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Q.2

Ans A. Artificial Intelligence (AI) is a wide-ranging branch of computer science concerned with building smart machines capables of performing tasks that typically require human intelligence. AI is an interdisciplinary science with multiple approaches, but advancements in machine learning and deep learning are creating a paradigm shift in virtually every sector of the tech industry.
During this COVID-19 pandemic situation AI has helped in many ways. A little publicised fact is that progress is made with a little help from technology.

In particular, Artificial Intelligence (AI) has from the very beginning, been busily working behind the scenes assisting the limitations of human knowledge in this massive endeavour. Also, During this COVID-19 pandemic many new devices were made to detect the virus in various ways.

It was a Canadian AI company called BlueDot that developed an AI program that alerted the world to coronavirus. This program was designed to predict infectious diseases and locate and track their spread. Using this technology BlueDot identifies 100,00 & reports daily in many languages, and then send out alerts to health care, government, and public health clients.

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→ Image-Scan Analysis ..
During this pandemic, Testing has become a key issue in the fight against virus. Countries like South Korea and Germany has been seen a successfull in handling the virus, because of the testing that has done. Since, the testing were using more time then machine. But AI is now assisting with other forms of testing, such as x-ray scanning. Many AI programs are now available for chest screening that can highlight lung abnormalities risk evaluation much faster that human radiologists.

→ Contact less between human :-
A range of AI-based robots have emerged during recent months in the situation battle by reducing contact between patients and health care-workers. For example, Chinese firms are using drones and robots to perform contactless delivery and to spray disinfectants in public area to minimize the risk.

→ Inventions of new applications :-
During this pandemic situation, Many IT companies were discovering new application for detection of virus. For example, In India, an application was launched name Aragyar Setu Application. It was a successfull detection apps having features like daily updates, also the precautions should be taken

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also, if a person gets infected within your range or in your area it notifies you. In India, it was compulsory to keep that application on.

→ Camera-based Technologies:-
Many companies were invented AI programs that ables to ~~dei~~ detect if the person is wearing mask or not. Also many programs were able to detect the social distance between two persons standing nearby. These AI programs helps us in many ways to reduct the infection through humans.

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04.

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Q.2

Ans C. Bayes theorem is also known as Bayes rules, Bayes' law or Bayesian reasoning, which determines the probability of an event with uncertain knowledge.
In probability theory, it relates the conditional probability and marginal probabilities of two random events.

Bayes Theorem is a formula that describes how to update the probabilities of hypotheses - when given evidence. It follows simply from the axioms of conditional probability.

Given a hypothesis H and evidence E, Bayes theorem states that the relationship before getting the evidence P(H) and the probability of the hypothesis after getting the evidence P(H/E) is

$$P(H/E) = \frac{P(E/H)}{P(E)} P(H).$$

Many modern machine learning technologies rely on Bayes theorem.

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Given:-

- A doctor knows the meningitis causes stiff neck 50 % of time.
- Prior probability of any patient having meningitis is 1/50,000
- Prior probability of any patient having stiff neck is 1/20

$$P(M/S) = \frac{P(S/M)\,P(M)}{P(S)}$$

$$= \frac{0.5 \times 1/50000}{1/20}$$

$$= 0.0002$$