Enrolment No.

PCET's Pimpri Chinchwad University
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Pimpri Chinchwad University

Established under Govt. of Maharashtra Act No. V of 2023
Sate, Maval (PMRDA) Dist - Pune, Maharashtra - 412 106.

End-Semester Assessment – April/May- 2025

Program : **B. Sc (Cyber Security)** **Semester: IV**
Maximum Marks: 60 marks **Time: 2.5 hrs.**

Course Name: Cyber Law & Security Policies **Course Code: UBS213A/MAJE**

Course Learning Outcomes (CLOs):

1. Define cyber security, cyber law, and their roles.
2. Demonstrate cybersecurity, cybercrime, and forensics.
3. Infer legal issues in cybercrime,
4. Demonstrate tools and methods used in cybercrime and security.
5. Illustrate evidence collection and legal challenges.

Instructions:

- All questions are compulsory.
- Figures to be right indicate full marks. etc.

Question	CLO	BTL	Marks
Q.1) Solve any 2 (Each question carries 5 marks) a) Define cybercrime and discuss its origins. How has the evolution of technology influenced the growth of cybercrime? b) Explain the key provisions of the Indian ITA 2000 related to cybercrime. Highlight its significance in safeguarding against cyber offenses. c) Classify cybercrimes and provide examples for each category. Why is understanding these classifications important for information security?	CLO1	1	(10 marks)
Q.2) Solve any 2(Each question carries 5 marks) a) Discuss the security challenges posed by mobile devices in the context of increasing trends in mobility. What measures can be taken to mitigate these risks? b) Explain credit card frauds in the mobile and wireless computing era. What are the implications of these frauds on individual and organizational security? c) Describe attacks on mobile and cell phones. What role does authentication service security play in preventing such attacks?	CLO2	2	(10 marks)
Q.3) Solve any 2 (Each question Carries 5 marks) a) Briefly explain the concept of "social engineering" in the context of cybercrime. Discuss at least three different techniques used by cybercriminals in social engineering attacks. b) Describe different types of malwares (viruses, worms, Trojan horses) commonly used in cybercrimes. Explain how they differ in their propagation and impact on systems. c) Discuss the role of proxy servers and anonymizers in cybercrime. Explain how they are used to hide the identity and location of attackers and why they are used.	CLO3	3	(10 marks)
Q.4) Solve any 2 (Each question carries 5 marks) a) What is Computer Forensics, and why is it important in modern society? b) Explain the concept of Chain of Custody in Computer Forensics. Why is maintaining a proper Chain of Custody crucial for the admissibility of evidence in a legal proceeding?	CLO4	4	(10 marks)

c) What are common challenges faced by computer forensics professionals, and what are tools and techniques they use to overcome these challenges?			
Q.5) a) Why is an Information Security Policy essential for an organization? Discuss its purpose, benefits, and the challenges faced during its implementation. b) Elaborate on the objectives and scope of the Information Technology Act, 2000. How has this Act contributed to legalizing and regulating electronic transactions in India? **OR** c) Explain the different types of information security policies (such as Acceptable Use Policy, Access Control Policy, and Data Protection Policy). How should these policies be reviewed and updated? d) What are intellectual property rights in cyberspace? Discuss major issues related to intellectual property in the digital world and how Indian cyber law addresses them.	CLO5	5	(20 marks)

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SCHOOL OF COMPUTER APPLICATIONS

End-Semester Assessment – April/May- 2025

Program : **BCA** Semester: IV

Maximum Marks: 30 marks Time: 1.5 hrs.

Course Name: Search Engine Optimization **Course Code: UBC/UBS216A**

Course Learning Outcomes (CLOs):

1. Identify the various types of SEO's.
2. Explain the types of tags associated with optimization of technical SEO.
3. Apply knowledge of SEO for competitive analysis on a webpage.
4. Analyze the data to see which content gets the most shares.
   Create a report of findings and recommendations for SEO.

Instructions:

- All questions are compulsory.
- Figures to be right indicate full marks. etc.

