Indra Ganesan
COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC
IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION – 1

CURRICULAR ASPECTS

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL

INDRA GANESAN COLLEGE OF ENGINEERING

Criteria 1	Curricular Aspects	100

1.1 Curricular Planning and Implementation (20)

1.1.1 The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of continuous internal Assessment

Table of Content

INDRA GANESAN COLLEGE OF ENGINEERING

IG Valley, Manikandam, Tiruchirappalli, Tamil Nadu – 620 012, India
(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PREFACE OF THE COURSE FILE

Batch : **2021-2023**

Academic Year : **2022-2023 / ODD**

Program : **COMPUTER SCIENCE AND ENGINEERING**

Year & Semester : **2nd Year / 3rd Semester / 'A' Section**

Course Code : **CP4391** NBA Course Code: **C203**

Name of the Course : **Security Practices**

Faculty in-charge : **Mrs. G.Revathi Asst.Prof/CSE**

Signature of the Faculty in-charge

HoD / CSE

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
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Manikandam, Trichy-620 012.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REVIEW OF COURSE FILE

(to be pasted on the inner side of the file-backside).(#-State Yes/No.)

S.N	Details Date:	R-I-*	R-II-*&	R-III-*&	R-IV-*&$	R-V-*&$@
1.	Preface of the course file	Y				
2.	Vision, Mission, PEOs, POs, PSOs, Blooms taxonomy	Y				
3.	Subject handlers of yesteryears	Y				
4.	Timetable/Workload of the staff – Distribution of teaching load – Roles and Responsibilities	Y				
5.	Syllabus signed by staff & HoD	Y				
6.	Lecture Schedule signed by staff & HoD	Y				
7.	Course Committee meeting circular and minutes					
8.	Identification of Curricular gap and Content Beyond the syllabus	Y				
9.	Self-study topics	Y				
10.	Previous AU Question papers	Y				
11.	Unit wise Q&A and Objective type questions	Y				
12.	Unit wise course material		Y	Y	Y	
13.	Assignment question paper with sample answer sheets and mark entry		Y	Y	Y	
14.	Tutorial question paper with key and mark entry		Y	Y	Y	
15.	Class test/IA test Q Paper with Key, sample answer papers and mark entry		Y	Y	Y	
16.	IA Test- result analysis-CAP-evidence-root cause analysis.		Y	Y	Y	
17.	Retest –Q paper-Attendance-marks		Y	Y	Y	
18.	AU Web portal entry sheet		Y	Y	Y	
19.	Very poor performance in first two tests-action taken.-communication to parents-evidence			Y	Y	
20.	Absence for two tests-action taken-communication to parents-evidence.			Y	Y	
21.	Indiscipline of student reported, if any					
22.	Special class/coaching class/remedial class/attendance-CAP		Y	Y	Y	
23.	Conduct of Seminar, Quizzes - proof					
24.	Content beyond the syllabus - proof					Y
25.	Student feedback on faculty					Y
26.	Course end survey					Y
27.	Internal Assessment sheet					Y
28.	AU question paper with students feedback					Y
29.	Discrepancy of the question paper and correspondence, if any					Y
30.	AU result analysis-Details of arrear students.					Y
31.	AU grade sheet					Y
32.	CO – PO & PSO attainment sheet					Y
	Signature of Course handling faculty					
	Signature of HoD					

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Faculty Time Table

Mrs.G.Revathi

Day Order	1	2	3	4	5	6	7	8
I	SP							
II								
III		SP						
IV			SP					
V				SP				

S.Code	Title	Year / Branch	Hours
CP4391	Security Practices	II /M.E(CSE)	4
TOTAL - 4 hours			

Signature of the Faculty

Hod/CSE

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CP4391 **SECURITY PRACTICES** **L T P C 3 0 0 3**

COURSE OBJECTIVES:

- To learn the core fundamentals of system and web security concepts
- To have through understanding in the security concepts related to networks
- To deploy the security essentials in IT Sector
- To be exposed to the concepts of Cyber Security and cloud security
- To perform a detailed study of Privacy and Storage security and related Issues

UNIT I **SYSTEM SECURITY** **9**

Model of network security – Security attacks, services and mechanisms – OSI security architecture - A Cryptography primer- Intrusion detection system- Intrusion Prevention system - Security web Applications- Case study: OWASP - Top 10 Web Application Security Risks.

