



EARTHQUAKE

Be prepared before the NEXT happens

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The earth's crust is divided into seven major and many minor tectonic plates that continuously move over the earth's interior. These moving plates sometimes suddenly move against each other and the rocks within the earth's surface break and release a tremendous amount of energy that leads to wave formation called seismic waves. These waves are responsible for the violent shaking of the earth and the phenomenon is known as an earthquake. It occurs suddenly without any warnings and very rapidly, causing violent movements of the earth and everything above it.

Earthquakes are among the most stunning geological processes. These are one of the most unpredictable natural disasters, with the potential to cause destructive effects on human lives and infrastructure. India is very vulnerable to earthquakes and about 58 per cent of the total land in our country is prone to moderate to severe-intensity earthquakes. The country's seismic zoning map divided the entire territory into four seismic zones. Seismically zone V is the most active region while zone II is the least active. Approximately 10% area of our country falls under zone V, 18% under zone IV, 30% under zone III and the rest of the land falls under zone II. Areas under the seismic zone V have the highest risk of earthquakes of intensity of magnitude of 9 or more. The parts of India which fall under this zone include states along the Himalayan range i.e., parts of Jammu and Kashmir, Himachal Pradesh, Bihar and the states of the northeast region. The islands of Andaman and Nicobar and part of Gujarat also fall under seismic zone V (Fig. 1).

Safety precautions at the time of earthquake

Preparation before an earthquake: Every person should choose a safe place inside the house and pinpoint them beforehand. The safe places inside the house are the inner wall of the room, corners, under the beams, inner door lintels, and the inner strong core of the building like a lift well area away from windows. Regularly practice the "drop, cover, and hold on technique" as shown in figure 2. Frequent practices always help to reinforce safe behaviour. Many people hesitate to try to remember what they are supposed to do at the time of the earthquake. Always keep the basic disaster supply kits and emergency supply kits at your home. These kits include a First aid kit, fire extinguishers, battery-powered radio, fresh water and some food, a flashlight or torch, sleeping bags or blankets.

During an earthquake: Despite so many technologies and inventions no one can predict the exact timing of the next earthquake. However, because of recent advances, we are aware now that in which seismic zone we fall and thus we can better be prepared and educated about the probabilities of earthquakes in our area and prepare ourselves for better survival. Public awareness and public education about earthquakes are key to survival. We should not panic, always remain calm and follow the instructions of the government authorities. During an earthquake, if we are inside a building, stay inside, adopt the "drop, cover, and hold on technique", and stay in a safe place inside the house. Take care of falling objects and shield your head and face with a blanket pillow or box and don't rush outside. When you are told to leave the building, use the stairs only and never rush as this may harm you. Never use the lifts as the power supply of lifts may go off and you may get trapped inside the lift. Leave your floor only in case of an emergency like fire and always make a plan from where to exit safely.

When you are outside, stay there and don't rush inside the house. Stay away from tall buildings, malls, electric poles and power cables. Proceed cautiously



toward the open area. If you are in a vehicle, stop your vehicle at a safe place, not near tall buildings, malls or under the power cables or electric poles. Stay inside your car and keep the doors of the car closed, don't open them even if electric lines have fallen on the ground and never come outside as your car is insulated and will protect you from electric shocks because of rubber tires.

Post-earthquake

Immediate precautions: Remain calm and don't panic and console others also. Don't go outside until the earthquake has stopped. Don't light any fire e.g. matchbox, lighter or cigarette. Do not turn on the electrical switches, instead, a battery-operated flashlight or torch should be used. Try to protect your head and face while moving with a helmet, blanket, or pillow if available. Take a quick survey of your injuries of yourself as well as the family members so that you can give first Aid treatment. Never try to pull seriously injured persons unless there is an emergency like a fire. Doing so can further harm the person instead of helping them. Switch off all electrical appliances and machines and shut off the main switch if possible. Make immediate provision of clean drinking water by collecting some covered utensils as the water supply may go off because of pipeline damage and it may also get contaminated by dust and debris.

