

Q.No.2

(a)

Introduction:

Concise it!

AI has been changing almost all the spheres of life in 21st century. For efficiency and effectiveness, machines with intelligent features are trusted more than humans in many things. In this regard, healthcare is being incorporated with AI to make it more feasible and affordable along with its efficiency. There are several benefits that range from patient-specific treatment, robotics within medical center, and proper medical diagnoses. However, there are challenges too. They revolve around AI ethics and in case of failure who is responsible? This lack of unambiguous responsibility further makes its use limited and unviable. Its impacts on patient care, though, have both positive and negative features. Similarly, medical diagnoses is not void of possible impacts that AI will include upon it.

Benefits of implementing AI in health care:

Dos and Don'ts for the General Science & Ability Paper

Hi there — you've prepared well! Remember, knowing the content is one thing, but presenting it in the paper exactly as required is another. Here are a few key points to keep in mind:

1. For a 5 mark part, aim to write at least 2 and at most 3 sides of the answer sheet. Often, a question has two or three parts, and the marks are divided accordingly — so address each part fairly.
2. Manage your time wisely — you have about 35 minutes per full question, which comes down to around 8 minutes for each 5 mark part. Stick to this to avoid rushing later.
3. Make your answers look scientific, not just theoretical. Use flowcharts and diagrams wherever they add clarity.
4. Neatness matters — keep your handwriting clean, avoid cutting or overwriting.
5. Mind your spelling and grammar — while GSA doesn't deduct marks for these, your expression leaves an impression.
6. In the ability portion, explain analytical ability questions in words. For a 5-mark part, show all steps and provide clear explanations.

Good luck for CSS 2026 — you're going to ace it, in sha Allah! 🌟

i) AI chips on patient's body can provide early warnings of any ensuing illness:
These small chips can monitor micro and macro molecular movements within body tissues, and any threat to health will come to notice before it converts into illness.

ii) AI can make patient-specific prescription, making treatment more effective:

As AI is informed of medical history of the patient, it diagnoses even the smallest cellular movements to prescribe what is deficient, and what is exceeding, making treatment effective.

iii) Use of robotics in medical centers can make work more efficient:

Robotics can substitute nursing by humans, making it time and work efficient. Within surgery, robots can work under human surveillance.

iv) Use of AI applications can substitute the need of doctors for medical diagnoses:

Today, ChatGPT is commonly used for medical diagnoses if it's not grave. It can provide prescription for minor illnesses like fever, cough and headache.

v) AI can help in disciplining daily life to remain protective from any potential disease:

AI can create strict routine, subjective

to the person. It can be used to live a healthy - life and remain vigilant of one's biology.

The Challenges of implementing AI in healthcare:

i) The challenge of AI ethics impedes its extensive usage:

AI ethics means moral contradictions on how and where AI must be used. How AI must behave is also included.

ii) Lack of responsibility mechanisms in case of AI failure produces legal challenges. Legally, for every action or failure to act someone is responsible. In case of AI failure, how machine can be legally tried, remains a legal dilemma.

iii) The threat of information leakage in the wake of recent surge in hacking, leading to challenges of privacy issue:

The rise of cyber crimes ~~the~~ challenge the extensive use of AI, as the over digitization of life can threaten the stock of sensitive information like one's medical status.

iv) Lack of human emotions can challenge the psychological coldness of AI and machines:

Several diseases have direct link to psychological state of a patient. Psychology of homo sapiens is still overly connected with human emotion, lack of

Impact of AI on patient care

- i) Continuous monitoring; attentive care
- ii) Human failures are discarded with use of robotics; AI can never get bored.
- iii) However, lack of human emotions can have negative impact on patient's psychological state.

Impact of AI on medical diagnosis

- i) AI can make medical diagnosis more efficient by being patient-specific
- ii) Extensive knowledge feeded with codes relief AI from lack of information.
- iii) Once stored, Medical history can never be forgotten thus making AI sharp in remembering and prescribing treatment.

Conclusion:

As with every sphere of life, AI today is incorporated in healthcare to make it more efficient and effective. Although there are challenges, the beneficial impacts on patient care and medical diagnosis can never be lost. It's make its use extensive, all over the world, and efficient.

c.

