INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
Dundigal, Hyderabad - 500 043

COMPUTER SCIENCE AND ENGINEERING(DS)

QUESTION BANK

Course Title	**Human Computer Interaction (UI & UX)**				
Course Code	ACDC12				
Program	B.Tech				
Semester	VII	CSE(DS)			
Course Type	Elective				
Regulation	UG20				
Course Structure	Theory			Practical	
	Lecture	Tutorials	Credits	Laboratory	Credits
	3	0	3	-	-
Course Coordinator	Mr J.Gangadhar, Assistant Professor				

COURSE OBJECTIVES:

The students will try to learn:

I	The essentials of designing interactive systems
II	The different techniques for designing interactive systems
III	The contexts for designing interactive systems
IV	The important aspects of implementation of human-computer interfaces

COURSE OUTCOMES:

After successful completion of the course, students should be able to:

CO 1	**Demonstrate** the essentials of the design process and skills to develop the human-centered interactive systems	Understand
CO 2	**Identify** the design requirements to perform the evaluation process through participants and experts	Apply
CO 3	**Choose** the design guidelines and psychological principles to develop user interfaces	Apply
CO 4	**Construct** a conceptual basis to design HCI by considering internet sites usability, and user appreciation designs through case studies.	Apply
CO 5	**Compare** HCI designs to gain knowledge on user-centric interfaces while designing as case study in cryptography and network security	Understand

CO 6	**Make use of** computing skills to design efficient interactive systems that align with human capabilities and needs	Apply

QUESTION BANK:

Q.No	QUESTION	Taxonomy	How does this subsume the level	CO's
MODULE I				
ESSENTIALS OF DESIGNING INTERACTIVE SYSTEMS				
PART A-PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS				
1	Designing interactive systems within HCI involves a multitude of concerns, spanning from usability and accessibility to ethical considerations and cross-cultural adaptability. In light of these concerns. i)Discuss how a holistic approach to interactive system design can be developed, ii)which not only addresses each of these concerns but also balances them effectively to create user-centered and socially responsible interactive systems. iii)What strategies, methodologies, and ethical principles should designers employ to ensure that their designs not only meet user needs but also promote inclusivity, security, and ethical responsibility in a rapidly evolving technological landscape?	Understand	The learner has to **recall** the concept of interactive systems **understand** holistic approaches related to interactive systems.	CO 1

2	In the rapidly evolving field of HCI, an interactive systems designer plays a pivotal role in shaping user experiences across a wide range of digital platforms and devices. i) Discuss the multifaceted skill set required of an interactive systems designer. ii) What technical, creative, and interpersonal skills are essential for success in this role, and how can designers continually develop and adapt their skills to stay relevant in an ever-changing technological landscape? iii) Provide examples of how these skills come into play in the design process and contribute to the creation of user-centered and effective interactive systems.?	Understand	The learner has to **recll** the concept of interactive systems and **understand** multifaceted skills and applying to develop digital platforms and devices.	CO 1
3	In the realm of Human-Computer Interaction (HCI), the concept of being human-centered is often regarded as paramount. i. Discuss the significance of a human-centered approach in HCI, emphasizing its implications for user experience, usability, ethics, and the development of technology. ii. How does prioritizing the needs, preferences, and abilities of users contribute to the creation of more effective, inclusive, and socially responsible interactive systems? iii.Provide examples and insights into how a human-centered approach can lead to improved HCI outcomes and address contemporary challenges in technology design.” .	Understand	The learner has to **recall** the concept of Human centered approach and **demonstrate** insights into how a human-centered approach can lead to improved HCI outcomes	CO 1

4	The process of human-centered interactive systems design in Human-Computer Interaction (HCI) is a multi-stage journey, encompassing research, ideation, prototyping, testing, and iteration. i).Describe each key phase of this process, highlighting the objectives, methods, and significance of each stage. ii).How does the human-centered design process ensure that user needs, preferences, and feedback are integrated effectively into the design, ultimately resulting in interactive systems that are not only usable but also provide exceptional user experiences? iii).Provide real-world examples to illustrate the impact of this process on HCI outcomes and its role in addressing contemporary challenges in technology design	Understand	The learner has to **recall** the concept of hill cipher and **show** conversion of plain text into cipher text by using hillcipher.	CO 1
5	Developing personas and scenarios is a fundamental practice in HCI that aids in creating user-centered designs. i) Explain the concept of personas and scenarios in HCI, including their objectives and methods for development. ii) How do personas and scenarios contribute to the design process by representing user characteristics, needs, and behaviors? iii) Discuss the potential challenges and limitations associated with their use in HCI.	Apply	The learner has to **recall** the concept of substitution techniques and **relate** with techniques and **make use** of playfair technique.	CO 1

6	Scenarios play a pivotal role throughout the design process in HCI, offering a dynamic and user-centric perspective on system interactions. i) Describe the concept of using scenarios in HCI, elucidating their purpose, development methods, and significance. ii) How do scenarios guide designers in understanding user behaviors, contextual factors, and system requirements? .	Understand	The learner has to **recall** the cipher techniques and **infer** one time pad cipher technique	CO 1
7	Scenario-based design methods are foundational in HCI, offering a structured approach to create user-centered interactive systems. i) Describe the concept of scenario-based design in HCI, outlining its key principles, steps, and objectives. ii) How does this method facilitate the development of interactive systems that align with user needs and context? iii) Discuss potential challenges and considerations when implementing this approach	Undertand	The learner has to **recall** the conventional security model and **extend** the approach of conventional security.	CO 1
8	i).What is the key differences between user-centered design and task-centered design in the context of designing interactive systems. ii).How can designers choose the most appropriate approach for a given project?	Understand	The learner has to **recall** the concept of Steganography and Crytography and also **compare** both steganography and cryptography.	CO 1
9	i).Explain the importance of accessibility and inclusivity in interactive system design. ii).How can designers ensure that their systems are accessible to users with disabilities, and what role do design guidelines like WCAG play in this process?	Understand	The learner has to **recall**the concepts of key range and key size and possible types of attacks and **relate** them.	CO 1

