Q.1] Find out the meaning and examples of these terms : SaaS, PaaS, IaaS, IaC. and write 20 lines of summary each.

-> IaaS - Infrastructure as a Service

IaaS is a cloud service model that offers on-demand infrastructure resources, such as compute, storage, networking, and virtualization, to businesses and individuals via the cloud.It eliminates the need for enterprises to procure, configure, or manage infrastructure themselves, and they only pay for what they use.
IaaS cloud computing platform layer eliminates the need for every organization to maintain the IT infrastructure.
IaaS is offered in three models: public, private, and hybrid cloud. The private cloud implies that the infrastructure resides at the customer-premise. In the case of public cloud, it is located at the cloud computing platform vendor's data center, and the hybrid cloud is a combination of the two in which the customer selects the best of both public cloud or private cloud.

Some Examples of IaaS : Amazon Web Services, Google Cloud Infrastructure, IBM Cloud, Alibaba Cloud, Hitachi Enterprise Cloud, etc

-> PaaS - Platform as a Service

PaaS is a cloud computing model that provides a platform for developing, running, and managing applications without the need for building and
maintaining the underlying infrastructure.
Paas is provided primarily for developers and programmers, a PaaS allows the user to develop, run, and manage their own apps without having to
build and maintain the infrastructure or platform usually associated with the process.
PaaS includes infrastructure—servers, storage, and networking but also middleware, development tools, business intelligence (BI) services, database management systems, and more. PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing, and updating.
Benefits of using a PaaS environment include offloading the responsibilities of maintaining servers, keeping infrastructure software updated, and having to set up a custom platform upon which to build your app. A PaaS provider can host the platform and provide the environment for running applications.

Some Examples of PaaS : Microsoft Azure, Heroku, AWS Lambda, IBM Cloud Foundry, Red Hat OpenShift, Wasabi, etc.

