"ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार" - शिक्षणमहर्षी डॉ. बापूजी साळुंखे
Shri Swami Vivekanand Shikshan Sanstha, Kolhapur.

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)
Affiliated to Shivaji University
NAAC Reaccredited "A+" CGPA 3.29 | College with Potential for excellence | ISO 9001:2015

Department of Computer Studies

🕪 NOTICE

Date-08/11/2025

This is to inform all the **MCA II Year** students that the **Unit Test – I** for the subject **"Ethical Hacking"** will be conducted as per the details given below: Students are required to be present on time with proper preparation.

Date :12th November 2025

Day :Wednesday

Room No. : 512

Time : 11.00AM to 12.00PM

Mr.V.B.Pujari
HEAD
DEPARTMENT OF M. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
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VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

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Department of Computer Studies

Subject- Ethical Hacking Unit Test I

Date-12/11/2025

SR. NO.	NAME	SIGN
1	*AGLAVE AARTI HARIDAS	Agalave.
2	*AMANE SALONI SATISH	AB
3	*APATE KOMAL ARVIND	KAPate
4	*BAVADEKAR MANASI PRAKASH	MBavadekar.
5	*BHOI SHREYA SACHIN	AB
6	BHOSALE KARTIK KUMAR	AB
7	*BHOSALE DEVIKA RAMCHANDRA	Dbhosale
8	CHAVAN ABHISHEK RAJESH	Abhavan
9	*CHAVAN PRANALI SUHAS	AB
10	*CHECHAR ADITI UTTAM	AB
11	*CHOPADE SHIVANI DATTATRAY	Shivani
12	CHOPADE JAMES PRAVIN	
13	*CHORMARE PRERANA SANJAY	PL
14	*CHOUGALE NANDINI SHASHIKANT	Nbhougale
15	*JADHAV HARSHADA MOHAN	AB
16	JADHAV AKASH SURYAKANT	AB
17	*JADHAV RADHIKA NITIN	Radhika.
18	*KALE SHRUTI SATISH	Shruti.
19	*KAMAT SWATI SHRIKANT	AB
20	KAMBALE SHREYASH RAJENDRA	SRK
21	KAMBLE RUTVIK MURALIDHAR	
22	KAMBLE VINAY KAKASO	AB
23	*KHADE SHARVARI EKNATH	AB
24	KHADRE JAY SANJAY	
25	*KHAMBE VAISHNAVI MADHUKAR	AB
26	*KHOT SAKSHI DATTATRAY	Sakshi
27	*KOKATE SANDHYA ARUN	Skokate.
28	KORADE SIDDHESH RAMAKANT	
29	*KOTAMIRE POURNIMA UJWAL	Pournima
30	KUMBHAR SOURABH RAJESH	AB
31	*KUMBHAR POOJA MARUTI	AB

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32	LOTAKE OM RAHUL	
33	*MAGDUM JYOTI KUMAR	AB
34	MAHADIK SANGRAMSINH TATYASAHEB	AB
35	*MARALKAR PRATIKSHA VITTHAL	
36	NADAWADE PRASANNAJEET BHAGAVAN	
37	NIGADE SNEHAL RAMCHANDRA	
38	*NILKANTH NIKITA NAMDEV	AB
39	PATEL MUHAFIJ GOUSMAHAMAD	
40	PATHAN AAKIBMATIN FIROZKHAN	
41	*PATIL SHIVALI SANDIP	
42	*PATIL SHRAVANI MALGOUNDA	
43	*PATIL SHREYA SHAMRAO	
44	*PATIL VAISHNAVI VISHWAS	AB
45	*PATIL VAISHNAVI BALIRAM	
46	*PATIL ROHINI DATTATRAY	
47	PRASAD VIVEK KALPNATH	
48	*SANGAR SHITAL RAVINDRA	
49	*SHAIKH SUMAIYA AMAN	
50	SHELAKE PARTH PRABHAKAR	
51	*SHINDE ARATI ARUN	
52	SHIVASHARAN ADITYA RAMESH	
53	*THOMBARE SHRUTI VILAS	
54	*TUPE SHREYA MOHAN	
55	*VADD SHWETA YASHVANT	
56	*VARNE SAKSHI SUNIL	
57	*WAINGADE SAMRUDDHI SANJAY	
58	*YADAV AISHWARYA SANJAY	
~~59~~	~~*AGLAVE AARTI HARIDAS~~	~~AB~~
~~60~~	~~*AMANE SALONI SATISH~~	~~AB~~
~~61~~	~~*APATE KOMAL ARVIND~~	~~AB~~