10	In the context of designing interactive systems, discuss the trade-off between security and usability. i).How can designers strike a balance between creating user-friendly systems and maintaining robust security measures?	Understand	The learner has to **recall** the concept conversion techniques and **classfies** the transposition techniques and substitution techniques.	CO 1
PART-B LONG ANSWER QUESTIONS				
1	How do interactive systems in HCI impact our daily lives??	Understand	The learner has to **recall** the HCI have a profound impact on our daily lives **extend** them with neat diagrams.	CO 1
2	What are the key challenges in designing interactive systems for HCI	Remember	User-centered design is a fundamental approach in HCI. **recall** the concept of cryptanalysis, and **identifies** cryptanalysis and has to know information about cryptanalytic.	CO 1
3	What are the different types of interactive systems in HCI?	Understand	The learner has to **Understand** the Interactive systems in HCI have a profound impact on our daily lives **outline** model for internetwork security with neat diagram.	CO 1
4	What are the primary usability concerns in interactive systems design in HCI?	Remember	The learner has to **recall** and **identify** various types of transposition techniques.	CO 1
5	What are the key accessibility concerns when designing interactive systems in HCI?	Understand	The learner has to **recall** the concept of substitution techniques and **relate**the caeser cipher then **Calculate** the encryption and decryption for the given plain text with given key.	CO 1
6	How do ethical concerns impact interactive systems design in HCI?	Understand	The learner has to **infer** the concept of cryptography and know the use of transposition techniques.	CO 1

7	How does user-centered design play a role in interactive systems design in HCI?	Remember	The learner has to **recall** the concept of security attacks, security services, security mechanism, plain text, cipher text, substitution techniques, and transposition techniques.	CO 1
8	How do designers address cross-platform and cross-device concerns in interactive systems design?	Apply	The learner has to **recall** the conversion techniques of plain text to cipher text and **extend** the transposition techniques.**Make use** the concept of simple columnar transposition techniques they are basic technique, with multiple rounds.	CO 1
9	What are the key technical skills that an interactive systems designer in HCI should possess?	Understand	The learner has to **recall** the concepts security attacks and security mechanisms and **infer** about them.	CO 1
10	What soft skills are important for an interactive systems designer in HCI?	Understand	The learner has **recall** the concept of conversion techniques and **extend** the cipher conversion with key repetition with the given plain text.	CO 1
11	How important is user research and usability testing for an interactive systems designer in HCI, and what skills are required for these tasks?	Remember	The learner has to know cryptography and **list** the cipher techniques in cryptography	CO 1
12	In what ways does a designer's understanding of psychology and human behavior play a role in HCI, and what skills are needed in this area?	Apply	The learner has to **relate** the concept of cipher text conversion and **outline** play fair cipher technique, **Calculate** cipher text by using play fair cipher technique for given plain text.	CO 1
13	How does staying updated with current HCI research and industry trends contribute to the success of an interactive systems designer, and what skills are necessary for this continuous learning?	Understand	The learner has to **list** the concept of cipher text by **make use**of hill cipher and **utilise**it to calculate the encryption for the given plain text.	CO 1

14	What is the process of human-centered interactive systems design in HCI, and why is it important?	Apply	The learner has to **list** the concept of cipher text by **make use** of playfair cipher and **Calculate** the encryption for the given plain text.	CO 1
15	What are personas in the context of HCI, and why are they important in the design process?	Apply	The learner has to **list** the concept of cipher text by **make use** of one-time pad cipher and **Calculate** the encryption for the given plain text.	CO 1
16	What are the key steps involved in developing personas for an HCI project?	Apply	The learner has to **relate** the concept of cipher text by **using** one-time pad cipher and **apply** it to calculate the encryption and decryption for the given plain text.	CO 1
17	What are scenarios in HCI, and how do they contribute to the design process?	Understand	The learner has to **list** the concept poly-alphabetic ciphers with example and **extend** its applications.	CO 1
18	What are the key steps involved in developing scenarios for an HCI project?	Remember	The learner has to **list** the concepts plain text, ciphers text, symmetric and asymmetric key in cryptography.	CO 1
19	How do personas and scenarios work together to inform the design and development of interactive systems in HCI?	Understand	The learner has to **recall** the concept of cipher techniques in the cryptography and **classify** all kinds of cipher techniques in the cryptography.	CO 1
20	How does scenario-based design contribute to the creation of user-friendly and effective interactive systems?	Understand	The learner has to **recall** the concept of Caesar cipher and mono-alphabetic ciphers and **outline** them with examples.	CO 1
PART-C SHORT ANSWER QUESTIONS				
1	Recall the term Human Computer Interaction ?	Remember	The learner has to **define** the concept of security attacks.	CO 1
2	What is a natural language interface in HCI?	Remember	The learner has to **recall** definition of traffic analysis and about traffic analysis.	CO 1

3	How do touch-based interactive systems work??	Understand	The learner has to **list** active attacks and **identify** the categories of active attacks.	CO 1
4	How does eye-tracking technology contribute to HCI?	understand	The learner has to **relate** the concept security mechanisms and has to **identify** the categories of security mechanisms.	CO 1
5	What is the role of brain-computer interfaces in HCI??	Understand	The learner has to **recall** the definition of active and passive attacks and **extend** the differences examples.	CO 1
6	What are accessibility issues in HCI?	Understand	The learner has to **recall** the concept of security and **outline** key principles of security.	CO 1
7	How does usability testing address HCI concerns?	Understand	The learner has to **recall** the concept of encryption and **compares** symmetric and asymmetric encryption.	CO 1
8	What are ethical considerations in HCI??	Understand	The learner has to **recall** the concept of security and **demonstrate** the needs of security.	CO 1
9	What is human-centered design in HCI?.	Understand	The learner has to **recall** Guass law.	CO 1
10	How does security play a role in HCI?	Understand	The learner has to **find** the basics tasks of security services and **explain** about security services	CO 1
11	What is the importance of feedback and error handling in HCI?	Understand	The learner has to **find** the concept of mechanisms and **interpret** for confidentiality.	CO 1
12	How do cultural and cross-cultural considerations impact HCI?	Understand	The learner has **recall** the terms key range and key size and **classify** them.	CO 1
13	What is the role of user training and documentation in HCI?	Remember	The learner has to **recall** the concept of passive attacks.	CO 1
14	What is HCI design?	Remember	The learner has to **relate** the concept cryptanalysis.	CO 1
15	What is the role of empathy in HCI design?	Remember	The learner has to **recall** about stegnography.	CO 1
16	Define user research skills in HCI??	Remember	The learner has to **recall** the concept security approaches.	CO 1