Introduction:

Global warming is defined as the increase in average temperature of the Earth. It is the direct effect of Green house effect, which can be a natural or man-made increase in its scale. The Natural Green house effect is although necessary; however, the increased Green house effect due to man-made green house emissions causes global warming, which have numerous effects on the global health.

Causes of global warming:

- i) Green house gas emissions: CO_2 , CO , SO_2 , NO_x
- ii) Deforestation: forests are natural carbon sinks. Destroying forests decrease absorption of carbon
- iii) water pollution: Oceans are natural carbon sinks. polluting water decreases its capacity.
- iv) population increase; Rapid urbanization increase pollution in air and rise demands of energy.

Effects of global warming:

- i) Extreme weather patterns: increase in floods, droughts, volcanic, tsunami, cyclones.
- ii). Heat strokes: Human deaths due to increase in temperature
- iii) Rise of sea level: coastal areas are

iv) Glacial melting: It cause floods and decrease in fresh water reservoir.
Human activities in contributing to global warming.

- i) Industrial gases and waste: CO_2 , CO , SO_2
- ii) Agricultural gases and waste: pesticides, CH_4
- iii) vehicle's gases
- iv) fossil fuel burning for energy
- v) oil spills in oceanic waters.
- vi) Deforestation
- vii) uncontrolled urbanization and population boom.

Solutions to mitigate impacts:

- i) Reforestation must be done.
- ii) Renewable energy resources must be used
- iii) Electric cars and public transport should rise.
- iv) Mitigation and adaptations are different. Pollution management mechanism be formed.
- v) Industrial gases and waste must be recycled, and reused as a fuel.

Conclusion:

Global warming is a man-made phenomenon that can be mitigated if right steps are taken immediately. It has potential to destroy the known life on earth. As Stephen Hawking famously said,

"It is not nuclear war, but climate change that will destroy life on earth"

Q.No. 3

(d)

Introduction:

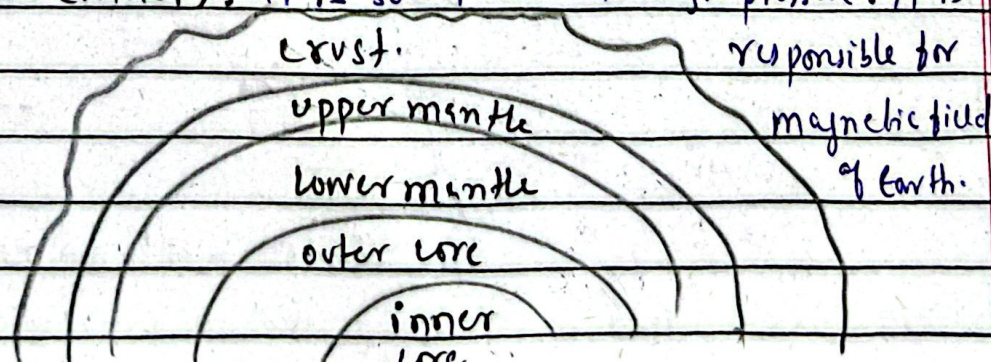
Earth's inner structure is made of different layers each having different composition and different functions.

Moreover, oceanic crust and continental crust have different densities whose plate tectonics explain several phenomena under water. These plate tectonics explain how earth's crust is structured, and moves.

Structure of Earth:

Earth's interior is made up of following layers:

- i) crust: upper most layer. It is solid and has its two types: oceanic and continental.
- ii) upper mantle: The upper layer of mantle. It is solid and together with crust it forms lithosphere.
- iii) lower mantle: It is dense liquid and high in temperature.
- iv) outer core: It is too in liquid form and conducts convection currents from inner core to lower mantle.
- v) core (inner): It is solid due to high pressure. It is



Difference between Oceanic and continental crust.

