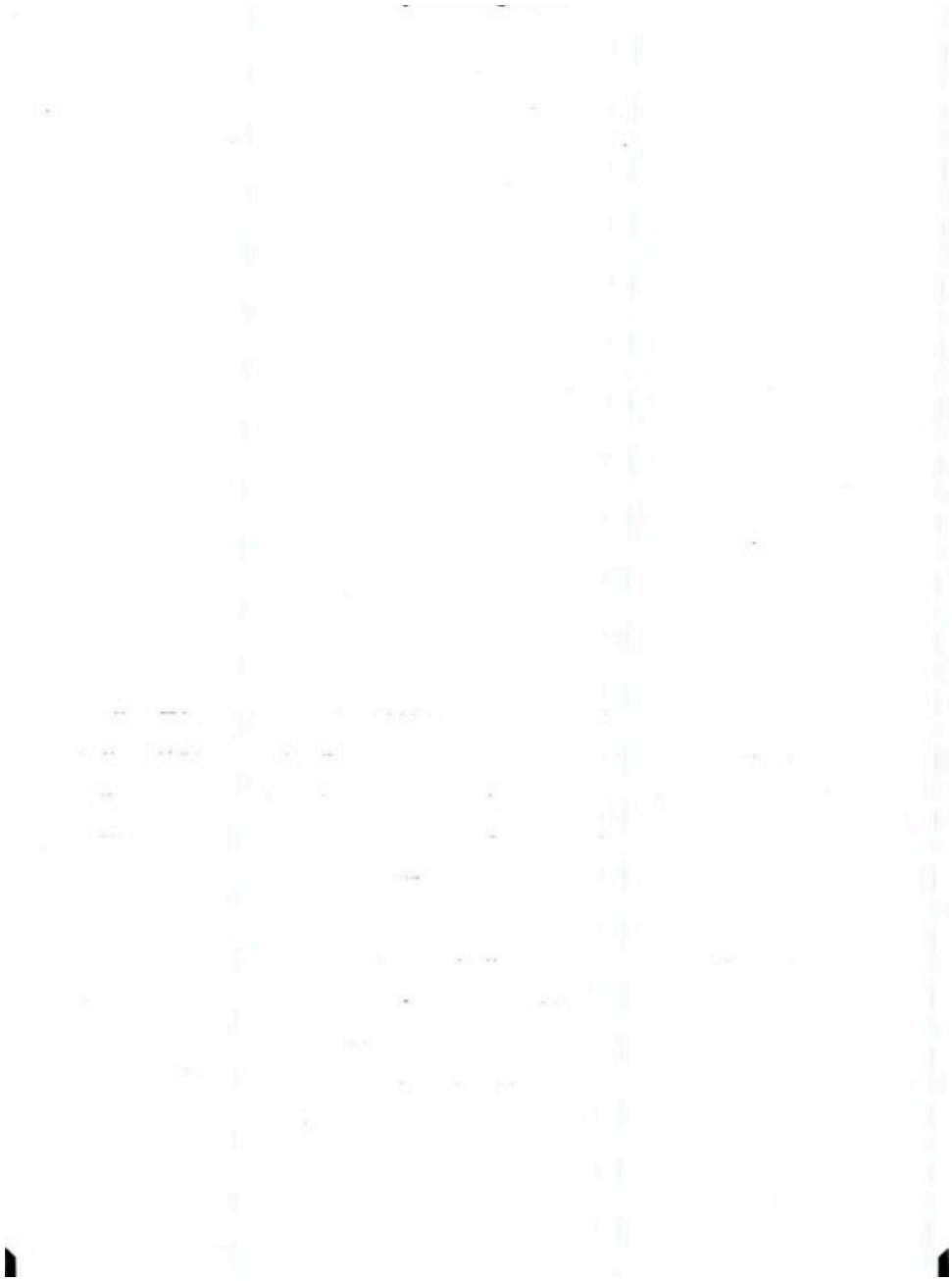




Use for rough work

Q. No. 2 Part (i)

Data Science

ANS:-

•) Data science is used to get meaningful insights from the data. It helps us to analyze and manage data.

•) Data science is also used to make Predictions. It provide us that what and which thing happen in future with great probability.

Q. No. 2 Part (ii)

Real-World business

ANS:- These are actual issues faced by companies such as:

- Low sales
- Customer dissatisfaction

Role of data science:

- Analyzes data to find causes.
- Suggests solutions to improve performance.

Q. No. 2 Part (iii)

Searching Algorithm

ANS:-

Searching algorithm is an algorithm used to search and find the target data or number. It is used in researches.

Example:-

Linear search algorithm, is a part and type of searching algorithm that overview whole data until the target number not achieved or the list comes to end.

Q. No. 2 Part (iv)

Front-END Technology

ANS:-

Front-end development focuses on what users see on a website.

Technologies:

-) HTML : creates structure (headings, paragraphs)
-) CSS: Add style (colours, layout)
-) Java Script: Adds interactivity (buttons, animations).