17	Why is usability testing important for HCI designers?	Understand	The learner has to **recall** the concept of conversion techniques and **classify** substitution techniques and transposition techniques.	CO 1
18	Compare encryption and decryption?	Understand	The learner has to **recall** the concept of conversion and **identify** encryption and decryption. Identify encryption and decryption.	CO 1
19	How transposition techniques differ from substitution techniques?	Understand	The learner has to **recall**the concept of substitution techniques and transposition techniques and **contrast** transposition techniques from substitution techniques.	CO 1
20	How do HCI designers ensure consistency in design?	Remember	The learner has to **list** various security approaches.	CO 1
MODULE II				
TECHNIQUES FOR DESIGNING INTERACTIVE SYSTEMS				
PART-A PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS				
1	i).Why is the process of understanding requirements considered a cornerstone in HCI? ii).How does a thorough understanding of user requirements contribute to the success of interactive system design?	Understand	The learner has to **recall** the concept of fiestel cipher structure and **expand** why it is important to study the feistel cipher.	CO 2
2	In the field of HCI, understanding user requirements is a foundational step in designing interactive systems that meet user needs effectively. i).Explain the process of gathering and documenting user requirements in detail, from initial research to final documentation. ii).Discuss the challenges that designers may encounter during requirement gathering and how they can address these challenges to ensure that the resulting interactive systems .	Understand	The learner has to **recall** the concept of diffie -hellman algorithm.**Extend** the diffie -Hellman Key Exchange Algorithm with example	CO 2

3	Participative design is a collaborative approach that actively involves users, stakeholders, and designers in the design process of interactive systems. i)Explain the key principles and objectives of participative design in HCI, emphasizing the importance of inclusivity, empowerment, and user-centeredness. ii)Describe the phases of the participative design process, from initial planning and user involvement to evaluation and refinement.	Apply	The learner has to **recall** DES algorithm and **show** how it can be **used** to calculate the first 24 bits of each sub key come from the same subset of 28 bits of the initial key and that the second 24 bits of each sub key come from a disjoint subset of 28 bit initial key.	CO 2
4	Participative design is considered a cornerstone of user-centered design in HCI. i).Explain the core principles and objectives of participative design, emphasizing how it empowers users and stakeholders in the design process. ii).Describe the phases of participative design, from initial planning and user involvement to iterative evaluation and refinement.	Understand	The learner has to **recall** the concept of block cipher modes of operations and **relate** why do some block cipher modes of operation only use encryption while others use both encryption and decryption.	CO 2
5	Card sorting is a valuable technique in HCI for organizing information and improving the navigation and usability of interactive systems. i).Explain the principles and objectives of card sorting in detail, emphasizing its role in information architecture and user-centered design. ii).Describe the two main types of card sorting: open and closed. iii).discuss when and how each type is most appropriately used in HCI projects.	Apply	The learner has to the **relate** the RSA algorithm and **make use** the RSA Algorithm to **slove** encryption and decrytion for given example	CO 2

6	Basic techniques play a foundational role in HCI, helping designers understand user needs, create user-friendly interfaces, and evaluate system usability. i).Explain the significance of basic techniques in the HCI field and their contribution to user-centered design. ii).Discuss three fundamental basic techniques used in HCI, such as usability testing, heuristic evaluation, and cognitive walkthroughs.	Understand	The learner has to **recall** the concept of block cipher modes of operations and **identify** the concept of Output feedback mode operation.	CO 2
7	The introduction phase of design in HCI sets the stage for the entire interactive system development process. i).Explain the significance of a well-structured design introduction and its role in ensuring the success of HCI projects. ii).Describe the key components of a design introduction, including problem definition, user analysis, and design objectives.	Understand	The learner has to **recall** types of stream ciphers and **outline** them with neat diagrams.	CO 2
8	Conceptual design is a critical phase in HCI where designers establish the high-level vision and framework for interactive systems. i).Explain the importance of conceptual design in the HCI process and how it sets the direction for the entire project. ii).Describe the key components of conceptual design, including user personas, scenarios, and design principles. iii).Explain the role of user personas in creating a user-centered design concept by representing user characteristics, needs, and goals. ?	understand	The learner has to **recall** the concept of fiestel cipher structure and **identify** which parameters and design choices determine the actual algorithm of a feistel cipher.	CO 2

9	Metaphors are commonly used in HCI design to bridge the gap between the digital and physical worlds, making complex interactions more intuitive. i).Explain the significance of metaphors in HCI and their role in enhancing user understanding and interaction with digital interfaces. ii).Describe the two primary types of metaphors in HCI: direct and indirect metaphors. Provide examples of each type and discuss when and how they are employed in interface design to simplify complex concepts and actions.	Apply	The learner has to **recall** the concept of diffe Hellaman key exchange algorithm and by **make use** of it **solves** public key and secret key.	CO 2
10	Scenarios are a crucial tool in the conceptual design phase of HCI, helping designers envision user interactions and system behavior in specific contexts. i).Explain the significance of scenarios in HCI and their role in creating user-centered design concepts. ii).Describe the key components of scenarios, including user actions, goals, and system responses.	Understand	The learner has to **recall** concept of public key , private key and algorithms and **illustrate** key generation	CO 2
PART-B LONG ANSWER QUESTIONS				
1	Why is understanding requirements important in HCI?	Understand	The learner has to **recall** AES and DES.**Contrast** both.	CO 2
2	What is card sorting, and why is it important in HCI?	Understand	The learner has to **recall** the concept DES algorithm and feistel cipher structure and **extend** how DES algorithm uses feistel cipher structure.	CO 2
3	What steps are involved in conducting a card sorting study in HCI?	Understand	The learner has to **recall** concept of encryption and **outline** how encryption is misused to attack the system.	CO 2

4	Discuss card sorting results be used in the design process in HCI?	Understand	The learner has to **relate** the concept Diffie-Hellman algorithm and **summerize** the diffie-hellan algorithm.	CO 2
5	What challenges can be encountered when conducting card sorting studies, and how can they be mitigated?	Understand	The learner has to **recall** concept of encryption and **outline** how the placement of encryption will works?	CO 2
6	What is in situ observation and why is it important in HCI?	Understand	The learner has to **recall** concept of RC4 algorithm and **demonstrate** how to compile a process and how RC4 decryption is reverse of its encryption.	CO 2
7	What are the key steps involved in conducting in situ observation in HCI?	Understand	The learner has to **recall** the concept of conventional encryption algorithms and **outline** its principles.	CO 2
8	What types of information can be gathered through in situ observation in HCI?.	Understand	The learner has to **relate** the concept of encryption and **outline** how the placement of encryption will work.	CO 2
9	What challenges and ethical considerations are associated with in situ observation in HCI, and how can they be addressed?	Understand	The learner has to **relate** the concept of feistel cipher structure and **outline** recite round function evaluation in feistel cipher structure.	CO 2
10	What are representations in HCI, and why are they important?	Understand	The learner has to **relate** the concept of RSA algorithm and **outline** how key is distributed in the RSA algorithm.	CO 2
11	Explain the concept of "User-Centered Design" in HCI.? Explain the avalanche effect.	Understand	The learner has to **recall** the concept of S-boxes and **extend** the purpose of S-boxes	CO 2
12	Provide practical examples to illustrate how scenario-based design has been applied effectively in HCI projects	Understand	The learner has to **recall** the DES Algorithm and **extend** its advantages and limitations.	CO 2
13	Explain the concept of user-centered design and its significance in modern design practices.?	Understand	The learner has to **recall** the concept of cryptanalysis and **compare** linear and differential cryptanalysis.	CO 2

