

Innovative Pedagogical Activities

Course: Computer Networks

Course Code: BTCOC602

Pedagogy refers to a student centered **teaching** and learning (SCL) approach where educators are reflective in their theory, practice and policy implementation in **teaching/learning**, resulting to positive impacts in the learners.

Having a well-thought-out **pedagogy** can improve the quality of your **teaching** and the way students learn, helping them gain a deeper grasp of fundamental material. Being mindful of the way we **teach** can help us better understand how to help students achieve deeper **learning**.

Keeping in mind the importance of pedagogical approach we designed a pedagogy activity for the students. Pedagogy activity was posted on whats app group & On Gnomio Moodle Site and sufficient time was given to the students to solve the activity.

Following are the day wise details of pedagogy activities conducted during the refresher program :

Pedagogy Activities Details:

| Sr. No | Name of the Activity | Unit | WhatsApp/ Online/Gnomio | No of Students Successfully Completed |
|---------------|-----------------------------|-------------|--------------------------------|--|
| 1. | Mind Map | 1,2,3,6 | Gnomio | 51 |
| 2. | Crossword | 1,2 | Wahtsapp/Gnomio | 56 |
| 3. | One Minute Paper | 3,4 | Online Google Meet | 67 |
| 4. | WhatsApp Emoji Activity | 1,2 | WhatsApp | 56 |
| 5. | Project Based Learning | All units | Gnomio | 67 |
| 6. | Think Pair Share Activity | 2 | Google Meet | 67 |

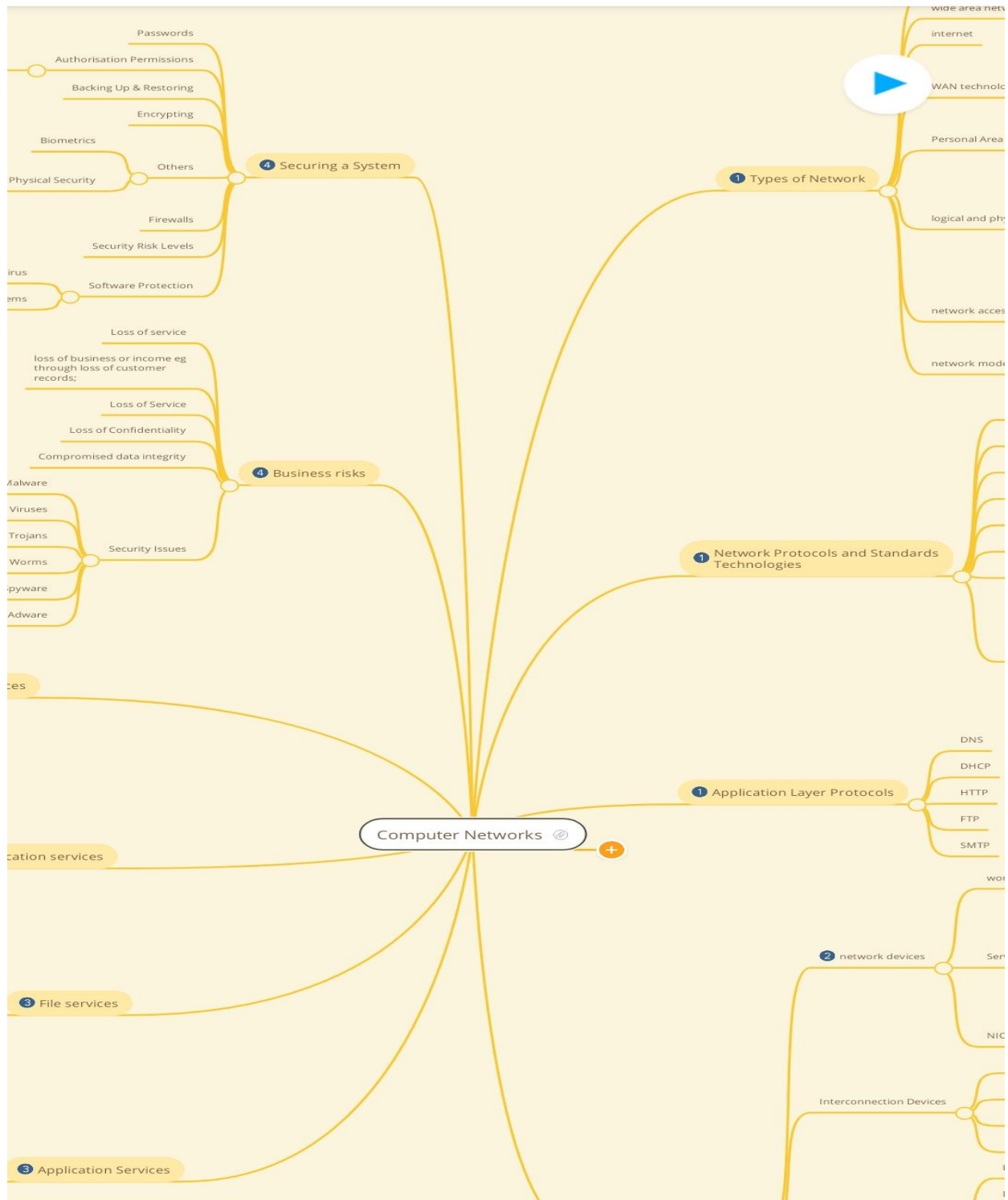
Innovative Tools: Gnomio Moodle as a LMS Tools, Quizziz.com, Google Form, Jam board, Epic Pen, animated Videos, PPT's, Google Meet

