➜ **BIODIVERSITY**   ❧ pakcity.org ❧

Q.1: <u>Define and explain 'Classification'.</u>

Ans: <u>Classification</u>: Biologists mapped the whole diversity of organisms exist on earth, into simple group. To understand about the characteristics of specific organisms individually, is simply called classification. Classification is actually based on the similar and dissimilar characteristics what organisms shared with each other and by this biologists can easily study and identify the organisms.

Q.2: <u>What is biodiversity?</u>

Ans: <u>Biodiversity</u>: Biodiversity is the combination of two words; Bio (life), diversity (variation) thus it is defined as, "The biodiversity or biological diversity is the degree of variation within or among the species exist on different regions of the earth". It is comprised of different organisms such as bacteria, protozoans, algae, fungi, animals and plants.

Q.3: <u>Describe the importance of biodiversity.</u>

Ans. <u>Importance of Biodiversity</u>: Biodiversity provides many beneficial products which include fiber, oil, dyes, rubber, water, timber, paper and food. It also stabilizes the ecosystem by recycling the nutrients, reduces the amount of pollution by means of forest. Biodiversity also plays an important role in drug discovery and medicinal resources. Medicines from nature account for usage by 80% of the world's population. It also beautifies the nature with lots of trees and animals found in different regions which enhances the tourism.

Q.4: <u>Describe the principles of classification.</u>

Ans: A system of classification is necessary because of the abundance of the variety of life on earth. There are currently around 1.5 million species that have been described and have been given scientific names. In future, more can be identified if they are found.

To study such a diverse pack of organisms exist on earth, biologists classified the Organisms into groups and sub groups. This grouping of organisms is called biological classification.

Principles of Classification: Some organisms share similar fundamental characteristics or functions. It is further explained by means of Morphology (external features of an Organism) in which we study the organisms on the basis of their Homologous and Analogous.

Homologous: In biology, it means similar in structure and have different functions. In other words it means a similarity in internal or chromosomal structures. With internal structures, homology indicates organs that have similar positions, structures, or evolutionary origins. Organs do not have to have the same function to be homologous.

Analogous: In biology, analogous means different in structure and have same functions. Analogous structures are similar structures that evolved independently in two living organisms to serve the same purpose.

Sometimes it is impossible to classify organisms using morphological characters, therefore scientists use other characteristics to classify organisms which include; Cytology and genetics in which organisms are classified on the basis of cellular study, genetic constitution and their development pattern. Biochemistry is also employed in which the chemical substances of the organisms are compared.

Taxonomic Hierarchy: The groups into which organisms are classified are known as taxonomic categories or taxa (singular taxon). The taxa are arranged in ascending order and form a ladder, called taxonomic hierarchy. All organisms are classified into five kingdoms, so, the kingdom is the highest taxon of classification. On the basis of similarities, each kingdom is further divided into smaller taxa in the following ways:

Kingdom | Phylum | Class | Order | Family | Genus | Species
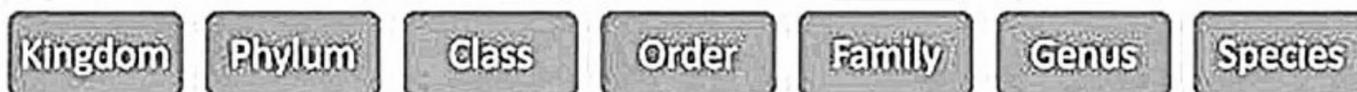
Units of classification: The smallest and basic unit of classification is species. Taxonomic studies consider a group of individual organisms with the fundamental similarities as a species. Thus all the members of the particular species share the similar characteristics and can naturally interbreed to produce a fertile offspring. Closely related species are grouped. together into genera (singular-genus). Similar genera are grouped together into families, families into orders, orders into classes, classes into phyla or division and phyla or division into kingdoms.

Simple classification of two Organisms		
Taxa	Human	Pea
Kingdom	Animalia	Plantae
Phylum	Chordate	Magnoliophyta
Class	Mammalian	Magnoliopside
Order	Primates	Fabales
Genus	Homo	Pisum
Species	Sapiens	Sativum
Scientific name	Homo sapiens	Pisum sativum

Q.5: Define taxonomy.