UNIT II **NETWORK SECURITY** **9**

Internet Security - Intranet security- Local Area Network Security - Wireless Network Security - Wireless Sensor Network Security- Cellular Network Security - Mobile security - IOT security – Case Study - Kali Linux.

UNIT III SECURITY MANAGEMENT **9**

Information security essentials for IT Managers- Security Management System - Policy Driven System Management- IT Security - Online Identity and User Management System. Case study: Metasploit

UNIT IV **CYBER SECURITY AND CLOUD SECURITY** **9**

Cyber Forensics- Disk Forensics – Network Forensics – Wireless Forensics – Database Forensics – Malware Forensics – Mobile Forensics – Email Forensics- Best security practices for automate 35 Cloud infrastructure management – Establishing trust in IaaS, PaaS, and SaaS Cloud types. Case study: DVWA

UNIT V **PRIVACY AND STORAGE SECURITY** **9**

Privacy on the Internet - Privacy Enhancing Technologies - Personal privacy Policies - Detection of Conflicts in security policies- privacy and security in environment monitoring systems. Storage Area Network Security - Storage Area Network Security Devices - Risk management - Physical Security Essentials.

COURSE OUTCOMES:

CO1: Understand the core fundamentals of system security
CO2: Apply the security concepts to wired and wireless networks
CO3: Implement and Manage the security essentials in IT Sector
CO4: Explain the concepts of Cyber Security and Cyber forensics
CO5: Be aware of Privacy and Storage security Issues.

TOTAL: 45 PERIODS

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REFERENCES

1. John R. Vacca, Computer and Information Security Handbook, Third Edition, Elsevier 2017
2. Michael E. Whitman, Herbert J. Mattord, Principles of Information Security, Seventh Edition, Cengage Learning, 2022
3. Richard E. Smith, Elementary Information Security, Third Edition, Jones and Bartlett Learning, 2019
4. Mayor, K.K.Mookhey, Jacopo Cervini, Fairuzan Roslan, Kevin Beaver, Metasploit Toolkit for Penetration Testing, Exploit Development and Vulnerability Research, Syngress publications, Elsevier, 2007. ISBN : 978-1-59749-074-0
5. John Sammons, "The Basics of Digital Forensics- The Primer for Getting Started in Digital Forensics", Syngress, 2012
6. Cory Altheide and Harlan Carvey, "Digital Forensics with Open Source Tools",2011 Syngress, ISBN: 9781597495875.
7. Siani Pearson, George Yee "Privacy and Security for Cloud Computing" Computer Communications and Networks, Springer, 2013.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Lecture Schedule

Degree/Program: **M.E / CSE**
Duration: **ODD**

Course code &Name: **CP4391 –SECURITY PRACTICES**
Semester: **III** Section: **B** Faculty: **REVATHI.G**

AIM:

To protect the confidentiality of information by preventing unauthorized access or disclosure of sensitive data

OBJECTIVES:

1. To learn the core fundamentals of system and web security concepts
2. To have through understanding in the security concepts related to networks
3. To deploy the security essentials in IT Sector
4. To be exposed to the concepts of Cyber Security and cloud security
5. To perform a detailed study of Privacy and Storage security and related Issues.

PREREQUISITES: Access, Authentication, and Authorization Management..