Activity No: 01

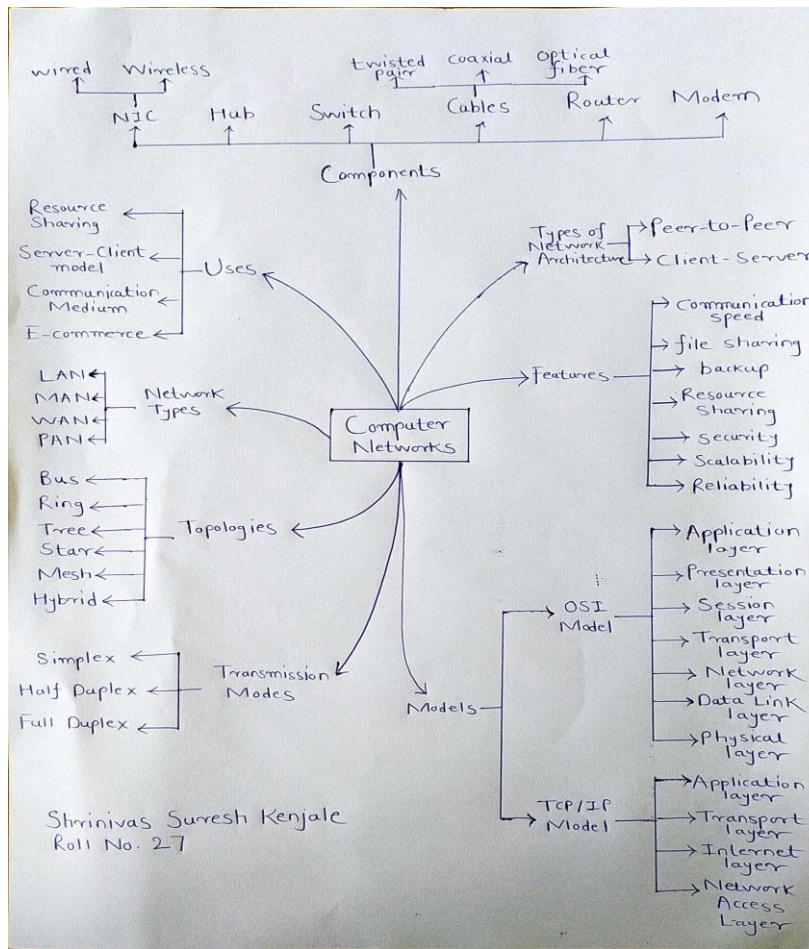
Name of the Activity: Min Map Activities (Unit-I, II, III,VI)

Mind mapping — a visual representation of information — is a versatile tool that can assist students with many aspects of their learning. It can help them map out new ideas, explore concepts in more detail and facilitate a better understanding of relationships and connections. It is an creative activity where the technical concepts can be explained and demonstrated in simplified fashion. A map or drawing or visual image is used to imagine the conceptual scenario of any topic with the scenarion faced in the real world. Number of analogies can be used to create a mind map of any technical concept.

Sample document were given on Gnomio Moodle for reference purpose.



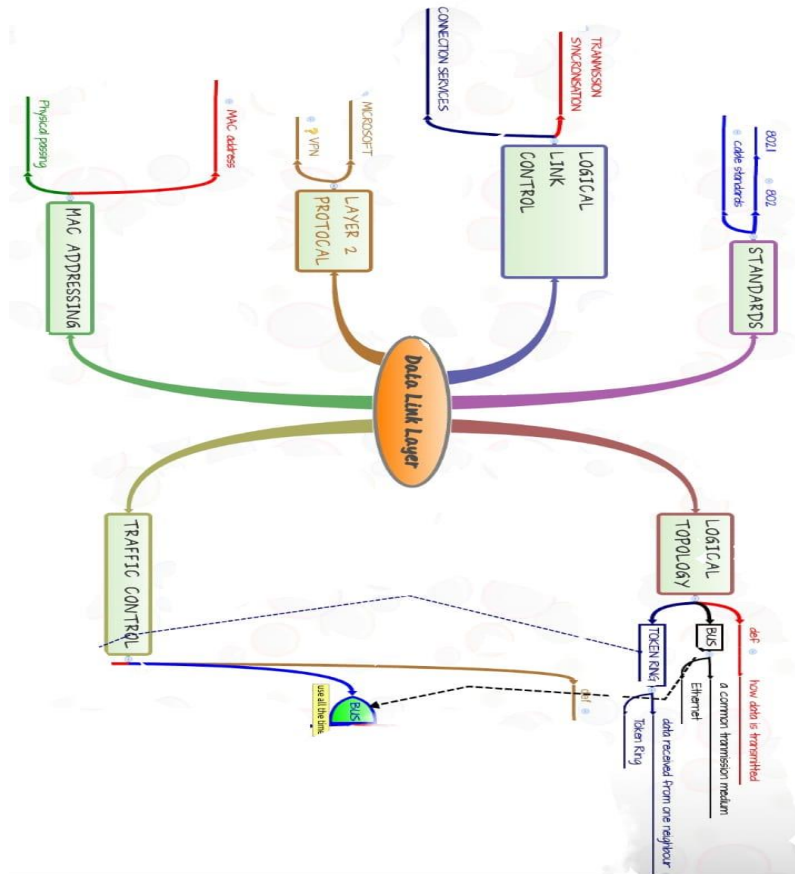
Students Responses: Sample Response of Mind Map activity on Unit-I