Precautions after an earthquake have stopped: Always keep in mind that a second or third earthquake can happen in the form of aftershocks. Take complete access to trapped family members and immediate neighbours especial-

ly people of extremes of age and bedridden people. There is always the possibility of landslides in hilly areas, tsunamis in coastal areas or fire. Keep the radio on to get necessary information and instructions from the government authorities. Use telephones only in case of emergencies to keep phone lines free for other needy people. Inspect gas pipes for any damage before use and if possible, try to avoid using flammable material. Check if sewage pipes before using the toilet to prevent the spread of infections. Don't try to go inside houses unnecessarily or until the authorities declare it to be safe. Do not roam outside unnecessarily. It may cause hindrance in the ongoing rescue work.

The outbreak of infectious diseases post-earthquake: Infectious diseases emerge following any disaster. Thus, the survivors of earthquakes are at high risk to get these infectious diseases. These diseases are categorised as water-borne, air-borne or vector-borne diseases and contamination of the external wounds. Infectious diseases mostly occur during the post-impact phase of the earthquake, which usually lasts from 4 days to several weeks. During this phase, both the newly appeared infections and those that are endemic in the particular area could spread and turn into an epidemic. Following are the common infections that occur in disaster areas and particularly after the earthquake.

Respiratory Infectious diseases: Most of the earthquake-affected population live in overcrowded evacuation shelters, with inadequate ventilation, poor personal hygiene and unsafe and contaminated water. These are the main predisposing factors for respiratory infectious diseases. The most commonly occurring respiratory infectious diseases during earthquakes are upper respiratory tract infections, influenza and pulmonary tuberculosis.

Gastrointestinal Diseases: These are also called water and food-borne diseases. These are caused by the ingestion of water and foods contaminated by bacteria, viruses and parasites from human and animal faeces. The most common water and food-borne diseases that occur after earthquakes are acute gastroenteritis, cholera, hepatitis A and hepatitis E, giardiasis and rota virus-associated diarrhoea in children.

Vector-borne diseases: These are the infections transmitted by the bite of infected mosquitoes, mites, and ticks. The most common vector-borne infectious diseases transmitted during the post-earthquake period are malaria, cutaneous and visceral leishmaniasis, scrub typhus, and the Zika virus outbreak.

Wound and skin infections: wound infections depend mainly on the environment in which the injuries take place, the extent of the injury and the microorganisms present on the skin. The traumatic injuries that occur due to earthquakes, adversely affect the immune system and increase the chances of infections. The wound and skin infections that occur during earthquakes are gas gangrene, tetanus, fungal infections and crush syndromes.

Psychological trauma: After the earthquake, survivors often have mental health problems such as post-trauma stress disorder (PTSD) or depression and experience symptoms like anxiety, low mood, emotional ups and downs, and sleep disturbance after the event.

Prevention and control measures: public health responders should rapidly conduct the disease risk assessment to identify the disaster impacts and health needs. There should be an adequate supply of clean water for drinking, proper disposal of excreta and management of solid wastes are essential to prevent outbreaks of diarrhoeal diseases and other vector-borne diseases. All people should ensure regular hand wash with soap and water and take care of proper personal hygiene. All the water storage containers should be well protected and food properly cooked. Chlorine is effective against almost all water-borne pathogens and it is the most affordable and widely available disinfectant for drinking water. It should be used in drinking water.

For malaria and other vector-borne disease control, mosquito nets and the spray of insecticides should be used to prevent the diseases. For dengue prevention improved water storage practices including covering water containers to prevent access to egg laying by female mosquitoes.

Vaccination: measles vaccination is one of the most effective and should be given as soon as people start gathering in the camps. The target age groups are mostly as per the national guidelines. Measles vaccines together with vitamin A supplementation are protective against acute respiratory infections and measles. A proper and focused mental health check-up of all the survivors of the earthquake should be included in the earthquake management programme and repeated frequently after the disaster.

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Rahul Dogra

The world of artificial intelligence (AI) is rapidly advancing, and one of the most exciting new projects to hit the market is ChatGPT which has taken the internet by storm. Developed by OpenAI, well-known for having created the text-to-image generator DALL-E, ChatGPT is a powerful AI-based platform designed to create conversations between people and software.

It uses natural language processing, deep learning algorithms and natural language generation to understand a human conversation and respond in a way that mimics human responses. It can answer questions, write essays, generate computer programs, and even write a poem. You can give it any text command and it will generate a human-like response using the incredible GPT-3 combined with artificial intelligence.