14	Discuss the role of empathy in design and its impact on creating meaningful and user-centric solutions?	Remember	The learner has to **list** the concept BlowFish, AES, and RC4.	CO 2
15	What is the purpose of the Evaluation Introduction phase in HCI, and what are the key components that should be included in the introduction of an evaluation process for an interactive system?	Understand	The learner has to **recall** public key crypto systems and **outline** all the principles of the public key crypto systems.	CO 2
16	What is the role of expert evaluation in HCI, and what are the key steps involved in conducting an expert evaluation of an interactive system? How does expert evaluation complement other evaluation methods?	Understand	The learner has to **recall** RSA algorithm and ECC.**Extend** its applications	CO 2
17	How can evaluation methods, both expert and participant-based, be effectively integrated into the practice of HCI design and development?	Understand	The learner has to **recall** the concept of AES and **demonstrate** AES encryption and decryption process with neat sketch.	CO 2
18	How does participant-based evaluation differ from expert evaluation in HCI, and what are the advantages of involving actual users in the evaluation process? What are common participant-based evaluation methods?	Understand	The learner has to **relate** the concept of asymmetric key ciphers and **outline** key distribution of asymmetric key ciphers.	CO 2
19	What is the role of the Physical Design phase in HCI, and what are the key considerations during this phase to create user-friendly and visually appealing interfaces?	Understand	The learner has to **recall** the concept of differential cryptanalysis and **extend** its uses.	CO 2
20	How do scenarios contribute to the Conceptual Design phase in HCI?	Understand	The learner has to **recall** stream ciphers and **summerize** it with examples	CO2
PART-C SHORT ANSWER QUESTIONS				
1	What is card sorting in HCI?	Understand	The learner has to **relate** the concept stream and block ciphers and **otuline** them with examples.	CO 2

2	Define two main types of card sorting techniques??	Understand	The learner has to **recall** DES, AES, Blowfish algorithms and **extend** DES, AES, Blowfish algorithms with examples.	CO 2
3	Explain open card sorting?	Remember	The learner has to **relate** block cipher modes of operation.	CO 2
4	Define closed card sorting??	Remember	The learner has to **recall** the concept of product cipher.	CO 2
5	How is card sorting typically conducted?	Understand	The learner has to **recall** the concept of feistel cipher structure and **extend** design parameters of feistel cipher structure .	CO 2
6	What is the purpose of card sorting in HCI??	understand	The learner has to **recall** symmetric- key cryptography and **identify** its importance.	CO 2
7	What type of information can be sorted using card sorting techniques?	understand	The learner has to **recall** the concept symmetric-key in cryptography and **extend** its uses.	CO 2
8	How is data analyzed in card sorting studies?	Remember	The learner has to **find** RC4 Location.	CO 2
9	Common methods for in situ observation?	Understand	The learner has to **recall** the concepts of ciphers modes of operation and **outline** its advantages.	CO 2
10	Recall situ observation?	Remember	The learner has to **recall** differential and linear cryptanalysis.	CO 2
11	What are suitable representations in HCI??	Understand	The learner has to **recall** the AES algorithm and **outline** steps in AES algorithms.	CO 2
12	Why is choosing suitable representations important?	Understand	The learner has to **recall** the concept RC4 Location and **demonstrates** it with example.	CO 2
13	What is the role of information visualization in HCI??	Understand	The learner has to **recall** the concept for DES algorithm and **extend** its procedure.	CO 2

14	What is the purpose of metaphors in HCI design?	Understand	The learner has to **relate** the concept of RSA algorithm and **demonstrates** the procedure for RSA algorithm.	CO 2
15	What is affordance in HCI?	Understand	The learner has to **recall** the concept of RSA Diffie-Helmann, ECC Key Distribution Algorithm and **illustrates** them.	CO 2
16	Define prototype in HCI	Remember	The learner has to **label** the key distribution asymmetric key ciphers.	CO 2
17	What is high-fidelity prototyping?	Remember	The learner has to **recall** the concept of link and end-to-end encryption.	CO 2
18	What is envisionment in HCI practice?	Remember	The learner has to **relate** the concept of session key and master key.	CO 2
19	8. How does iterative design relate to prototypes?	Remember	The learner has to **recall** the design criteria of block cipher.	CO 2
20	Can prototypes be used for usability testing in different stages of design?	Remember	The learner has to **outline** the placement of encryption function.	CO 2

MODULE III				
VISUAL INTERFACE DESIGN,MULTIMODEL INTERFACE DESIGN				
PART A-PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS				
1	Consider the design of a modern graphical user interface (GUI), such as a smartphone operating system or a web application?	Apply	The learner has to **recall** the concept of HMAC and **outline** required changes HMAC then **identify** what changes in HMAC are required in order to replace one underlying hash function with another.	CO 3
2	When assessing interface design guidelines in HCI, it's essential to think critically about their application and impact. Consider a set of interface design guidelines, whether established industry standards or custom recommendations for a specific project?	Understand	The learner has to **recall** the concept of MD4, MD5 to **compare** MD4 and MD5 and to know MD5 is stronger than MD4.	CO 3
3	How does visual hierarchy contribute to effective interface design?	Remember	The learner has to **list** types of attacks are addressed by message authentication.	CO 3
4	How can GUIs support multitasking?	Understand	The learner has to **recall** the concept of message authentication code and **extend** why has there been an interest in developing a message authentication code derived from a cryptographic hash function as opposed to one derived from a symmetric cipher.	CO 3
5	What is the accessibility consideration in GUI design??	Understand	The learner has to **relate** the concept of MD5 and **extend** basic arithmetical and logical functions are used in MD5	CO 3
6	What is digital signature? Explain in detail?	Understand	The learner has to **recall** concept of Digital signature **Summerize** digital signature with examplle.	CO 3

