

General Science & Ability

Describe the big bang theory - - - - -
..... theory?

Big Bang Theory

Big bang theory was initially proposed by Georges Lemaitre who first called it "hypothesis of primaval atom." It was accepted in scientific theory in 1931. Although now it's well-received and one of the most common accepted theory about beginning of universe, it was not the case when it was first presented in the world. As many astronomers were reluctant to believe it.

Definition

Big Bang theory explains the origin of the universe - According to this theory

- The universe began as an infinitely small, hot and dense point which rapidly start expanded and continued to stretch over billion years. It is growing as large as it now and is still growing and stretching. •

It propose that universe originated from a point in space-time called Singularity. once matter and energy of the universe was trapped in inconceivably small point of high density and temperature. At one point all of this energy was released resulting in the expansion of universe.

Significance Of Big Bang Theory

Big Bang theory gave new perspective on the origin of universe. Following are some most significant parts of this theory played.

Revolutionizing understanding of Existence

Celestial lights, stars and planets always have been the point of wonder of human being. The most significant question that always plagued human mind is how the universe began. Big Bang theory gave the perspective to generations.

Explanation of Cosmic Element formation

It explains the abundance of light elements in the universe, such as helium, hydrogen and lithium produced after few minutes of big bang and are known as nucleosynthesis.

Structured Formation

It explains how matter clumped together under the force of gravity and how it is possible for two elements to join together under pressure.

Prediction of Cosmic Microwave Background Radiation

It also explains how cosmic microwave background radiations are remnant of early universe heat.

uniting physics and cosmology studies

It provides the link between matter and energy and how physics is bounded the word of cosmology-

Key Evidence Supporting Big Bang theory

Expanding Universe (Hubble's Law)

Edwin Hubble discovered in 1920 that galaxies are moving away from us - The farther they are, the faster they are moving. It was proved by 'Red Shift' experiment. The red shift is based on doppler effect and prove how universe is giving red wavelength.

Time Dilation in Super Nova

It shows how light curves (brighten over time) of Super Nova appear stretched out as compared to similar Super Nova of same size. It explains how space-time have stretched due to expansion of universe.

Echo of the Big Bang.

The Echo of Big bang can be heard through radio signals as the sound waves don't travel through space. These waves give significant evidence of the ~~primary~~ theory.

Conclusion

Big bang is one of the most widely accepted theory, that play significant role in making one understand origin of universe.

What are primary impacts? - - - - -

Global Warming

Global Warming is one of the most serious threat over humanity. It is having effect that can change the pattern of the society.

Definition

- It refers to Long-term increase in earth's average surface temperature due to rising level of green-house gases, burned fossils and pollutants.

Cause of global Warming

Following are some major causes of global Warming that need to be addressed immediately -

Man-made causes

Deforestation

Cutting of forests lead to the deforestation which increase global warming.

Vehicle usage

All the emission from vehicles causing pollutants in air.

Factories emission

factories emitting smoke that result in smog and affect ozone layer.

Agriculture

Burning crops lead to the air pollution that cause depletion of ozone layer.

over-population

More the population is the chances of increased global warming.

Chloroflourocarbon

Emission of ChloroflouroCarbon is major reason for the global warming.

Natural Causes

Volcano Eruptions

Volcanoes eruption cause huge smoke and fire that disrupt climate.

Melting Permafrost

Melting permafrost resulting in melting glacier and floods.

Forest Fires

Forest fires in different jungle like Amazon also increase effect of global warming.

Effect of global Warming

Rise in temperature with the increase of global warming
and temperature of earth increases
climate change

Climate change occur due to it.

Diseases and infections

Many diseases and infection spread due to hot weather -

High mortality rate

Higher mortality rate due to floods and famine -

Famine & floods

Melting Glaciers results in floods that cause damage.

Animal extinction

It occurs when habitat is lost due to various reason and animals go extinct -

Strategies for mitigating global warming impact

Transition to renewable energy

Government should take steps to change their strategies in renewable energy.

Afforestation and deforestation

Planting more trees should be the foremost step.

Electric cars and Transport

Cars with batteries proved to be better for environment.

Waste management improvement

Recycling should be suggested by the government.

Public awareness and education

Government should run campaigns to fight for more awareness.

Government and international funding

International fundings should work together.

What are potential diagnosis, - - - - -

Artificial intelligence is revolutionizing not only world but medical segments too. From disease diagnosis to performing surgeries it's helping health care providers at huge levels.

Potential benefits of AI in health care

Improved Diagnosis of Patients

Artificial intelligence can analyze medical record, scans and reports and help in diagnosis.

Helps in analysis of data

It can help to analyze data and all the medical history of patient.

Assistance in Surgeries

There are many cases of robots helping in sensitive surgeries.

Health Assistant and Robot doctors

Give advice in term of disease symptom 24/7 even when doctor is not available.

Less Cost and faster Result

It's proven to have less cost and better results.