Question	CLO	BTL	Marks
Q.1) Solve any 1 (Each Question Carries 5 Marks) **a)** List five key Google algorithm updates and their focus areas. **b)** Differentiate between on-page and off-page SEO with examples.	CLO1	2 4	(5 marks)
Q.2) Solve any 1 (Each Question Carries 5 Marks) **a)** Name four types of meta tags used in SEO. **b)** Describe how canonicalization prevents duplicate content issues.	CLO2	2 2	(5 marks)
Q.3) Solve any 1 (Each Question Carries 5 Marks) **a)** Differentiate between short-tail and long-tail keywords with examples. **b)** Explain why keyword research is crucial for SEO and content marketing.	CLO3	4 2	(5 marks)
Q.4) Solve any 1 (Each Question Carries 5 Marks) a) What are key elements of SEO-Friendly content structure. b) What is content research and how does it contribute to effective SEO?	CLO4	2 2	(5 marks)

Q.5) Solve any 1 (Each Question Carries 10 Marks) a) A local home maintenance service provider faced significant challenges with their website's performance: • **Low Visibility for Commercial Intent Queries**: The website wasn't ranking well for keywords that potential customers used when seeking services. • **On-Page SEO Issues**: The site had several on-page SEO problems, including poorly optimized content and technical issues that hindered search engine crawling and indexing. • **User Engagement**: There was a lack of user-focused content, leading to low engagement metrics such as time on site and conversion rates. Create a detailed On-Page SEO checklist for improving website performance. b) A digital marketing blog had a well-written article focusing on a specific service in Florida. Despite the quality content, the article suffered from poor search engine rankings and minimal organic traffic. The primary issue was that the title tag lacked specificity regarding the location, leading to a mismatch between the content and user search queries. As an SEO strategist, what specific title and content optimization strategies would you apply to improve their performance? Justify your suggestions with SEO principles.	CLO5	3 3	(10 marks)

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End-Semester Assessment – April/May- 2025

Program : B.Sc. Computer Science (Cyber Security) Semester: IV

Maximum Marks: 60 marks Time: 2.5 hrs.

Course Name: Mobile Security **Course Code: UBS211**

Course Learning Outcomes (CLOs):

1. Identify the requirement of security and various issues at wireless and mobile networks.
2. Explain the threats in the wireless environment including devices, networks, and servers.
3. Assess the security requirement for mobile adhoc environment
4. Recognize the attacks in various environment and Report consequences of them
5. Select an appropriate solution for security measures and countermeasures.

Instructions:
- All questions are compulsory.
- Figures to be right indicate full marks. etc.

Question	CLO	BTL	Marks
Q.1) Solve any 2 (Each Question Carries 5 Marks) a) Define mobile security. Why is it becoming increasingly important in the modern digital world? b) Explain any four major threats to mobile security. c) Explain any four key components of mobile device security.	CLO1	BTL2	(10 marks)
Q.2) Solve any 2 (Each Question Carries 5 Marks) a) Compare and contrast security concerns in wired and wireless networks. b) What are the major types of threats to wireless network security? Explain with examples. c) How can organizations ensure secure communication over wireless networks?	CLO2	BTL4	(10 marks)
Q.3) Solve any 2 (Each Question Carries 5 Marks) a) What is Application-Level Security in Wireless Networks? b) Discuss the major security issues and attacks specific to cellular networks. c) Compare different generations of cellular networks (1G to 5G)	CLO3	BTL2	(10 marks)
Q.4) Solve any 2(Each Question Carries 5 Marks) a) What is a Mobile Ad hoc Network (MANET)? Explain its basic structure and working. b) Describe any four types of security attacks that are common in MANETs.	CLO4	BTL2	(10 marks)

c) Explain any two security mechanisms or protocols used to defend MANETs against attacks.			
Q.5) Solve any 2 (Each Question Carries 10 Marks) a) What is a Wireless Sensor Network (WSN)? Discuss the different types of attacks that can affect WSNs. b) Identify and explain any three important prevention techniques employed in Wireless Sensor Networks (WSNs) c) What is centralized intrusion detection in WSNs? Explain its working mechanism and discuss its advantages and limitations.	CLO5	BTL4	(20 marks)

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SCHOOL OF COMPUTER APPLICATIONS

End-Semester Assessment – April/May- 2025

Program: BSc(Cyber Security) Semester: IV
Maximum Marks: 60 marks Time: 2.5 hrs.

Course Name: Operating Systems-Linux **Course Code: UBS209/MAJM**

Course Learning Outcomes (CLOs):

1. To Define various Linux commands that are used to manipulate system operations.
2. To Explain Shell Programming using Linux commands.
3. To Execute the application to manipulate the internal kernel level Linux File System.
4. To Categorize various processes for synchronization.
5. To Ability to develop applications to make efficient use of resources.