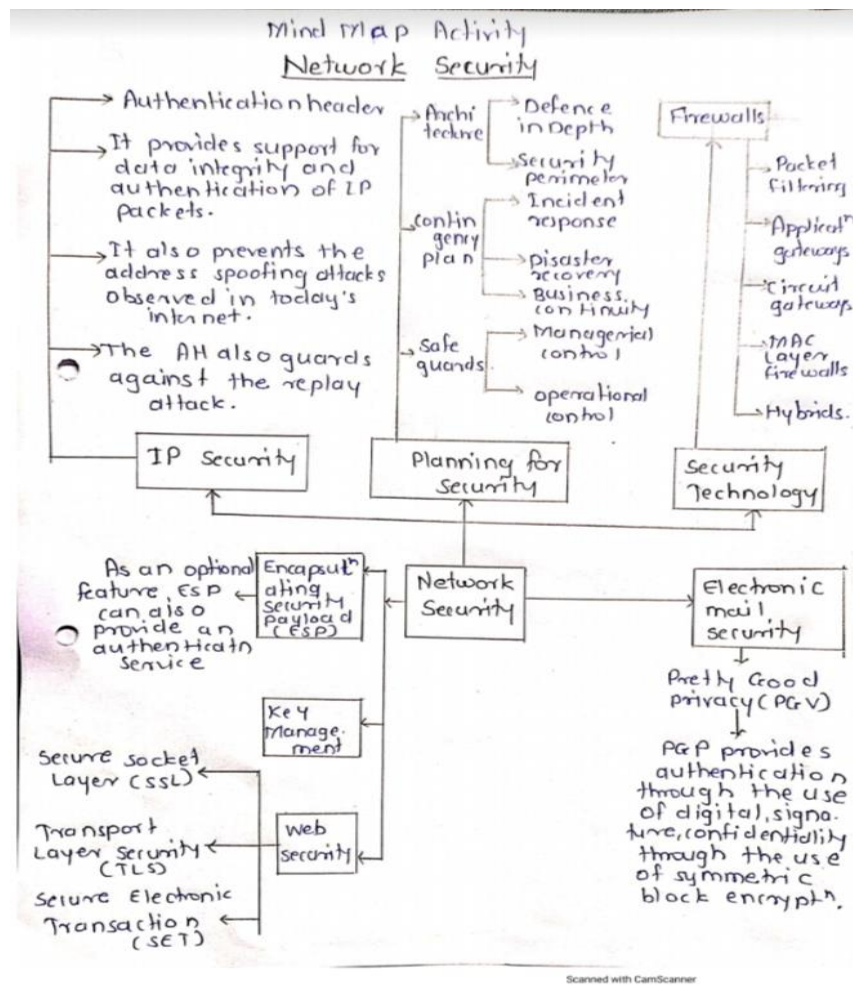
Sample Response of Mind Map activity on Unit-II