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(Mr. Vaishnav. V. Shegale)

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MCA – II Semester – III
Unit Test – I Result
Subject: Ethical Hacking

Marks: 20 **Date: 12/11/2025**

ROLL NO.	NAME	MARKS
1	AGLAVE AARTI HARIDAS	13
2	*AMANE SALONI SATISH	AB
3	*APATE KOMAL ARVIND	12
4	*BAVADEKAR MANASI PRAKASH	13
5	*BHOI SHREYA SACHIN	AB
6	BHOSALE KARTIK KUMAR	AB
7	*BHOSALE DEVIKA RAMCHANDRA	17
8	CHAVAN ABHISHEK RAJESH	13
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10	*CHECHAR ADITI UTTAM	AB
11	*SHIVANI DATTATRAY CHOPADE	15
12	CHOPADE JAMES PRAVIN	15
13	*CHORMARE PRERANA SANJAY	14
14	*CHOUGALE NANDINI SHASHIKANT	16
15	*JADHAV HARSHADA MOHAN	AB
16	JADHAV AKASH SURYAKANT	AB
17	*JADHAV RADHIKA NITIN	12
18	*JADHAV NISHA GUNDOPANT	12
19	KAKADE SIDDHESH VINIT	11
20	*KALE SHRUTI SATISH	15
21	*KAMAT SWATI SHRIKANT	AB
22	KAMBALE SHREYASH RAJENDRA	11
23	KAMBLE RUTVIK MURALIDHAR	10
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UNIT TEST-1

16/20

Name- Shivali patil
RollNo - 43
sub - Ethical hacking

Q1 Define Ethical hacking. Explain the types, advantages disadvantages & the purpose of ethical hacking with suitable example.

Ethical hacking is process of when a person trics to break computer system or network legally or ethically.
This hacking not intension to harm or damage system.
Ethical hacking process different hacker can performs.
White hat hacker also perform task ethically.

- Types of Ethical hacking -

1 Web application -

In web application hacking can perform to find vulnerabilities & detect threats. for the purpose safely running application's. becaise attacker can enter anytime so Ethical hacking crucial role play in web application.

2 Network hacking - In network hacking

play crucial role in networking, to protect network or internet security ethical hacking is most important hacking in networking. because unauthorized user create traffic & load on the network and break down the network so to avoid attack ethical hacking ethical user to find vulnerabilities & protect the network

3 Wireless Network Hacking -

Wireless hacking directly enter malicious insider and to harm system or disstrupt services Example Wi-fi, Blutooth these are Wireless connection to another system attacker easily enter in system so ethical hacking hacker to create strong passcoard or uniqtue passcoard.

4 Mobile hacking -

Mobile hacking is scary things attacker hacks application's and email through or message through ethical hacker to find threats, to protect apps, mails for the user use easily application.

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- Advantages of fthical hacking -

1 Increase Security Awaresness -

Ethical hacker is good hacker, or ethically performed all task & increase security of all devices or network.

2 Reduce financial loss -

Ethical haeker to protect system, or network devices and attacks on bad hacking for the purpose Reduce financialoss & make it safe system.

3 Secure System -

Ethical hacker perform to secure or protect systems devices to find vulnerabilities who can exploitedsystem.

- Disddvantage -

1 System Damage -
sometimeInethical hacking hackers cause system or damage system.

2 high cost -

Some time good hacking get high cost for the damage system.

3 Misuse - Ethical hacker sometime misuse services and act on devices.

⊙ Purpose of Ethical hacking.