These technologies work together to create user-friendly interfaces.

Q. No. 2 Part (v)

Internet of things

ANS:-

IOT (Internet of things) is an infrastructure or computer network that connect digital devices to the internet. Data is stored and processed in cloud server which is connected through internet. IOT has five compenents:-

-) Sensors
-) User interfarence
-) Connectivity
-) Cloud server
-) Data processing.

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Q. No. 2 Part (vi)

Data Science

ANS:- Data science has a wide range of scops.

•) Sports :- data science is used to predict the match or game and also provide statistical information.

•) Education:- Data science is also used in the field of education by providing the meaningful insights.

•) Healthcare:- Data science is also used in healthcare by managing patients reports.

Q. No. 2 Part (vii)

Binary Search

ANS:- Following are two main necessary conditions for binary search.

•) For binary search it is necessary that data must be sorted and cleaned. so that algorithms functions well.

•) Binary search algorithms must cheak and search data and number by using time intervals.

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Q. No. 2 Part (viii)

Abstractions

ANS:-

Abstraction plays a supreme and significant role in program development as it hide and remove the unnecessary and least important data out of the program and hence data and program work efficently and time is also reduced due to which our task done on time and earlier.

Q. No. 2 Part (ix)

Data Visualizations

ANS:- Following are two types of data visualization.

- Multivariate Visualization:- It is a type of data visualization that deals with more than two numerical variables.
- Temporal Visualization:- It is also a type of data visualization that changes data over the time.

Q. No. 2 Part (x)

AI Applications

ANS:- AI have supreme importance in our daily life:

•) Artifical intelligence is used in decision making in much field of life such as education, finance, entretainment etc.

•) Automates tasks: AI helps in performing tasks automatically without human efforts. It can handle repetitive and routine work.

Q. No. 2 Part (xi)

Importance of information

ANS:- Information security is important due to following reasons:

•) It is important to protect personal and business data.

•) Information security on the internet is important to prevent hackings, fraud and identity theft.

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Q. No. 3 (Page 1)

Role of Software

ANS:-

•) Translator:-

A translator is a type of system software that converts a program written in a high-level language into machine language so that the computer can understand and execute it. Example:-

•) Integrated development environment:-

An IDE is a software application that provide all tools needed for programming in one place.

•) It increase productivity
•) It helps detect errors quickly.
•) It provide user-friendly interface.

•) Code Repository:-

A code repository is a storage location where developers save and manage their code.

Example:- GitHub.

Q. No. 3 (Page 2)

-) It keeps code organized
-) It allows teamwork
-) It prevent data loss

•) Debuggers:-

A debugger is a tool used to find and fix errors (bugs) in a program.
-) Improves program quality.
-) Helps programmers understand code behaviour.

•) Languages Editors:-

A language editor is a tool used to write and edit programming code.
Example:- Notepad ++ , VS code.
-) Makes coding easier
-) Reduces mistakes and improve readability.

Q. No. 4 (Page 1)

Software methods

ANS:-

Protection of device in modern age is crucial for us to stay safe and well from cyberattacks. There are many software methods to protect device amongst them five are written:-

•) System update:-

Regular updating the existing system protect the device from any unknown person and updating the system also prevent cyber attacks and any illegal access to your device.

•) Firewall (software):-

Firewall act as a barrier and wall that prevent somebody to access your device. So that it is used in several devices to remain the device safe and secure from any unwanted access.

•) Password Management:-

Q. No. 4 (Page 2)

It is the best way to remain our device secure by using the strong and unique password. Biometric autentication is also a type of strong password that works by seeing and analyze the fingerprint and face.

•) Using Virtual private network:-

Using VPN and private networks in our devices makes our data and information safe and secure. It uses the data to transfer information and make unable for anybody to interect.

•) Use Antivirus software:-

Digital devices like smartphones, computer etc remain safe and secure by using antivirus software that delete and remove the fake junks like spams, fake emails, etc.

Q. No. 5 (Page 1)

IOT working

ANS:-

Internet of things (IOT):-

Internet of things (IOT) is a system in which physical devices (like smartphones home appliances vehicles) are connected to the internet. It provides remote access to the user. It can collect, share and act on data automatically.

•) **Sensors:-** Sensors are devices that detect and collect data from the surroundings environment.

Role of Sensors:- It measure physical conditions such as:

•) Temperature •) Motion
•) Light •) Humidity

It convert real-world signals into digital data.

Example:- Temperature sensor in a smart AC detects room temperature.

Sensors are the first step in IOT because without data collection, the

Q. No. 5 (Page 2)

system cannot function.

•) **Connectivity :-**

After data is collected, it is sent to other devices or servers through connectivity. It transfer data from sensors to cloud or servers. It connects devices using: •) Wifi
•) Bluetooth
•) Mobile networks.

It enables communication between devices.

Example :- A smartwatch sends your health data to a mobile app via Bluetooth.