Sample Response of Mind Map activity on Unit-III



Sample Response of Mind Map activity on Unit-VI



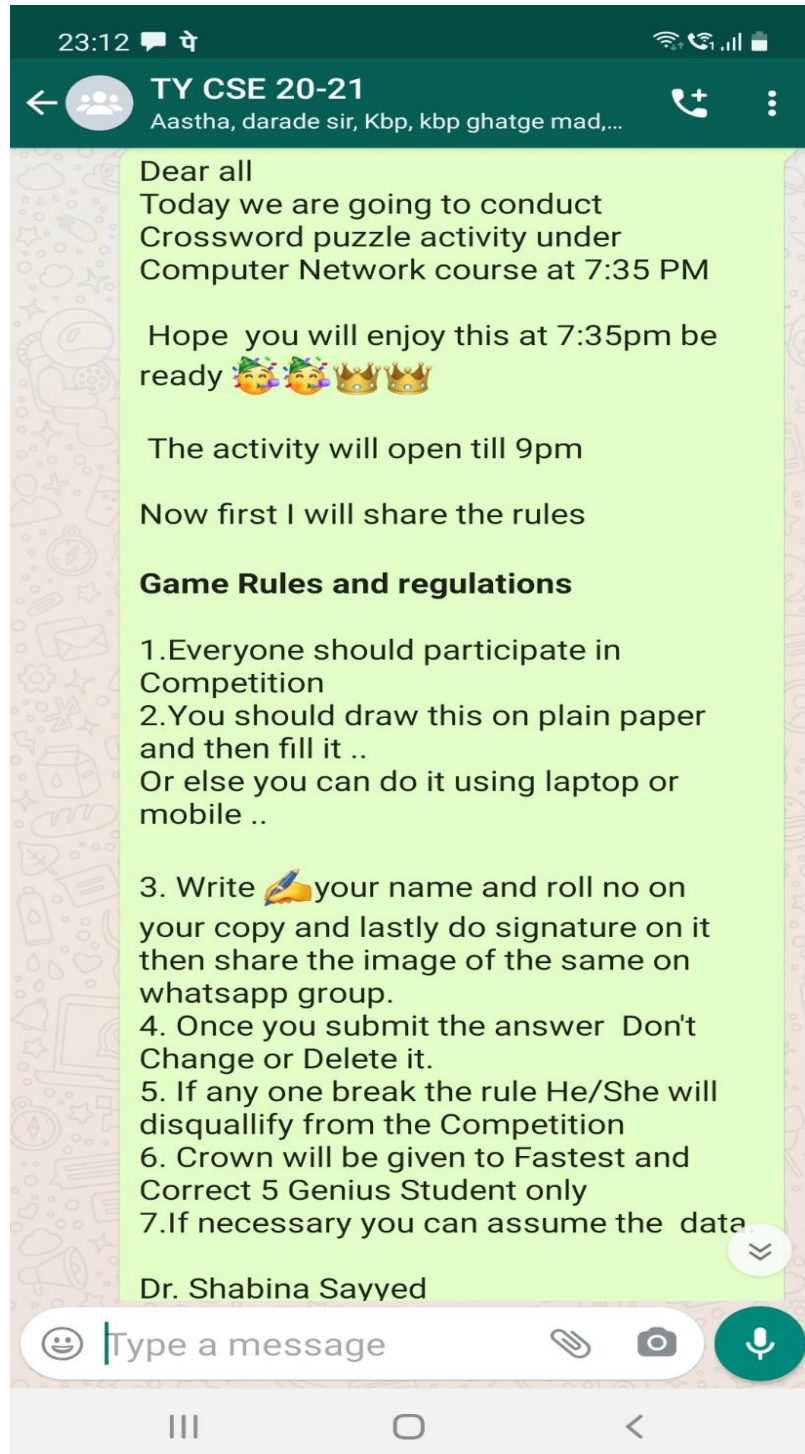
Activity No: 02

Name of the Activity: Crossword Activity (Unit-I)

Crossword Activity: A puzzle in which words that are the answers to clues are written into a pattern of numbered squares that go across and down. In this activity you have to refer the description and fill up the appropriate words in the Puzzle .

This activity was shared with students on WhatsApp group also instructed them to upload this on Gnomio moodle site.

Notification about this activities along with the rules and regulations for solving this activity was shared with students on whatsapp group of third year students.



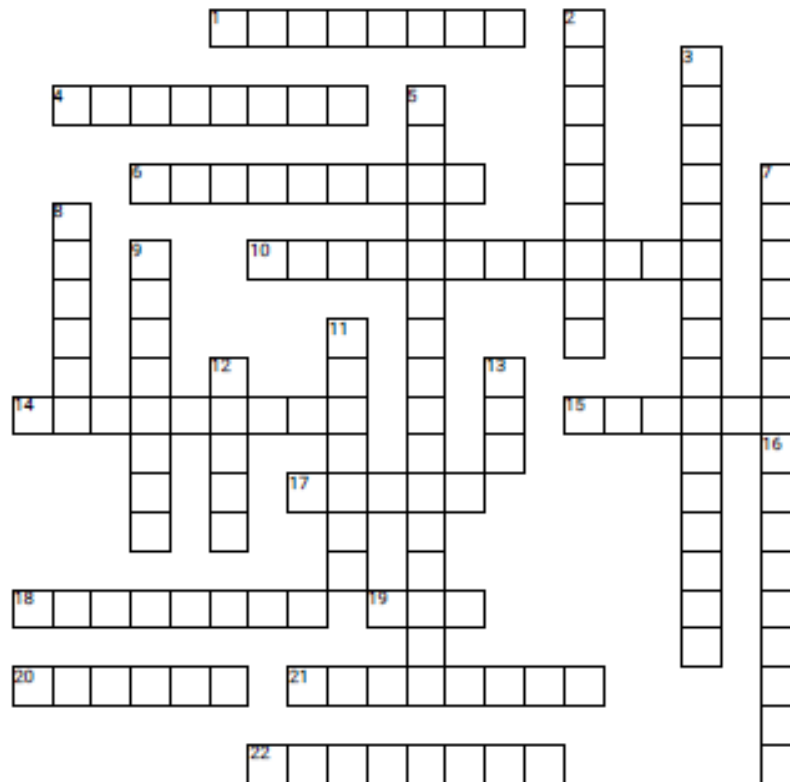
Students Sheet : This is the students sheet the students can draw this image on plain paper and they can submit it on gnomio moodle site or whatsApp group.

Name: _____

Date: _____

Period: _____

Networking Crossword



Across

1. What are any devices that connect network environments that are not alike?
4. What indicates your computer's virtual location in a network?
6. What is the data rate supported by a network connection or interface?
10. What physically connects computers to one another in a network?
14. What sends out a message to all devices on the same network segment?
15. What is SMTP's (Simple Mail transfer Protocol) most common form?

Down

2. What sends signals over different frequencies at once?
3. What kind of network cable is most commonly used?
5. What is a special electronic circuit inside any computer attached to a network?
7. What is used to centralize data and share it or save it in a network?
8. What is a device that can connect multiple network segments?
9. What is the part of a company's network that allows access to employees?
11. What are two or more computers connected by a wireless radio connection so that they can exchange information a part of?
12. What is another name for 1 byte?
13. What is the most basic networking device that connects multiple computers or network devices together?
16. What does HTTP stand for?
17. What are devices that change digital data into analog for transmission over analog network medium and then back to digital at the receiving end?
18. What is the part of a company's network that allows access to nonemployees?
19. What are a group of computers in a small geographic area a part of?
20. What is a computer that is not a server and is used by individuals?
21. What acts as a security guard between the internet and a network?
22. What is used to connect multiple devices on the same network within a building or campus?