ChatGPT is actually based on GPT-3 (Generative Pre-trained Transformer 3), the latest version of OpenAI's cutting-edge natural language processing (NLP) technology. It is the most powerful and advanced language generator ever created and has been called a "superhuman" level of AI.

This innovative tool takes advantage of advances in artificial intelligence to generate more realistic responses to questions and statements from its users. With ChatGPT, users can engage in conversations with a bot that are more lifelike than ever before.

At its heart, ChatGPT relies on deep learning algorithms and pre-trained models that are based on existing datasets of conversations between people. This allows it to accurately interpret user input and generate appropriate responses in real-time. The system also has access to information from various sources such as databases, texts and other repositories which help it provide even more contextualized answers when necessary.

This AI-driven chatbot platform has been a hit among users, and its success was recently demonstrated when it gained 1 million users in a week after it was launched publicly on November 30, 2022, by OpenAI.

ChatGPT is backed by Microsoft, Reid Hoffman's charitable foundation, and Khosla Ventures according to their website and it has been rated as the fastest-growing consumer app in the history of the internet.

In December 2022, ChatGPT even passed the Turing Test. Alan Turing developed the Turing test in 1950 to objectively check a machine's intelligence. The scenario in the Turing test poses a human versus a machine in a conversation. If the machine convinces the human that it is human, then it is said to have passed the Turing test.

ChatGPT

The Start of AI Revolution



How to use ChatGPT

Go to chat.OpenAI.com and register for an account with an email. You need to create an account on the OpenAI website to log in and access ChatGPT. ChatGPT is currently free to use. Although, it has also launched a paid subscription plan for \$20 per month recently.

Applications of ChatGPT

The potential applications for this type of AI technology are vast and versatile. It can be used in customer service roles, providing more accurate responses than any human operator could offer, as well as assisting businesses with efficiency improvements due to its ability to quickly process large amounts of data. Additionally,

ChatGPT can be utilized in educational settings; responding accurately and intelligently when asked questions or providing valuable feedback on students' work or test results.

Microsoft co-founder Bill Gates also bats for ChatGPT and says it'll change the world.

"Until now, artificial intelligence could read and write, but could not understand the content. The new programs like ChatGPT will make many office jobs more efficient by helping to write invoices or letters. This will change our world," Bill Gates said to the German business daily Handelsblatt.

Microsoft announced that its Bing search engine and

Edge web browser will be powered by advanced AI technology which will be more powerful than ChatGPT.

Going by the huge popularity of ChatGPT which is backed by Microsoft, Google has also announced the launch of an artificial intelligence chatbot technology called Bard that the company will start rolling out in the coming weeks. This chatbot-war has created a lot of discussion among business leaders about the use of AI in their respective search engines.

By using ChatGPT, businesses can now use artificially intelligent chatbots to interact with their customers. These chatbots can answer questions quickly and accurately, providing personalized customer service experiences for customers who need help or want more information about products or services. In addition to conversational services, ChatGPT can also be used for automated tasks like booking appointments or ordering items online.

Limitations of ChatGPT

ChatGPT has the potential to revolutionize how companies interact with customers and handle data analysis, but it is not without its limitations. One major limitation of ChatGPT that users must be concerned about is privacy. When we ask ChatGPT to answer questions, we are inadvertently handing over sensitive information to ChatGPT and ChatGPT has clearly mentioned that their developers can read our conversations with ChatGPT. So, we need to be careful as to what information we are putting in the ChatGPT tool.

Another limitation of AI technology in its current state is its inability to think outside of the parameters it was programmed with or recognize patterns beyond what it was trained on. This means that even when presented with new information, AI will struggle to come up with logical solutions or draw conclusions from what it sees as unfamiliar territory. Additionally, AI algorithms run on huge datasets and require immense computing power which can be costly for some businesses making them less accessible than other forms of customer experience tools before. This innovative technology has sparked a massive wave of interest among researchers who are keen to explore its potential applications in various sectors such as finance, healthcare, HR and education.

Endnote

The groundbreaking achievements made with ChatGPT have demonstrated how far AI can go when harnessed properly. It has been rated the fastest-growing consumer app in history. It helps us understand how quickly these technologies can evolve and what new possibilities they may offer in the future. From providing insightful answers to complex questions to automating tedious tasks, ChatGPT is helping usher in an era of unprecedented convenience for both businesses and consumers alike.