GOVERNMENT OF ANDHRAPRADESH

COMMISSIONERATE OF COLLEGIATE EDUCATION

In Collaboration with

Nodal Resource Center, PVKN Govt. College (Autonomous) CHITTOOR

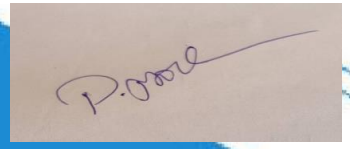
Certificate of Participation

This certificate is presented to Dr/Mr. /Mrs. /Miss. **G.KALYANI**, Student,

PVKNGC (A) CHITTOOR, has participated in thirty days

Certificate course on E-COMMERCE held at Nodal Resource Center,

PVKN Govt. College (Autonomous), CHITTOOR from**19.07.2022to17.08.2022**



COORDINATOR
Dr.P.Jyoshna

HEADOFTHEDEPARTMENT
Dr.V.Masulamani

PRINCIPAL
Dr.G.AnandaReddy

GOVERNMENT OF ANDHRAPRADESH

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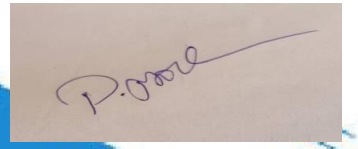

COORDINATOR
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Certificate of Participation

This certificate is presented to Dr/Mr. /Mrs. /Miss. **K.USHASREE**, Student,

PVKNGC (A) CHITTOOR, has participated in thirty days

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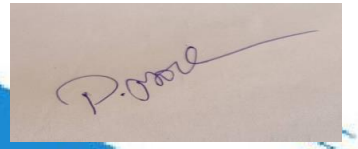

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Dr.V.Masulamani

PRINCIPAL
Dr.G.AnandaReddy

PVKN GOVT. COLLEGE (A), CHITTOOR

DEPARTMENT OF COMMERCE

CERTIFICATE COURSE

2022-23

On

E-COMMERCE

RESOURCE PERSONS

S.no	Resources persons	Designation
1.	Dr. N .SUSEELA BHARATHI	Lecturer in Commerce
2.	Dr. P. JYOSHNA	Lecturer in Commerce
3.	Smt. A. NIROSHA	Lecturer in Commerce
4.	Sri. R. BALAKRISHNA	Lecturer in Commerce
5.	Sri. K. MUJAKAR	Lecturer in Commerce

PVKN GOVT. COLLEGE (A), CHITTOOR

DEPARTMENT OF COMMERCE

2022-2023

From
Dr P. JYOSHNA
Lecturer in COMMERCE,
PVKN Govt. Degree College (A)
Chittoor.

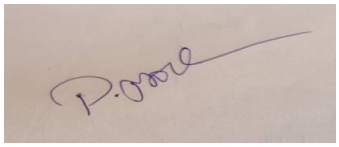
To
The Principal,
PVKN Govt. Degree College(A)
Chittoor.

Sub: Regarding to start certificate course on "E-COMMERCE"

Respected sir/madam,

I am Dr. P. Jyoshna working as Lecturer in Commerce in this college. This is regarding with conduct subject related certificate course introducing for students benefits of our department on '' **E-COMMERCE"**. The course duration should be 30 Hours . We are going to start in the academic year 2022-2023 i.e. 19.07.2022 to 17.08.2022. So this is my humble request you to permit us for the conducting of above course.

Thanking you sir,



Dr.G.Ananda Reddy
Principal

Dr. P. JYOSHNA
Lecturer in Commerce

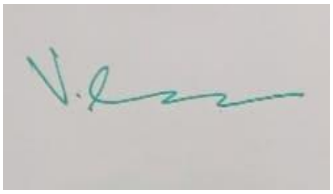
PVKN GOVT. COLLEGE (A), CHITTOOR

DEPARTMENT OF COMMERCE

CIRCULAR

DATE: 15.07.2022

This is to inform that the department of Commerce is going to be conducted a subject related certificate course from 19.07.2022 to 17.08.2022 for Second year students of B.COM on "**E-COMMERCE**". The students who are interested can enroll their names to concerned department on or before 17.07.2022. The duration of the course is 30 HOURS.



Dr V.Masulamani

Head of the department

PVKN GOVT. COLLEGE (A), CHITTOOR

IQAC-Resolution Copy

The IQAC committee along with chairperson and coordinator, convened a meeting on ……. and resolved to conduct "Certificate/ Value add on courses". in the month of …… with the duration of a minimum of 30 hours.

Notice Board

The department of commerce is going a conduct a certificate course on "E-Commerce" from _____ with min 30 working hours.

Interested candidates should come and register your names in the department on or before_____

Check list:

1. **IQAC Resolution**
2. **Department wise Resolution**
3. **Agenda, circular**
4. **Course structure and planning**
    a. **Date and timing schedule**
    b. **Course out comes, Syllabus, Contents, Model papers**
    c. **Feedback form**
    d. **Model Certificate**
5. **Students' enrolment list**
6. **Attendance register for 30 hours and more (Online/ Offline)**
7. **Certificate distribution**
8. **Submission of Critical Analysis Report to IQAC**

PVKNGC (A), CHITTOOR

DEPARTMENT OF COMMERCE:

Syllabus

1	**Introduction**
2	**Types of E-Commerce**
3	**Internet, Intranet, Extranet**
4	**Website structures**
5	**E-commerce security**
6	**Digital signature**
7	**Services of E-banking**
8	**E-payments Systems**
9	**Model test**

Outline of the course;

Total allotted hours: 30

OBJECT OF THE COURSE: To generate a good sound knowledge on E-Commerce and its various concepts involved and to provide a practical knowledge among E-Commerce to students.

COURSE OUTCOME: Students will learn to understand what is main role of E-Commerce in present trends and the know how to operate a business and it helps them to take as entrepreneurship and make them independent and self-employable.

PVKN GOVT. COLLEGE (A), CHITTOOR

DEPARTMENT OF COMMERCE

SUBJECT RELATED CERTIFICATE COURSE- 2022-23

The faculty members of the COMMERCE department met in the principal chamber to discuss and review the conduct of the certificate course titled "**E-COMMERCE** "under the chairman ship of the principal and the faculty of the DEPARTMENT OF COMMERCE on 15.07.2022.

AGENDA:

Starting of certificate course for B.com students.

RESOLUTIONS:

(1) It is resolved to start the certificate course titled "E-COMMERCE**"** from 20.07.2022 (30 hours) for the academic year 2022-2023.

(2) It is also resolved to frame the syllabus, regulations for the successful completion of the certificate course titled "**E-COMMERCE".**

(3) Enrolled 25 students in this course.