Ans: Taxonomy: Biologists classified the organisms in order to make them study easily, so the science of classification is called Taxonomy. (Tazm=group, Nomy=naming)

Q.6: Explain the units of classification.

Ans: Units of Classification:

1. **Species:** Species is a group of organisms which can interbreed and produce fertile offspring.

2. **Genus:** Group of closely related species is called genus.

3. **Family:** Group of closely related genera is called family.

4. **Order:** Group of closely related families is called order.

5. **Class:** Group of closely related order is called class.

6. **Phylum:** Group of closely related classes is called phylum.

7. **Kingdom:** Group of closely related phyla is placed together in Kingdom.

Q.7: Explain the aims of classification.

Ans: Aims of Classification: The main aims of classification are:

(i) To determine similarities and dissimilarities among organisms so that they can be studied easily.

(ii) To find the evolutionary relationship among organisms.

Q.8: Briefly describe the history of classification.

Ans: <u>History of Classification</u>: The system that we still use today for giving scientific names to plants and animals has many founders, from the Greek philosopher Aristotle to the Swedish physician and botanist Carolus Linnaeus.
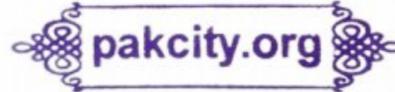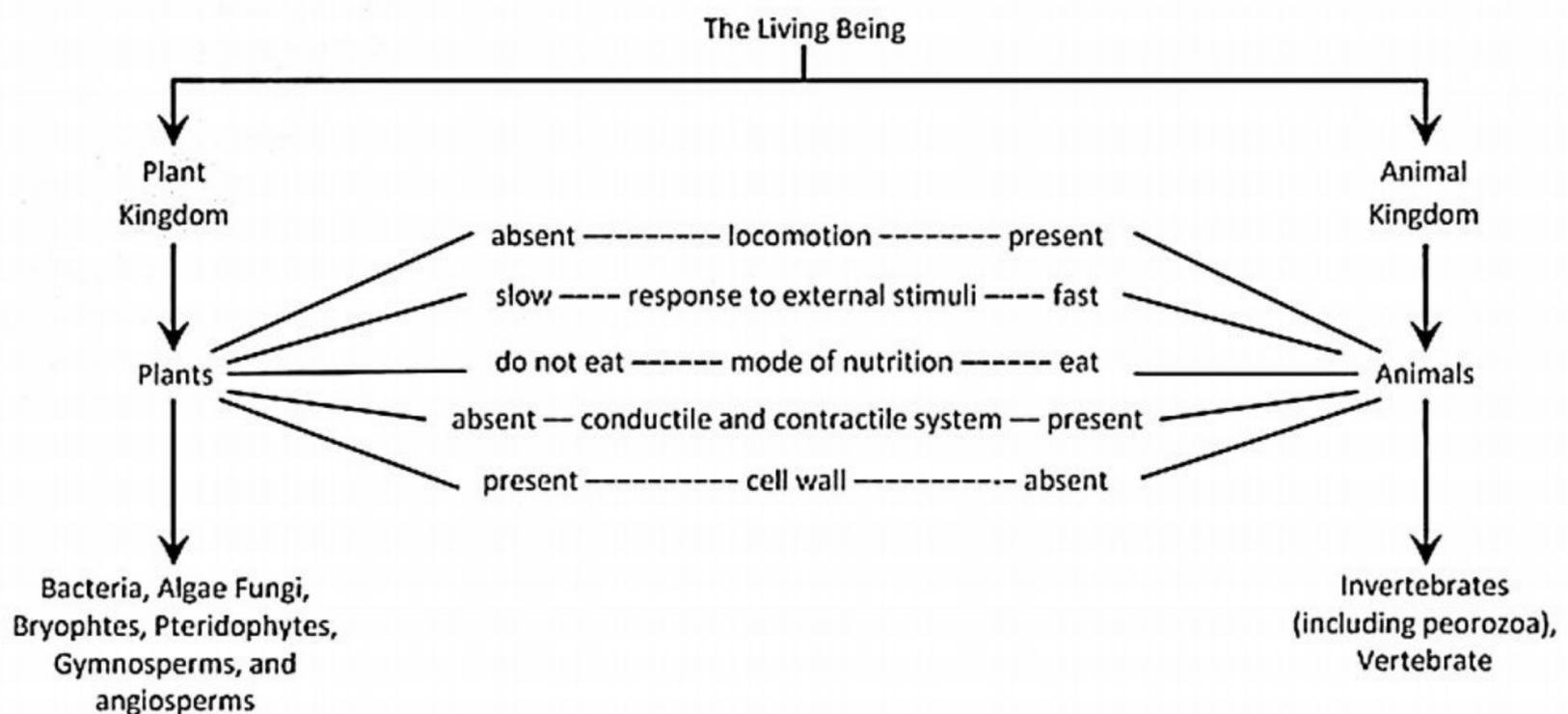
Aristotle: Taxonomy's first father was the philosopher Aristotle (384-322 BC, sometimes called the "father of science". It was Aristotle who first introduced the two key concepts of taxonomy as we practice it today: classification of organisms by type and binomial definition. Aristotle was the first to attempt to classify all the kinds of animals in his book on Animals (historia Animalium in Latin). He grouped the types of creatures according to their similarities: animals with blood and animals without blood, animals that live on water and animals that live on land.

