

Day: _____

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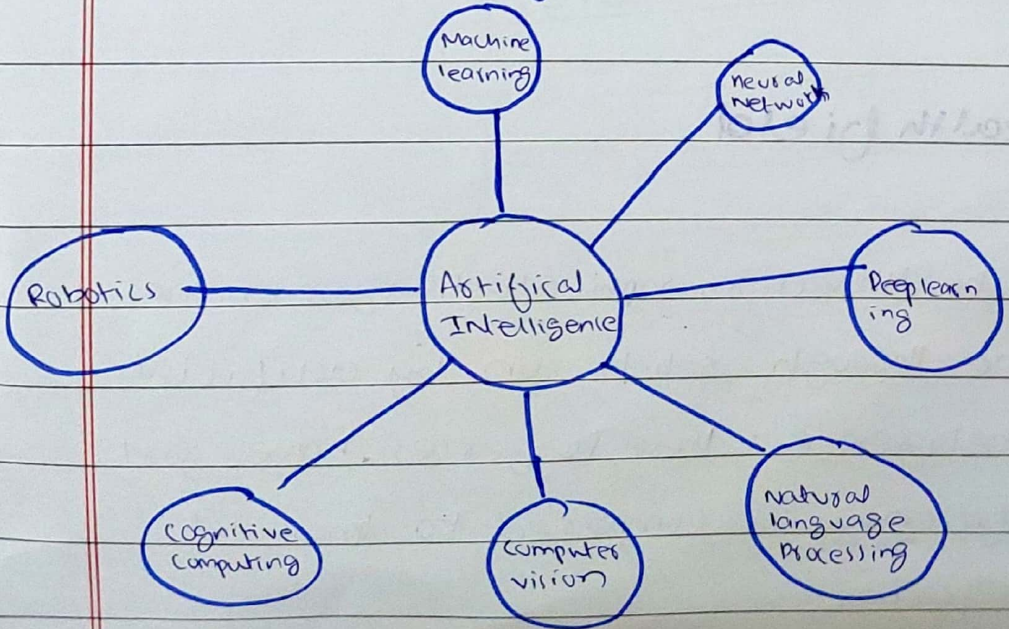
ii) 17, 19, 23, 29, 31, 37
After, ~~23~~ the next prime number = 29
So, the answer = 29