(4) Resolved to conduct classes at 4.00 PM. To 5.00 P.M

(5) It resolved that certificate will be issued to all registered students who have successfully completed the course

MEMBERS PRESENT:

1. Dr. N. Suseela Bharathi
2. Dr. P. Jyoshna
3. A. Nirosha
4. R. Balakrishna
5. K. Mujakar

STUDENT ENROLMENT LIST

s.no	Register number	Name of the student	Group	Remarks
1	230202507	B. MOUNIKA	**I B.Com**	
2	230202515	B. ASHOK KUMAR	**I B.Com**	
3	230202516	C. BHAVANI	**I B.Com**	
4	230202533	G. KALYANI	**I B.Com**	
5	230202542	K. LAVANYA	**I B.Com**	
6	230202554	K. USHASREE	**I B.Com**	
7	230202567	M.KIRAN	**I B.Com**	
8	230202581	P. MICHAEL	**I B.Com**	
9	230202588	P. BHARGAVI	**I B.Com**	
10	230202589	P. UMA MAHESH	**I B.Com**	
11	230202590	P. BINDU PRIYA	**I B.Com**	
12	230202608	S. MEHAR	**I B.Com**	
13	230202613	S. SHAHINA	**I B.Com**	
14	230202617	S. VISHNU SAI	**I B.Com**	
15	230202626	T. DHANUSREE	**I B.Com**	
16	230202639	V. VINEETH KUMAR	**I B.Com**	
17	230202641	V. NANDINI	**I B.Com**	
18	230201504	K. YOGENDRA VARMA	**I B.Com**	
19	230203501	B. YUVARAJ	**I B.Com**	
20	230203510	P. NITHIN KUMAR	**I B.Com**	
21	230203509	P. KRISHNA KUMAR	**I B.Com**	
22	230204505	G. KUSUMA	**I B.Com**	
23	230204507	K. PARTHU	**I B.Com**	
24	230204517	S. KEJIYA	**I B.Com**	
25	230204518	V. MAHESH BABU	**I B.Com**	

I. INTRODUCTION

E-Commerce is buying and selling, marketing, servicing delivery and payment of products, service and information over internet, intranets, extranets and other networks, between an inter-networked enterprise and its prospects, customers suppliers and other business partners.

It differs form the traditional commerce in the way that it enables the trading of goods, money and information electronically from computer to computer. Business is done electronically and there is no longer a need for physical currency or goods to conduct business.
Electronic commerce (e-commerce) refers to companies and individuals that buy and sell goods and services over the internet. E-commerce operates in different types of market segments and can be conducted over computers, tablets, smartphones, and other smart devices. Nearly every imaginable product and service is available through e-commerce transactions, including books, music, plane tickets, and financial services such as stock investing and online banking. As such, it is considered a very disruptive technology.

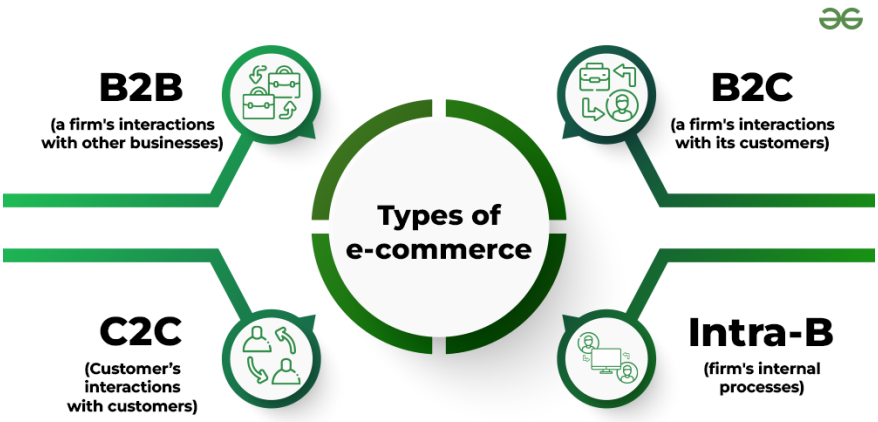
E-commerce is the process of buying and selling tangible products and services online. It involves more than one party along with the exchange of data or currency to process a transaction. It is part of the greater industry that is known as electronic business (e-business), which involves all of the processes required to run a company online.

II.TYPES OF E-COMMERCE

The Types Of E-Commerce

The following are the different types of e-commerce platforms:

1. Business-to-Business (B2B)
2. Business-to-Consumer (B2C)
3. Consumer-to-Consumer (C2C)
4. Consumer-to-Business (C2B)
5. Business-to-Administration (B2A)
6. Consumer-to-Administration (C2A)



Business-to-Business (B2B)

A B2B model of business involves the conduct of trade between two or more businesses/companies. The channels of such trade generally include conventional wholesalers and producers who are dealing with retailers.

Business-to-Consumer (B2C)

Business-to-Consumer model of business deals with the retail aspects of e-commerce, i.e. the sale of goods and/or services to the end consumer through digital means. The facility, which has taken the business world by storm, enables the consumer to have a detailed look at their proposed procurements before placing an order. After the placement of such orders, the company/agent receiving the order will then deliver the same to the consumer in a convenient time-span. Some of the businesses operating in this channel include well-known players like Amazon, Flipkart, etc.

This mode of purchase has proved to be beneficial to the consumers when compared to the traditional method, as they are endowed with access to helpful contents which may guide their purchases appropriately.

Consumer-to-Consumer (C2C)

This business model is leveraged by a consumer for selling used goods and/or services to other consumers through the digital medium. The transactions here are pursued through a platform provided by a third party, the likes of which include OLX, Quickr, etc.

Consumer-to-Business (C2B)

A C2B model is the exact reversal of a B2C model. While the latter is serviced to the consumer by a business, the C2B model provides the end consumers with an opportunity to sell their products/services to companies. The method is popular in crowdsourcing based projects, the nature of which typically includes logo designing, sale of royalty-free photographs/media/design elements, and so on and so forth.

Note – the term 'crowdsourcing' was coined in the year 2005 as a sourcing model that facilities individuals/organizations to obtain goods/services from internet users.

Business-to-Administration (B2A)

This model enables online dealings between companies and public administration, i.e. the Government by enabling the exchange of information through central websites. It provides businesses with a platform to bid on government opportunities such as auctions, tenders, application submission, etc. The scope of this model is now enhanced, thanks to the investments made towards e-government.