Abu Usman 'Umer Aljahiz: Abu Usman Umer Aljahiz was the first eminent Arab zoologist of the Muslim world. He used to slaughter animals for studying the internal organs of their bodies. He also opened the abdomen of pregnant animals to find out the number of embryos and the location of each one of them in the body. His encyclopedic work in seven big volumes Kitab al-Haywan (Book of Animals) is the most famous work on zoology, in which he has described diseases and treatment.

Carolus Linnaeus: He is considered as the father of taxonomy.

Q.9: How living organisms are classified into two kingdom classification?

Ans. <u>Two Kingdom Classification</u>: Previously the organisms were classified into two groups; all the organisms possess cell wall were placed in plant kingdom and all the organisms do not possess cell wall were placed in animal kingdom.

The Living Being

Plant Kingdom   Animal Kingdom

Plants

absent ———— locomotion ———— present
slow ——— response to external stimuli ——— fast
do not eat —————— mode of nutrition —————— eat
absent — conductile and contractile system — present
present ———————— cell wall ———————— absent

Animals

Bacteria, Algae Fungi, Bryophtes, Pteridophytes, Gymnosperms, and angiosperms
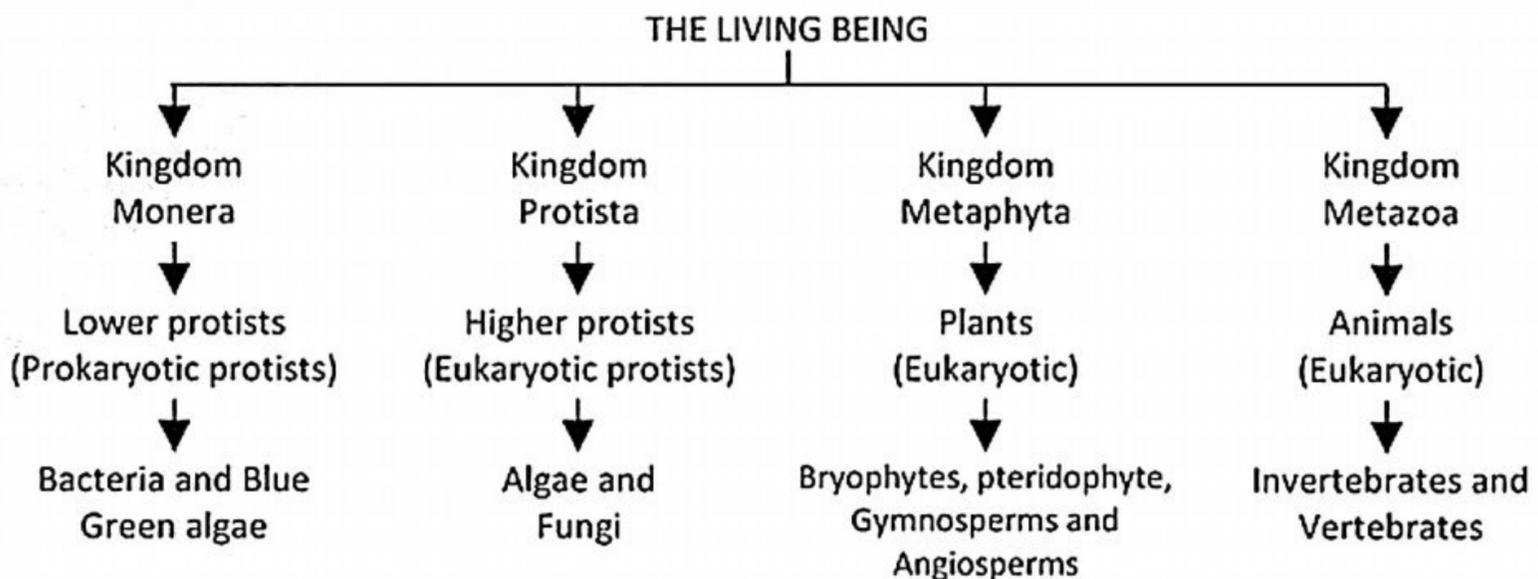
Invertebrates (including peorozoa), Vertebrate