COURSE OUTCOMES:

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C213.1	Understand the core fundamentals of system security	1,2,3,4	1,2
C213.2	Apply the security concepts to wired and wireless networks	1,2,3,4	1,2
C213.3	Implement and Manage the security essentials in IT Sector	1,2,3,4	1,2
C213.4	Explain the concepts of Cyber Security and Cyber forensics	1,2,3,4	1,2
C213.5	Be aware of Privacy and Storage security Issues	1,2,3,4	1,2
C213.6	Protect and defend computer systems and networks from cyber security attacks	1,2,3,4	1,2

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S.No	Date	Period	Topics to be Covered	Book & Page. No.
UNIT -I - SYSTEM SECURITY				
			Target periods :12	
1	11/8/22	1	Model of network security	T1
2	12/8/22	2	Security attacks, services and mechanisms	T1
3	16/8/22	3	OSI security architecture	T1
4	17/8/22	4	A Cryptography primer	
5	18/8/22	1	Intrusion detection system	T1
6	20/8/22	2	Intrusion Prevention system	T1
7	22/8/22	3	Security webapplications	T1
8	23/8/22	4	Case study: OWASP	T1
9	24/8/22	1	Top 10 Web Application Security Risks	T1
				T1
UNIT II - NETWORK SECURITY				
			Target periods :12	
10	29/8/22	2	Internet Security	T2
11	30/8/22	3	Intranet security- Local Area Network Security	T2
13	2/9/22	4	Wireless Network Security	T2
14	13/9/22	1	Wireless Sensor Network Security	T2
15	14/9/22	2	Cellular Network Security	T3
16	16/9/22	3	Mobile security	T3
17	21/9/22	4	IOT security	T3
18	23/9/22	1	Case Study - Kali Linux	T3
UNIT III - SECURITY MANAGEMENT				
			Target Periods :12	
19	28/9/22	1	Information security essentials for IT Managers	T1
20	29/9/22	2	Security Management System	T1
21	30/9/22	3	Policy DrivenSystem Management	T1
22	1/10/22	4	IT Security	T2
23	3/10/22	1	Online Identity and User Management System	T2
24	7/10/22	2	Case study:Metasploit	T2
		3		
UNIT IV -CYBER SECURITY AND CLOUD SECURITY				
			Target Periods :12	
25	13/10/22	4	Cyber Forensics- Disk Forensics	T3
26	14/10/22	1	Network Forensics	T3
27	18/10/22	2	Wireless Forensics	T3
28	19/10/22	3	Database Forensics	T3
29	21/10/22	4	Malware Forensics	T3
30	26/10/22	1	Mobile Forensics	T3
31	27/10/22	2	Email Forensics	T3
32	29/10/22	3	Best security practices for automate	T2

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33	1/11/22	4	Cloud infrastructure management	T3
34	2/11/22	1	Establishing trust in IaaS	T2
35	5/11/22	2	PaaS, and SaaS Cloud types	T2
36	7/11/22	3	Casestudy: DVWA	T2

UNIT V - PRIVACY AND STORAGE SECURITY

Target Periods:12

37	12/11/22	4	Privacy on the Internet	T3
38	15/11/22	1	Privacy Enhancing Technologies	T3
39	16/11/22	2	Personal privacy Policies	T3
40	17/11/22	3	Detection of Conflicts in security policies	T3
41	23/11/22	4	privacy and security in environment monitoring systems	T3
42	24/11/22	1	Storage Area Network Security -	T2
43	25/11/22	2	Storage Area Network Security Devices	T2
44	28/11/22	3	Risk management	T2
45	29/11/22	4	Physical Security Essentials.	T2

Book Reference -Text Books

Sl.	Title of the Book	Author	Publisher	Year
1.	Computer and Information Security Handbook	John R. Vacca	Third Edition, Elsevier.	2017
2.	Principles of Information Security	Michael E. Whitman, Herbert J. Mattord.	Seventh Edition, Cengage Learning	2022
3	Elementary Information Security	Richard E. Smith	Jones and Bartlett Learning	2019

