Class 12 Informatics Practices

Chapter 5: Internet & Web – One-Shot Exam Guide

💡 ***Quick Notes | 1,2,3 & 4 Mark Questions | MCQs | SV Toppers Corner***

📚 Notes

🔑 Key Terms & Definitions

- **Network**: A group of interconnected devices.
- **Node**: Any device in a network (e.g., computer, printer).
- **LAN**: Connects devices in a small area (e.g., office) – up to 1 km.
- **MAN**: Covers a city or town (e.g., cable networks).
- **WAN**: Connects computers over long distances; Internet is the largest WAN.
- **Ethernet**: Rules for LAN data transfer; speed ranges from 10 Mbps to 1 Gbps.
- **Topology**: Physical/logical layout of network (e.g., star, bus).
- **Modem**: Converts digital to analog and vice versa.
- **Router**: Connects networks and routes data.
- **Switch**: Sends data to intended devices only.
- **Hub**: Sends data to all connected devices (less efficient).
- **Repeater**: Strengthens weak signals.
- **Gateway**: Entry/exit point connecting two networks.
- **Web Page**: A single HTML document.

- **Website**: A collection of interlinked web pages.
- **Static Web Page**: Same content for all users.
- **Dynamic Web Page**: Content changes per user or data.
- **URL**: Uniform Resource Locator – web address.
- **HTTP/HTTPS**: Protocols to access web pages; HTTPS is secure.
- **Cookie**: Small file stored by browser to remember user data.
- **VoIP**: Voice over Internet Protocol – calling over internet.
- **Browser**: Software used to access the Internet (e.g., Chrome, Firefox).
- **Add-ons/Plug-ins**: Extend browser functionality.

📋 Full Forms

Abbreviation	Full Form
LAN	Local Area Network
MAN	Metropolitan Area Network
WAN	Wide Area Network
URL	Uniform Resource Locator
HTTP	HyperText Transfer Protocol
HTTPS	HyperText Transfer Protocol Secure
ISP	Internet Service Provider
VoIP	Voice over Internet Protocol
NIC	Network Interface Card
DNS	Domain Name System

HTML	HyperText Markup Language
CSS	Cascading Style Sheets
MAC	Media Access Control
ARPANET	Advanced Research Projects Agency Network

🧠 20 MCQ Predicted Qs with Answers

1. Which device connects LANs into a WAN? → **Router** ✅
2. Most secure topology is? → **Mesh** ✅
3. Data sent to all devices: → **Hub** ✅
4. Converts analog to digital? → **Modem** ✅
5. Protocol used to access web pages? → **HTTP** ✅
6. Function of Repeater? → **Regenerates weak signals** ✅
7. NIC card connects via? → **Ethernet cable** ✅
8. URL is a type of? → **URI** ✅
9. Dynamic page uses? → **Server-side scripting** ✅
10. Which stores user login? → **Cookies** ✅
11. Secure data transfer uses? → **HTTPS** ✅
12. Web hosting needs? → **Domain + Web server** ✅
13. The Internet is a type of? → **WAN** ✅
14. Difference between web and internet? → **Web is service; Internet is network** ✅
15. Switch vs Hub? → **Switch sends selectively** ✅

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16. Chat is what type of communication? → **Real-time** ✅
17. Gateway functions as? → **Entry/exit point** ✅
18. First page of a website is? → **Home page** ✅
19. VoIP works on? → **Digital signals** ✅
20. DNS maps? → **Domain name to IP** ✅

✅ 1 Marker Questions with Answers

1. **Define LAN:** A network within a limited area like school or office.
2. **URL stands for?** Uniform Resource Locator.
3. **Two browsers?** Chrome, Firefox.
4. **VoIP?** Voice calling over the Internet.
5. **Cookie?** Text file that stores user data.
6. **Topology?** Layout of devices in a network.
7. **Repeater's function?** Strengthens signals.
8. **ISP?** Internet Service Provider.
9. **Device to connect LAN to Internet?** Router.
10. **HTTP stands for?** HyperText Transfer Protocol.