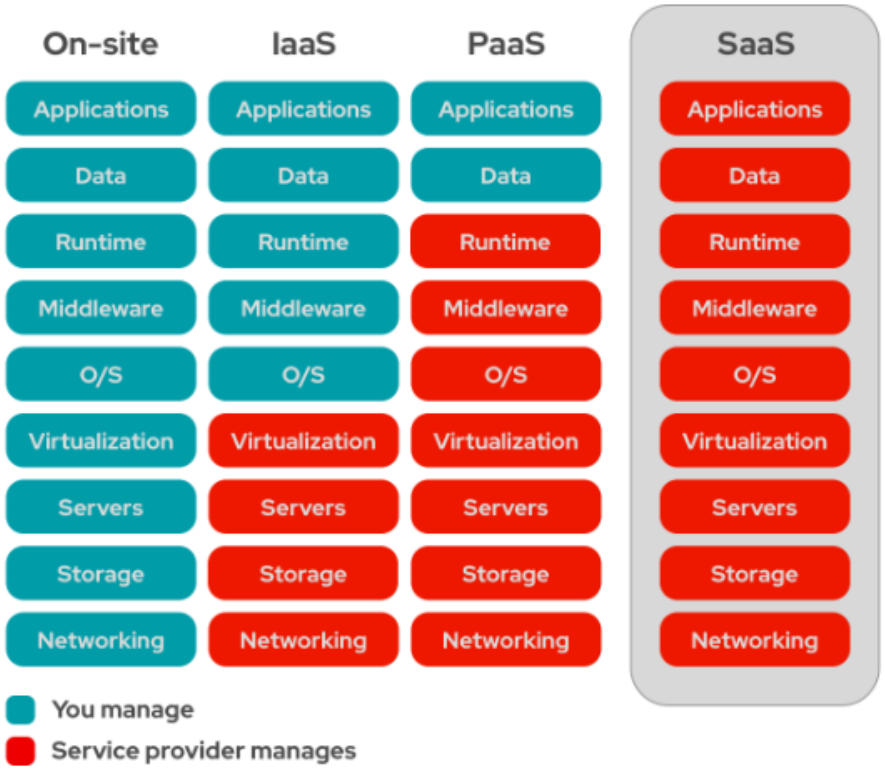
-> SaaS - Software as a Service

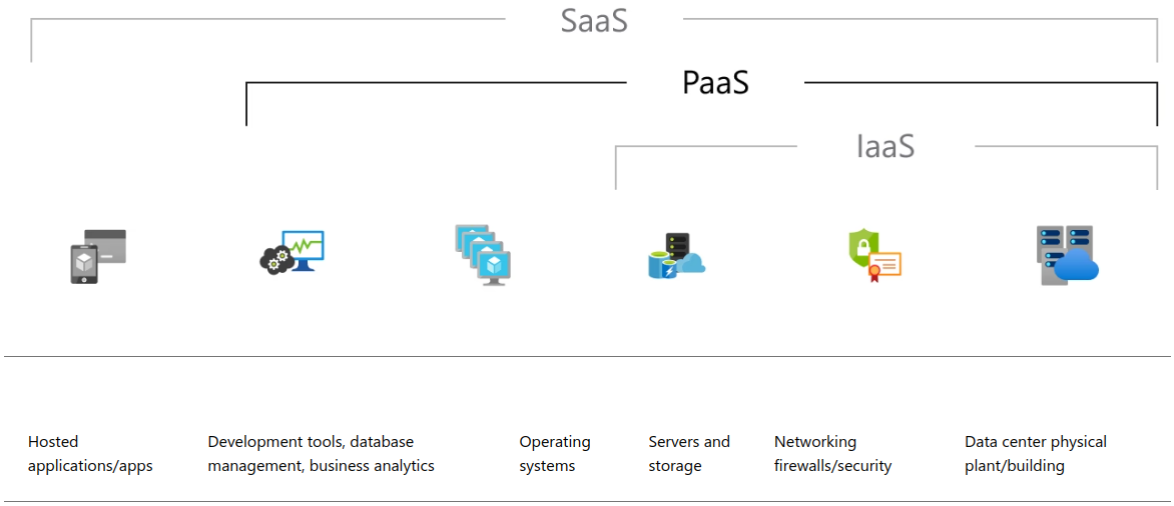
As the name suggest, in SAAS Software is provided as a service to the client. It is a way of delivering applications over the Internet—as a service instead of downloading and installing software on your own computer or server. SaaS is a form of cloud computing that delivers a

cloud application—and all its underlying IT infrastructure and platforms—to end users through an internet browser.
SaaS has solved the problems of many large enterprises, small businesses, freelancers or individuals who do not want to buy or maintain infrastructure, platforms, and on-premises software. Also, who does not want a customised software application and who likes the software subscription model more than purchasing it. Because SaaS reduces users' upfront costs by eliminating the need to permanently purchase software or invest in a robust on-premise IT infrastructure—as is the case with traditional software. By doing these users need not to take care of continuously changing applications, hardwares, datacenters, etc. because it is taken care by that specific SaaS provider.
Most SaaS applications are preconfigured plug-and-play products where the SaaS provider manages everything behind the app, including:
>> Hardware components, like networking, storage, and datacenter servers.
>> Platforms, like virtualization, the operating system, and middleware.
>> Software requirements, like runtimes, data, and the app itself.

Some Examples of SaaS : Microsoft Office 365, Dropbox's file storage service, SAP, Google Workspace, Zoom, Slack, Shopify, etc.

To get the clear idea about the IaaS, PaaS, SaaS here are the diagrams :





-> IaC - Infrastructure as Code

Infrastructure as Code (IaC) is the managing and provisioning of infrastructure through code instead of through manual processes.
With IaC, configuration files are created that contain your infrastructure specifications, which makes it easier to edit and distribute configurations. It also ensures that you provision the same environment every time.
Version control is an important part of IaC, and your configuration files should be under source control just like any other software source code file.
IaC is an important part of implementing DevOps practices and Aligning development and operations teams through a DevOps approach leads to fewer errors, manual deployments, and inconsistencies.

Some Examples of IaC : Chef, Puppet, Ansible, Terraform, etc.

Q.2] What is a Software?

In my opinion software is a program in execution. i.e, it is a process running which is designed to do a specific task.
I think that in lay man's term, most of the softwares are the middle ware between the user and the binaries(machine language i.e, 0's and 1's).
software is a computer program that provides a set of instructions to execute a user's commands and tell the computer what to do.
There are some type of softwares such as System software, application software. Operating systems such as linux, windows and other software such as device drivers, language processors are type of system softwares. MS word, photoshop are type of application software.
System software is software that directly operates the computer hardware and provides the basic functionality to the users as well as to the other software to operate smoothly. Or in

other words, system software basically controls a computer's internal functioning and also controls hardware devices such as monitors, printers, and storage devices, etc. It is like an interface between hardware and user applications, it helps them to communicate with each other because hardware understands machine language.
Whereas application softwares are designed to do a specific task which user want to do using their computer.Software that performs special functions or provides functions that are much more than the basic operation of the computer is known as application software. Or in other words, application software is designed to perform a specific task for end-users. It is a product or a program that is designed only to fulfill end-users' requirements.
IT Industry was mostly born because of software. Software development is key to driving innovation in the IT industry. New software applications and tools enable businesses to solve problems, reach new markets, and create new products and services. Overall, software is essential to not only the IT industry but various other domains also as it drives innovation, improves efficiency and productivity and enables businesses to compete in an increasingly digital world.

Some examples of softwares : Linux, Device drivers, Language processors, MS Office, Photoshop, etc.