

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

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Batch 066

Paper: General Science and Ability

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, and 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! 🌟

Q2:

①

Artificial Intelligence

Artificial Intelligence (AI) is an advance machine which can develop its own intelligence based on recorded data and user interactions.

(a) AI in healthcare

All technologies have its pros and cons. AI is not exempted from it.

(i) Significance

- ① Artificial Intelligence can be precise and accurate in diagnosis based on medical history of patient.
- ② It can manage patient medical history more ~~pro~~ efficiently which is good for diagnosis.
- ③ AI can improve human negligence in treatment by reviewing medical reports.
- ④

(ii) Challenges

- ① AI machines are complicated and would require technical staff.
- ② AI is costly to be employed in healthcare.
- ③ It can cause unemployment of human staff as indicated by Mckinley Reports.

(b) Impacts on Patient and diagnoses

- ① AI might not properly understand patient's sentiments or emotional state of mind which require intense psychological counselling.
- ② AI can take decisions that could not be understood by human and thus cause complication. Yael Noach, and Mustafa Sula for example, in his article; Never summon a Power you can't control, warn humans of the underlying consequences of integrating AI into human society. Because that AI could take a harmful step and there won't be any power to stop, as it has its own intelligent development.

③ conclusion

AI is powerful tool

(4)

tool which can help humans resolve complicated issues. However, it requires ethical regulation for beneficial use.

(B) (1) Big Bang Theory

Big Bang Theory explains the evolution and origin of universe that started 13.5 billion years ago from an extremely hot and dense matter and ever since expanding.

(a) Significance in understanding of origin and evolution

- (1) It explains the origin of universe ~~to~~ 13.5 billion years ago from a hot singularity.
- (2) The theory is responsible

for the foundation of cosmology and modern astrophysics.

(3) Big Bang Theory explains the evolution of universes from matter, galaxies, stars and planets that formed over time.

(4) It aligns and is testable through scientific method and empirical evidence.

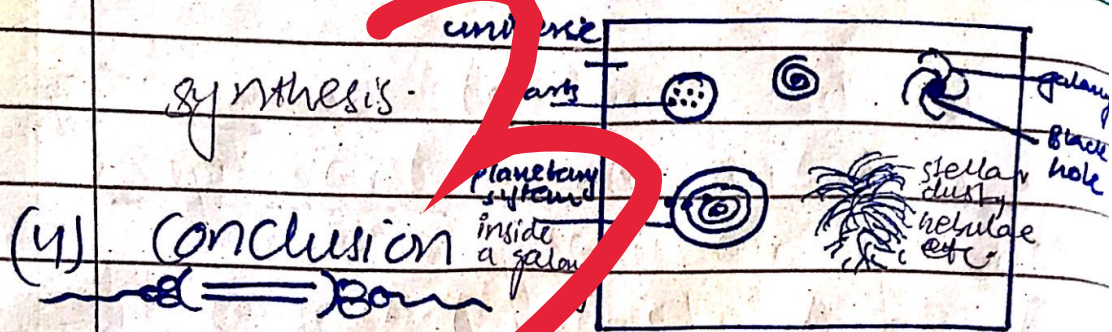
3) Evidence supporting Big Bang Theory:

(1) cosmic microwave background radiation (CMB) supports the Big Bang Theory.

(2) Hubble's law which explains galaxies drifting away from us.

(3) Abundance of light elements such as Helium, Hydrogen and lithium match the result of Big Bang nucleosynthesis.

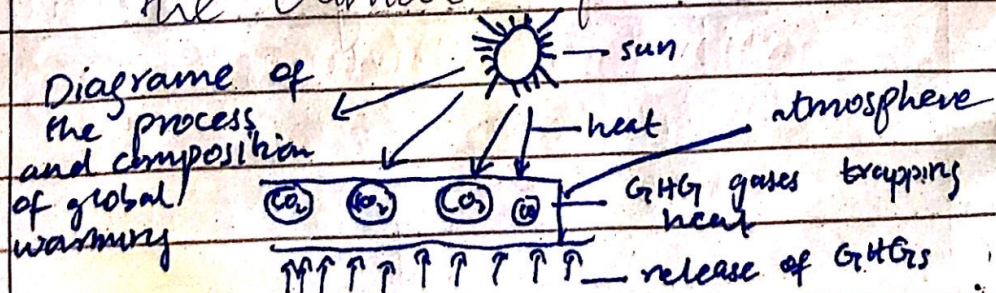
Diagram of the universe.