✅ 2 Marker Questions with Answers

1. **Static vs Dynamic page:** Static = same for all; Dynamic = changes per user/data.

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2. **Two website uses:** Share info, sell products.
3. **Two network devices:** Modem (conversion), Switch (selective forwarding).
4. **Role of DNS:** Maps domain to IP address.
5. **Hub vs Switch:** Hub broadcasts; switch targets.
6. **MAC address:** Unique hardware ID of NIC.
7. **Modem function:** Converts signals for data transfer.
8. **Internet applications:** Email, online shopping.
9. **Cookie's role:** Saves preferences/logins.
10. **Two email providers:** Gmail, Yahoo.

✅ 3 Marker Questions with Answers

1. **Compare LAN, MAN, WAN:**
    - LAN: short-range, fast (e.g., school)
    - MAN: city-wide (e.g., cable TV)
    - WAN: worldwide (e.g., Internet)
2. **How dynamic page works:**
   Server processes input, fetches data (e.g., weather, profile) and customizes output.
3. **Topology & Star Topology:**
   Devices connect to central hub. If hub fails, network fails.
4. **VoIP concept:**
   Converts voice into digital signals. E.g., WhatsApp calling.
5. **Three network devices:**

- Modem: Analog↔Digital
- Router: Traffic controller
- Switch: Sends data to specific node

6. **Router vs Gateway:**
   - Router: Connects similar networks
   - Gateway: Connects different networks/protocols
7. **Website purpose & structure:**
   Purpose: Info or service delivery. Structure: Linked web pages under one domain.
8. **Add-ons vs Plug-ins:**
   - Add-on: Enhances browser
   - Plug-in: Adds functionality like Flash/Java
9. **Email features:**
   Compose, attach, organize, filter, forward, search.
10. **Browser working:**
    Sends HTTP request, receives response, renders HTML page.

✅ 4 Marker Questions with Answers

1. **Web server roles:**
   - Hardware: Stores web files
   - Software: Responds to HTTP requests
     E.g., Apache, Nginx
2. **Four topologies:**
   - **Bus:** Single line

- **Star:** All to central hub
- **Ring:** Circular data flow
- **Mesh:** All-to-all connections

3. **Steps to host a website:**
   - Choose host
   - Register domain
   - Upload files
   - Link domain via DNS
4. **Web vs Internet:**
   - Internet = global network
   - Web = service to access linked pages
     E.g., YouTube is on the web; your modem connects you to the Internet
5. **VoIP: Working, pros, cons:**
   - Converts voice → digital
   - Pros: cheap, portable
   - Cons: quality depends on internet speed
6. **Webpage vs Website:**
   - Webpage: Single doc (e.g., about.html)
   - Website: Collection of pages (e.g., www.ncert.nic.in)
7. **Four Firefox settings panels:**
   - General (downloads, language)
   - Home (startup settings)

- Search (default engine)
- Privacy (tracking, cookies)

8. **Internet evolution & use:**
   - ARPANET → World Wide Web
   - Used in education, business, socializing, smart devices
9. **HTTP vs HTTPS:**
   - HTTP: No encryption
   - HTTPS: Encrypted & secure for sensitive info
10. **Internet services:**

- WWW, email, chat, VoIP, e-commerce, social media

🌟 SkillVeda Toppers' Corner – Special Questions

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1. What are Nodes in Networking?

Answer:
Nodes are any devices connected to a network that can create, receive, or transmit data. Examples include computers, printers, modems, routers, etc.

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2. What are Packets in Networking?

Answer:
Packets are small units of data into which information is divided before being transmitted over a network.