7	What impact do well-designed GUIs have on the overall user experience (UX)?	Understand	The learner has to **recall** the concept of message authentication and **identify** types of attacks are addressed by message authentication.	CO 3
8	What are psychological principles in interface design?	Understand	The learner has to **recall** the concept of message authentication and **interpret** some approaches to producing message authentication.	CO 3
9	How does the principle of "recognition over recall" apply to interface design?	Understand	The learner has to **recall** the concept of secure hash function **identify** what characters are needed in a secure hash function.	CO 3
10	What is the "Gestalt principle" in interface design?	Understand	The learner has to **recall** and **demonstrate** the concept public key infrastructure.	CO 3
PART-B LONG ANSWER QUESTIONS				
1	What is visual interface design in HCI? ?	Understand	The learner has to **recall** the concept of message authentication and **extend** secure hash algorithms protocol.	CO 3
2	Why is visual interface design important in HCI? ?	Understand	The learner has to **recall** the concept of message authentication and **extend** secure hash algorithms protocol.	CO 3
3	What are the core elements of visual interface design?	Understand	The learner has to **relate** knapsack algorithm and **outline** with an example.	CO 3
4	SHow does visual hierarchy contribute to effective interface design?	Understand	The learner has to **recall** the concept biometric authentication and **identify** its importance to support security in real time.	CO 3
5	How can designers make visual interfaces accessible?	Understand	The learner has to **recall** X.509 certificate and **outline** how it is revoked.	CO 3

6	How does responsive design relate to visual interface design?	Understand	The learner has **recall** the concept of digital signature **illustrates** message digest function in digital signatures with an example.	CO 3
7	What is the role of user personas in visual interface design?	Apply	The learner has to **infer** whirlpool mechanism with an example.	CO 3
8	How does user testing play a role in evaluating visual interface design?	Understand	The learner has to **recall** the concept of X.509 and **extend** X.509 certificates with neat diagram.	CO 3
9	What is a Graphical User Interface (GUI) in HCI? What are the advantages of GUIs in HCI?	Understand	The learner has to **recall** the concept of message authentication and **identify** different kinds of the authentication requirements are there for message authentication.	CO 3
10	How do GUIs impact the user experience (UX) in HCI?	Understand	The learner has to **list** public key and private key and **demonstrates** public key infrastructure with example.	CO 6
11	What are the challenges and considerations in GUI design for HCI?	Understand	The learner has to **recall** concept of kerberos and **compare** Kerberos v4 with Kerberos v5.	CO 3
12	What are psychological principles in interface design, and why are they important?	Understand	The learner has to **relate** the Kerberos security mechanism and **demonstrates** why it is important in real time for providing security.	CO 3
13	How does the principle of "recognition over recall" apply to interface design?	Understand	The learner has to **recall** the concept of kerberos and **contrast** which Kerberos is more secure than the other security mechanisms.	CO 3
14	Can you explain the Gestalt principles and their relevance in interface design?	Understand	The learner has to **recall** the concept of SHA-1 and **extend** functions in SHA-1 for **solving** the values of W16, W17, W18, W19 .	CO 3

15	How does "Hick's Law" impact interface design, and what is its significance?	Understand	The learner has to **recall** types of the message authentication codes and **extend**them with example.	CO 3
16	Explain "Fitts's Law" and its implications for interface design.	Understand	The learner has to **recall** concept of X.509 and **extend** X.509 certificates with neat diagram.	CO 3
17	How does the concept of "mental models" influence interface design?	Understand	The learner has to **recall** the concept authentication service and **extend** x.509 authentication services.	CO 3
18	How does "color psychology" influence interface design?	Understand	The learner has to **recall** the concept hash function and **outline** hash function with example.	CO 3
19	Can you explain how "proximity grouping" is used in interface design?	Understand	The learner has to **recall** the concept of digital signatures **extend** digital signatures with example.	CO 3
20	What is the significance of the "principle of least astonishment" in interface design?	Understand	The learner has to **recall** the concept of PKIX and **demonstrates** management functions of PKIX and the process in public Key infrastructure.	CO 3
PART-C SHORT ANSWER QUESTIONS				
1	What is visual interface design in HCI?	Understand	The learner has to **recall** the concept of HMAC,CMAC and **compares** HMAC and CMAC.	CO 3
2	Recall the visual interface design?	Remember	The learner has to **recall** concept Authentication requirements.	CO 3
3	How does visual hierarchy contribute to effective interface design?	Remember	The learner has to **recall** the concept authentication codes.	CO 3
4	What is the role of consistency in visual interface design?	Remember	The learner has to **recall** the concept of HMAC.	CO 3
5	How can designers make visual interfaces accessible?	Remember	The learner has to **recall** CMAC.	CO 3
6	What is the purpose of wireframing in visual interface design?	Remember	The learner has to **recall** secure hash algorithm.	CO 3

7	How does responsive design relate to visual interface design?	Understand	The learner has to **recall** the concept of kanpsack algorithm and **identify** the steps in knapsack algorithm.	CO 3
8	What is the role of user personas in visual interface design??	Remember	The learner has to **show** message digest.	CO 3
9	How does user testing play a role in evaluating visual interface design?	Understand	The learner has to **recall** the concept Public – Key Infrastructure.	CO 3
10	What is the primary purpose of a GUI?	Remember	The learner has to **recall** digital signature.	CO 3
11	What are some key GUI components?	Understand	The learner has to **recall** the concept Biometric Authentication and **outline** its key principles.	CO 3
12	How do GUIs differ from text-based interfaces like command-line interfaces (CLIs)?	Remember	The learner has to know X.509 certificate.	CO 3
13	Recall GUI??	Understand	The learner has to **recall** the concept of message authentication and **extend** its applications.	CO 3
14	What are psychological principles in interface design?	Remember	The learner has to **recall** the concept of kerberos and **identifies** simple and secure authentication dialogue in Kerberos.	CO 5
15	What is the "Gestalt principle" in interface design?	Understand	The learner has to **recall** the concept of X.509 certificate and **extend** its services.	CO 3
16	What is the role of the "Fitts's Law" principle in interface design?	Remember	The learner has to **recall** the concept of private and public key.	CO 3
17	How does the "mental model" concept affect interface design??	Understand	The learner has to **recall** the concept of messgae authentication and **extend** MD4 and MD5.	CO 3
18	How does "color psychology" influence interface design?	Remember	The learner has to **relate** what is message authentication algorithm.	CO 3
19	How does "proximity grouping" apply to layout in interface design?	Remember	The learner has **recall** the concept of message authentication codes and **identifies** MD4 and MD5.	CO 3