Big bang theory makes us understand and explain the origin and evolution of the universe which helps us understand the formation and expansion of the universe.

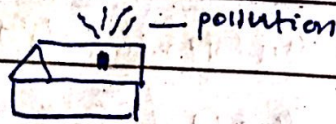
(c) Global warming

Global warming refers to the trapping of gases released by Green house emission. These gases trap inside them incoming heat of the sun which disrupts the climate of the earth.



② Primary Causes

① Industrial units release harmful gases in the atmosphere



② Pollution from the burning of hydrocarbon in
eg vehicles, ships, aeroplanes



Add natural causes as well

③ Burning of coal for the production of electricity.
▷ For example China is the highest producer of electricity from coal

③ Effects

① Global warming has caused extreme heat.

▷ last year, according to the UN climate report, global temperature has crossed the limit of 1.5°C

⑧

Threshold

⑦ Global warming has disrupted weather patterns. eg recent torrential rains and cloud outburst have caused more than 200 deaths in Pakistan.

③ It has further caused prolonged drought and winters showing a shift in seasonal pattern.

④ Melting of glaciers triggered by global warming threatening floods, and water shortage and food insecurity. eg Pakistan has 7000 glaciers and last year according to the Dawn, its snow cap has reduce by 13.5% due to global warming.

(4) Human role

① Since the industrial revolution human are releasing harmful gases in the atmosphere which is

(9)

responsible for global warming.

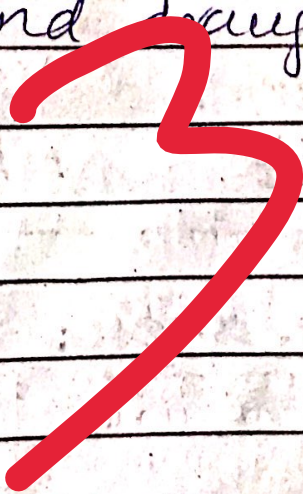
(5) Mitigating impacts of Global warming

- (1) implementation of Cop21 mandate strictly
- (2) reducing gaseous emission and increase reforestation.
- (3) introducing climate resilient infrastructure  Elevated roads, Green rooftops.

Mitigation and adaptations are different

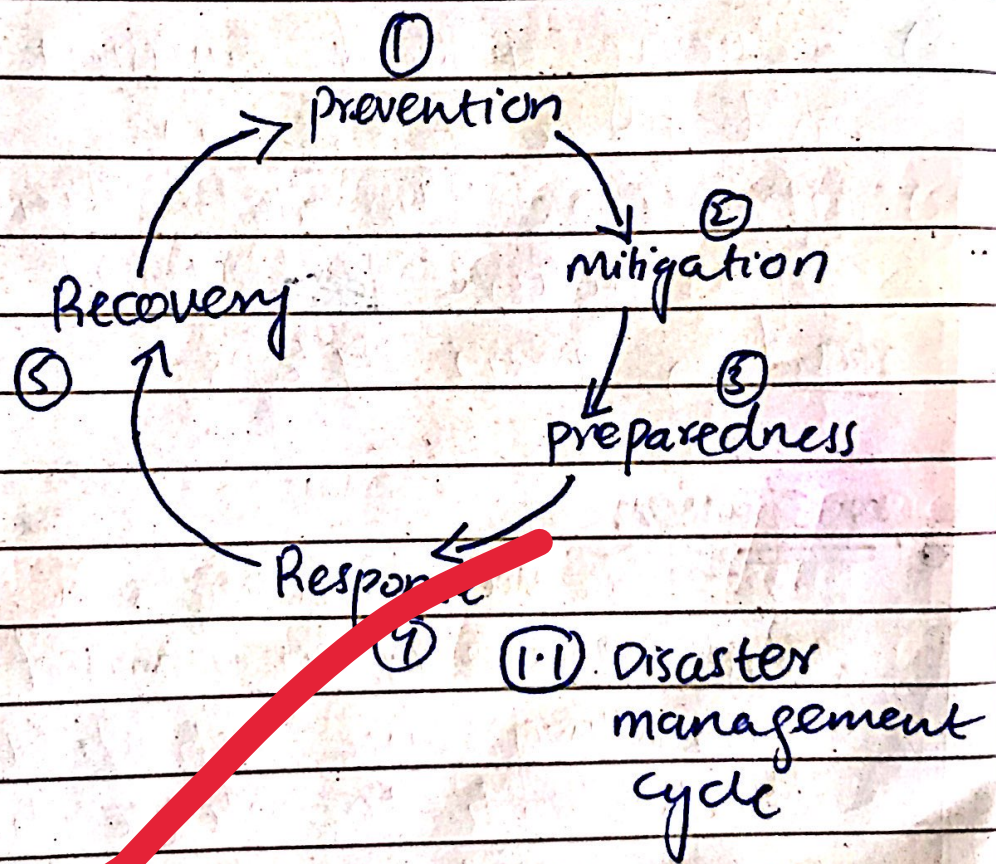
(6) Conclusion

Global warming is a global phenomenon caused by anthropogenic activities which leads to intense heat, flood and draughts etc.