Consumer-to-Administration (C2A)

The C2A platform is meant for consumers, who may use it for requesting information or posting feedbacks concerning public sectors directly to the government authorities/administration. Its areas of applicability include:

- The dissemination of information.
- Distance learning.
- Remittance of statutory payments.
- Filing of **tax returns**.
- Seeking appointments, information about illnesses, payment of health services, etc

III. INTERNET, INTRANET, EXTRANET

Internet vs Intranet

The internet is a global network of computers and servers that are connected to each other using standardized communication protocols. It allows users to access a vast array of information and services, including websites, email, social media, and e-commerce platforms. The internet is accessible to anyone with an internet connection and a device that can connect to the internet, such as a computer or smartphone.

On the other hand, an intranet is a private network that is accessible only to authorized users within an organization. It is used to share information, collaborate on projects, and manage internal operations. Intranets are typically password-protected and can only be accessed from within the organization's premises or through a secure virtual private network (VPN).

The primary purpose of an intranet is to improve communication and collaboration within an organization. Intranets can be used to share information about company policies, procedures, and news. They can also be used to facilitate team collaboration and project management.

Intranets offer several benefits over traditional methods of communication and collaboration, such as email or phone calls. They provide a centralized location for storing and accessing information, which makes it easier for employees to find what they need quickly. Intranets also enable real-time collaboration, which can improve the efficiency of teamwork.

Extranet vs Intranet

While intranets are designed for internal use only, extranets are a type of private network that allows external users, such as customers, suppliers, and partners, to access certain parts of an organization's intranet. Extranets provide a secure platform for sharing information and collaborating with external parties, without compromising the confidentiality of internal data.

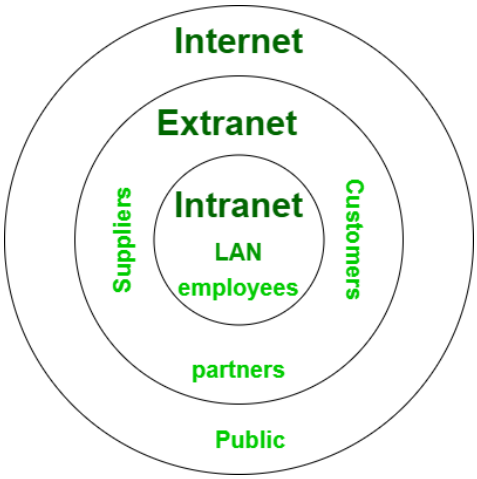
Extranets are used by organizations that need to share information with external parties, such as suppliers or customers, but don't want to provide them with full access to their intranet. Extranets can be used to share product information, order status, or other relevant data with customers. They can also be used to collaborate with suppliers on product development or logistics.

One example of an extranet is a customer portal, which allows customers to log in and access information about their orders, track deliveries, and communicate with the organization's customer service team. Another example is a partner portal, which allows authorized partners to access product information, training materials, and other resources.

Difference between Extranet and Intranet

The main difference between extranets and intranets is that intranets are internal networks that are accessible only to employees, while extranets are extended networks that allow external parties to access certain parts of an organization's intranet. Intranets are used for internal communication, collaboration, and operations management, while extranets are used for external communication and collaboration with customers, suppliers, and partners. Also Read Collaboration Challenges in Workplace

Intranet vs Extranet vs Internet



To summarize, the key differences between intranet, extranet, and internet are:

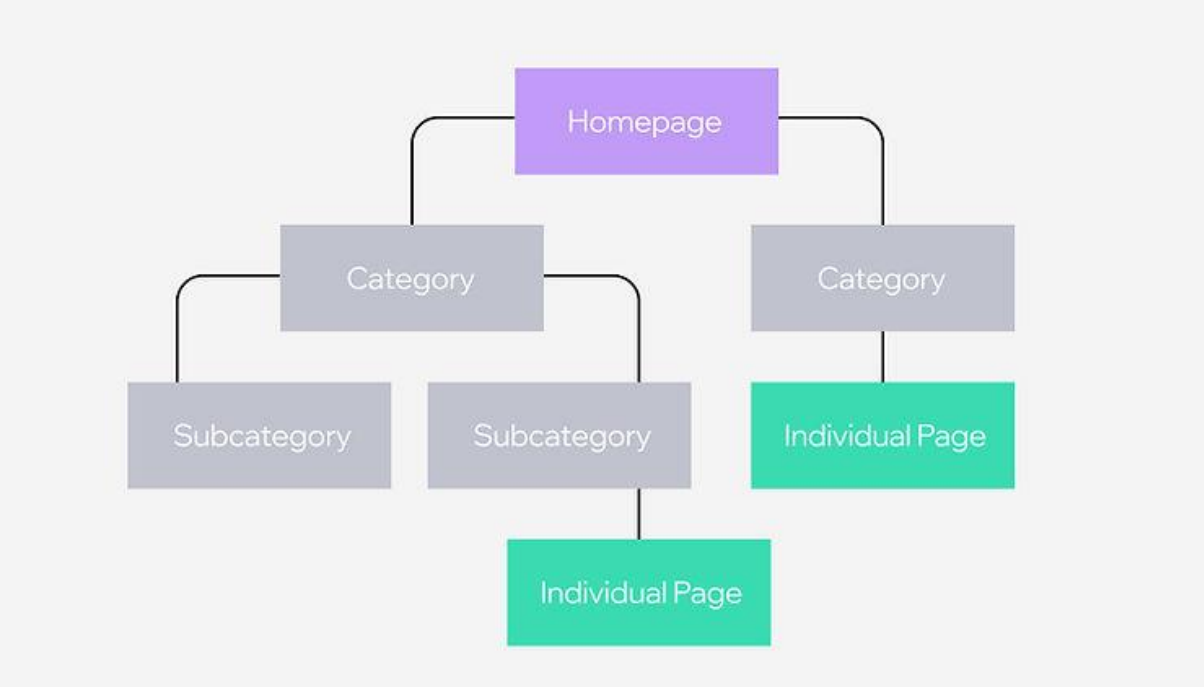
1. **Internet:** A global network of computers and servers that allows users to access a wide range of information and services.
2. **Intranet:** A private network that is accessible only to authorized users within an organization and is used for internal communication, collaboration, and operations management.
3. **Extranet:** A private network that allows external parties to access certain parts of an organization's intranet for external communication and collaboration.

IV. WEBSITE STRUCTURES

Structure and Design of Website

A website structure refers to the hierarchy, order and organization of your site's pages, mapped out by a desired user experience. It connects all your web pages with a navigational system of menus, internal linking and content.

Along with your site's information architecture, website structure is an important UX design factor that impacts a visitor's user journey. But it's also a way for you as the creator to plan your site's layout and content and determine where each element should sit. Especially when designing a website with multiple pages, the more attention you pay to your site's structure at the start, the less surprises you'll have later on.



