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Total No. of Pages : 03

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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?

ਸਮ੍ਰਫ਼ਿ ਕਯਾ ਹੈ? ਸਮ੍ਰਫ਼ਿ 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?

ਪ੍ਰਾੈਯੋਗਿਕੀ, ਪ੍ਰਬੰਧਨ ਸਾੱਡਲ ਔਰ ਉਤਪਾਦਨ ਪ੍ਰਣਾਲਿਯੋਂ ਕੇ ਸੂਲ੍‍ਯਾਂਕਨ ਕੇ ਲਿਏ ਕ੍ਰਯਾਪਕ ਸਮਗ੍ਰ ਸਾਪਦ੍ਰੰਡ ਕਯਾ ਹੈਂ?

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

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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.

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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

- If $A = \begin{bmatrix} 2 & 0 & -1 \\ 5 & 1 & 0 \\ 0 & 1 & 3 \end{bmatrix}$ Evaluate $A^3 - 6A^2 + 11A - I$
- 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
$$\frac{p+q}{2} \left[a + b + \frac{a-b}{p-q} \right]$$
- 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.
- 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.
- 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 $A \cup B = B$.
- 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 $A - 5X = 2B$.

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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

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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 :

- 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.

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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.

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Total No. of Pages : 02

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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.

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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.

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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?

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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?

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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.

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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.

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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?

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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

- I. Write briefly :
- What is cyber jurisprudence?
 - What is cyber stalking?
 - Give the introduction legal framework.
 - Write a short note on open source software.
 - What is the cyber world?
 - Explain role of Certificate Authority.
 - What is IPR?
 - How to protect the invention?
 - What are related rights?
 - 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?

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Total No. of Pages : 02

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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.

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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 :
 - a) What is an IP address?
 - b) What do you mean by Hyperlink?
 - c) List few text formatting HTML tags.
 - d) How you can add graphics to HTML documents?
 - e) What is the difference between internal and external document reference?
 - f) How to use COLSPAN and ROWSPAN attribute in HTML?
 - g) Define DHTML.
 - h) What is the importance of Form tag in HTML?
 - i) What is a JavaScript statement? Give an example.
 - j) 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

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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.

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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?

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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?

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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 :
- Name three types of machine learning.
 - What is the difference between AI and machine learning?
 - How do you measure accuracy in the supervised learning?
 - What is a centroid in clustering?
 - What is a policy in reinforcement learning?
 - Name a common application of reinforcement learning.
 - What is the main objective of using an SVM?
 - How does Naïve Bayes handle continuous data?
 - What is the difference between parameter and hyperparameter?
 - 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

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Total No. of Pages : 02

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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.

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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.

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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.

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