Instructions:

- All questions are compulsory.
- Figures to be right indicate full marks. etc.

Question	CLO	BTL	Marks
Q.1) Solve any 2(Each question carries 5 marks) **a)** Explain the use of echo, man, mkdir, ls and cat Commands with suitable example. **b)** Describe the Architecture of Linux. **c)** Describe the functionality of the following ps, top, cp with suitable example.	**CLO1**	2 2 2	**(10 marks)** 7
Q.2) Solve any 2(Each question carries 5 marks) **a)** Explain how pipes are used for inter-process communication in Linux with a suitable example. **b)** Describe how the tee Command integrates with other commands in a Linux pipeline. Provide a practical example. **c)** What is the role of filters in Linux, and how do they process data streams?	**CLO2**	2 2 2	**(10 marks)** 6
Q.3) Solve any 2(Each question Carries 5 marks) **a)** Illustrate the different file types in UNIX? Give a suitable example. **b)** Analyze the significance of inodes in maintaining file permissions. **c)** Compare GREP and SED Command with suitable example.	**CLO3**	3 4 4	**(10 marks)**
Q.4) Solve any 2 (Each question carries 5 marks) **a)** Investigate the use of the kill function in inter-process communication with a suitable example. **b)** Compare zombie and orphan processes. **c)** Examine the role of inter-process communication in scheduling decisions.	**CLO4**	4 4 4	**(10 marks)** 7

Q.5) Solve any 2 (Each question carries 10 marks)		**5**	
a) Evaluate the use of pipes for data transfer in producer-consumer applications with a suitable example.			
b) Compare the role of vfork() and fork() in memory management with a suitable example.		**4**	
OR	**CLO5**		**(20 marks)**
c) Critically assess the role of semaphores in solving the producer-consumer problem with a suitable example.		**5**	15
d) Examine the use of FIFO in Inter Process Communication with a suitable example.		**4**	

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SCHOOL OF COMPUTER APPLICATIONS

End Semester Assessment – Apr/May 2025

Program :	SYBSc Cyber Security	**Batch :**	2024	**Semester :**	IV
Course Code & Name :	**INTRODUCTION TO GITHUB.** UETAD103				
Maximum Marks :	30			**Time:**	1.30 Hrs

Course Outcomes (CO):

1. Understand the fundamentals of version control systems (VCS), including Git and its role as a distributed VCS.
2. Demonstrate proficiency in installing and setting up Git across various platforms and using IDE plugins.
3. Effectively work with remote repositories, including fetching, pulling, and managing upstream and downstream workflows.
4. Analyze and apply branching and merging techniques in Git for effective collaboration.
5. Implement Git workflows in real-world projects, emphasizing open-source project collaboration.

Instructions : (Make necessary changes)

- *All questions are compulsory.*
- *Draw well labelled diagrams wherever necessary*

My gut feeling says soon it will happen my story will unfold.

	QUESTIONS	CO	BTL	Marks
Q 1) Solve all questions.		**Max Marks: 05**		
a.	State any two differences between centralized and distributed version control systems.	CO1	1	02
b.	Explain how a version control system helps in managing project files	CO1	2	03
Q 2) Solve all questions.		**Max Marks: 05**		
a.	What is Git branching? And List and Explain the types of branches in Git.	CO2	3	02
b.	Identify and analyze the causes of merge conflicts when working with branches. What strategies can be used to prevent or resolve them?	CO2	4	03
Q 3) Solve all questions.		**Max Marks: 05**		
a.	Design strategy to Create a Branch in Git	CO3	2	02
b.	Analyze how does Git help with parallel development?	CO3	4	03
	OR			
	Explain Detail steps to install git on Windows as well as in linux	CO3	2	03
Q 4) Solve all questions.		**Max Marks: 05**		
a.	What is Git, and why is it widely used in software development?	CO4	1	02
b.	What is the main purpose of using Git in software development?	CO4	3	03
	OR			

	Identify potential issues that may occur when pulling from a remote repository and how to resolve them.	CO4	2	03
Q 5) Solve any two questions.		**Max Marks: 10 (2*5)**		
a.	Evaluate the effectiveness of using multiple feature branches during software development. What are its advantages and disadvantages?	CO5	5	05
b.	A team is working on a shared repository, and multiple developers are pushing changes simultaneously. Analyze potential problems that can arise and suggest best practices to handle them effectively.	CO5	5	05
c.	List any five features of a Version Control System. Give a brief explanation of each.	CO5	5	05