The Elements are in a website structure

Defining a website structure ensures that visitors follow a logical user journey when discovering information on your website. The structure must include all of the web pages on your site, a system of categories for organizing these and a means for visitors to navigate from one element to another. Your site's structure should make sure the most important information is discoverable first, while inviting visitors to continue exploring the following elements:

- Categories and sub-categories
- Navigation
- Linking system

Categories and subcategories

Categories set the foundation for organizing your website structure, grouping pages of your site that have similar content, and making it easier for visitors to find what they need. In addition, bigger sites that have a large number of categories should further divide their content into sub-categories.

Navigation:

Your website's navigation lays out its structure for visitors, acting as a map of directions to the content they need. In most cases, this starts with a website menu—which may be a classic header menu across the top or a more minimalistic hamburger menu.
Since the purpose of navigation is to guide visitors, your homepage should clearly display the pages and categories they're looking for on your site. From there, sub-categories should also be discoverable, whether by using a drop-down menu or using another way to display links to sub-category pages. Additionally, you'll want to be sure your site's navigation drives visitors

to other important web pages relating to your brand, such as an “About Us” page or a “Contact” page.

Linking system

Implementing a well-thought-out linking system ensures that your user moves through your site properly.. Depending on the type of website structure you use, there will be varying degrees to which the visitor relies on your linking system. In addition to links from your website’s menu, a structure can utilize the following kinds of links to elevate the user experience:

- **CTAs**, or calls-to-action, are strategically placed links that take visitors to a direct goal, encouraging them to make a move. Whether it's a link to “sign up” or “purchase,” CTAs are extremely helpful to visitors who have that specific goal on your site. Display them using bold text, enticing micro copy or a button design.
- **Internal links** refer to those links within a website that connect to other pages of the same site. Every site naturally has internal linking between its web pages, whether it's organized in the most optimal way for visitors is entirely up to you. Sometimes, businesses will group their pages into category “clusters,” using this as a guide. Having a system of internal linking also happens to be a strong SEO best practice. Since it is reflected in your sitemap, Google bots see the effort being made to provide visitors with the most relevant information in the right order.
- **Contextual links** bring the visitor to related content outside of your own site’s web pages, such as product pages from other businesses, blog posts, sources or news.

Different types of website structures

Take a look at the different types of website structures and examples below. What patterns do you notice? What are the characteristics of each? What type of user will benefit best from each of these structures?

Having a grasp of the four most basic structures and how they’re used will help give you a better understanding of how to build your own design or which website template to use:

- Hierarchical model
- Sequential (aka Linear) model
- Matrix model
- Database model

Hierarchical model

The most popular type of website structure is the hierarchical model, where a homepage acts as the starting point, branching off into various categories and pages according to importance. Because it’s so versatile, this structure suits a variety of types of websites—from personal service websites to online portfolios. First, order your content according to importance. Most times, this means ensuring the user reaches general information first before discovering more detail. To draft and test out your hierarchy, use wireframes and card-sorting exercises. Then, once you have your pages created and mapped out, use an interlinking system and navigation menu to implement this hierarchy on your website.

Sequential (aka Linear) model

A sequential web structure takes users through a step-by-step journey to achieve their goal, whether it's narrowing down categories, guiding their search process or helping them find a sign up form. This basic, low-maintenance structure fits sites with minimal content and pages, such as a small business website or online portfolio. A sequential website structure starts at your homepage or landing page that lists a number of pages or categories. Visitors follow a linear flow that guides them through a journey of parent pages, ultimately landing them on their desired content.

Matrix model

While the matrix is one of the oldest website structure models, it still remains popular today. Geared towards letting visitors enjoy browsing without strict categories, a website structure following the matrix model does not have a rigid user journey in mind. This might sound chaotic, but for visitors, it means complete freedom and many points of entry to all of your website's content. While categories, sub-categories and individual pages should still exist in the matrix model, you don't have to curate their order of appearance for the user. Instead, the website's robust interlinking and increased importance on navigation features, like a website menu or search bar, serve the user experience.

Database model

Website structures that follow a database model often create dynamic and personalized experiences. A visitor to a site following this model will generally need to input their own personal details, queries or preferences. From there, the website will present them with relevant content stored like personal details or product pages in the webpage's database.

Something that is overlooked by a lot of web designers and developers is what is actually involved in the deployment of a website; the process when you've finished developing the site, tested to make sure it works, and are ready to push it to a live web server. In a lot of cases, you will be dealing with clients who are getting their website for the first time, and there is nothing for you to really consider apart from the hosting solution to set them up on. As time goes on, you will start getting larger clients that may have existing websites already, or who have more complicated needs.

V. E-COMMERCE SECURITY

E-commerce security

Broadly speaking, e-commerce security refers to a set of globally accepted guidelines that ensure safe purchasing experiences on the internet. These include protocols that protect both the businesses selling their products online, as well as the customers sharing their personal information to purchase these goods.

There are a few different facets of e-commerce security that are important to familiarize yourself with as you establish the types of protocols that are necessary within your own web shop. These include:

- **Authentication,** which establishes that both buyer and seller are verifiable identities, who are who they claim to be.
- **Privacy,** which refers to the protection of customer data, especially from unauthorized third parties.
- **Integrity,** which means this data will remain unedited or altered in any form, and
- **Non-repudiation,** which is the legal principal that enforces follow-through on a transaction The club provides you with exclusive access to th

E-commerce security weaknesses & attacks

1. Phishing

You might not think twice about clicking the link, since you have requested a password reset and are expecting an email about it.

2. Malware & ransomware

Malicious software, commonly known as malware, is installed by attackers on your system. Ransomware is type of malware and involves locking a victim out of their own system, preventing access to data unless some kind of 'ransom' is paid out. Ransomware attacks have targeted banks, schools, and even hospitals – costing the world $21 billion in 2021. Here are some common signs you might be experiencing a malware attack:

- Being taken to the wrong links/page destinations
- Incessant pop-up ads that are difficult to click out of
- A slow system that is constantly crashing/freezing
- A high quantity of emails you send bounce back
- New icons showing up on your desktop without having been installed

3. Zero-day exploit

Zero-day sounds like something out of a spy thriller, but the reality is almost just as outrageous. A zero-day vulnerability is an unknown security flaw that someone can take advantage of. A

zero-day attack or zero-day exploit is an attack carried out that exploits this unknown security flaw. Because the victim was unaware of the flaw before the attack, they aren't able to release a patch to prevent the attack until it's too late.

4. E-skimming

E-skimming is the digital version of credit card skimming. While in the physical world, skimmers are installed over credit card readers to skim credit card information, e-skimmers are pieces of malicious code that steals a customer's credit card data during an online transaction. Using secure payment processors such as Sana Pay is a great way to reduce this e-commerce security threat.