Oceanic crust	Continental crust
(i) It is denser	(i) It is relatively less dense
(ii) Its depth is lower	(ii) Its depth is higher
(iii) It is under ocean, forming ocean bed	(iii) It is main land, forms continents
(iv) It is hotter because close to mantle	(iv) It is relatively cooler because far from mantle

oceanic crust

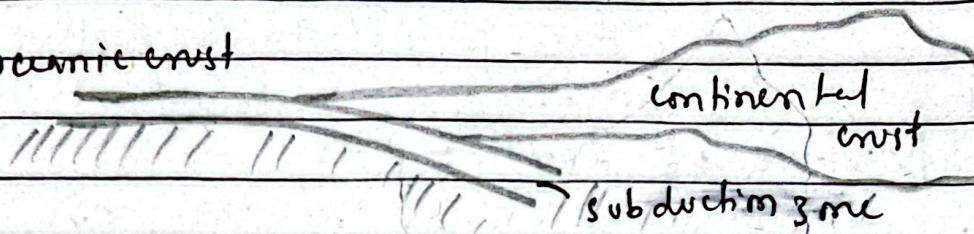
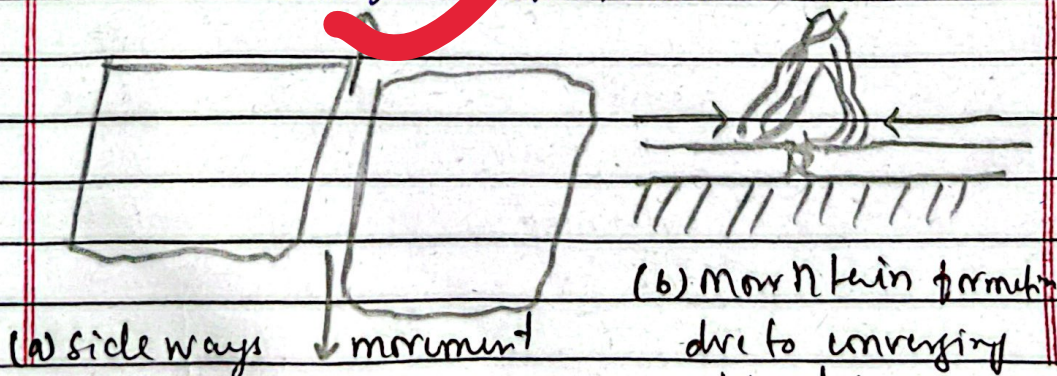


Plate tectonics: shaping the Earth's surface

Earth crust is divided into several plates that keep moving over molten mantle. The mantle's movement is due to convection current inside Earth's interior. There are major 9 tectonic plates. When these plates move they can create converging, diverging or side ways boundary. When plates collide mountains can form, and volcanoes can erupt.



Conclusion:

Earth's interior is responsible for Earth's magnetic field, temperature and gravity. Its layers are divided in three major parts.

The upper most layer is where life (known) mostly exist. The two types are different from each other. Furthermore plate tectonic movement is responsible for how Earth's surface is shaped. Different boundaries cause different effects and this reshape our understanding of Earth's interior marvels.

Qnos

Q) Data:

Below 8 years of age = $20\% \cdot x$ no. of students (total) = x

no. of students of age 8 years = 48

no. of " above age 8 years = $\frac{2}{3} \times 48 = 32$

Solution:

Total no. of students = $x = 32 + 48 + 20\% \cdot x$

$$80 + 20\% \cdot x = x$$

$$x - 20\% = 80$$

$$x(1 - 0.2) = 80$$

$$x(0.8) = 80$$

$$x = 80 \div 0.8$$

$$x = \frac{80 \times 10}{8}$$

$$x = 100$$

total no. of students = $x = 100$ Ans.

(b) Data:

father age = f

Rashid's age = R

Given $\Rightarrow f = 3R$

after eight years $\Rightarrow f+8 = 2\frac{1}{2}(R+8)$

after further eight years what would
be f times of $R = ?$

Solution:

$$f = 3R \rightarrow (1)$$

$$f+8 = 2\frac{1}{2}(R+8) \rightarrow (2)$$

Solving (2):

$$f+8 = \frac{5}{2}(R+8)$$

$$f+8 = \frac{5R}{2} + 20$$

$$f = \frac{5R}{2} + 12$$

$$f = \frac{5R+24}{2} \rightarrow (3)$$

$\therefore$ putting (1) in $\rightarrow (3)$

$$3R = \frac{5R+24}{2}$$

$$6R = 5R + 24$$

$$R = 24 \rightarrow (4)$$

$\therefore$ putting (4) in (1)

$$f = 72$$

$$R = 24 \text{ and } f = 72$$

$$\text{After 8 year } \Rightarrow R = 32 \quad f = 80$$

$$\text{After further 8 years } \Rightarrow R = 40, \quad f = 88$$

$$\text{thus, } \frac{88}{40} \rightarrow \frac{11}{5} \Rightarrow 2 \frac{1}{5}$$

After further 8 years father will be $2 \frac{1}{5}$ of Rashid's age.