3. Distance Coverage of LAN, MAN, and WAN

- **LAN**: Up to 1 kilometer
- **MAN**: Up to 30-40 kilometers
- **WAN**: Can span across countries or continents

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4. Equivalence of 1 GB and 1 Gbps

- **1 GB (Gigabyte)** = 1024 MB = 1024 × 1024 KB = 1024^3 Bytes
- **1 Gbps (Gigabits per second)** = 1000 Mbps = 1000 × 1000 Kbps = 10^9 bits per second

Note: 8 bits = 1 byte → 1 GB ≠ 1 Gbps

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5. Examples of MAN (Metropolitan Area Network)

- Cable TV network
- City-wide Wi-Fi networks
- Broadband services in urban areas

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6. Examples of WAN (Wide Area Network)

- The Internet
- ATM banking networks
- International corporate networks (e.g., Google office in India connected to USA HQ)

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7. Full Form of Modem

Answer:
Modem stands for **MOdulator-DEModulator**

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8. Another Name for Ethernet

Answer:
Ethernet is often called the **IEEE 802.3 standard** or simply **Wired LAN protocol**.

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9. Limitation of Hub in Networking

Answer:
A hub broadcasts data to all devices causing data collisions and slow speed. It lacks intelligence to forward data selectively.

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10. What is an ISP?

Answer:
ISP (Internet Service Provider) is a company or organization that offers internet access to users (e.g., Jio, Airtel, BSNL).

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11. Dual Task Performed by a Wi-Fi Router

Answer:

- Acts as a **modem** to convert analog to digital signals.
- Functions as a **router** to direct data to appropriate devices.

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12. Examples of Peripheral Devices

- **Input**: Keyboard, Mouse, Scanner
- **Output**: Monitor, Printer, Speaker
- **Storage**: External Hard Drive, Pen Drive

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13. Formula for Mesh Topology Connections

Answer:
For **n nodes**, the total connections = **n(n–1)/2**

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14. Who is Sir Tim Berners-Lee?

Answer:
He is the British scientist who **invented the World Wide Web (WWW)** in 1990 and defined its core technologies.

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15. Three Core Technologies of WWW (by Tim Berners-Lee)

- **HTML** – HyperText Markup Language
- **URI** – Uniform Resource Identifier
- **HTTP** – HyperText Transfer Protocol

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16. Difference between Domain and Subdomain

Domain	Subdomain
The main address (e.g., `example.com`)	A subdivision of domain (e.g., `blog.example.com`)
Purchased from registrar	Created from within domain

Needed for hosting	Useful for organizing site content

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17. Other Names for VoIP

- Internet Telephony
- IP Telephony
- Broadband Telephony

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18. Difference between Static and Dynamic Web Pages

Static Page	Dynamic Page
Same content for all users	Personalized content for each user
No server-side scripting	Requires server-side code
Faster to load	Takes time to load
Written in HTML/CSS	Uses PHP, ASP.NET, etc.

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19. What is DNS (Domain Name System)?

Answer:
DNS translates **domain names** (like google.com) into **IP addresses** so that browsers can load websites.

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20. What was Mosaic Web Browser?

Answer:
Mosaic was the **first graphical web browser** developed in 1993 by NCSA. It made the web accessible to common users.

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21. What are Add-ons and Plug-ins in a Browser?

- **Add-ons:** Mini tools/extensions that enhance browser features (e.g., ad blockers).
- **Plug-ins:** External software for playing media or animations (e.g., Flash Player).

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22. What are Cookies in Web Browsers?

Answer:
Cookies are small text files stored by browsers that save user preferences, login sessions, and browsing history to improve user experience.

📝 Special Note by Srishti Ma'am

Dear Students,

This is your final stretch. Just before the exam may feel overwhelming, but it's also your secret weapon.
You've studied hard, practiced questions, and now it's time to tune in for precision and focus.

🔁 **Here's a tip:**
Go through **SkillVeda's Toppers' Corner notes and important MCQs.**
✅ Revise **definitions, devices, topologies, and protocols**
✅ Practice **1, 2, 3, and 4 marker questions**

📌 **Even a 30-minute revision session today could be the difference-maker.**
Who knows — the last thing you revise tonight might appear on your question paper tomorrow!

Take care of your health, sleep well, eat right — and don't panic.

✨ **Stay confident. Stay calm. Believe in yourself. You've got this!**

With best wishes,
Srishti Ma'am
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