Q.10: How living organisms are classified into three kingdom classification?

Ans. <u>Three Kingdom Classification</u>: Ernst Hackle in 1866, introduced a new kingdom named as Protista to accommodate the organisms exhibiting characters either common to both plants and animals, or unique to their own such as Euglena, Bacteria were also placed under this kingdom.

THE LIVING BEING

All organisms lacking tissue-system, morphological complexities, and division of labour

↓

diversified type of modes of nutrition

↓

Kingdom Protista

↓

Algae (micro, macro) Fungi (micro, macro). Protoloa, Bacteria

All organisms having diverse tissue-system with well defined division of labour and maximum morphological complexities

↓

Autotrophic mode of nutrition

↓

Kingdom Plantae

↓

Bryophytes, Pteridophytes Gymnosperms, Angiosperms

Holophagic mode of nutrition

↓

Kingdom Animalia

↓

Invertebrates, Vertebrates

Q.11: Describe the four kingdom classification.

Ans: <u>Four Kingdom Classification</u>: After the clear concept for kingdom Protista, Copeland (1959) came forward with a four kingdom system to classify the living beings. He designed a new kingdom named as Monera to place all the lower protists which include prokaryotic unicellular organisms and remaining single celled eukaryotic organisms were included in Protista.

THE LIVING BEING

Kingdom Monera

↓

Lower protists (Prokaryotic protists)

↓

Bacteria and Blue Green algae

Kingdom Protista

↓

Higher protists (Eukaryotic protists)

↓

Algae and Fungi

Kingdom Metaphyta

↓

Plants (Eukaryotic)