5. Man in the middle attack

An MTM attack is what's called an "active eavesdropping attack." A third party intercepts a conversation or transfer of data between two parties. This third party can additionally inject malicious software into the files that are being exchanged, ultimately infecting further systems after the attack has been completed.

6. SQL injection attack

Most e-commerce sites maintain databases filled with customer information such as email addresses, physical addresses, phone numbers, etc.

A SQL injection attack allows an unauthorized user to access these databases. By using a nefarious piece of code, a hacker can bypass an authentication page, and gain access to the full back-end database. From there, the user can steal, modify and delete the data.

7. Cross-site scripting

Cross-site scripting is an e-commerce security threat where a hacker adds malicious code to a legitimate website. This code will then attack a user when that person browses the infected website.

XSS can result in client impersonation, keystroke logging, file/webcam/microphone access, and identity theft.

8. Financial fraud

Financial fraud is a different type of e-commerce security threat than, say, SQL injection. Instead of relying on malicious code, financial fraud relies on stolen credit cards or fake returns in order to benefit at the company's expense. When credit card fraud is discovered, the e-commerce site will have to refund the victim without recouping the goods sold – leaving them on the hook for an expensive bill.

9. Insider threats

Insider threats are a serious danger for e-commerce businesses. Disgruntled employees (or ex-employees) may attempt to steal company data or proprietary information in hopes of selling it to a rival business. Or, they may attempt to lock or delete company data to cause your

business to suffer. Either way, these insiders represent a real security threat in the e-commerce space.

E-commerce security measures to protect your web store

E-commerce security threats are a constant menace. You need to actively defend against these threats to ensure that your users can safely browse your e-commerce site without fear of fraud or theft.

Here are some prudent steps you can take to reduce the risk of e-commerce security threat.

1. Use closed source code

One of the first things to consider when purchasing new software is whether you want a solution based on open source or closed source code. But when it comes to open source vs. closed source, how can you determine which one is best for your B2B web store?

Open source code

Open source code is created by an open community of developers. There are no restrictions on who can contribute to the code's ongoing development.

Closed source code

When it comes to development, bigger teams aren't necessarily better. Closed source solutions are only worked on by a select group of developers — "select" being the keyword.

Contrary to open source code, closed source code is proprietary and not open to the public, either to view or collaborate on.

While there are fewer sets of eyes on closed source code, those eyes belong to carefully recruited developers. Limiting the number of engineers and other specialists working on the software makes it easier to:

- Control the development environment
- Keep track of who has worked on what and with a smaller scope
- Prevent issues from slipping through the cracks
- Assess quality of the developers and of the product

2. Ensure strong password creation

A simple tip that is often overlooked, ensuring both you and your customers have strong passwords can go a long way in securing your online portal. A strong password includes at least eight characters, that contain a mix of upper and lowercase numbers, letters and special characters.

3. Install device protection

Installing a trusted anti-virus software, keeping networks secure with firewalls, and ensuring there are routine updates for these platforms will help add a secondary layer of security to your data, and prevent interference on your e-commerce platform.

4. Set up a VPN (virtual private network)

A virtual private network, or VPN, provides a way to securely send data over the public, possibly unsecured networks like the internet.

Setting up a virtual private network (VPN) connection helps you keep your connection secure and your data confidential.

You may be familiar with VPNs as a way to protect your privacy when using the internet. However, you can also use a VPN connection to protect your corporate network. In fact, VPNs were originally developed to let remote workers connect to their company's network without compromising security.

If you use an ERP (enterprise resource planning) system with your online portal, VPNs can be used in the same way to safeguard your integrated ERP. Any data sent via a virtual private network is encrypted. For more information about how a VPN works exactly, we recommend this article by Microsoft.

5. Use multi-factor authentication for added data protection

Multi-factor authentication (MFA) can be a valuable tool for e-commerce security, especially when it comes to protecting customer purchases and preventing loss of data.

6. Create consistent backups

Site breaches can result in a loss of data – ensuring you regularly create backups will help minimize lead time to total recovery.

7. Switch to HTTPS

HTTP is the standard way data is transferred on the internet. HTTPS provides a layer of encryption to this data. With HTTPS, you can prevent most man-in-the-middle attacks.

VI. DIGITAL SIGNATURE

What is a Digital Signature?

Digital signatures function similarly to digital "fingerprints." The digital signature, which takes the form of a coded message, securely links a signer with a document in a recorded transaction. Digital signatures rely on a universally accepted format known as Public Key Infrastructure (PKI) to ensure enhanced security. They are a subset of electronic signature technology (eSignature).

A digital signature is a type of electronic signature where a mathematical algorithm is routinely used to validate the authenticity and integrity of a message (e.g., an email, a credit card transaction, or a digital document). Digital signatures create a virtual fingerprint that is unique

to an individual or entity and are used to identify users and protect the information in digital messages or documents and ensure no distortion occurs when in transit between signer and receiver. In emails, the email as a whole also becomes a part of the digital signature. Digital signatures are significantly more reliable and secure than other forms of electronic signatures.

Why are digital signatures considered secure?

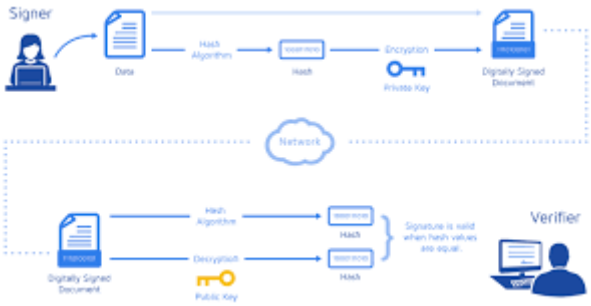
Digital signatures work using public-key cryptography. Public key cryptography is a cryptographic method that uses a key pair system, private and public. The private key encrypts the data and is available only to the signer. The public key decrypts the data pertaining to the digital document and is given to the receiver. However, both parties must have a registered digital certificate from an issuing certificate authority to connect the signer and their signature. Public key cryptography ensures the security, accuracy, and authenticity of the document.

What is the importance of Digital Signatures?

Agreements and transactions that were once signed on paper and delivered physically are now being replaced with fully digital documents and workflows as more businesses are conducted online. Malicious actors who want to steal or manipulate data for their own gain are often present whenever precious or sensitive data is shared. To minimize the risk of document tampering by malicious parties, businesses must be able to check and authenticate that these critical business documents, data, and communications are trusted and delivered securely.

How do you create a digital signature?

Digital signature technology ensures the process of digitally signing documents is easy and secure. They provide a platform for sending and signing documents online and work with the appropriate Certificate Authorities to provide trusted digital certificates. The Certificate Authority you are using determines what kind of information you may be required to provide. There can also be set regulations and rules on to whom you send documents for signing and the way in which you send them. When you receive a document for signing via email, you must authenticate as per the Certificate Authority's requirements and then proceed to sign the document by filling out an online form.