Sl	Title of the Book	Author	Publisher	Year
1	The Basics of Digital Forensics	John Sammons	The Primer for Getting Started in Digital Forensics	2012
2	Digital Forensics with Open Source Tools	John Sammons	Syngress, ISBN	2012
3	Privacy and Security for Cloud Computing	Siani Pearson, George Yee	Computer Communications and Networks, Springer	2013

Website References

http://nptel.iitm.ac.in/courses.php?branch=Computer

www.freebookspot.com

Signature of the Faculty in-charge

Hod/CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Identification of Curricular Gap & Content Beyond Syllabus(CBS)

Name of the Faculty :G REVATHI **Course Code & Name:CP4391 & SECURITY PRACTICES**

Degree & Program:M.E. /CSE **Semester & Section: III / A** **Academic Year: 2022 -2023 /ODD**

I.Mapping of Course Outcomes with POs & PSOs.(before CBS)

Table.1 Mapping of COs, C, PSOs with POs - before CBS.

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C213.1	2	2	1	1	3	3	1	3	-	1	-	3	-	2
C213.2	2	2	1	1	*3	3	2	3	-	1	-	3	-	3
C213.3	2	2	1	1	-	3	1	3	-	1	-	3	-	3
C213.4	2	2	1	1	3	3	1	3	-	1	-	3	-	2
C213.5	2	2	1	1	-	3	1	3	-	1	-	3	-	3
C213.6	2	2	1	1	1	3	1	3	-	1	-	3	-	3
C213	2	2	1	1	-	3	1	3	-	1	-	3	-	3

II. Identification of content beyond syllabus.

Table.2 Identification of content beyond syllabus

Details of Content Beyond Syllabus(CBS) added	POs strengthened/ vacant filled	CO/Unit
Security Practices	PO5(2) Vacant filled	C213.5 & C213.6/ IV & V

III. Mapping of Course Outcomes with POs & PSOs. (After CBS)

Table.3 Mapping of COs, C. PSOs with POs- after CBS.

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C213.1	2	2	1	1	3	3	1	3	-	1	-	3	-	2
C213.2	2	2	1	1	-	3	2	3	-	1	-	3	-	3
C213.3	2	2	1	1	-	3	1	3	-	1	-	3	-	3
C213.4	2	2	1	1	3	3	1	3	-	1	-	3	-	2
C213.5	2	2	1	1	-	3	1	3	-	1	-	3	-	3
C213.6	2	2	1	1	1	3	1	3	-	1	-	3	-	3
C213	2	2	1	1	-	3	1	3	-	1	-	3	-	3