↓

Bryophytes, pteridophyte, Gymnosperms and Angiosperms

Kingdom Metazoa

↓

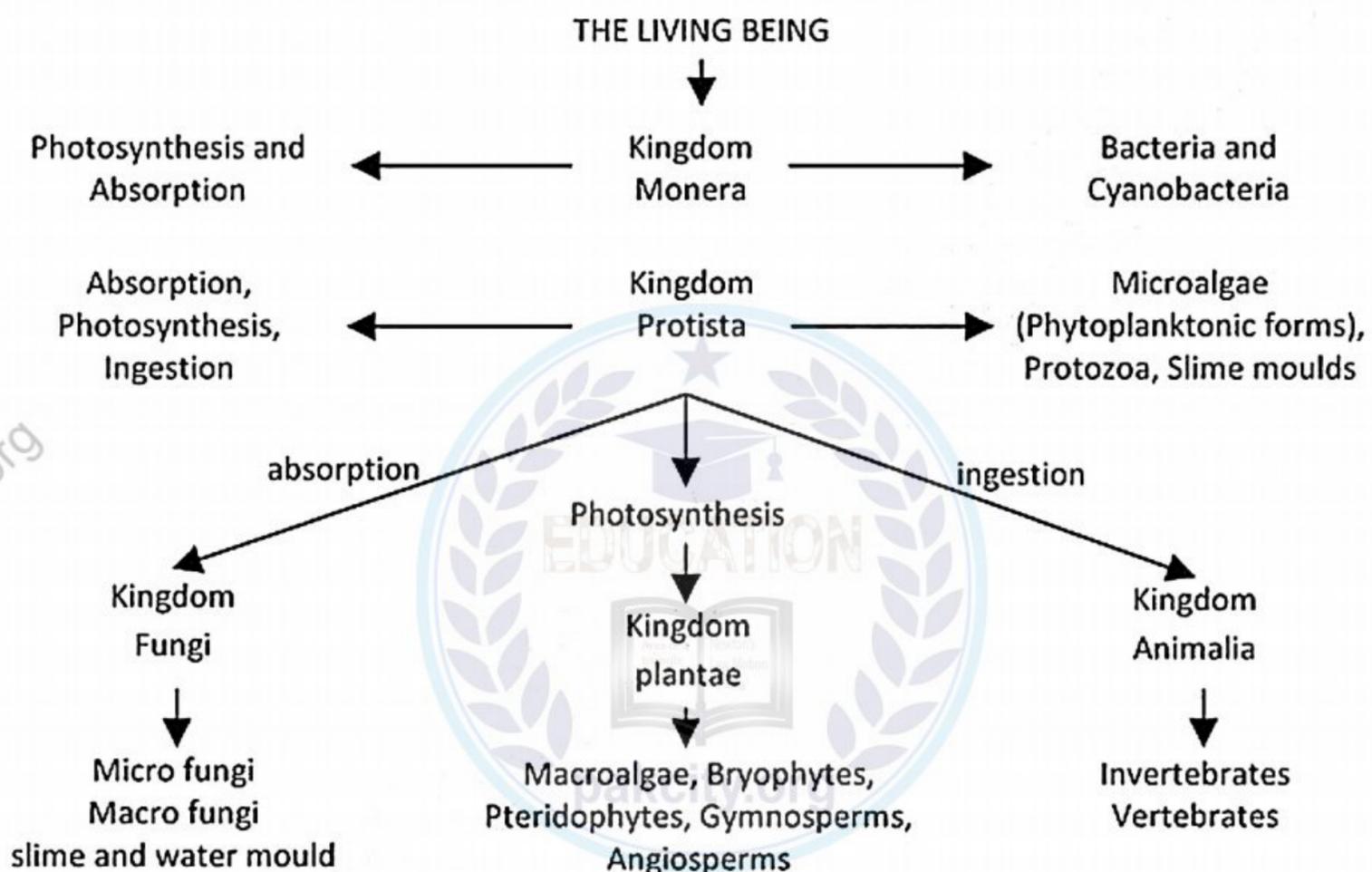Animals (Eukaryotic)

↓

Invertebrates and Vertebrates

Q.12: Describe in detail five kingdom classification.

Ans: <u>Five Kingdom Classification:</u> Robert Whittaker in 1969 classified the organisms into five kingdoms which clearly categorized fungi into a separate kingdom. This system of classification was based on:

- Cellular structure and body organization; unicellular Prokaryote, Unicellular and multicellular eukaryotes.
- Mode of nutrition; autotrophs (plants), Ingestive heterotrophs (animals) and absorptive heterotrophs (fungi).

THE LIVING BEING

Photosynthesis and Absorption	Kingdom Monera	Bacteria and Cyanobacteria
Absorption, Photosynthesis, Ingestion	Kingdom Protista	Microalgae (Phytoplanktonic forms), Protozoa, Slime moulds

absorption — Photosynthesis — ingestion

Kingdom Fungi	Kingdom plantae	Kingdom Animalia
Micro fungi Macro fungi slime and water mould	Macroalgae, Bryophytes, Pteridophytes, Gymnosperms, Angiosperms	Invertebrates Vertebrates

<u>**Five Kingdoms:**</u>

(i) <u>**Kingdom Monera:**</u> It includes all the prokaryotes i.e., bacteria and cyanobacteria.

(ii) <u>**Kingdom Protista:**</u> It is the place for all the eukaryotic unicellular organisms, except yeast which some of them have the features of both plant and animal like most protists are aquatic. It includes protozoa and unicellular algae.