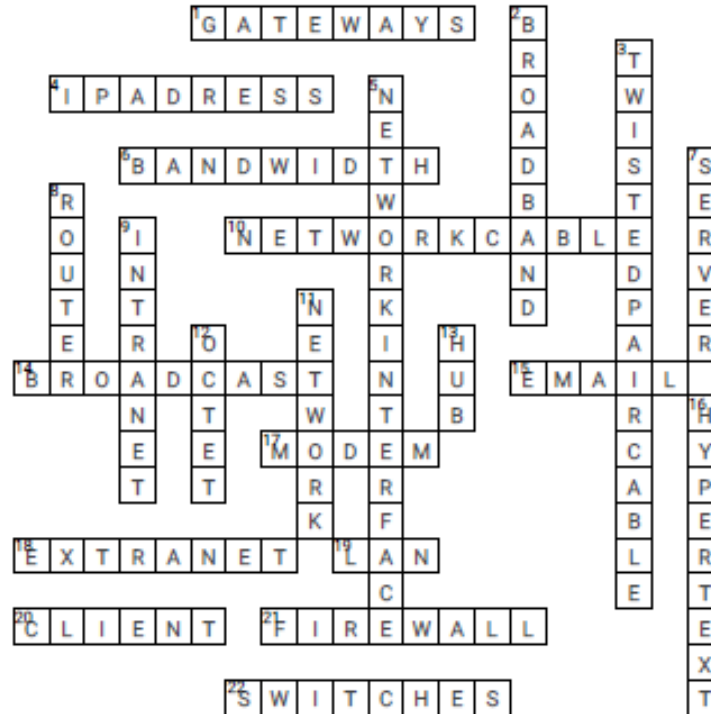
Answer Sheet:

Name: _____

Date: _____

Period: _____

Networking Crossword



Across

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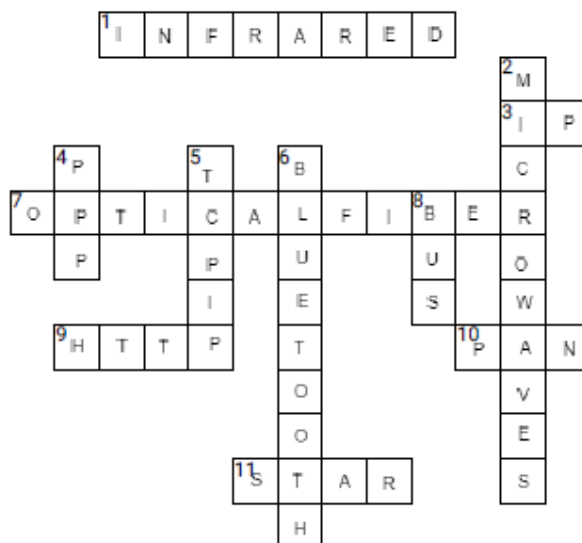
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12. What is another name for 1 byte?
13. What is the most basic networking device that connects multiple computers or network devices together?
16. What does HTTP stand for?

Sample Response of Crossword activity on Unit-I

Name: Sangram Khandagale

Date: 12/05/2021

COMPUTER NETWORKS



Activity No: 03

Name of the Activity: One Minute Paper

The Minute Paper is a very commonly used classroom assessment technique. It really does take about a minute and, while usually used at the end of class. The students were fully utilised this techniques for solving their doubts and queries .

Sample Response of Crossword activity on Unit-III



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara

Academic Year: 2020-2021 Semester-II

Name of the Program: Computer Science and Engineering

Program Code: 627005

Name of the Course: Computer Networks

Course Code: BTCOC602

Class: Third Year

Date of Session:

The Minute Paper Technique

Topic: Data link layer

(Concise, well planned sentences, please answer the two questions below:

1. What are the two (Three, Four, Five) Most Significant (Central, Useful, Meaningful, Surprising, Disturbing) things you have learned during this session?

Ans: Data Link Layer Design Issues, Service provided to network layer Framing,

Error Control, Flow Control, Error Detection and Correction, error correcting codes

error detecting codes.

2. What Questions remain uppermost in your mind?

Ans: Which technique is used in data link layer that allows two stations working at

different speeds to communicate with each other

3. Is there anything you did not understand?

Ans: No

Name of Student: Neha Chavan

Sample Response of Crossword activity on Unit-IV



Rayat Shikshan Sanstha's
Karmaveer Bhaurao Patil College of Engineering, Satara

Academic Year: 2020-2021 Semester-II

Name of the Program: Computer Science and Engineering.

Program Code: 627005

Name of the Course: Computer Networks

Course Code: BTCOC602

Class: Third Year

Date of Session:

The Minute Paper Technique

Topic: Network Layer and Congestion Control & Congestion Control and QOS

(Concise, well planned sentences, please answer the two questions below:)

- 1. What are the two {Three, four, five} Most Significant {Central, Useful, Meaningful, Surprising, Disturbing} things you have learned during this session?**

Ans: IPv4/ IPv6, Routers and Routing Algorithms distance vector link state. TCP

UDP and sockets. Congestion control and QOS, Packet-scheduling, Traffic shaping, integrated Services.

- 2. What Questions remain uppermost in your mind?**

Ans: The question remains uppermost is that how is the network layer and computer works.