Question no # 04

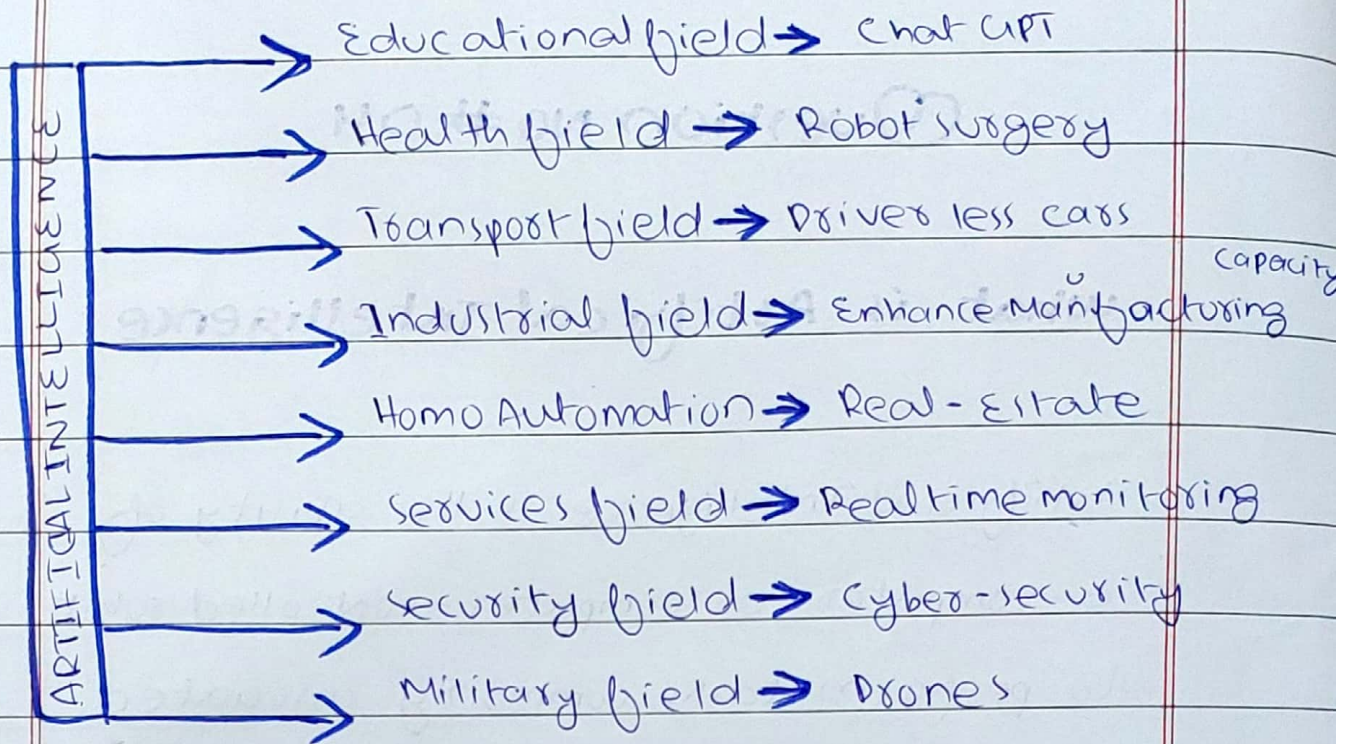
what is Artificial Intelligence

Artificial Intelligence is the ability of a computer or computer-controlled robot to perform tasks commonly associated with intelligent beings (Britannica)

The capacity of computer or other machines to exhibit or simulate intelligent behaviours. (Oxford English dictionary)



How Artificial Intelligence has revolutionized the world



1) Educational field

Artificial Intelligence based chat-GPT has revolutionized the educational field.

2) Health field

In health sector, sophisticated surgeries are done through robots run by artificial intelligence. These surgeries have good efficiency as compared to manual surgeries.

3) Transport field

Driverless cars are the future of Transport.

According to the World Economic Forum, report 2022,

More than 5 billion driverless cars will overtake manual cars by 2030.

4) Industrial field

Artificial Intelligence has enhanced

Artificial the productivity of goods in manufacturing industry.

5) ~~Home~~ A Real-Estate field

In real-estate sector, Artificial Intelligence has introduced home automation. Recently,

Amazon has released its Alexa home automation system.

6) services field

In services sector, Artificial Intelligence has decreased tax evasion by introducing

real-time monitoring. Recently, FBR

has introduced point of sale method

to enhance real time monitoring and

discourage tax evasion in services sector

Security field :-

In security domain, it has enhanced the cyber-security attacks on the internet.

Aggressive countries, like Russia, utilize its cyber efficiency to attack its adversarial country.

Military field :-

The creation of Drone has reduced the ~~the~~ need of human involvement in anti-terrorist operations and enhanced the efficiency of the operations.

Impacts of AI on the world

- a) Cyber Armageddon
- b) Jobs loss
- c) Enhance Political Propaganda
- d) Enhance dependency of humans on machines.

Part (b)

Conditions of water scarcity in Pakistan

According to the UNDP report 2020, Pakistan's per capita water has exponentially decrease from 5,000 cubic meter in 1950 to less than 1,000 cubic meter in 2020. This report further noted that Pakistan ~~will~~ ^{would} become water scarce country by 2023.

Policy measures to deal water scarcity :-

- 1) Introduced efficient methods in Agriculture farming to reduce water dependency

Pakistan economy is the agra-gian economy. Pakistan is the second largest exporter of the rice. However, Pakistan utilize its ~~wa~~ essential water resources nearly 90pc in agricultural activities poorly. Thereby, drip irrigation should be introduce to enhance water conservation.

2) Introduce climate-resilience policy to mitigate climate aftershocks

Pakistan is the 8th most climate vulnerable country in the world, according to the IPCC. Therefore, implementation climate resilience policy is a need of hour to mitigate the negative impacts of climate change.

water

3) Enhance storage capacity

Pakistan water storage capacity is 30 days which is relatively very low as compared to India and Sri Lanka which are 100 days and 130 days.

4) Implement water 2018 policy

comprehensive

Pakistan ~~has~~ introduced water policy in 2018 which is yet not materialized. So, implementation of 2018 water policy will reduce water scarcity in the country.

5) Upgrade irrigation system

Pakistan's irrigation system is outdated and highly corrupt. Therefore, upgradation of irrigation system will improve water availability in the country.

Part (c)

what is vaccine :-

A vaccine is a biological preparation that provides active ~~require~~ acquired immunity to a particular infectious disease.

Purpose of vaccine :-

The purpose of vaccine is to stimulate the body's immune system to recognize and remember the specific pathogen, so that if person is exposed to the actual disease-causing agent in the future, their immune system can quickly ~~manage~~ recognize and fight it off. This helps prevent or reduce the severity of the disease.

Types of vaccines :-

There are several types of vaccines, each designed to stimulate the immune system in different ways to provide protection

2) against specific diseases. Here are some common types of vaccines:

1) Inactivated vaccine

These vaccines contain killed or inactive pathogens (viruses or bacteria) that cannot cause the disease but can still trigger an immune response. Examples 1) Inactivated poliovaccine 2) Hepatitis A vaccine.

3) 2) Live attenuated vaccine

Live attenuated vaccine contains weakened forms of the live pathogens. They provide long lasting immunity. Examples 1) measles, mumps, and rubella (MMR) vaccine and 2) oral poliovaccine.

4) 3) Viral vector vaccine

Viral vector vaccine use a harmless virus (the vector) to deliver genetic material from the target pathogens into the cell of the body.