Signature of the Faculty

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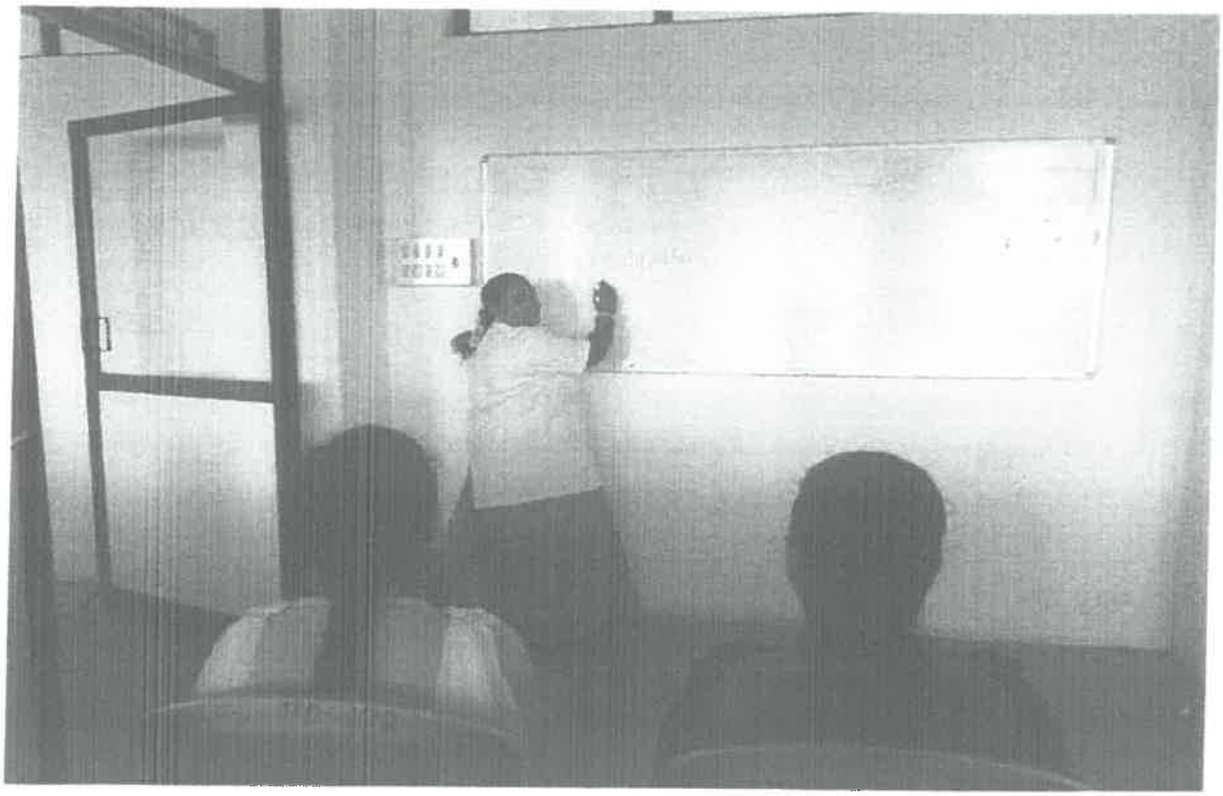
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CBS-PROOF

ACADEMIC YEAR: 2022-2023(ODD) **SEM: 03** **REGULATION: 2021**

PROGRAM: CSE **Name of the Faculty**: **REVATHI.G**

TOPIC: SECURITY ATTACKS



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Assignment Answer Sheet

Name of the Student : P. Vinitha Devi

AU Register Number: 811221405002

Assignment – 01			**Date of Issue:** 21/8/22	**Marks**	10
Course code	CP4391	**Course Title**	Security Practices		
Year	II	**Semester/Section**	III / A	**Date of Submission:**	1/9/22

Q.No	Questions	CO
1	Explain in detail an OSI Architecture	C213.1
2	Explain in detail Security Attacks, Service, Mechanism	C213.1

Mark Allocation

Rubrics	Marks Allocated	Marks obtained
Content Quality	6	5
Presentation Quality	2	2
Timely submission	2	1
Total marks	10	8

Name and Signature of the Faculty Incharge

HoD/CSE

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STUDENT FEEDBACK ON FACULTY
THEORY COURSE

ACADEMIC YEAR: 2022-2023 ODD SEMESTER

Name of Department :	CSE	Year / Sem:	2 / III	Faculty Name	
Subject Code & Name					

S.No.	QUESTIONS	Excellent	Very Good	good	Satisfactory	Somewhat Satisfactory	Not Satisfactory
		5	4	3	2	1	0
1.	Delivery of Lectures by Interactive Communication	✓					
2.	Use of Teaching Aids and ICT		✓				
3.	Level of Preparedness & Knowledge Level	✓					
4.	Involvement in mentoring and guiding	✓					
5.	Effective Time management	✓					
6.	Is the teacher completing syllabus as per lecture schedule?	✓					
7.	Is the teacher distributing answer scripts of students as per schedule?	✓					
8.	Is the teacher addressing grievances on answer scripts of IA while distributing?	✓					
9.	Is the teacher covering content beyond syllabus (CBS)?	✓					
10.	Is the teacher punctual to class?	✓					