- 3. Is there anything you did not understand?**

Ans: No

Name: Vaishnavi Devendra Devi

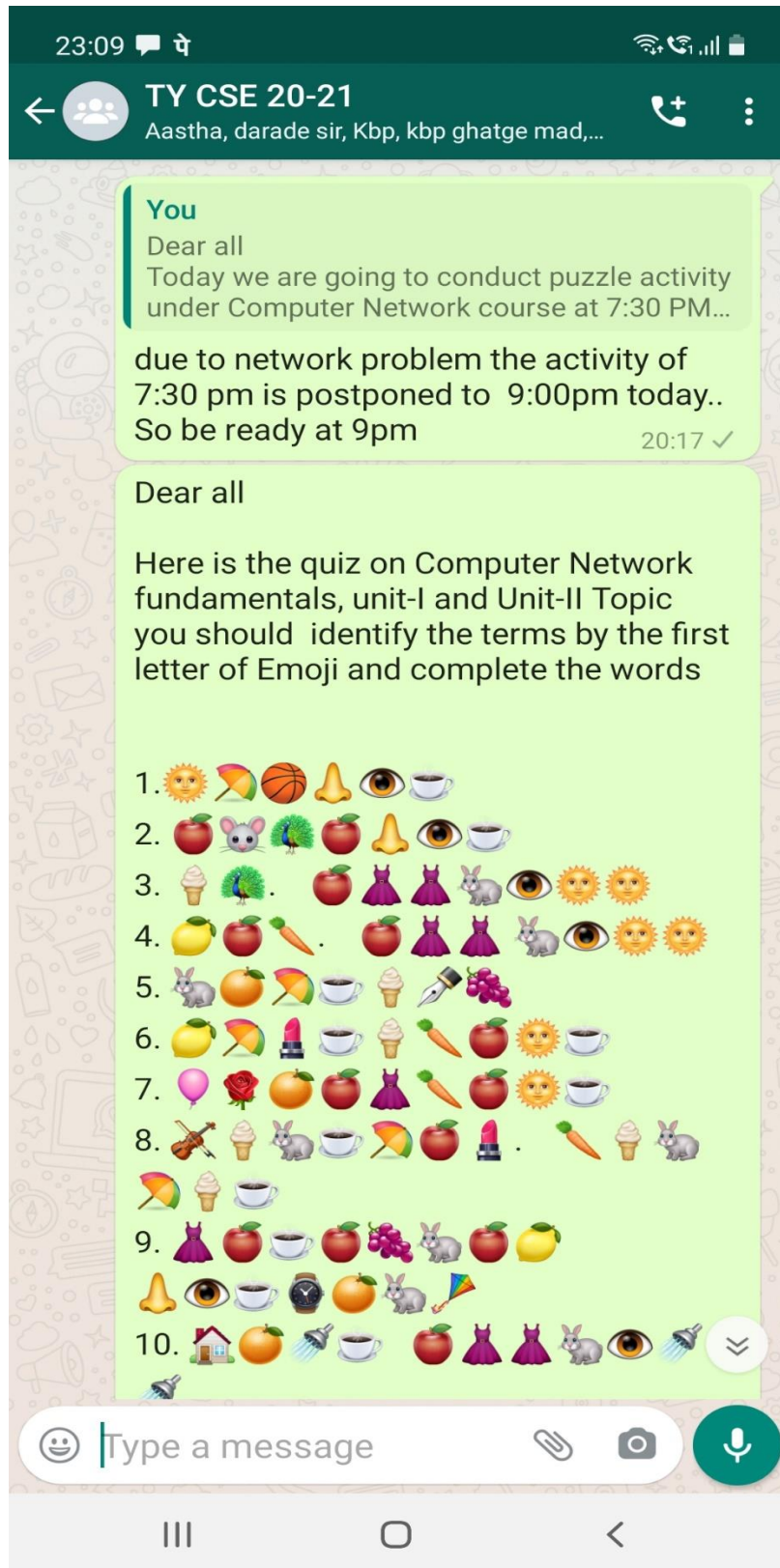
Roll No: 13

Activity No: 04

Name of the Activity: WhatsApp Emoji Activity.

The students has to identify the terms by the first letter of Emoji and complete the words.

Notification of WhatsApp Emoji Activity along with the rules for solving this puzzle activity.





TY CSE 20-21

Aastha, darade sir, Kbp, kbp ghatge mad,...



- 5. 🐰 🍊 🌈 ☕ 🍦 🖋️ 🍇
- 6. 🍋 🌈 📌 ☕ 🍦 🥕 🍎 🌞 ☕
- 7. 🎈 🌹 🍊 🍎 👗 🥕 🍎 🌞 ☕
- 8. 🎻 🍦 🐰 ☕ 🌈 🍎 📌 🥕 🍦 🐰
- 🌈 🍦 ☕
- 9. 👗 🍎 ☕ 🍎 🍇 🐰 🍎 🍋
- 🍌 👁️ ☕ 🕒 🍊 🐰 🌈
- 10. 🏠 🍊 🌬️ ☕ 🍎 👗 👗 🐰 👁️ 🌬️
- 🌬️
- 11. 🏀 🚢 ☕ 🐘 🚢
- 12. 🎈 🍦 ☕ 🌞
- 13. 🐘 🌹 🐰 🍊 🌹 🥕 🍊 🍌 ☕ 🐰
- 🍊 📌
- 14. 🇮🇳 🌹 🍎 🍋 👁️
- 15. 🌳 🍎 🥕 🌈 👁️ ☕
- 16. ☕ 🍊 🌳 🍊 📌 🍊 🍇 🚢
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- 20. 🍊 🌬️ 🍦 🍋 🍊 👗 🐘 📌