How do digital signatures work?

The mathematical algorithm generates a public key and a private key that is linked to each other. When a signer electronically signs a document, the mathematical algorithm generates data pertaining to the signed document by the signer, and the data is then encrypted. This data is also called a cryptographic hash. A hash function is a fixed-

Certificate Authority who are Trust Service Providers(TSP) provides digital certificates to ensure that the keys generated and documents signed are created in a secure environment.

Digital certificates help to validate the holder of a certificate. Digital certificates contain the public key of the sender and are digitally signed by a Certificate authority.

Public key infrastructure (PKI) includes regulations, protocols, rules, people, and systems that aid the distribution of public keys and the identity validation of users with digital certificates and a certificate authority.

This is how a digital signature is sent:

- In the document platform or application, the sender chooses the file to be digitally signed.
- The sender's computer calculates the file content's unique hash value. The digital signature is created by encrypting this hash value with the sender's private key.
- The receiver receives the original file as well as its digital signature.
- The receiver opens the associated document application, which recognizes the digitally signed file.
- The digital signature is then decrypted by the receiver's computer using the sender's public key.
- After that, the receiver's computer computes the hash of the original file and compares it to the now-decrypted hash of the sender's file.

Benefits of digital signatures

While digital signatures have caught the fancy of many corporates and executives, what exactly is it? Simply put, a digital signature is your electronic fingerprint. It lets you sign a document electronically and it validates the signer. It is a mathematical code that authenticates the document from the sender and ensures the document remains unaltered on reaching the recipient.

Fears about the security of digital signatures are reasonable, however, it uses an accepted format called a Public Key Infrastructure, which provides a very high level of security making it difficult to duplicate. Digital signatures make office paperwork far more efficient, but laws regarding this technology vary between countries. The benefits of digital signatures have more offices and companies getting on the bandwagon in favor of e-signatures, making for a far more efficient and secure workplace, digitally.

In many parts of the world including North America, the European Union, and APAC, digital signatures are legal and has the same value as hand signatures.

Advantages of digital signatures

- **Saves time**
- **Cost savings**
- **Workflow efficiency**
- **Better customer experience**
- **Security**

VII. SERVICES OF E-BANKING

Meaning of E-Banking:

Banks give administrations or bank services to draw in clients, from giving advances, issuing of debit cards and credit cards, computerised monetary services, and surprisingly personal services or administrations. Even so, some fundamental present-day administrations are presented by many commercial banks.

Electronic banking has many names like web-based banking, e-banking, virtual banking, or web banking, and online banking. It is just the utilisation of telecommunications networks and electronic networks for conveying different financial services and products. Through e-banking, a client can acquire his record and manage numerous exchanges utilising his cell phone or personal computer.

Classification of E-Banking:

Banks offer different kinds of services through electronic financial stages. These are of three sorts:

Type 1:

This is the essential degree of administrations or services that banks offer through their sites. Through this assistance, the bank offers data, information regarding its services and products to clients. Further, a few banks might respond to an inquiry through email as well.

Type 2:

In this category, banks permit their clients to submit directions or applications for various administrations, check their record balance, and so on. Be that as it may, banks don’t allow their clients to do any fund-based exchanges with respect to their records or accounts.

Type 3:

In the third category, banks permit their clients to work or operate their records or accounts for bill payments, purchase and redeem securities and fund transfers, and so on.

Most conventional banks offer e-banking administrations as an extra technique for offering support. Further, many new banks convey banking administrations principally through the other electronic conveyance channels or web. Likewise, a few banks are 'internet only' banks with no actual branch anyplace in the country.

Services Under E-Banking:

Mobile Banking:

Mobile banking (otherwise called M-banking) is a name utilised for performing account exchanges or transactions, bill payments, credit applications, balance checks, and other financial exchanges through a mobile phone like a Personal Digital Assistant (PDA) or cell phone.

Electronic Clearing System (ECS):

The Electronic Clearing System is a creative provision for occupied individuals. With this provision, an individual's credit card bill is consequently charged from the same individual's savings bank account, so one doesn't have to stress over missed or late payments.

Smart Cards:

A smart card is a card that stores data on a microchip or memory chip or a microprocessor in lieu of the magnetic stripe found on debit cards and credit cards. Smart cards are not utilised for transferring or moving monetary data alone, but also they can be utilised for an assortment of identification grounds. Exchanges made with smart cards are scrambled or encrypted to shield the exchange of data from one party to another. Each encoded exchange can't be hacked and doesn't transmit any extra data past what's required for finishing the single exchange or transaction.

Electronic Fund Transfers (ETFs):

Electronic fund transfer (EFT) is the electronic exchange of cash starting with an individual account in the bank to another individual account of the same bank, or within or with other financial institutions or with multiple institutions, by means of personal computers based frameworks, without the immediate intercession of bank staff.

Telephone Banking:

Telephone banking is an assistance given by a bank or other monetary foundation or other financial institutions, that empower clients to perform via telephone a scope of monetary exchanges which don't include cash or financial instruments, without the need to visit an ATM or a bank branch.

Internet banking:

Web-based banking is an assistance presented by banks that permits account holders to get their record information by means of the web or the internet. Web-based banking or Internet banking is otherwise called "Web banking" or "Online banking."

Internet banking through customary banks empowers clients to play out every standard exchange, for example, bill payments, balance requests, stop-payment requests, and balance inquiries. Some banks even proposition online credit card and loan applications.

Account data can be acquired day or night, and should be possible from any place.

Home banking:

Home banking is the most common way of concluding the monetary exchange from one's own home as opposed to using a bank's branch. It incorporates making account requests, moving cash, covering bills, applying for credits, and directing deposits.

VIII. E-PAYMENT SYSTEMS

Electronic Payment System (e-Payment) is a type of payment conducted via electronic or online mediums. Online payment systems eliminate the need for cash or cheque payments. It is a unique payment method that allows you to conduct online transactions via digital wallets, bank cards and internet banking systems. The funds are directly debited from your bank account. Electronic Payment System refers to making online transactions without cash or cheques.

- The RBI regulates the electronic payment systems in India.
- Electronic Clearing services allow banks and non-banking institutions to debit or credit money instantly.
- NEFT, IMPS, and RTGS allow cashless fund transfers between bank accounts.
- E-payment systems are safe, speedy and cost-effective alternatives to paper-based payment systems.