20	What is the significance of the "principle of least astonishment" in interface design?	Understand	The learner has to **recall** the concept simple and secure authentication.	CO 3
MODULE IV				
CONTEXTS FOR DESIGNING INTERACTIVE SYSTEMS				
PART A- PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS				
1	i).What is the key differences between user-centered design and task-centered design in the context of designing interactive systems. ii).How can designers choose the most appropriate approach for a given project?	Understand	The learner has to **recall** the concept PGP and **identifies** why PGP generate a signature before remembering.	CO 4
2	i).Explain the importance of accessibility and inclusivity in interactive system design. ii).How can designers ensure that their systems are accessible to users with disabilities, and what role do design guidelines like WCAG play in this process? ?	Understand	The learner has to **recall** R64 conversion and **outline** why is R64 conversion is useful for an e-mail application.	CO 4
3	In the context of designing interactive systems, discuss the trade-off between security and usability. i).How can designers strike a balance between creating user-friendly systems and maintaining robust security measures? ?	Understand	The learner has to **recall** the concept IPSec and **extends** its applications.	CO 4
4	Describe the role of personas and scenarios in user-centered design. How do these tools aid in understanding user behaviors, needs, and preferences, and what steps can designers take to ensure the accuracy and relevance of personas and scenarios in their projects??	Remember	The learner has to **recall** the concept IPSec and to know what are the services provided by IPSec.	CO 4

5	Discuss the impact of rapid technological advancements, such as AI and virtual reality, on the design of interactive systems. How can designers adapt to these changes and ensure that their designs remain user-centered and relevant in a fast-evolving technological landscape??	Understand	The learner has **recall** the concept of E-mail security and **extend** MIME and S/MIME.	CO 4
6	i).Why is the process of understanding requirements considered a cornerstone in HCI? ii).How does a thorough understanding of user requirements contribute to the success of interactive system design? ?	Apply	The learner has to **recall** the concept of PGP and **extend** how PGP use the concept of trust. The learner has to **experiment** with an example	CO 4
7	What are the key challenges in eliciting and prioritizing user requirements in HCI projects? How can designers navigate these challenges to ensure that requirements are accurately captured and effectively addressed in the design process?	Understand	The learner has to **recall** the concept of SA and to know what parameters to **identify** an SA and what parameters characterize the nature of particular SA.	CO 4
8	Explain the concept of user personas in HCI. How do personas help in understanding user requirements, and what are the potential limitations or biases that designers should be aware of when creating personas??	Understand	The learner has to**recall** the concept of PGP and **identify** why the segmentation and reassembly function in PGP is.	CO 4
9	In HCI, what is the significance of requirements validation and usability testing in the design process? How do these methods help ensure that user requirements are accurately reflected in the final design, and what are some best practices for conducting effective usability testing??	Understand	The learner has to **recall** the concept of SAs and **identify** the basic approaches to bundling SAs.	CO 4

10	How can designers ensure that user requirements remain adaptable in the face of evolving technology and user behaviors? Discuss the role of continuous user research and feedback in maintaining the relevance of requirements throughout the design process.?	Understand	The learner has to **recall** the concept ESP and **extend** a padding field in ESP.	CO 4
PART-B LONG ANSWER QUESTIONS				
1	How does Human-Computer Interaction (HCI) principles contribute to the development of user-friendly websites?	Understand	The learner has to **recall** the concept MIME and **illustrates** its specification.	CO 4
2	What role does user research play in the development of websites from an HCI perspective?	Understand	The learner has to **recall** the concept PGP and to **outline** the general format of PGP message.	CO 4
3	How can the iterative design process be applied to the development of a website with a focus on HCI?	Understand	The learner has to **recall** the concept Oakley key and **demonstrates** its general structure.	CO 4
4	How does effective navigation design contribute to a positive user experience on a website, and what principles should be considered in its development?	Understand	The learner has to **recall** the concept PGP and **illustrates** services provided by PGP .	CO 4
5	How can a responsive navigation design contribute to a positive user experience, especially in the context of mobile devices?	Understand	The learner has to **recall** concept of PGP **extends** its approach for e-mail security.	CO4
6	How can information architecture be effectively utilized in navigation design to enhance the usability of a website?	Understand	The learner has to **recall** the concept IP security and **extends** its overview.	CO 4
7	What are the key considerations in designing global navigation menus for websites, and how does it contribute to a seamless user experience?	Understand	The learner has to **recall** the concept of e-mail security and **outlines** how the security will be provided in Email.	CO 4
8	How can Human-Computer Interaction (HCI) principles be applied in the design of the Robert Louis Stevenson website to ensure a user-centered experience?	Understand	The learner has to **recall** the concept of IP security and **identify** IP security architecture in detail.	CO 4

9	What considerations should be taken into account when designing the navigation structure of the Robert Louis Stevenson website to enhance user engagement?	Understand	The learner has to **recall** the concept key management and **outline** its uses in email security.	CO4
10	Illustrate about the Collaborative environments?	Understand	The learner has **recall** the concept of MIME and **identify** MIME content types.	CO4
11	How can the design of the Robert Louis Stevenson website promote accessibility and inclusivity, considering users with diverse abilities?	Remember	The learner has to **recall** Combining Security associations.	CO 4
12	How does Human-Computer Interaction (HCI) contribute to the design and usability of social networking platforms?	Understand	The learner has to **recall** the concept of MIME**identify** MIME transfer encoding techniques and certificate processing.	CO 4
13	How can social networking platforms leverage HCI principles to address issues of user trust and online community building?	Remember	The learner has to **recall** ISAKMP key management.	CO 4
14	How can social networking platforms use HCI principles to enhance user engagement and promote positive user interactions?	Understand	The learner has to **recall** the concept of authentication header and **extends** the importance of the authentication header	CO 4
15	How do collaborative environments in HCI contribute to improved teamwork and productivity in various domains?	Understand	The learner has to **recall** the concept e-mail security and **extends** SIMIME message.	CO 4
16	What challenges and considerations arise in the design of collaborative environments, and how can HCI principles address them?	Understand	The learner has **recall** the concept of encapsulating security payload and **extends** its importance.	CO 4
17	Finding suitable representations in HCI long answer questions?	Understand	The learner has to **recall** the concept of encapsulating security payload and **outline** its security associations.	CO 4