Challenges of Implementing AI in the health care

Concerns of data privacy

Companies going to have all the access on data and privacy can be compromised.

Lack of human Judgement and intuition

Artificial intelligence lack human intuition and Judgement which is very necessary.

Technical barriers and high development cost

Many technical barriers regarding serious diseases are difficult to manage.

Ethical concerns bounding legal actions

Many unclear regulation and prescription can lead to misdiagnosis. It also raise concern about legality of showing patient data.

Impact of AI on patient care

Better results and services
Give timely services that are accurate with results

Accessibility

The patient have access to its medical history and robot doctor all the time -

Efficiency

AI is efficient and do not waste time of the patient.

Impact on Diagnosis

Higher Accuracy

Data is accurate and always have details.

Overall Support

Give complete support in the test and checkups.

Consistent

No human errors and slip of tongues, Everything is consistent

Conclusion

Although we need to regulate the health system around AI, It still have lots of benefit.

In a Certain School (team)

1) Total numbers of the student

20% of student below 8 years

48 students are 8 years old

no of student above 8 = $\frac{2}{3} \times 48$

if total number = x = 32

Below 8 years = 20% of x

$$= 0.2x$$

8 years = 8

above 8 = 32

$$0.2x + 48 + 32 = x$$

$$80 = x - 0.2x = 0.8x$$

$$x = 100$$

student = 100

let Rashid age = x

$$\text{Father's} = x + 3x = 4x$$

After 8 years

$$\text{Rashid} = x + 8$$

$$\text{Father} = 4x + 8$$

equalize

$$4x + 8 = 2.5(x + 8)$$

$$4x + 8 = 2.5x + 20$$

$$x = 8$$

Current

$$\text{Rashid} = 8$$

$$\text{Father} = 3d$$

After, father 8 years (16 years)

$$\text{Rashid} = 8 + 16 = 24$$

$$\text{Father} = 3d + 16 = 48$$

$$= \frac{48}{24} = 2$$

Father will be 2 times Rashid age -

c) Possible sums from 2 dice = 2 to 12
Prime numbers = 2, 3, 5, 7, 11.

Combination Count

$$2 = (1, 1)$$

$$3 = (1, 2), (2, 1)$$

$$5 = (1, 4), (2, 3), (3, 2), (4, 1)$$

$$7 = (1, 6), (2, 5), (3, 4), (4, 3), (5, 2), (6, 1)$$

$$12 = (5, 6), (6, 5)$$

$$\text{Total} = 2 + 4 + 6 + 2 = 15.$$

out comes for two dice = $6 \times 6 = 36$

$$\text{Prime total} = \frac{15}{36} = \frac{5}{12}$$

Average age of team = x

$$\text{captain} = 26$$

$$\text{WC} = 26 + 3$$

Remaining 9 players = $x - 1$

$$\text{Total age} = 11 \times x$$

$$9 \text{ players} = 9(x - 1)$$

$$\text{captain} + \text{keeper} = 26 + 29 = 55$$

$$9(x - 1) + 55 = 11x$$

$$9x - 9 + 55 = 11x$$

$$46 = 2x$$

$$x = 23$$

Average age = 23 years

Selling price ----- percent.

$$\text{Cost price} = x$$

$$\text{original selling price} = y$$

$$\text{profit original} = y - x$$

$$\text{if SP is doubled} = 2y$$

$$\text{profit new} = 2y - x$$

So Given

$$\text{New profit} = 3 \times \text{original profit}$$

$$2y - x = 3(y - x)$$

$$2y - x = 3y - 3x$$

$$x + 3x = 3y - 2y$$

$$4x = y$$

$$y = 4x$$

$$sp = 2x$$

$$cp = x$$

$$\text{profit} = \frac{2x - x}{x}$$

$$\text{profit} = \frac{x \times 100}{x}$$

$$= 100\%$$

$$y^{\text{th}} \text{ pay} = y$$

$$x \text{ pay} = 1.2y$$

$$y + 1.2y = 550$$

$$2.2y = 550$$

$$y = \frac{550}{2.2}$$

$$y = 250 \text{ per week}$$

$$\text{breath} = b$$

$$\text{Perimeter} = 5b$$

$$\text{of rectangle} = 2(l+b) = 5b$$

$$l+b = \frac{5b}{2}$$

$$l = \frac{5b}{2} - b$$

$$l = \frac{3b}{2}$$

$$\text{Area} = l \times b$$

$$= \frac{3b}{2} \times b$$

$$3h^2 = 216$$

$$h^2 = 72$$

$$h = 144$$

$$b = 12$$

$$l = 3 \times 12 = 18$$

$$\text{length} = 18\text{cm}$$

d)

Multiple of 3 from 1 to 20:

3, 6, 9, 12, 15, 18 = 6 numbers

Multiple of five

5, 10, 15, 20 = four numbers

Multiple of both 3 & 5

Total favorable

$$= 6 + 4 - 1$$

$$= 9$$

$$\text{Total} = 20$$

$$= 9$$

$$20$$

Answer