•) **Data Processing:**

Once data is receive, it is processed to generate useful results.

Role of data processing:

•) Analyzes collected data
•) Make decisions based on programming logic
•) May use Artificial intelligence
•) Sends commands back to devices.

Example :-

A smart thermostat adjust temperature automatically.

Q. No. 6 (Page 1)

Digital communication

ANS:-

Digital communication:-

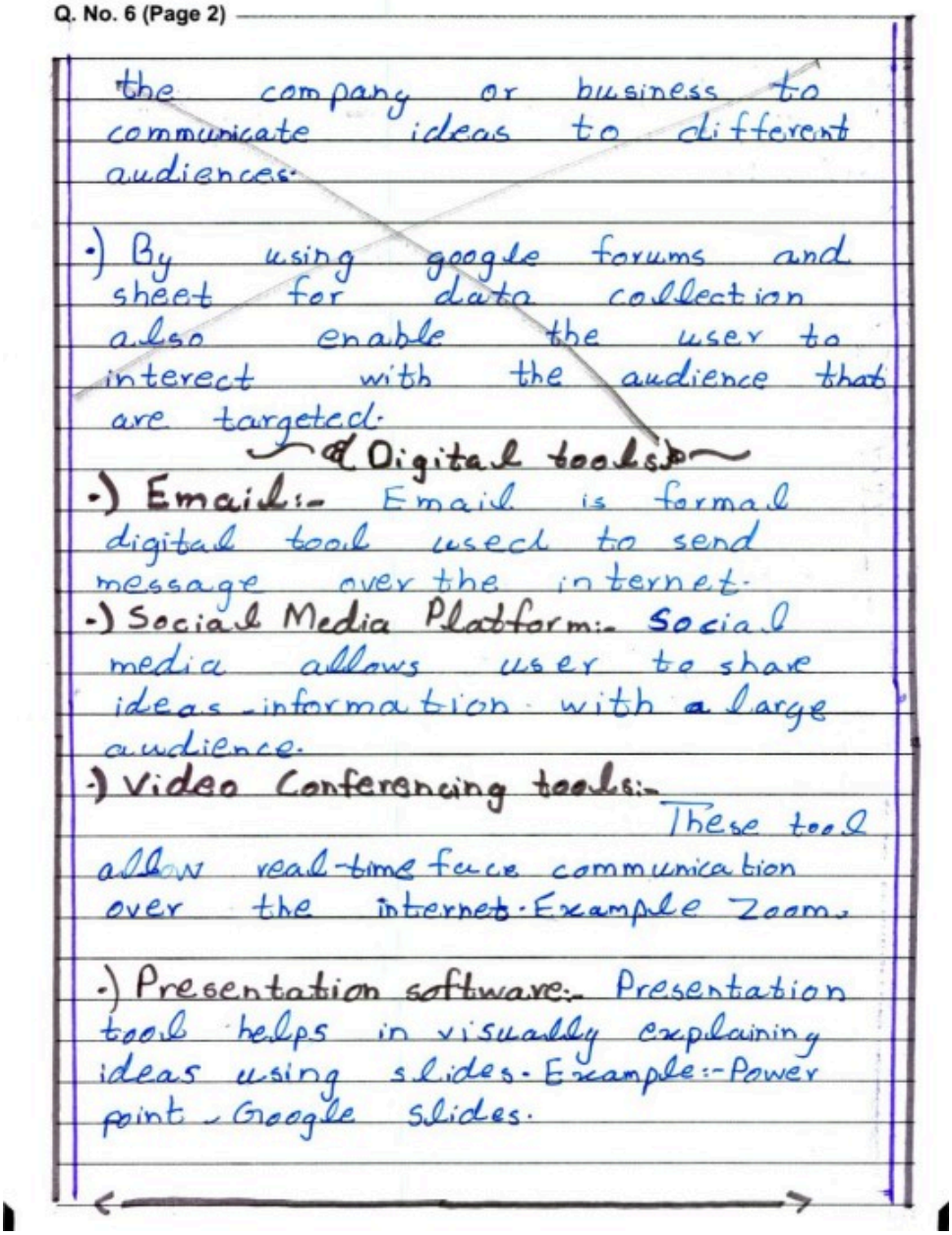
Digital communication is a key component of digital litracy. It means sharing collected information with the target audience using digital tools effecientlly.

Digital Tools:-

•) Email

•) Sending and Receiving emails is also a tool that enables

Q. No. 6 (Page 2)



the company or business to communicate ideas to different audiences.

-) By using google forums and sheet for data collection also enable the user to interect with the audience that are targeted.

Digital tools:

-) **Email:-** Email is formal digital tool used to send message over the internet.

-) **Social Media Platform:-** Social media allows user to share ideas information with a large audience.

-) **Video Conferencing tools:-** These tool allow real-time face communication over the internet. Example Zoom.

-) **Presentation software:-** Presentation tool helps in visually explaining ideas using slides. Example:- Power point, Google slides.