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उत्तर-पुस्तिका

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आवश्यक निर्देश / Important Instructions

- उत्तर पुस्तिका में परीक्षार्थी अपना नामांकन क्रमांक केवल मुख्य पृष्ठ पर निर्धारित स्थान में ही लिखें अन्यत्र कहीं नहीं। Students must write their Enrollment Number on the Answer Booklet only at the prescribed place on the front page and nowhere else.
- उत्तर पुस्तिका में परीक्षार्थी ज तो कहीं अपना नाम लिखें और न ही कोई पहचान अंकित करें। Student should neither write their name in the Answer Booklet nor should they make any identification mark anywhere.
- प्रश्न का क्रमांक सही और साफ-साफ लिखें। प्रश्न के खण्ड के साथ प्रश्न क्रमांक भी लिखें। Write the Question Number correctly and clearly. Write both the Section of the Question number.
- एक प्रश्न का उत्तर समाप्त होने पर दूसरे प्रश्न का उत्तर नये पृष्ठ से ही प्रारम्भ करें। Start writing the answer of every question from a fresh page.
- जिस प्रश्न को भी हल करें उत्तर पुस्तिका में उसे वही क्रम संख्या दें जो क्रम प्रश्न पत्र में दिया गया है। While answering the questions make sure that the Question number written in the Answer Booklet is the same as that given in the Question Paper.

Ans: 3 firewall: In computing, a firewall is a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules.

A firewall typically establishes a barrier between a trusted network and an untrusted network, such as the internet.

Purpose of Firewall:-

It provides protection against outside cyber attackers by shielding your computer or network from malicious or unnecessary network traffic. Firewall can also prevent malicious software from accessing a computer or network via the internet.

Importance of Firewall:-

Firewall are important for protecting your computer from unwanted access. Identifying and blocking unwanted content. Helping prevent against worms, viruses, and ~~and~~ malware.

Components of Firewall:-

- Internet Protocol (IP) packet filtering.
- Network address translation (NAT) services.
- SOCKS server.
- Proxy servers for a variety of services such as HTTP, Telnet, FTP and so forth.
- Mail relay services.
- Split Domain Name System (DNS)
- Logging.
- Real-time monitoring.

Ans: 4:- Encryption: It is the process through which data is encoded so that it remains hidden from or inaccessible to unauthorized users.

It helps protect private information, sensitive data and can enhance the security of communication between client apps and servers. To encrypt a message, you need the right key, and you need the right key to decrypt it as well. It is the most effective way to hide communication via encoded information where the sender and the recipient hold the key to decipher data.

Types of Encryptions:

There are mainly three types of encryption.

1. DES Encryption
2. AES Encryption
3. RSA Encryption



1:- DES Encryption:- Accepted as a standard of encryption in the 1970s, DES encryption is no longer considered to be safe on its own. It encrypts just 56 bits of data at a time and it was found to be easily hacked not long after its introduction.
Ex:- "0787070787878787" and encrypt it with DES key "0E329232EA6D0073"

2:- AES Encryption:- One of the most secure encryption types, Advanced Encryption Standard (AES) is used by government and security organizations as well as everyday businesses for classified communication. AES uses "symmetric" key encryption.

Ex:- "buy me some potato chips please" comes out look like "0k23b8c0i3j293 uivnfgf98vs07a"

3:- RSA Encryption:- Another popular encryption standard is "Rivest-Shamir-Adleman" or RSA. It is widely used for data sent online and relies on a public key to encrypt the data.

Ex:-

Ans:-

~~Give Smart Card :-~~ A smart card, chip card, or integrated circuit card is a physical electronic authorization device, used to control access to a resource. It is typically a plastic credit card sized card with an embedded integrated circuit chip.

A chip card is a standard-size plastic debit or credit card which contains an embedded microchip as well as a traditional magnetic stripe. The chip encrypts information to increase data security when making transactions at stores, terminals or automated teller machines (ATM).

Smart cards can provide personal identification, authentication, data storage, and application processing.

The smart card is a third generation chip based identity document that is produced according to international standards and requirements. The smart card has over 36 physical security features and has the latest encryption codes.

In 1999 Gujarat was the first Indian state to introduce a smart card license system. As of 2005 it has issued 8 million smart card driving licenses to its people.

Applications of Smart Card

- Payment System
- National ID
- Financial Applications
- Transportation
- Smart Networking
- University Identification
- Retail & Loyalty
- Health

Smart card provide computing and business systems the enormous benefit of portable and secure storage of data and value.

For government organizations where privacy and security of data is part of the daily routine.

Smart cards can add convenience and safety to any transaction of value and data.

Ans:- 6:- Security threats:- In security threats can be many like software attacks, theft of intellectual property, identity theft, theft of equipment or information, sabotage, and information extortion.