HoD/ CSE **IQAC Coordinator** **Principal**

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IQAC Academic Audit Form

ACADEMIC YEAR: 2022-2023 ODD SEMESTER

Name of Department :	CSE	Year / Sem / Sec :	2 / III	No. of Students Registered :	2
Details of Examination :	IA Test -1 / IA Test -2 / IA Test -3 / Model Test				

S.No.	Course Code	List of Reg.No Verified	Course Log Book Verified (Y / N)	Course File Verified (Y / N)	No of students Attended	No of Absentees	No of Failures	Pass %	Remarks
1	CP4391	811221405001,2	Y	Y	2	1	1	92%	-
2	CP4311	811221405001 811221405002	Y	Y	2			90%	-
3	DS4015	811221405001 811221405002	Y	Y	2			90%	-
4	IF4091	811221405001 811221405002	Y	Y	2			89%	-
5	MP4292	811221405001 811221405002	Y	Y	2			95%	-

Verified by

External Member Name and Signature:	
Internal Member Name and Signature:	

Overall Remarks:

HoD/ CSE **IQAC Co-ordinator** **Principal**

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Register Number:											

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Internal Assessment Exam - I			Date/Session	29/08/22/FN	Marks	50
Course code	CP4391	Course Title	SECURITY PRACTICES			
Regulation	2021	Duration	90 minutes	Academic Year	2022-2023	
Year	II	Semester	III	Department	CSE	

COURSE OUTCOMES

CO1:	To learn the core fundamentals of system and web security concepts
CO2:	To have through understanding in the security concepts related to networks
CO3:	To deploy the security essentials in IT Sector
CO4:	To be exposed to the concepts of Cyber Security and cloud security
CO5:	To perform a detailed study of Privacy and Storage security and related Issues
CO6:	To design and develop a security architecture for an organization

Q.No.	Question	CO	BTS
	PART A (Answer all the Questions 10 x 2 = 20 Marks)		
1	List out basic primitives of communication service interface	C1	K1
2	Define send and confirm primitives	C2	K2
3	What is mean by Access control	C1	K1
4	Define Application security	C1	K1
5	Define Cryptography	C2	K2
6	What is mean by Malicious code (Malware)?	C1	K1
7	Define Physical security?	C2	K2
8	List the various aspects in IT Security	C2	K2
9	Define Injection attack	C2	K2
10	Define Byzantine attack	C2	K2
	PART B (Answer all the Questions 2 x 10 = 20 Marks)		
11a	Explain about Security policies and variety functions of IDS	C1	K1
	OR		
11b	Explain about Types of firewalls	C1	K1
12a	Write short notes on Security management Security	C2	K2
	OR		
12b	Write short notes on control for Enforcing security Policies in Distributed System	C2	K2
	PART C (Answer all the Questions 1 x 10 = 10 Marks)		
13a	Explain about Symmetric and Asymmetric Mutual Authentication Methods	C1	K1
	OR		
13b	Explain about Security policies and variety functions of IDS	C1	K1

Course Faculty
(Name /Sign / Date)

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HoD
(Name /Sign / Date)

CP4391 Security Practices
Answer Key
II M.E (CSE)
Internal Assessment-1

1 **List out basic primitives of communication service interface**

- Request – A service node wants some service from its adjacent layer to pass the parameters to mention the requested service.
- Indication – Another Service node or receiver node gets an indication that a procedure has been invoked by the adjacent service node.

2 **Define send and confirm primitives.**

SEND primitive does not block even if there is no corresponding execution of the RECEIVE primitive.

The corresponding Confirm primitive can be either blocking or non-blocking

3 **What is mean by Access control?**

Identifying a user based on their credentials and then authorizing the appropriate level of access once they are authenticated.