Types of Electronic Payment System

The RBI has introduced various cost-effective payment solutions as an alternative to cash transactions. The commonly used types of electronic payment systems include:

ECS Payments

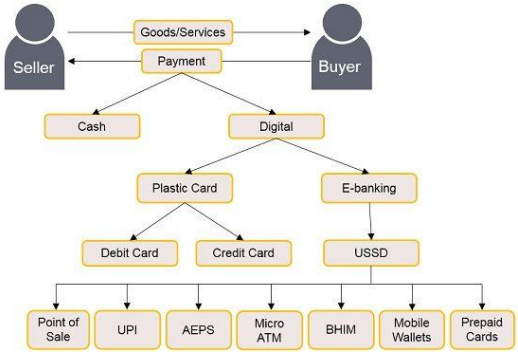
For bulk and repetitive payments like salary credit, interest payment, dividend payments from companies, etc., the RBI introduced the Electronic Clearing Service (ECS) credit scheme in the 1990s. This system enables payers to credit a specific amount directly into the payees account on a particular date. ECS enables recurring payments to banks, Mutual Fund companies, service providers, utility companies, etc. The bank collects payment from your account and passes it on to the relevant companies.

Electronic Fund Transfers: NEFT, RTGS, and IMPS

National Electronic Fund Transfer (NEFT), Real-Time Gross Settlement (RTGS), and Immediate Payment Services (IMPS) are three modes of electronic fund transfers. With NEFT, you can transfer any amount of money, while the minimum transaction limit for RTGS is INR 2 lakhs. These transactions are cleared in half-hour batches, whereas IMPS transactions have a daily limit of INR 5 lakhs and are instantly cleared.

Clearing Corporations

Clearing Corporations settle trades in money markets, foreign exchange markets and government securities. Banks and other financial institutions set Clearing Corporation of India Limited (CCIL) as an industry-wide clearing company across India.



Pre-Paid Payment Systems

These include the purchase of goods and services using bank cards. You can use internet and mobile banking facilities, third party or bank digital and mobile wallets, and credit and debit cards to make payments on domestic and international e-commerce websites.

Advantages of Electronic Payment System

1. Easy Bill Payments

It should enable your clients to pay their bills online like payments of rent, electricity, gas, etc. which you will need to partner also along with multiple service providers in the category to give users an easy option to make the payments.

2. Virtual Cards Management
The wallet application should enable users to save their debit and credit card data ensuring high security. It should allow people to add money to their wallets through a one-click system. Moreover, users would be given the option to remove or add cards to their list.

3. Contactless Technology Payments
Contactless technologies are more in vogues like QR codes and NFC, especially with retail chains. Considering the enormous growth, it is very profitable for your brand to have a QR code and NFC features integrated into it.

4. Quick Self-registration
Digital wallets have made their presence gravitational by easing people's lives and making the transaction-making process quick. One way to ensure this is to offer a fast self-registration process. Usually, when our fintech app developers build wallets, we keep this self-registration process –Download the application, Follow the KYC process, Confirm registration through OTP, Set up the password and login, Link cards, and Add money to the wallet.

5. Rewards And Discounts
Rewards and discounts generally convert one-time users into loyal customers. You should offer your clients the same promos to use the wallet when making purchases or bill payments.

6. Analytics-Based Dashboards
There should be a dashboard in the wallet app to give your clients proper information on where they should spend their funds, the upcoming bills, etc. You can even go one step ahead and have a budget management and expense tracking module in the app too.

7. Chatbot
The most trending feature of any app is chatbots. Integrating it will tell its users of their account balance or money transfer from their bank to their wallet or vice versa can prove to be extremely useful for the wallet app clients.

You might offer customers the choice to pay with:

- Cash
- Checks
- Debit cards
- Credit cards
- Mobile payments
- Electronic bank transfers
- **What Is A Payment App/ Mobile Wallet?**
- A payment app or a mobile wallet is a mobile application that allows you to store your debit or credit card information that can be used to pay for goods and services in digital money instead of using physical cards or cash and also send money online to friends, family, or merchants in an instant. It is just like having a digital wallet on your phone.
- Digital payments are a fast-growing industry in India. There are over 50 third-party applications that are operational under the UPI system.
- In a bid to ensure parity among the players, the National Payments Corporation of India (NPCI) capped the market share to 30%, limiting their share in the overall volume of transactions on the unified payment interface.
- Here is our list of the best digital payment apps in India
- **PhonePe**

- This Bangalore-based online payment app is India's first UPI-enabled payment app, backed by Walmart-owned Flipkart with over 300 million registered users across India. PhonePe leads the UPI payment market in India with a 46.04% market share.
- With PhonePe, you can transfer money, recharge, pay bills, shop online, book flights, invest, etc. Since it works on the UPI system, you can link your bank account with your PhonePe account to make transactions. You can also make payments through PhonePe wallet, debit card, and credit card.
- You can link your other existing e-wallets such as Jio Money, Airtel Money, and others with the PhonePe app for hassle-free money transfer between these wallets.
- **Google Pay**
- Google Pay, formerly launched as Tez in India is a digital payment app from Google which utilizes the UPI to enable in-app, online, in-store, and in-person cashless transactions on mobile devices, tablets, smartwatches. Users can send and request money from other Google Pay users within India.
- Google Pay India also has similar product offerings in other markets such as various cashback and other rewards including scratch cards, discounts, etc.
- As per the latest data from the NPCI, Google Pay shares 34.36% of the total UPI payment market in India, second to PhonePe. There are over 70 million active users in the country.
- **Paytm**
- Paytm (or pay through mobile) is a Noida-based fintech firm that is owned by One97 Communications. Paytm is one of India's largest mobile payments and e-commerce player. It allows cashless transactions through the Paytm app or Paytm website.
- Paytm wallet lets you store and send money from one wallet to another wallet or pay directly from your bank account using the UPI. You can recharge your mobile phones, metro cards, data cards, DTH cable and make utility bills payments, postpaid payments. Or book movies and travel tickets, do online shopping or use at various locations such as taxis, grocery shops, restaurants, malls, etc.
- With over 150 million active users, Paytm continues to be at the top with the largest volume of transactions by any payment firm in India. Paytm is valued at $16 billion as of 2020
- **Amazon Pay**
- Amazon Pay, owned by e-commerce giant Amazon is an online payment service that allows customers to use payment methods stored in their Amazon account for the purchase of goods and services on Amazon and other third-party e-commerce websites. Users can also pay utility bills, phone bills, send money to contacts, and more.
- You can also set up Amazon Pay UPI for UPI transactions by registering through the Amazon app. Amazon UPI services are provided by Axis Bank. There are now 50 million customers using Amazon Pay UPI services.
- **FreeCharge**
- Trusted by over 27 million users, FreeCharge is a popular e-commerce website and a digital wallet owned by Axis bank. Customers use FreeCharge to recharge their prepaid, postpaid, metro card, DTH, utility bill payments, and do online shopping and in-store purchases.
- Marketed as the one-stop solution for online recharge, it covers major network providers in India including Airtel, Aircel, Vodafone, BSNL, etc. It offers generous cashback, multiple discounts for various transactions.
- FreeCharge wallet is UPI-enabled which allows customers to send and receive money through the UPI system.
- **JioMoney**