(iii) <u>**Kingdom Fungi:**</u> It includes all the multicellular eukaryotic fungi. They are Achlorophyllous, absorptive heterotrophs. They have cell wall made up of mainly chitin. They have a body called Mycelium which is made up of a thread like structure called hyphae.

(iv) **Kingdom Plantae:** It includes all the multicellular, eukaryotic, photosynthetic or arganisms. They have cell wall mainly made up of cellulose. It includes multicellular algae, bryophytes, pteridophytes, gymnosperm and angiosperms.

(v) **Kingdom Animalia:** All animals are multicellular, eukaryotic which are ingestive heterotrophs without cell wall. It includes all vertebrates and invertebrates except protozoa. *pakcity.org*

Q.13: What do you know about the structure of virus? Why virus is not placed in any kingdom?

Ans: **Structure of Virus:** Virus is non cellular obligate endoparasite (lives inside host cell) It does not have cellular organization but do have nuclear material either DNA or RNA. It has protein coat called capsid that encloses the nucleic acid. It reproduces only inside the host cell. It causes number of diseases in plant like tobacco Mosaic Disease etc. and animals like, cold, flue, dengue, polio, hepatitis, AIDS etc. Due to its non-cellular nature it cannot be placed in any of the five kingdoms.

Q.14: What do you know about bionomial nomenclature? What are the advantages of scientific over common names?

Ans: **Binomial Nomenclature:** A scientific name given to each species comprising two words is known as binomial nomenclature.

Carolus Linnaeus, Swedish naturalist and explorer, who was the first to frame principles for defining natural genera and species of organisms and to create a uniform system for naming them. Through a system of nomenclature in which each species of animal, plant or others receives name of two terms of which the first identifies the genus to which it belongs and the second the species itself or its specific names.

The Advantages of Scientific over Common Names: The advantages of scientific over common names are that they are accepted by speakers of all languages, that each name applies only to one species, and that each species has only one name. As common names cause many problems to identify the organisms as different regions have different languages for the same thing for example; common name of onion in Urdu is "Piyaz" but in other regions it is also known as 'ganda' or 'basal' etc. but in scientific language it is k own as Allium cepa.

This avoids the confusion that often arises from the use of a common name to designate different things in different places or from existence of several Common names for a single species.

Q.15: Describe the principles of binomial nomenclature.

Ans: <u>Principles for Binomial Nomenclature</u>: Some of the rules which are universally adopted for writing scientific name of a species are:

- Scientific name of any organisms should be italicized when printed, such as Homo sapiens and when handwritten these are underlined.
- The first word of the name is generic always started with capital letter, while second term is species which is never capitalized.
- When the scientific name is written first time, it is written full but when it is repeated several times it is abbreviated. For example: The scientific name of the red rose is Rosa indica, it is abbreviated as R. indica.
- Sometimes the author name appears after species name which means the species was described by him. For example; (mango plant) Mangifera indica L. it means Mangifera indica was first described by Linnaeus.

Q.16: Define conservation of biodiversity.

Ans: <u>Conservation of Biodiversity</u>: Conservation of biodiversity simply is the way of caring, saving the species, inhabit on earth from dangers.

Q.17: What are the factors which affecting biodiversity in Pakistan?

Ans: Pakistan is one of few countries in the world to have every kind of geological structure. The geography of Pakistan is a blend of landscapes. You'll find plains, deserts, forests, hills and plateaus. There are coastal areas along the Arabian Sea and mountains of the Karakoram Range in the north part of Pakistan.

This diversity contains diversified habitats and landscapes that support a rich biodiversity of both fauna and flora (animals and plants respectively). Arid and semi-arid regions covering almost 80% of the total land area of the country possess significant portion of country's biodiversity. During the last two-three decades, a number of animal and plant species have become threatened endangered mainly due to over exploitation and loss of natural habitat. Factors like deforestation, overgrazing, soil erosion, salinity and water logging are posing major treats to the remaining biodiversity of the country. The continuing loss of forest habitat, with its associated fauna and flora, will have serious implications for the nation's other natural and agricultural ecosystems. To overcome all these problems biodiversity should be paid attention in order to save the organisms from being endangered.

Q.18: Describe the reasons to conserve biodiversity.