18	Describe the importance of the socila networking?	Understand	The learner has to **recall** the concept of authentication header and **identify** the importance of the authentication header	CO 4
19	What are some common types of representations used in HCI, and when are they suitable?	Apply	The learner has **recall** the concept of e-mail security to **extend** S/MIME and **identify** why SIMIME is a security enhancement to MIME internet email format standard.	CO 4
20	What ethical considerations should be taken into account when selecting and implementing representations in HCI?	Understand	The learner has to **recall** the concept of symmetric key, public key and private key **identify** why in spite of symmetric key, public key and private key, uses three separate requirements	CO 4
PART-C SHORT ANSWER QUESTIONS				
1	How much does website development cost?	Remember	The learner has to **recall** the concept PGP	CO 4
2	What do you mean by website development?	Understand	The learner has to **recall** the concept of IP security and **identify** the terms IP Security and Authentication Header.	CO 6
3	Is coding required for web development?	Understand	The learner has to **recall** the concept of PGP and **outline** why PGP is open source.	CO 4
4	What is information architecture of a website?	Remember	The learner has to **recall** the notations used in PGP.	CO 4
5	What is the meaning of IA in website?	Understand	The learner has to **recall** the concepts of e-mail security and **identify** PGP and MIME types.	CO 4
6	What is the information structure of a website?	Understand	The learner has to **recall** the e-mail security and **outline** e-mail compatibility.	CO 6
7	What is meant by information architecture?	Remember	The learner has to **recall** the concept services of PGP.	CO 4
8	What is navigation design in web design?	Understand	The learner has to **recall** the concept IP Security.	CO 6

9	How do I make a good navigation for my website?	Understand	The learner has to **recall** the concept of encapsulating Security payload and **demonstrates** its functions. .	CO 6
10	How do you structure a Website navigation?	Understand	The learner has to **recall** the concept PGP and **outline** why does PGP generate a signature before Remembering.	CO 6
11	What is navigating the website?	Understand	The learner has to **recall** the concept of security and **extend** the over view of security.	CO 6
12	What is social interaction in HCI?	Remember	The learner has to **recall** architecture of IP Security.	CO 6
13	What is social psychology in Human-Computer Interaction?	Remember	The learner has to **recall** the concept PGP and **outline** how does PGP provide public key management.	CO 4
14	What are the 5 examples of Human-Computer Interaction?	Understand	The learner has to **recall** the concept of signature and **outline** the utility of a detached signature.	CO 6
15	What are the 3 main components of HCI?	Understand	The learner has to **recall** the concept IP Security and **express** the overview of IP security.	CO 6
16	What are the multidisciplinary fields of human-computer interaction?	Understand	The learner has to **define** the concept of PGP, Header **relate** Header and PGP .	CO 6
17	What are the 7 principles of HCI?	Remember	The learner has to **recall** Authentication Header.	CO 4
18	What is an example of a Collaborative Virtual Environment?	Remember	The learner has to **recall** the concept key management.	CO 4
19	What is VR in human computer interaction?	Understand	The learner has to **recall**the concept of encapsulating Security payload and **explain** its uses.	CO 4
20	What is interactive virtual environment?	Understand	The learner has to **recall** the concept of security and **outline** the over view of security.	CO 6

MODULE V				
UBIQUITOUS COMPUTING,MOBILE COMPUTING,WEARABLE COMPUTING				
PART A-PROBLEM SOLVING AND CRITICAL THINKING QUESTIONS)				
1	i).Explain the process of gathering and documenting user requirements in detail, from initial research to final documentation. ii).Discuss the challenges that designers may encounter during requirement gathering and how they can address these challenges to ensure that the resulting interactive systems . ?	Apply	The learner has to **recall** the concepts of SSL and TLS and **extends** the change cipher protocol and **identify** why is there a separate change cipher Spec protocol rather than including a change cipher-Spec message in the Handshake protocol.	CO 5
2.	i).Explain the key principles and objectives of participative design in HCI, emphasizing the importance of inclusivity, empowerment, and user-centeredness. ii).Describe the phases of the participative design process, from initial planning and user involvement to evaluation and refinement. ?	Understand	The learner has to **recall** the concept of CSS and **express** cross sire scripting vulnerability purpose.	CO 5
3	Identify Intrusion provides early warning of an intrusion so that action can be taken to prevent or minimize damage?	Apply	The learner has to **recall** the concept of intrusion prevention system and **outlines** how Intrusion provides early warning of an intrusion so that action can be taken to prevent or minimize damage.	CO 5
4	What is participative design, and how does it differ from traditional design approaches? Discuss the advantages and potential challenges of adopting participative design in the development of interactive systems?	Understand	The learner has to **recall** the concept SET and **outline** its principle and categories of SET participants.	CO 5

5	In participative design, what role do end-users play in shaping the design process and final outcomes? How can designers effectively incorporate user input and feedback into the design while maintaining project goals and constraints??	Understand	The learner has to **recall** the concept of SSL and **shows** parameters that define an SSL session state.	CO 5
6	Discuss the importance of empathy and understanding in participative design. How can designers cultivate empathy for users and stakeholders to create more user-centered and inclusive interactive systems?	Understand	The learner has to **recall** the concept of intruder. **Outline** three classes of intruders.	CO 5
7	Explain the concept of "prototyping with users" in participative design. How does this approach enhance the design process and lead to improved interactive system outcomes? Provide examples to illustrate its effectiveness.?	Understand	The learner has to **recall** the concept of protection **extend** the two common techniques used to protect a password file.	CO 5
8	i).Explain the core principles and objectives of participative design, emphasizing how it empowers users and stakeholders in the design process. ii).Describe the phases of participative design, from initial planning and user involvement to iterative evaluation and refinement. ?	Understand	The learner has to **recall** the concept of web security and **outlines** how a worm propagates.	CO 5
9	What is card sorting, and how does it help in the information architecture and design of interactive systems? Discuss the key objectives and benefits of using card sorting techniques in the design process.?	Apply	The learner has to **recall** the concept of intrusion prevention system and **outline** how statistical anomaly detection is different from rule based intrusion.	CO 5
10	In what scenarios might card sorting be less effective or less appropriate as a design technique? Are there situations where alternative methods should be considered, and if so, what are those alternatives??	Understand	The learner has to **recall** concept of dual signature and **extends** its purpose.	CO 5