4 **Define Application security**

Application security is the process of developing, adding, and testing security features within applications to prevent security vulnerabilities against threats such as unauthorized access and modification

5 **Define Cryptography**

Cryptography is the process of hiding or coding information so that only the person a message was intended for can read it

6 **What is mean by Malicious code (Malware)?**

Malicious code is harmful computer programming scripts designed to create or exploit system vulnerabilities

7 **Define Physical security?**

Physical security is the protection of personnel, hardware, software, networks and data from physical actions and events that could cause serious loss or damage to an enterprise, agency or institution

8 **List the various aspects in IT Security**

The basic tenets of information security are confidentiality, integrity and availability. Every element of the information security program must be designed to implement one or more of these principles.

9 **Define Injection attack**

An injection attack is a form of cyberattack in which information is sent to alter the system's interpretation of commands

10 **Define Byzantine attack**

The game theory analogy behind the Byzantine Generals Problem is that several generals are besieging Byzantium. They have surrounded the city, but they must collectively decide when to attack

11a **Explain about Security policies and variety functions of IDS**

An intrusion detection system definition includes installing a monitoring system that helps detect suspicious activities and issue alerts about them. Depending upon these alerts, a SOC (security operations center) analyst or the incident responder investigates the issue and takes the required steps to eradicate the threat.

While these systems are quite effective for detecting malicious activity, they sometimes generate false alarms. So, organizations need to fine-tune them at the time of installation. This means you need to properly set up the intrusion detection system to identify what normal traffic on the network looks like.

Additionally, the intrusion prevention system also keeps a check on the network packets to detect malicious activity.

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OR

11b **Explain about Types of firewalls**

There are mainly three types of firewalls, such as **software firewalls, hardware firewalls, or both**, depending on their structure. Each type of firewall has different functionality but the same purpose. However, it is best practice to have both to achieve maximum possible protection.

A hardware firewall is a physical device that attaches between a computer network and a gateway. For example- a broadband router. A hardware firewall is sometimes referred to as an **Appliance Firewall**. On the other hand, a software firewall is a simple program installed on a computer that works through port numbers and other installed software. This type of firewall is also called a **Host Firewall**.

Besides, there are many other types of firewalls depending on their features and the level of security they provide. The following are types of firewall techniques that can be implemented as software or hardware:

Packet-filtering Firewalls
Circuit-level Gateways
Application-level Gateways (Proxy Firewalls)
Stateful Multi-layer Inspection (SMLI) Firewalls
Next-generation Firewalls (NGFW)
Threat-focused NGFW
Network Address Translation (NAT) Firewalls
Cloud Firewalls

Unified Threat Management (UTM) Firewalls
Packet-filtering Firewalls
Application-level Gateways (Proxy Firewalls)
Stateful Multi-layer Inspection (SMLI) Firewalls
Next-generation Firewalls (NGFW)
Threat-focused NGFW

12a **Write short notes on Security management Security**

Security management covers all aspects of protecting an organization's assets – including computers, people, buildings, and other assets – against risk. A security management strategy begins by identifying these assets, developing and implementing policies and procedures for protecting them, and maintaining and maturing these programs over time.

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Purpose of Security Management
2. Network Security Management
3. Cybersecurity Management

12b Write short notes on control for Enforcing security Policies in Distributed System

13a Explain about Symmetric and Asymmetric Mutual Authentication Methods

Asymmetric and symmetric encryption are two primary techniques used to secure data. Symmetric encryption uses the same key for both encryption and decryption, while asymmetric encryption uses a pair of keys: a public key for encryption and a private key for decryption. ELI5: Imagine symmetric encryption as a single key that locks and unlocks a treasure chest, while asymmetric encryption uses two keys—a key to lock (public) and a different key to unlock (private).

Choosing between asymmetric vs symmetric encryption can be a difficult choice, so here are some key differences:

Speed: Symmetric encryption is generally faster than asymmetric encryption, as it

requires less computational power, making it suitable for encrypting large amounts of data.

