements and Metrics-Baseline Measurements.	CO4	L2
i.	Define the concept of system matrices.	CO4	L1
j.	Interpret the purpose of cloud auditing.	CO5	L2
SECTION-B			
2.	Identify the components and characteristics of distributed computing in details.	CO1	L3
3.	Analyze cloud migration model with its steps. Also explain the cloud generalization.	CO2	L4
4.	Explain Hypervisor Technology. Show the importance of Xen, VMware, Microsoft Hyper-V in Hypervisor Technology.	CO3	L5
5.	Explain the role of SQL Azure in cloud data management with the help of example.	CO4	L5
6.	Identify the cost model of AWS with suitable example.	CO4	L3
7.	Examine how Google App Engine (GAE) works? Describe its main features.	CO5	L4

Note: Disclosure of identity by writing mobile number or making of passing request on any paper of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Questions: 07

Total No. of Pages: 01

B.Sc.(CS), Semester- 5th
ADVANCED WEB TECHNOLOGIES

Subject Code: UGCA 2019

M.Code: 94063

Date of Examination: 21-11-2025

Time: 3 Hrs.

Max. Marks:60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Why is PHP called a server-side scripting language?	CO1	L1
b.	Show the use of while() loop in displaying query results in a table?	CO1	L2
c.	Define Document Object Model (DOM).	CO2	L1
d.	Compare HTTP and HTTPS.	CO2	L2
e.	What is the use of mysqli_close().	CO3	L1
f.	Demonstrate how do we combine PHP and HTML to print database records?	CO3	L2
g.	Define MySQL.	CO3	L1
h.	Demonstrate two features of React Components.	CO4	L2
i.	Define E-Mail.	CO4	L1
j.	Demonstrate the use of AJAX for fetching data.	CO2	L2
SECTION-B			
2.	Apply OOPS concept described in PHP.	CO1	L3
3.	Explain AJAX in detail. Discuss its architecture, working mechanism, advantages, limitations, and real-time applications.	CO2	L5
4.	Build the key features of jQuery, such as date picker and auto complete and explain their impact on improving user interface experiences in web application.	CO3	L3
5.	Analyze the various web services available with example.	CO4	L4
6.	Build the components of Bootstrap in detail.	CO3	L4
7.	Explain Node.js with example.	CO4	L5

Note: Disclosure of identity by writing mobile number or making of passing request on any paper of Answer Sheet will lead to UMC against the student.

[illegible]

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc.CS, Semester-5th

LINUX OPERATING SYSTEM

Subject Code: UGCA 2021

M.Code: 94068

Date of Examination: 27-11-2025

Time: 3 Hrs.**Max. Marks:60**

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Define multitasking and multiuser in Linux.	CO1	L1
b.	Compare Linux and Unix.	CO1	L2
c.	List two commands of vi editor.	CO2	L1
d.	Discuss Linux kernel space and user space	CO2	L2
e.	Outline the function of kill command.	CO3	L1
f.	Discuss multimedia applications in Linux.	CO3	L2
g.	State how do you stop a running process temporarily.	CO4	L1
h.	Explain comments in shell scripts, and how are they written.	CO4	L2
i.	Define the term “kernel compilation.”	CO5	L1
j.	State the difference between su and sudo	CO5	L2
SECTION-B			
2.	Build the structure of Linux Operating system and explain in detail.	CO1	L3
3.	Distinguish command-line and graphical interfaces in Linux.	CO2	L4
4.	Explain the role of (a) Aliases (b) Filename expansion (c) Pipes in Linux	CO3	L5
5.	Compare if-fi & case-esac and also write shell script of each.	CO4	L5
6.	Make use of the terms: (a) break (b) echo (c) read with example.	CO4	L3
7.	Examine different types of runlevel with their number and working.	CO5	L4

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 02

Total No. of Questions: 07

B.SC.CS, SEMESTER-5th

FIREWALL & INTRUSION DETECTION

SUBJECT CODE: UGCA2028

M.CODE: 94073

DATE OF EXAMINATION: 04-12-2025

Time: 3 Hrs.**Max. Marks:60**

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** consists of **SIX** questions, carrying **TEN** marks each and student have to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1.	Answer briefly:		
a.	Who are intruders in the context of system security?	CO-1	L1
b.	Outline the spoofing in network security?	CO-1	L2
c.	What are fingerprint scanners and how do they work?	CO-2	L1
d.	Illustrate security policy and explain its purpose.	CO-2	L2
e.	What is role-based access control (RBAC)?	CO-2	L1
f.	What is a host-based intrusion detection system?	CO-3	L1
g.	Explain any two common firewall policy rules.	CO-3	L2
h.	Explain the cryptology.	CO-4	L2
i.	Define transport mode in IPSec.	CO-4	L1
j.	Explain the purpose of the IT Act, 2000.	CO-4	L2
SECTION-B			
2.	Utilize the intruders in cybersecurity? Describe different types of intruders and how they compromise systems.	CO-1	L3
3.	Explain the role of access control policies in securing systems. How are policies created, enforced, and monitored?	CO-2	L5
4.	Identify the limitations and vulnerabilities of password-based authentication systems. Provide examples of attacks.	CO-2	L3

5.	Compare and contrast packet filtering firewalls and stateful inspection firewalls.	CO-3	L4
6.	Differentiate between Vulnerability Assessment and Intrusion Detection. How do they complement each other in network security?	CO-3	L4
7.	Evaluate the importance of cryptography in modern digital communication. What are its main applications and challenges?	CO-4	L5

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the student.

Roll No.

Total No. of Pages: 01

Total No. of Questions: 07

B.Sc (Cyber Security) (Sem.- 6)

MACHINE LEARNING

Subject Code: UGCA-1950

M.Code: 94316

Date of Examination: 21-11-2025

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B consists of **SIX** questions, each carrying **TEN** marks each and student has to attempt any **FOUR** questions.

Q. No.	Question	Course Outcome	Bloom's Level
SECTION-A			
1	Answer briefly:		
a.	Mention some common use cases of Machine Learning.	CO1	L2
b.	Define Machine Learning.	CO1	L1
c.	Explain the purpose of gradient descent in regression.	CO3	L2
d.	Explain the working principle of Decision Tree.	CO2	L2
e.	Comparison between Grid Search and Random Search.	CO4	L2
f.	What are the main use cases of clustering?	CO2	L1
g.	Define similarity and dissimilarity measures in clustering.	CO4	L1
h.	Define the concept of Exploration vs. Exploitation.	CO5	L1
i.	Differentiate between Q-values and V-values.	CO5	L2
j.	What are the advantages of K-Means algorithm?	CO3	L1
SECTION-B			
2	Identify the categories of Machine Learning with examples.	CO1	L3
3	Discuss the Machine Learning process flow in detail with a neat diagram.	CO2	L6
4	Examine the steps for implementing Naïve Bayes Classifier with an example.	CO3	L4
5	Compare K-Means, C-Means, and Hierarchical Clustering techniques.	CO3	L4
6	Explain the basic concepts and elements of Reinforcement Learning.	CO4	L5
7	Evaluate the importance of Markov Decision Process (MDP) in Reinforcement Learning.	CO5	L5

Note: Disclosure of Identify by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the students.