Ans: <u>Reasons to Conserve Biodiversity</u>: Biologists warned that global ecosystem would be collapsed if biodiversity continues to reduced at the same rate. Therefore, it is mandatory to conserve life on earth in order to make nature stable. Some of the key points are highlighted below:

- Human should conserve biodiversity because of its benefit for example services and biological resources which are essential to live our life on earth.
- Biodiversity boosts ecosystem productivity where each species can easily survive in their habitat, if the one will not conserve biodiversity, so food chain and ecosystem will be imbalanced.
- With more plants, trees and animals, the soil improved and became stronger less prone to erosion, drought and flooding.

Q.19: What are the problems associated to conserve biodiversity in Pakistan?

Ans: **Problems Associated to Conserve Biodiversity in Pakistan:** The article from 2009 "Biodiversity in Pakistan Key issue", identified some of the primary challenges to implement Biodiversity Action Plan (BAP) are:

- Lack of awareness of environmental issues on the part of decision-makers and civil society.
- Weak governance (slow decision-making processes, inability to conceptualize policy and lack of distinction between public and private interests).
- Weak capacity of government departments (lack of individual capacity and incentives for performance).
- Lack of funding.

Q.20: Describe the problems associated to conserve biodiversity due to human intervention.

Ans: <u>Problems Associated to Conserve Biodiversity due to Human Intervention:</u>

The International Union for Conservation of Nature (IUCN) reported that 75 percent of genetic diversity of agricultural crops has been lost, 75 percent of the world's fisheries are over exploited, and one-third of coral reefs are threatened with extinction. Man is the factor, which is directly involved in the destruction of biodiversity. The table below show some of the human intervention in the loss of biodiversity.

Table: Impact of human activities on Biodiversity.

```
                          ┌──────────────────┐
                          │ Human activities │
                          └──────────────────┘
        ┌──────────────┬──────────┴─────────┬──────────────┐
        ▼              ▼                    ▼               ▼
┌──────────────┐ ┌──────────────┐  ┌──────────────┐  ┌──────────────┐
│ Urbanization │ │ Deforestation│  │  Pollution   │  │ Over-hunting │
│      or      │ │              │  │              │  │              │
│Industrializ..│ │              │  │              │  │              │
└──────────────┘ └──────────────┘  └──────────────┘  └──────────────┘
        │              │                   │                 │
        ▼              ▼                   ▼                 ▼
┌──────────────┐ ┌──────────────┐  ┌──────────────┐  ┌──────────────┐
│Overpopulation│ │Soil erosion  │  │   Global     │  │Direct killing│
│leads to the  │ │Plant life    │  │  Warming     │  │ of wild      │
│need of       │ │destroy Low   │  │              │  │ animals      │
│buildings.    │ │rainfall      │  │              │  │              │
│              │ │Climate change│  │              │  │              │
└──────────────┘ └──────────────┘  └──────────────┘  └──────────────┘
          │            │                  │                │
          └────────────┴────┬─────────────┴────────────────┘
                            ▼
                  ┌────────────────────────┐
                  │ Biodiversity is effected│
                  └────────────────────────┘
```