Key distribution: In symmetric encryption, secure key distribution is crucial, as the same key is used for both encryption and decryption. Asymmetric encryption simplifies key distribution, as only the public key needs to be shared, while the private key remains confidential.

Key usage: Symmetric encryption uses a single shared key for both encryption and decryption, while asymmetric encryption employs a pair of keys: a public key for encryption and a private key for decryption.

Use cases: Symmetric encryption is ideal for bulk data encryption and secure communication within closed systems, whereas asymmetric encryption is often used for secure key exchanges, digital signatures, and authentication in open systems.

Security: Asymmetric encryption is considered more secure due to the use of two separate keys, making it harder for attackers to compromise the system. However, symmetric encryption can still provide strong security when implemented correctly with strong key management practices.

13b **Explain about Security policies and variety functions of IDS**

A system called an intrusion detection system (IDS) observes network traffic for malicious transactions and sends immediate alerts when it is observed. It is software that checks a network or system for malicious activities or policy violations. Each illegal activity or violation is often recorded either centrally using a SIEM system or notified to an administration. IDS monitors a network or system for malicious activity and protects a computer network from unauthorized access from users, including perhaps insiders. The intrusion detector learning task is to build a predictive model (i.e. a classifier) capable of distinguishing between 'bad connections' (intrusion/attacks) and 'good (normal) connections'.

IDS work

- An IDS (Intrusion Detection System) monitors the traffic on a computer network to detect any suspicious activity.
- It analyzes the data flowing through the network to look for patterns and signs of abnormal behavior.
- The IDS compares the network activity to a set of predefined rules and patterns to identify any activity that might indicate an attack or intrusion.
- If the IDS detects something that matches one of these rules or patterns, it sends an alert to the system administrator.
- The system administrator can then investigate the alert and take action to prevent any damage or further intrusion

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Internal Assessment Test Answer Book

Name	P. Vinitha Devi			**Year/ Semester/Section**	II / A
Batch No.	8112214505002	**Date/Session**	3/9/22	**Department**	CSE
Course code	CB 2391	**Course Title**	Security Practical		
Internal Assessment Test	**IAT 1** ☑	**IAT 2** ☐	**IAT 3** ☐	**Model** ☐	
Name and Signature of the Invigilator with date	T. Sooki				

Instruction to the Student: Put tick mark to the question attended in the column against question.

Part A			Part B / Part C					Total Marks
Q. No.	✓	Marks	Q. NO.	✓	a Marks	✓	b Marks	
1		2	11		10			10
2		2	12				10	10
3		2	13		10			10
4		1	14					
5		1	15					
6		2	16					
7		2					Total	30
8		2						
9		1	47					
10		2						
Total		17	Grand Total				Name and Signature of the Examiner with date	

To be filled by the examiner							
Course Outcomes	1	2	3	4	5	6	Total
Marks allotted	30	20					50
Marks Obtained	30	17					47

IQAC Audit - Remarks

Name and Signature of the IQAC member

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2022 – 2023 (ODD SEMESTER)

STUDENTS MARK STATEMENT- CO BASED

INTERNAL ASSESSMENT TEST-1

SUBJECT CODE &TITLE: CP4391& SECURITY PRACTICES

YEAR/SEM: II/III **MONTH & YEAR:**

S.NO	REG NO	STUDENT NAME	COX (32)	COX (18)	TOTAL (50)	TOTAL (100)
1.	811220405001	Madhumathi K	30	16	46	92
2.	811220405002	Vinitha Devi P	28	18	46	92

MARKS RANGE:

<20	20-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
0	0	0	0	0	0	0	0	2

Total No.of Candidates Present	2
Total No.of Candidates Absent	0
Total No.of Students Pass	2
Total No. of Students Fail	0
Percentage of Pass	92

STAFF INCHARGE **HoD/CSE** **PRINCIPAL**

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