21:05 ✓

Now start this activity 👉👉

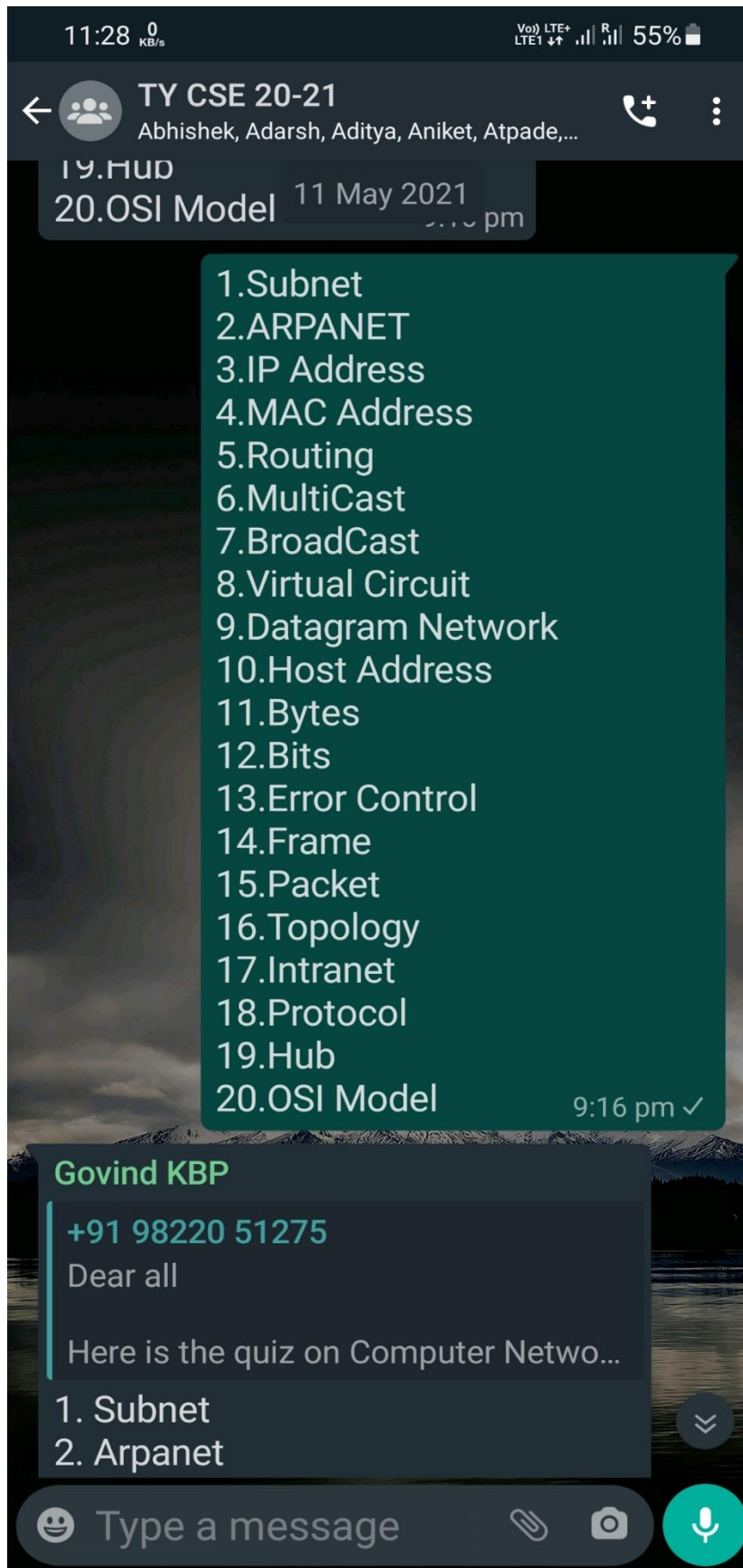
21:05 ✓

You have to identify all 20 emoji's and then post it on group

21:06

Type a message

Sample Responses of WhatsApp Emoji Activity on Unit-I & II



- 1 Subnet
- 2 Arpanet
- 3 IP Address
- 4 MAC Address
- 5 Routing
- 6 MultiCast
- 7 BroadCast
- 8 Virtual Circuit
- 9 Datagram Network
- 10 Host Address
- 11 Bytes
- 12 Bits
- 13 Error Control
- 14 Frame
- 15 Packet
- 16 Topology
- 17 Intranet
- 18 Protocol
- 19 Hub
- 20 OSI Model


Sourabh Joshi
(22)

Activity No: 05


Name of the Activity: Project Based Learning

Project-based learning is a student-centered pedagogy that involves a dynamic classroom approach in which it is believed that students acquire a deeper knowledge through active exploration of real-world challenges and problems.

Sample Responses of Project Based Learning Activity- Poster Presentation



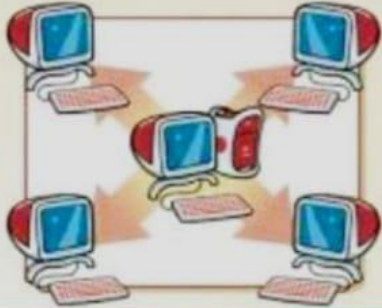
Rayat Shikshan Sanstha
KARMAVEER BHAURAO PATIL COLLEGE OF ENGINEERING, SATARA
Approved By AJCTE, New Delhi, Govt. of Maharashtra(DTE: EN-6270), Affiliated to DBATU, Lonere.
Accredited With 'B++' Grade by NAAC




NETWORK TOPOLOGY

STAR NETWORK

- This is used to connect a large number of terminals to a central computer/mainframe.
- Each terminal has a direct line to the central computer.
- This is a reliable network because if one connection fails the others remain unaffected. However, if the central computer fails, the whole network will break down.
- It is expensive because of the large quantity of cable required.