(d) (a) Disaster management Plan

Disaster management plan encapsulates effective dealing of a disaster, pre and post disaster.



(b) Importance of preparedness, Response and Recovery

① Preparedness: Preparedness is important for disaster

management. It will help in timely prevention of wasting costly lives.  organized placing of tools and maintenance, checking of fuel and disaster relief vehicles, tents and food supplies etc.

(2) Response

Timely response reduces the chances of human damages and suffering  Food, tents, aerial and vehicular ambulances and alternative place for the disaster replaced community.

(3) Recovery

Post disaster recovery is important for restoring normal peace and order situation. It requires post trauma psychological counselling, constructing permanent building.

(c) successful examples

(i) Early warning systems
 reduce damages by
 sending warnings to citizens
 of any flood, earthquake
 or Tsunami etc.

(ii) Evacuation plans
 pre determined evacuation
 routes incase of disaster.

(iii) Community Training
 Training community prone
 to disasters about initial
 responses and first aid.

↔

Q3 (a) Structure and Function of human heart

structure The human heart consist
 of 4 chamber and
 4 valves that are
 responsible for receiving

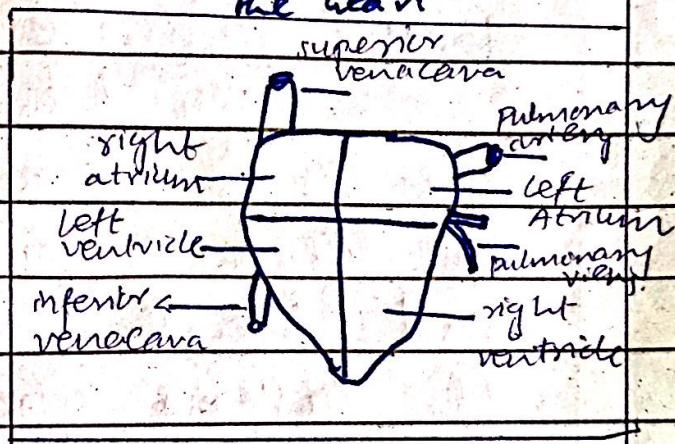
and transporting blood. It also has Sino Atrial node which is the natural pacemaker for heart contraction and relaxation.

Function

The function of the heart is to receive deoxygenated

blood from the body and send oxygenated blood to cells, tissues and organs of the body.

Structure of the heart



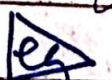
Cardiac cycle and role in maintaining blood circulation

cardiac cycle refers to the contraction and relaxation of heart. It maintains blood circulation.

in the body by steadily contracting and relaxing 70-72 times per minute and send blood to the body for proper functioning.

Blood pressure regulation

The heart maintains the blood pressure by adapting to different physical activities and health conditions.

It fastens when the blood need in the body is higher  in anger or exercise. It slows and lowers the blood pressure when the body is calm or suffering any problem  During sleep or rest.

(B) Bio fuels

Bio fuels refer to the fuel made of organic material such as corn or agricultural residue.

② Production

(a) Bioethanol : produced through the fermentation of sugar and its crop

(b) Biodiesel : produced through reacting animal and vegetable fats with alcohol

(c) Biogas : produced by decomposing organic waste in the absence of oxygen

③ Advantages

(a) less gaseous emission

(b) good for environment

(c) agriculture waste could be employed for benefit

Disadvantages

(a) very costly

(b) inconvenient availability

(c) not produced in large quantity

(d) increases food insecurity

(e) less land to cultivate for biofuel

~~of~~ on

(C) Factors of Food quality

- ① Nutrients
- ② cleanliness
- ③ Freshness
- ④ preserved
- ⑤ calories
- ⑥ vitamins

Significance of food safety

Food safety is important to prevent unhealthy food being consumed which can cause severe disease and even death.