Ans.

(c) Date:

Total no. of diff chances of two dice = $6^2 = 36$

total no. of prime sum of chances = x

$$\text{probability} = \frac{x}{36}$$

Solution:

$$n = 36$$

for x :

(1,2), (2,1), (2,3), (3,2), (1,1), (5,2), (3,4), (6,1)
 for 3 for 5 for 2 for 7

(6,5), (5,6)
 for 11

$$\text{Total} = 13$$

$$\text{probability} = \frac{13}{36}$$

(d) Data:

$$\text{avg age of team} = y$$

$$\text{avg age of team} - \text{captain \& wk} = x$$

$$\text{given } \Rightarrow x + 1 = y$$

$$\text{age of captain + wk} = 26 + 3 = 29$$

Solution:

$$x + 1 = y \rightarrow (1)$$

$$y = \frac{29 + \text{sum of other 9 players}}{11} \rightarrow (2)$$

$$x = \frac{\text{sum of 9 players}}{9}$$

$$9x = \text{sum of 9} \rightarrow (3)$$

Putting (3) in (2)

$$y = \frac{29 + 9x}{11} \rightarrow (4)$$

Putting (1) & (4)

$$x + 1 = \frac{29 + 9x}{11}$$

$$11(x + 1) = 29 + 9x$$

$$2x = 29 - 11$$

$$2x = 18$$

$$x = 9$$

$\rightarrow$ thus $y = 8 = \text{avg age of team}$

Q No. 7: ~~B~~

(a) Data:

Given equation:

$$5\% \cdot A + 4\% \cdot B = \frac{2}{3} [6\% \cdot A + 8\% \cdot B] \rightarrow (1)$$

find A:B.

Solution:

Solving (1):

$$\frac{5A}{100} + \frac{4B}{100} = \frac{2}{3} \left(\frac{6A}{100} + \frac{8B}{100} \right) \quad \therefore \left[\% = \frac{1}{100} \right]$$

$$\frac{5A+4B}{100} = \frac{2}{3} \left(\frac{6A+8B}{100} \right)$$

$$5A+4B = \frac{2}{3} (6A+8B)$$

$$5A+4B = \frac{12A+16B}{3}$$

$$A = \frac{16B-4B}{3}$$

$$A = \frac{16B-4B}{3}$$

$$A = \frac{4B}{3}$$

$$3A = 4B \Rightarrow \frac{A}{B} = \frac{4}{3} \Rightarrow \text{Thus } A:B = 4:3$$

⑧

① Date:

A, B, C, D $\Rightarrow$ ratio of money = 5:2:4:3

$$C = 1000 + D$$

$$B = ?$$

$$\text{money} = x$$

Solution:

As total share-sum (% ratio) = 14

$$C's \text{ share} = 1000 + D's \rightarrow \textcircled{1}$$

$$C = \frac{4}{14} \times x$$

$$D = \frac{3}{14} \times x$$

Putting in $\textcircled{1}$

$$\frac{4}{14}x = 1000 + \frac{3}{14}x$$

$$\frac{4}{14}x = \frac{14000 + 3x}{14}$$

$$4x = 14000 + 3x$$

$$x = 14000$$

$$B = \frac{2}{14} \times 14000 \Rightarrow 2000 = B's \text{ share}$$

(d) Date:

Father's age = 38 years

Son's age = x

As per given it must be true that:

$$\Rightarrow 38 - x = x$$

Son's age five years back = $x - 5$

Solutions

$$38 - x = x$$

$$38 = 2x$$

$$x = 19$$

Son's age five years back = $19 - 5 = \boxed{14}$

(b) Date:

Number = $A = xy$ ^{join mit}

$$\begin{aligned} \text{Given} &= y = x + 2 \\ &= A(x + y) = 144 \end{aligned}$$

Solution:

possible numbers:

iterative method:

$$13(1+3) \neq 144$$

However,

$$24(4+2) = 144$$

$$144 \times 1 = 144$$

$$\boxed{A = 24}$$

1	4
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	0