PART-B LONG ANSWER QUESTIONS				
1	How do information spaces in HCI contribute to the organization and retrieval of information, and what principles guide their design??	Understand	The learner has to **recall** the concept of intrusion detection system and **outline** how does the intrusion detection system work and the contents of the network message are encrypted.	CO 5
2	How can the design of information spaces in HCI support effective collaboration among users, and what challenges may arise in collaborative information environments?	Understand	The learner has to **recall** the concept network-based computing systems and **extends** how hackers exploit vulnerabilities.	CO 5
3	How does Human-Computer Interaction impact the navigation aspects of wireless sensor networks, and what are the key design considerations?	Understand	The learner has **recall** the concept of web security and **compares** socket layer security and transport security.	CO 5
4	What challenges may arise in designing navigation interfaces for wireless sensor networks in the context of Human-Computer Interaction, and how can these challenges be addressed?	Understand	The learner has to **recall** the concept of intrusion prevention system and **demonstrates** statistical anomaly detection and rule–based intrusion detection.	CO 5
5	How does context awareness enhance the user experience in interactive systems, and what are the key considerations in designing context-aware interfaces?	Understand	The learner has to **recall** the concept of secure electronic transaction and **classify** the types of secure electronic transaction.	CO 6
6	How does context awareness contribute to the design of smart environments, and what challenges may arise in implementing context-awareness in such environments?	Understand	The learner has to **define** counter measure for viruses and worms and **relate** how it will work.	CO 6
7	How has mobile computing transformed the landscape of Human-Computer Interaction, and what are the key design considerations for mobile interfaces?	Understand	The learner has to **recall** the concept firewall and **extends** design and its principles.	CO 5

8	How do mobile computing and HCI principles contribute to the design of location-based services, and what challenges may arise in implementing these services?	Understand	The learner has to **recall** the concept of prevention and detection and **outlines** various approaches to prevention and detection from users.	CO 5
9	How do smart materials contribute to the field of Human-Computer Interaction, and what are the key considerations in designing interfaces with smart materials?	Understand	The learner has to **recall** the concept of web security and **outlines** standard approach to the protection of local computer assets external threats.	CO 6
10	What challenges and ethical considerations arise in the design and implementation of interfaces using smart materials in HCI?	Understand	The learner has to **recall** the concept viruses and worms in software threats to systems and **extends** a special emphasis on software threats	CO 5
11	Explain the concept of Mobile computing?	Understand	The learner has to **recall** the concept of the virtual electronics and **shows** how it will work.	CO 5
12	How has mobile computing transformed the landscape of Human-Computer Interaction, and what are the key design considerations for mobile interfaces?	Understand	The learner has to **recall** the concept of cross site scripting vulnerability and **extend** its function	CO 5
13	How do mobile computing and HCI principles contribute to the design of location-based services, and what challenges may arise in implementing these services?	Understand	The learner has **recall** the concept of fire walls to **summerise** different types of firewalls.	CO 5
14	How do smart materials contribute to the field of Human-Computer Interaction, and what are the key considerations in designing interfaces with smart materials?	Understand	The learner has to **recall** the concept of fire walls to **outline** different types of the viruses and firewalls in web security.	CO 5
15	How do smart materials contribute to the field of Human-Computer Interaction, and what are the key considerations in designing interfaces with smart materials?	Understand	The learner has to **recall** the concept of intrusion detection system to **summerise** statistical anomaly detection and rule–based intrusion detection.	CO 5

16	What challenges and ethical considerations arise in the design and implementation of interfaces using smart materials in HCI?	Understand	The learner has to **recall** the concept of password management to **outline** how intrusion prevention is achieved through password management.	CO 5
17	How has ubiquitous computing transformed the landscape of Human-Computer Interaction, and what are the key design considerations for interfaces in ubiquitous computing environments?	Understand	The learner has to **recall** concept of SSL/TLS protocols to **contrast** between SSL and TLS protocols.	CO 5
18	What challenges and ethical considerations arise in the design and implementation of interfaces in ubiquitous computing, and how can designers address them?	Understand	The learner has to **recall** the concept of fire wall security to **outline** firewall design and its principles and techniques.	CO 5
19	What are the key methods and considerations in evaluating mobile interfaces and applications in the context of Human-Computer Interaction?	Understand	The learner has to **recall** the concept of password management to **summerise** how intrusion prevention is achieved through password management.	CO 5
20	How can user feedback be effectively collected and utilized in the evaluation of mobile interfaces in Human-Computer Interaction?	Understand	The learner has to **recall** the concept transaction to **extend** the inter branch payment transactions.	CO 5
PART-C SHORT ANSWER QUESTIONS				
1	Recall the four 4 key components of human-computer interaction?	Remember	The learner has to **recall** types of viruses.	CO 5
2	What is the human-computer interaction for information systems?	Remember	The learner has to **recall** files access activities used for intrusion detection.	CO 5
3	What are the 5 dimensions of human computer interaction?	Understand	The learner has to **recall** the concept of intrusion detection to **outline** different file access activities for intrusion detection.	CO 5
4	What is the concept of wireless sensor network?	Remember	The learner has to **recall** the concept of context of success control.	CO 5

5	What are the routing techniques in wireless sensor networks?	Remember	The learner has to **recall** the concept secure socket layer and transport layer security.	CO 5
6	What is the working procedure of wireless sensor networks?	Remember	The learner has to **recall** the techniques used to avoid guessable password.	CO 5
7	How wireless sensor networks is used in society?	Understand	The learner has to **recall** the concept of intrusion to **outline** three benefits that can be provided by an intrusion.	CO 6
8	What are the objectives of wireless sensor networks?	Understand	The learner has to **recall** the concept of bio metric authentication to **show** how biometrics used instead of password.	CO 5
9	What is mobile computing and its types?	Understand	The learner has to **recall** the concept firewall to **extend** its principles.	CO 5
10	What is the role of HCI in mobile devices design?	Understand	The learner has to **recall** intrusion detection system to **illustrates** the concept statistical anomaly detection and rule based intrusion.	CO 5
11	What are the 3 main components of HCI?	Remember	The learner has to **recall** the concept of application- level gateway.	CO 5
12	What is the evaluation process in human computer interaction?	Remember	The learner has to **recall** design goals for a firewall.	CO 5
13	What are the evaluation methods in HCI?	Remember	The learner has to **recall** the concepts packet filter routing and a state full inspection firewall.	CO 5
14	What are the three main evaluation goals of HCI?	Understand	The learner has to **recall** concepts of fire walld and intrusion detection system to **demonstrates** how firewall is different from intrusion detection system.	CO 5
15	What is wearable computing in HCI?	Understand	The learner has to **recall** concept of SSL protocols to **outline** how to comprise SSL.	CO 5

16	What is wearable in computer terms?	Remember	The learner has to **recall** the concepts alert codes of TLS protocol.	CO 5
17	Who introduced wearable technology?	Remember	The learner has to **recall** the concepts SSL and TLS protocols.	CO 6
18	What are smart materials in DT?	Understand	The learner has to **recall** the concept of SSL to **outline** the parameters that define SSL session state.	CO 5
19	What is smart and modern materials?	Understand	The learner has to **recall** the concept of intrusion detection system to **contrast** statistical anomaly detection and rule based intrusion.	CO 5
20	Why are smart materials important?	Remember	The learner has to **recall** the services provided by SSL record protocol.	CO 5

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