1 Ethical hacking find vulnerabilities or detects threats.

2 Ethical hacking hacker to positive like Redhat hacker to help threats for devices who exploit security

3 White hacker are most important role play to prevent data breaches.

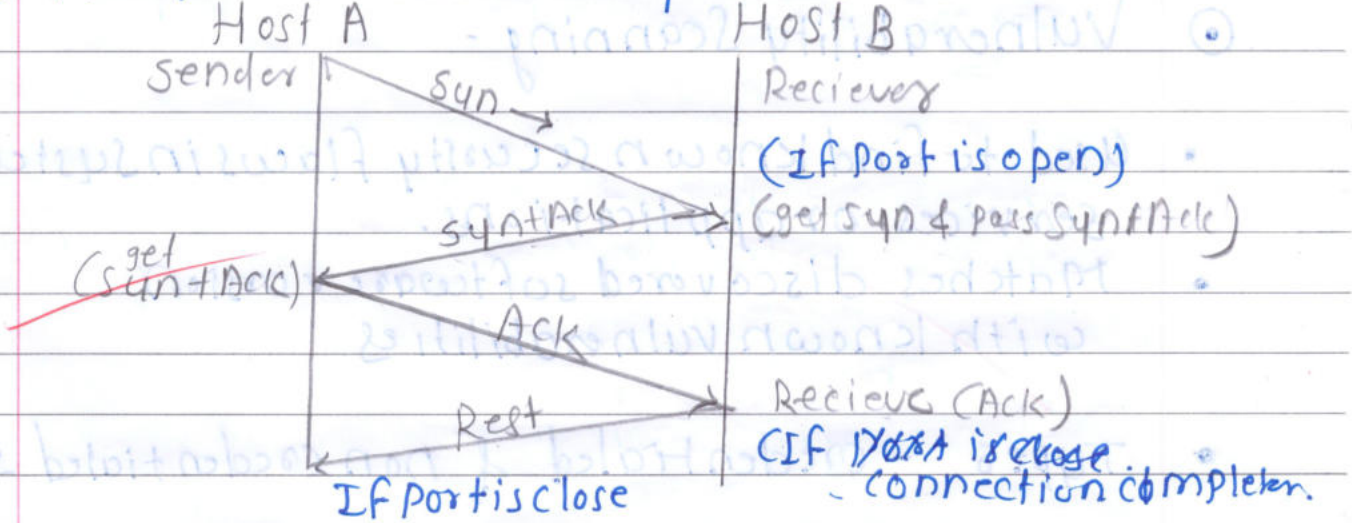
4 In Ethical hacking most services Building trust.

5 Ethical hancking help for organization & Improve awareness.

Q2
A TCP connect Scan -

→ The scanning system TCP perform 3 full way handshake. for the purpose extabilish connection for the communication.
If port is open syn flat set to the target system. then process is start for the connection completing.

- Working of TCP connect scan -
- Example - TCP 3 Way handshake



- Scanner Send SYN - The scanning machine send SYN send to TCP packet flag to set specific port.
- Target Respond - Sanner report port state -

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1 Open ports - If the open ports target respond to with SYN / Ack.

2 Closed ports - If the closed ports target respond to with RFST packet break down the connection

03

3 filter port - If the firwall present & blocking the ports there may be no responses on ICMP unreachable error is returned.

Q8 Vulnerability Scanning and any two tools

⊙ Vulnerability Scanning -

- Used to find known security flaws in system services or applications.
- Matches discovered software version with known vulnerabilities
- Types - credentialed & non credentialed Scans

⊙ Tools -

① Nmap - Nmap tools crucial role play to find vulnerabilities & identify open ports detect services & version. & gather information about operating system

Features of Nmap -

1. Comprehensive scanning
2. Scripting Engine
3. OS Detection.

(2) Nessus -

- A commercial paid tool
- very detailed & widely used

OR

- large vulnerability database.
- can do both credential & non credential checks a system configuration

Q3 :

→ Enumeration is the systematic process of actively gathering detailed information about target system Network or application & identify potential vulnerabilities & entry points.

Types of Enumeration -

1] Enumeration Network -
focuses on mapping the network topology identifying active devices & IP address & protocols the use (ICMP)

2 User Enumeration -
Involves identifying valid username, user account & group membership on system

3 Services Enumeration

Involves probing specific network services & their configuration to identify potential weakness or outdated software version.

⊙ Techniques -

1 Port Scanning - identifying open TCP/UDP port to determine the services running on a host

2 Banner grabbing - connecting to an open port & capturing service responce masage to identify the application & version number.

3 Protocol specific queries -
using built-in command or dedicated tools (e.g nmap script) to extract detailed information from specific services.

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Q 4

→ 1] Physical social Engineering -

Attacker is physically present at the target location & uses in-person interaction or physical access to manipulate people

2] Common techniques -

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Tailgating - Attacker follows an employee through badge controlled door by asking

Remote work - employee work entirely from outside the office - usually from home using online tools like zoom.