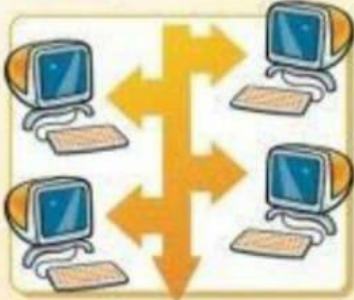
RING NETWORK



- This is used to connect terminals by cable in a ring formation.
- This is a fast network as all the data flows in one direction only.
- It is cheap and easy to expand but slows down with more users.
- If the central cable fails, the whole network breaks down.

BUS NETWORK

- This is also known as a line network.
- Data is sent between the file server and a terminal along a single line of cable.
- This is the simplest network and is cheap and easy to install.
- If the central cable fails the whole network will break down.
- If serving many terminals, this configuration will be the slowest.



Najuka Vijay Lasure
TY CSE
(Student)

Dr. Shabina Sayyad
(Guide)

Sample Responses of Project Based Learning Activity- Video Presentation

SJ_PBL.mp4

CRYPTOGRAPHY

Cryptography derived its name from a Greek word called "kryptos" which means "hidden secrets". Cryptography is the practice and study of hiding information. It is the Art or Science of converting a plain intelligible data into an unintelligible data and again retransforming that message into its original form.

Classification of Cryptography

```
graph TD
    Cryptography --> SymmetricKey[Symmetric Key Cryptography]
    Cryptography --> AsymmetricKey[Asymmetric Key Cryptography]
    SymmetricKey --> PlaintextEncryption[Plaintext Encryption]
    SymmetricKey --> EncryptedDataEncryption[Encrypted Data Encryption]
    AsymmetricKey --> PlaintextEncryption
    AsymmetricKey --> EncryptedDataEncryption
```

HOW IT WORKS?

PLAIN Plaintext Data
DATA SECURITY
CIPHER Encrypted Data
KEY Key

Terms Associated :

Encryption - Practice of hiding messages so that they can not be read by anyone other than the intended recipient

Plaintext - text that is not computationally tagged, specially formatted, or written in code

Cyphertext - It is the encrypted text. Plaintext is what you have before encryption, and cyphertext is the encrypted result. The term cipher is sometimes used as a synonym for cyphertext.

Decryption - Decryption is the process of taking encoded or encrypted text or other data and converting it back into text that you or the computer can read and understand.

Cyber Attacks

WANN CRY RANSOMWARE

Symmetric Key Cryptography

Symmetric Key Cryptography also known as Symmetric Encryption is when a secret key is leveraged for both encryption and decryption functions

Asymmetric Key Cryptography

In Asymmetric Encryption key is used to encrypt and another is used to decrypt. During this process, data is converted to a format that cannot be read or inspected by anyone who does not have the secret key that was used to encrypt it.

Sourabh Pramod Joshi
5162702181

Sample Responses of Project Based Learning Activity- Power Point Presentation

computer networks and communication topologies.pdf - Adobe Reader

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Tools Fill & Sign Comment

BASIC CONCEPTS OF COMPUTER NETWORK AND COMMUNICATION NETWORK TOPOLOGY

NAME - SAURABH GAVATE.
ROLL NO - CS2018016

Presentation Contents

- Definition of Computer Networks
- Different Network Methods
- LAN
- Network Topologies
- Summary

Computer Networks

Definition:

- Computer networking** is the engineering discipline concerned with the communication between computer systems or devices.
- A computer network is any set of computers or devices connected to each other with the ability to exchange data.

Different Network Methods

Different Network Methods are:

- Local area network (LAN),
- Metropolitan area network (MAN)
- Wide area network (WAN)
- Wireless LANs and WANs

Activate Windows
Go to Settings to activate Windows.

Type here to search

8:53 PM
13-Jul-21

Session plan for conducting the Think Pair Share Activity on Google Meet



Rayat Shikshan Sanstha's Karmaveer Bhaurao Patil College of Engineering, Satara

| | |
|--|----------------------------------|
| Program: Computer Science and Engineering | Course: Computer Networks |
| Class: T.Y. (CSE) | Course Code: |
| Unit No.: 2 | Lecture No.: 4 |
| Duration: 1 Hr. | Date: 24/3 |
| Objective: To elaborate the concept of wireless LAN using Example | |
| Outcomes: Students get a clear understanding of wireless LAN | |

Session Plan

| Time | Teacher Activity | Student Activity | Teaching Tool / Assessment Method / Resource used |
|-------------|---|--|--|
| 20 min. | Conducting discussion on Wireless LAN | Listening and noting down | Lecture method alongwith PPT |
| 20min. | Discussion on various types of Wireless LAN | Participating in Discussion on various types of Wireless LAN and sharing their opinion | Think – Pair - Share |
| 15 min. | Summarizing output of discussion | Listening and noting down | Lecture method alongwith PPT |
| 5 min. | Summarizing the lecture | Listening and noting down | |

Dr. Shabina Sayyed
Course Coordinator