↳ Food poisoning stomach cancer etc

Food quality control

Food quality control regulate the consumption of healthy food

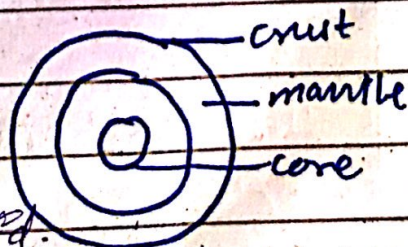
by maintaining balanced nutrients, cleanliness and quality of food which prevents the spread of food diseases.

Consumer vigilance

Consumer can ensure food quality and illness prevention by consuming safely labeled food, unexpired and food that contains healthy nutrients and vitamins. Furthermore, they should eat at clean restaurants.

(1) Structure of the Earth

The earth has an oval shape. Its interior is 3 layered.

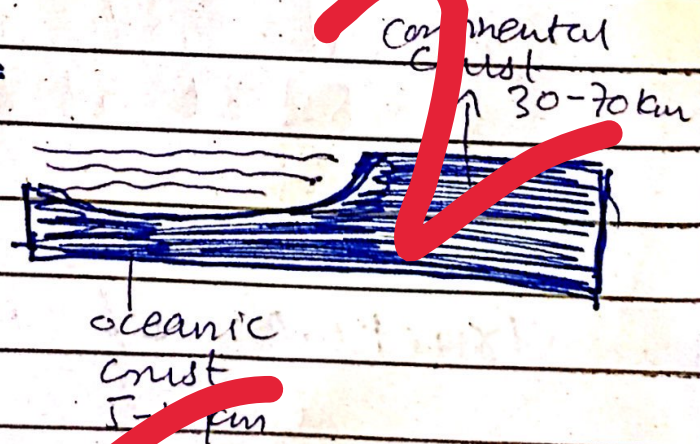


The upper layer is crust which is in solid state and it ranges upto 26-27 km from

from the surface. The second layer mantle which is in a semi solid state.

It is hot magma and it ranges to 1500 km from surface. The inner part or center is called the core. It is extremely hot having 6000°C temperature. It is approximately 5673 km down from the surface.

Difference between continental and oceanic crust.



The continental crust is thick 30-70 km mostly made of granite and is older about 4 billion years old. Oceanic crust is

thin (5-10km) : it has denser density made of mainly basalt. Its age is about 200 million years.

Tectonic plate forming Earth's surface

Tectonic plates form earth surface mainly through three kind of plate movements.

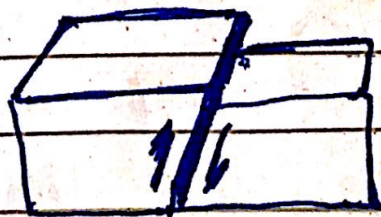
① Divergent movements

or normal fault during extension of the earth

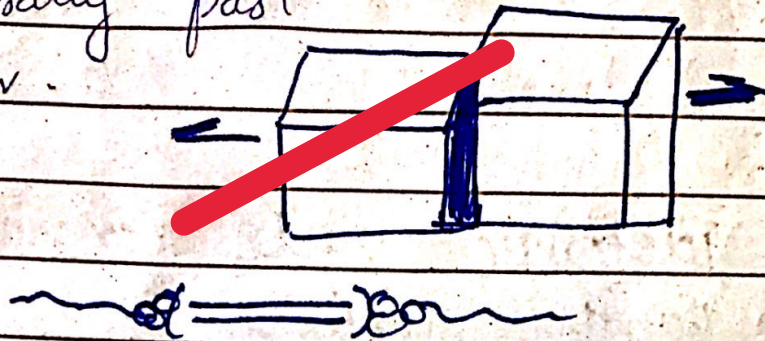


② Convergent movements

Reverse faults from during shortening of the crust.



(3) strike slip fault in this movement one block slides laterally past another.



Section II

cls

(a)

Total number of students in a school:

Given:

20% are below 8 $\rightarrow 0.2x$
 students above 8 years $= (2/3)x$
 $48 = 32$

So,

$x = 100$ Ans.

(b)

Father's age and son's age after 16 years

Rashid current age $= x$

Father current age $x + 3x = 4x$

after 8 years $= x + 8$

Date: _____

Day: _____

Ans:

Father's age will be two times of Rashid's age.

(c) Probability that total score is a prime number when two dice are tossed.

Ans: $5/12$

(d) Average age of the cricket team

- Let average age of the whole team = x
- Then total age = $11x$
- captain = 26, wicket keeper = 29
- Remaining 9 players:
- Their average

Ans: 23 years