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Name: Aishwarya Sanjay yadav
Roll No: 60
Sub - Ethical Hacking

Q.2 A] Describe the working of TCP Connect Scan with an example.

Q] Explain the concept of vulnerability scanning & name any two tools used.

→ A] — —

- A TCP connect scan is a port scan that compiles a full TCP Connection (the 3-way handshake: SYN → SYN-ACK-ACK) to target port to see if a service will accept connections.

- If the connection succeeds the port is open; if the connection is close the target to the system cannot be done.

- Working:
  - Scanner sends a SYN (request to start).
  - If the target port is open, the target replies SYN-ACK (saying "I'm ready")
  - Scanner then sends ACK to finish the handshake- a full TCP connection is now established.
  - The scanner can then immediately closed the connection (or exchange data ; but usually it just closes to test if port is open)

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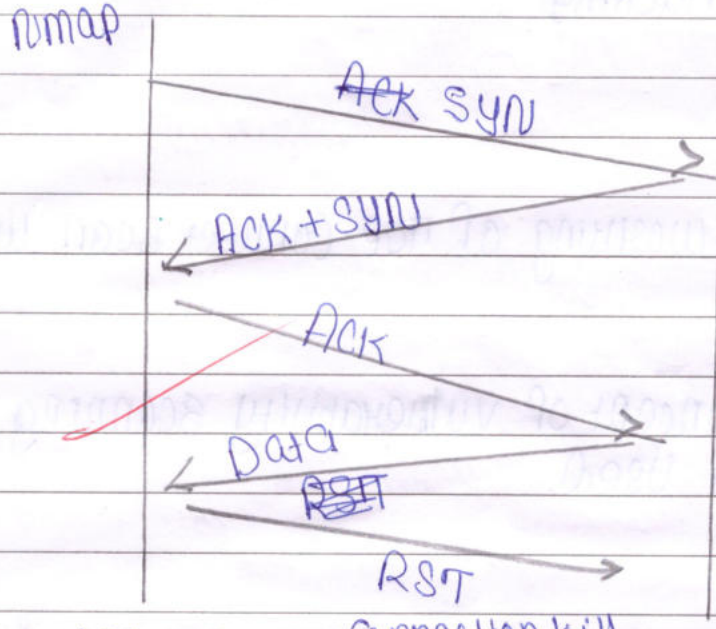
— What does it do?



— Advantages:

1) Very Reliable: Uses standard operating system networks. So it results are accurate.
2) Works when the scanner cannot craft raw packets.

— Disadvantages:

1) Easily logged by the target.
2) Slower and noisier.
3) Requires privileges only to open normal services.

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B] ——

— Vulnerability Scanning

- It is a processes of identifying security weaknesses in the computer networks or web applications using automated tools.
- It helps organizations find and fix vulnerabilities before hackers can exploit it.
- Its like a security checkup for our system to find weak spots that attackers could see.

Objectives

- To detect system flaws such as open ports, outdated software and system weakness.
- To find the ~~we~~ loop holes in the system like old version which needs to be updated.

Tools used in vulnerability scanning

Tool	Description
1. Nmap	• Nmap is a network discovery & security auditing tool. • It helps find hosts, open ports & running services in a network • It can detect the operating system version running on targets

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2. Nessus :-

- Nessus is a vulnerability scanning tool developed by Tenable
- It gives detailed reports with risk levels (low, medium, high. • Helps fix weaknesses before hackers exploit them.

Q.3. Explain Enumeration. Discuss its types, techniques and countermeasures.

→ Enumeration is the process of extracting detailed information about a target system or network during the information gathering phase of Ethical Hacking.

Types of Enumeration.

1) SNMP Enumeration
2) NetBIOS Enumeration
3) LDAP Enumeration
4) NTP Enumeration
5) SMTP Enumeration
6) DNS Enumeration

1) SNMP Enumeration:-
- SNMP (Simple Network management protocol) use to manage network devices
- Eg: Getting Router or Switch details using SNMP public Strings.

2) NetBIOS Enumeration:-
- Used in Windows system
- Eg- Accessing Shared Folders on Windows network.

