

SECTION-1

QUESTION No. 1

Ability Paper

(a) Explain components of cell and their functions:

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.

(i) Cell membrane: It is the outermost layer of animal cell and in plant cell it is present after the cell wall. It is selectively permeable membrane allowing essential substances into the cell. It protects and supports the cell.

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

(ii) Cytoplasm: It is jelly-like substance present between nuclear membrane and cell membrane. It contains 80% water. It provides site and protection to other cellular organelles. It is the centre stage for cellular activities.

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.

(iii) Nucleus: It takes part in information of genetic material (DNA and RNA). It regulates the cellular activities. It is called the brain of the cell.

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.

Difference between prokaryotic and eukaryotic cell:

Prokaryotic Cell

Smaller in size

Simpler

Nucleus absent

Eukaryotic Cell

Larger in size

Complex

Nucleus present

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.

Unicellular

Unicellular or
multicellular

No membrane bound

Contains membrane

organelles

bound organelles

Cells respond and maintain homeostasis

Cells respond to external stimuli and maintain homeostasis by detecting changes through receptors and then initiating a response to restore a stable internal environment, often using negative feedback.

(b) Mobile phones work

Mobile phones work as low-powered, two-way radios, transmitting and receiving signals to nearby cell towers which relay calls and data across a cellular network to the destination.

Key technologies that enable communication:

Key technologies include cellular networks that use a series of overlapping cells, radio frequency (RF) modules for signal transmission, base stations that act as the physical

cell infrastructure, and packet switching for data efficiency. The system connects through a core network to the public telephone network, enabling seamless communication as users move between cell towers.

Add diagrams

Advantages of Mobile Phones

Facilitates instant connections with friends and family, provide quick access to the internet for learning and offers variety of entertainment options like games and music.

Disadvantages of Mobile Phones

Excessive use can lead to screen addiction. It can distract from studies and work. It can cause accidents, when used while driving or walking.

Impacts on social interaction

Reduced face-to-face interaction
FOMO (Fear of missing out)

Impacts on mental health

Anxiety and depression
Sleeping problems

Mobile phones revolutionized communication by enabling instant, global connectivity through calls, texts, and video chats, breaking down geographical barriers. They also transformed information access, putting the internet and various apps - from banking to education to social media - in people's pockets, which improved productivity and allows for new forms of remote work and activism.

(C) Layers of the Earth

The different layers of the earth are Crust, mantle, and core

Interaction between layers

(1) Mantle Convection

Heat from the Earth's inner and outer core creates convection currents in the mantle.

(2) Plate Tectonics

The convection currents in the mantle cause the semi-fluid asthenosphere to move the overlying tectonic plates of the lithosphere.

(3) Surface Reshaping

The movement of these tectonic plates results in Earthquakes, volcanic eruptions, erosion and sedimentation.

Earth's Water cycle

The water cycle supports life by providing and recycling essential fresh water, regulating the planet's climate weather through heat absorption and release, supporting plant growth and agriculture and creating diverse habitats that foster biodiversity.

Impacts of human activities on Earth ecosystem and natural resources:

Human activities harm Earth's ecosystem and natural resources through activities like: deforestation, pollution, habitat destruction, over-consumption of resources, and introduction of invasive species leading to climate change, biodiversity loss, resources depletion, and environmental degradation.

Explain properly

Section - 11

QUESTION No. 7

(b) Find the missing terms.

(i) 53, 53, 40, 40, 27, 27, 14

(ii) 14, 28, 20, 40, 32, 64, 56

(iii) 8, 6, 9, 23, 87,

(iv) B, E, R, A

(v) V, U, W, V, X, W, Y

Ans in 10
20/11