Threat can be anything that can take advantage of vulnerability to breach security and negatively alter, erase, harm objects of interest.

Software attacks means attack by Viruses, Worms, Trojan Horses etc.

The most common security threats:-

1:- Computer virus:- Computer viruses are one of the most common threats to cybersecurity. Computer viruses are pieces of software that are designed to be spread from one computer to another.

2:- Rogue Security software:- Rogue security software is malicious

software that mislead users to believe there is a computer virus installed on their computer or that security measure are not upto date.

3:- Trojan horse :- It refers to tricking someone into inviting an attacker into a securely protected area. They spread often by email. Trojan also spread when you click on a false advertisement.

4:- Computer worm :- A worm spreads from an infected computer by sending itself to all of the computer's contacts, then immediately to the contacts of the other computers.

5:- Phishing :- It is a method of a social engineering with the goal of obtaining sensitive data such as passwords, usernames, credit card numbers.

It can seem a difficult task to keep track of all the security threats that are out there, and the new ones that just keep emerging.

Long Answer:-

Ans: 1:- Payment Gateways: A payment gateway is a merchant service provided by an e-commerce application service provider that authorizes credit card or direct payments processing for e-businesses, online retailers, bricks and clicks, or traditional brick and mortar.

A payment gateway facilitates a payment transaction by the transfer of information between a payment portal and the front end processor on acquiring bank.

There are many payment gateways and we are describe only five payment gateways according to that question:-

1: Cashfree payment gateway :- Cashfree provides the widest range of payment option :- cards (Visa, Mastercard, MASTRO, Rupay etc), 75+ Netbanking options, Paytm and 6 popular mobile wallets like Airtel, MobiKwik, Freecharge, along with widest range of PayLater and cardless EMI options such as ZestMoney, Ola Money etc.

Features: - Cashfree Payment Gateway provides the fastest settlement cycle and instant refunds. Seamless checkout, recurring payments, product hosting, pre-authorization are some features available.

2:- PayU Payment Gateway Service: PayU (formerly known as PayUMoney) is one of the best payment gateways to accept online payments with minimal development effort, easy sign-up, and quick onboarding process.

Features: - User can save their card details to get a seamless experience when they visit your website/App next time.

- Multi-currency support.
- Domestic Credit cards supported.

3.

3. Razorpay Payment Gateway: Razorpay is the only payments solution in India that allows businesses to accept, process, and disburse payments with its product suite.

- Features:
- Supported e-commerce CMS system
 - Mobile App Integration

4: PayPal Payment Gateway Service:- PayPal is a global payment platform available in 200+ countries across the world. PayPal claims to have processed 4 billion payments (including 1 billion mobile) in 2014.

Features :-

- International Payment
- Multi currency Support

5: Paytm Payment Gateway Service:- Paytm has emerged as a leading payment due to its online consumer base with 'Paytm Cash' wallet. Therefore paying with Paytm could be beneficial for a small e-commerce merchant.

Features :- Paytm ~~pay~~ offers a multitude of payment options to both online as well as physical merchants through its digital wallet.

Ans:- 4 Electronic payment techniques :- An electronic payment is any kind of non-cash payment that does not involve a paper check. Methods of electronic payments include credit cards, debit cards and the ACH (Automated Clearing House) network. The ACH system comprises direct deposit, direct debit and electronic checks (e-checks).

E-commerce sites use electronic payment, where electronic payment refers to paperless monetary transactions. Electronic payment has revolutionized the business processing by reducing the paper work, transaction costs, and labor cost.

There are many modes of electronic payment.

i:- Credit Card :- Payment using credit card is one of most common mode of electronic payment. Credit card is small plastic card with a unique number attached with an account. It is usually credit card payment cycle.

It has also a magnetic strip embedded in it which is used to read credit card via card readers.

2:- Debit Card: Debit card, like credit card, is a small plastic card with a unique number mapped with the bank account number. It is required to have a bank account before getting a debit card from the bank.

Debit cards free the customer to carry cash and cheques. Even merchants accept a debit card readily.

3:- Smart Card: It is again similar to a credit card or a debit card in appearance, but it has a small micro processor chip embedded in it. It has the capacity to store a customer's work related and/or personal information. Smart card are also used to store money and the amount gets deducted after every transaction.

4:- E-Money :- E-money transactions refers to situation where payment is done over the network and the amount gets transferred from one financial body to another financial body without any involvement of a middleman. E-money transaction are faster, convenient, and saves a lot of time.

5:- Electronic Fund Transfer: It is a very popular electronic payment method to transfer money from one bank account to another bank account. Account can be in the same bank or different bank. Fund transfer can be done using ATM or using a computer.

Nowadays, internet-based EFT is getting popular.