3) LDAP Enumeration
— Lightweight Directory Access Protocol (LDAP) helps access directory services like Active directory.
— Eg: Attackers can get user details email addresses and groups.

4) NTP Enumeration:
— (Network Time Protocol) reveals system time and connected clients.

5) SMTP
— Use to gather valid email address from a mail server.

6) DNS
— Extracts DNS records like IP address, mail servers and subdomains.

Enumeration Techniques:

1. Username and Email enumeration:-
— Finding out which usernames or email addresses actually belong to a place (So attackers know who to target).
— Eg: Trying "Forget password" for many names if the site replies "Email found" you know if exists.

2. Default weak password checks:

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— Guessing the easy or factory passwords people forget to change (like admin/admin).
— Eg: Logging into a new router with the sticker password that never got changed.

Countermeasures:

1. Use Captcha to prevent alternative ~~attacks~~ alerts.
2. Limit login attempts
3. Perform Regular Security audits.
4. Monitor network for unusual activity.

Q.4 — —

→ Social Engineering-

• It means tricking people to share secret info or doing things that compromise security (phishing emails, fake calls, SMS phishing / "Smishing", vishing, impersonation, baiting, etc).

A. Physical Social Engineering —
— Attacker interacts directly or physically accesses a location or device to steal data or gain entry
B. Remote Social Engineering.
— Attack conducted using electronic communication like Phone, email, or internet to trick users.
C. Hybrid — Combination of both physical & remote methods to increase success rate.

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Q.1 Define Ethical Hacking. Explain the types, advantages, disadvantages and the purpose of Ethical hacking with suitable examples.

→ Ethical Hacking:

— Ethical Hacking is hacking which is done for the security purpose, to find the vulnerabilities in the system.

— Ethical Hacking is also known as white hat hacking or penetration testing.

— Ethical hackers are hired by organizations to find and fix security flaws before malicious attacks can happen.

— Example: An IT Professional is hired by bank to find the and fix the vulnerabilities in the system.

Types of Ethical Hacking:

1. As ~~Web~~
   - → Web Application Hacking
   - → Network Hacking
   - → Wireless Hacking
   - → System Hacking
   - → Social Engineering
   - → Mobile Application Hacking.

1. Web Application Hacking:

— Definition: It is a type of hacking where the

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attacker tries the ~~send~~ malicious links to be send while browsing the user are directed to the different website.

— The ethical hacker checks those lopeholes in the web sites

— Purpose: To prevent data leaks or attacks through public websites & online forms.

— Eg: Ecommerce websites are tested for payment vulnerabilities.

2. Network Hacking:

— Definition: Network hacking is done while using public wi-fi or connecting devices to each other. It is use to find open ports on active devices.

— Purpose: To prevent users with device damage and data protection.

— Eg: Connecting to public wifi can be dangerous or risky. Company test its office network to find open ports, weak passwords, etc.

3. Wireless Hacking:

— Define: These type of hacking can be done through wireless devices like USB drive e.g. or bluetooth, etc. Viruses or malwares can be spread.

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— Purpose : Do not use unknown or other devices that can make system or device damage.

— Eg: Testing cafe or airport public wifi. Systems for vulnerabilities.

4. System Hacking:

— Definition : It is Hacking where the user tries to hack the OS (operating system).

— Purpose : To see the system is updated with new available versions. Find the bugs and use strong ~~pas~~ authentication.

— Example : Hacker tries the see the details of the operating system using WHOIS lookup tools.

5. Social Engineering:

— Definition : It is a type of Hacking where the ~~at~~ hacker tries to ~~e~~ fool people and get all the personal information from the user.

— Purpose : To ~~&~~ stop attacks like phishing, malware, Ransomeware, etc.

— Example : Sending a fake email, make ~~or~~ calls to trick people and gain the personal data.

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6) Mobile Application Hacking:

— Definition: In this hacking can be done through different mobile apps which are not safe and secure & can steal data unknowing.

— Purpose: To stop downloading unauthorized or unecessary apps.

Advantages:

1. Improve Security Awareness:
Make people aware of this kind of activities and conduct different training programmes.

2. Identify Security weaknesses:
It helps find weekness in the system.

3.

Disadvantages

1. Misuse of knowledge

— The Ethical Hacker can take advantage of the work and can misuse the important data of the company.

2. Privacy Issue

— Sometimes Private data is exposed to the Ethical hacker which is risky.