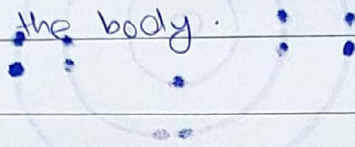
5) → covid-19 vaccines are the example of viral-vector vaccine.

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4) DNA vaccine

DNA vaccines work by introducing a small piece of DNA encoding the pathogen's antigen into the body.



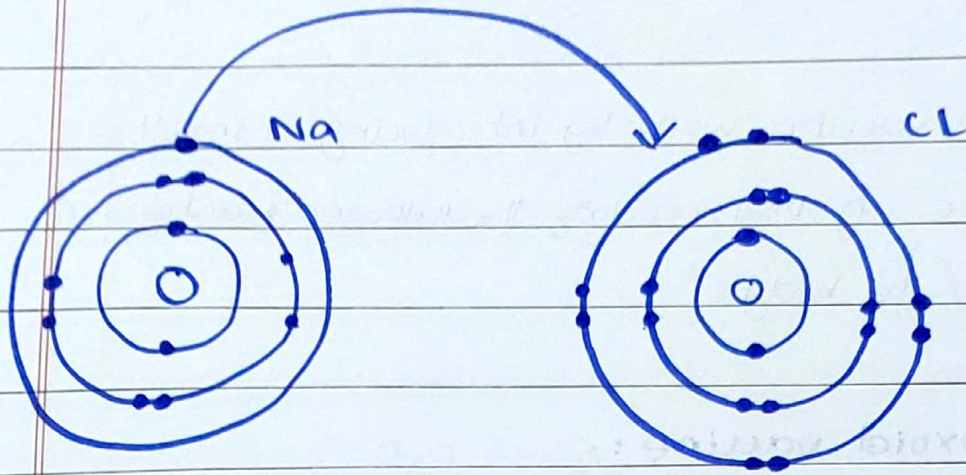
5) Toxoid vaccine :-

Toxoid vaccine target diseases caused by bacterial toxins. Examples include the tetanus and diphtheria vaccines.

Part d

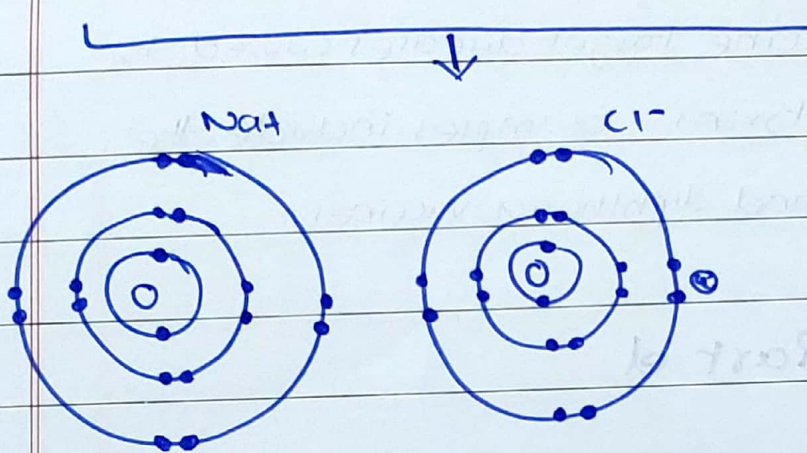
Tonic bond :-

An ionic bond is a type of chemical bond that occurs between two atoms with significantly different electronegativity. When atoms with vastly different electronegativities come together, one atom donates one or more electrons to the other, resulting in the formation of oppositely charged ions.



Sodium

Chlorine



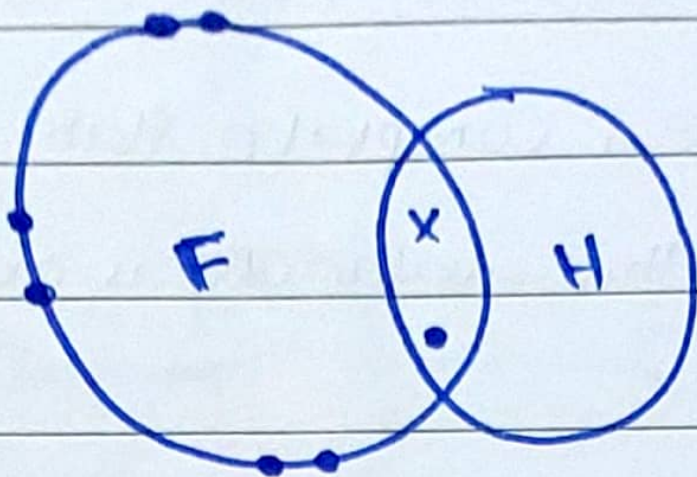
Sodium Chloride

Covalent Bond:-

A covalent Bond is a type of chemical bond formed between two atoms when they share one or more pairs of electrons.

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Hydrogen Fluoride (HF)