- JioMoney is a digital payment app by Reliance Industries that can be used for bill payments, recharge mobile/DTH, and making payments at thousands of online and physical stores. JioMoney is available as a payment option at several e-commerce sites.
- JioMoney also offers discounts, cashback, coupons, and deals.
- JioMoney Wallet is available for download on Apple App Store or Google Play Store. The money can be added to the wallet using Net banking, debit card, or credit card or link the bank account.
- **BHIM**
- BHIM or Bharat Interface of Money is a popular mobile payment app based on the UPI system and is backed by the government of India. You can link multiple bank accounts in the app and choose the one that will receive the payments which are directly credited to the bank account. And also request money through the app.

X. MODEL TEST

1.E-Commerce stands for _____.

- Electrical Commerce
- Electronic Commerce
- Entertainment Commerce
- Electro Chemical Commerce

Answer (b)

2.The World Wide Web (WWW) was introduced in the year ……

- 1994
- 1996
- 1992
- 1990

Answer (a)

3._____ is an early form of E-commerce

- SCM
- EDI
- Both of these
- Neither of these

Answer (b)

4._____ is concerned with the buying and selling information, products and services over computer communication networks

- Commerce
- E-Commerce
- E-Business
- None of these

Answer (b)

5.Which among the following products is suitable for E-Commerce?

- Books
- Vegetables
- All of these
- None of these

Answer (a)

6.Which of the following is not a party of SCM?

- Suppliers
- Manufacturers
- Distributors
- Customers

Answer (c)

7._____ is a function of E commerce.

- Marketing
- Supply Chain
- Finance
- All of the above

Answer (d)

8._____mainly deals with buying and selling, especially on a large scale.

- Shopping
- Commerce
- Retailing
- Distribution

Answer (b)

9.E-commerce has _____ scope than E-Business or Digital Business.

- Higher
- Narrower
- Wider
- More

Answer (b)

10._____is a system of interconnected electronic components or circuits.

- Electronic Network
- Marketplaces
- Electronic Markets
- Metamarkets

Answer (a)

11.All electronically mediated information exchanges are referred to as _____

- E-Business
- Digital Business
- E-Commerce
- None of the above

Answer (c)

12._____are markets linked via modern communications networks and powered through high-speed computers.

- Marketplaces
- Metamarkets
- Electronic Network
- Electronic Markets

Answer (d)

13._____ is a part of the 4 important types of E-commerce.

- All of the above
- B2B
- P2P
- C2A

Answer (a)

14.Companies like Flipkart, Amazon and Myntra belong to which type of Ecommerce (EC) segment.

- B2B
- B2C
- P2P
- C2B

Answer (b)

15.Customers pay a fixed amount, commonly month-to-month or quarterly or annually, to get a few types of service referred to as _____E-Commerce Business Model.

- Licensing
- Subscription
- Transaction
- Affiliate

Answer (b)

16.This E-Commerce commercial enterprise model specifically specialises in selling services or products online.

- Indirect Marketing
- Online Direct Marketing
- Brick & Mortar
- Marketplace

Answer (b)

17._____is a retail fulfillment approach in which a shop doesn't hold the goods it sells in stock.

- Aggregator Model
- Affiliate
- Dropshipping
- Advertising Model

Answer (c)

18.Some marketers or companies charge other companies for letting them place a banner on their websites, blogs or platforms known as the _____E-Commerce Model.

- Affiliate
- Transaction
- Aggregator
- Advertising

Answer (d)

19.Among the alternative models of B2B E-commerce, which is the best means to acquire a competitive advantage in the market?

- Strategic relationship
- Process
- Transaction
- All of the above

Answer (a)

20.The concept of online marketing and selling of products and services through the internet is _____

- B2G
- B2C
- B2B
- B2E

Answer (b)

ATTENDANCE:

PVKN GOVT. COLLEGE (A), CHITTOOR

DEPARTMENT OF COMMERCE

CERTIFICATE COURSE ON E-COMMERCE - 2022-23 19th July-2022 to 17th August-20

S no	Register No	Name of the Student	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	230202507	B. MOUNIKA																														
2	230202515	B. ASHOK KUMAR																														
3	230202516	C. BHAVANI																														
4	230202533	G. KALYANI																														
5	230202542	K. LAVANYA																														
6	230202554	K. USHASREE																														
7	230202567	M. KIRAN																														
8	230202581	P. MICHAEL																														
9	230202588	P. BHARGAVI																														
10	230202589	P. UMA MAHESH																														
11	230202590	P. BINDU PRIYA																														
12	230202608	S. MEHAR																														
13	230202613	S. SHABINA																														
14	230202617	S. VISHNU SAI																														
15	230202626	T. DHANUSREE																														
16	230202639	V. VINEETH KUMAR																														
17	230202641	V. NANDINI																														
18	230201504	K. YOGENDRA VARMA																														
19	230203501	B. YUVARAJ																														
20	230203510	P. NITHIN KUMAR																														
21	230203509	P. KRISHNA KUMAR																														
22	230204505	G. KUSUMA																														
23	230203503	K. PARTHU																														
24	230204517	S. KEJIYA																														
25	230203518	V. MAHESH BABU																														

FEEDBACK FORM:

Course feedback form:

1. Were the objectives of course is clear to you
   A) Yes B) No
2. The course contents met your expectations

A) Yes B) No

3. The level of the course was

A) Good B) Not Good

4. The contents were illustrated with

A) More examples B) Few examples

B) The course exposed you to new knowledge and practices

A) Agree B) Not agree

5. Will you recommend the course to your next batch?

A) Yes B) No

CRITICAL ANALYSIS REPORT: The Department of Commerce has been conducted a certificate course (instructional permission) on Retailing from …… to …… with the minimum duration of 30 hours. According to the IQAC and Principals instructions the course have been started the feasibility and convenient of the hours for his academic year. The total students …….. were registered for this course and completed as per the schedules. The objective of the course was fulfilled by acquiring of business skills.

OUTCOMES OF THE COURSE:

1. Students can able to understand the concept of E-Commerce
2. Students can know the types of E-Commerce
3. Students can able to know the Digital Signatures,
4. Students can know about E-Security

Hence, the certificate course is very useful to B.COM Students. The feedback from students were collected and analysed. All the students from commerce showed interest to do such type of certificate course and to continue it for further years also.

Thank You.