pakcity.org
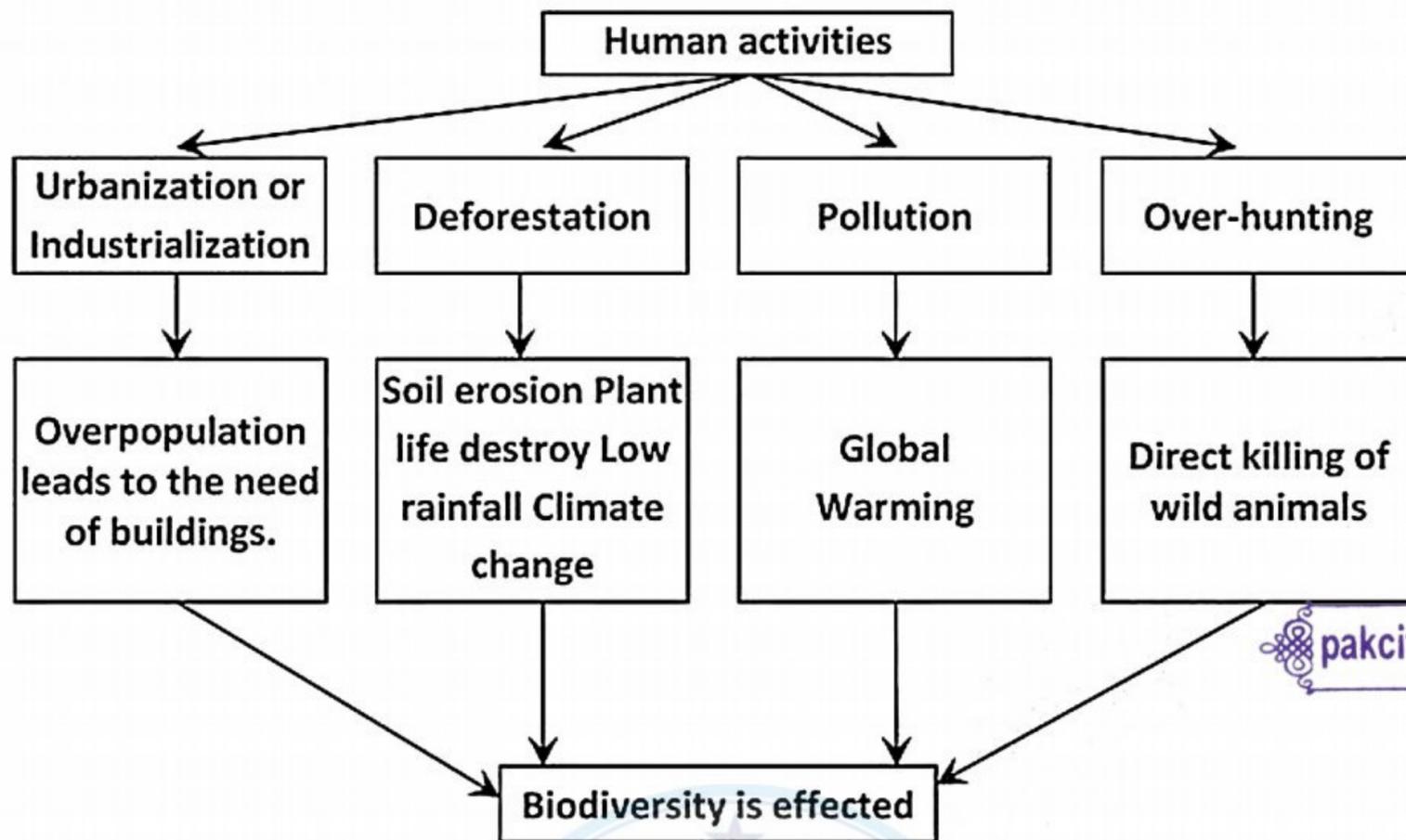
Climate changes are not the only pressure on our environments. Habitat loss and degradation, pollution, overexploitation, and invasive species also play significant roles in biodiversity decline. These pressures are because of human invading activity.

Q.21: **What is deforestation? Describe its causes and effects on biodiversity.**

Ans: <u>Deforestation</u>: The cutting down of trees for the conversion of forest into non-forest land is known as deforestation.

Forests cover 31% of the land area on our planet. They produce vital oxygen and provide homes for people and wildlife. Many of the world's most threatened and endangered animals live in forests, and billions of people rely on its benefits. Forests offer food, fresh air clothing, medicine and shelter. Forests play a critical role in reducing climate change because they act as a carbon sink soaking up carbon dioxide that would otherwise be free in the atmosphere and contribute to ongoing changes in climate patterns. But man is destroying this natural beauty by cutting them down for his sake and comfort.

Causes of Deforestation: Deforestation is done deliberately due to the mining, pap urbanization, timber, for making roads and agriculture expansion and livestock breeding.

Effects of Deforestation: Deforestation result with the great loss in biodiversity such as: increase in the concentration of green-house gases (carbon dioxide, methane, water vapour, nitrous oxide etc.) which leads to global warming, temperature will be high that cause glaciers melting which is the reason of raising sea level and cause flood. It is also the reason of habitat loss of wild life. Soil erosion, low rainfall due to no transpiration are also the result of deforestation.

Q.22: Write few lines on endangered and extinct species.

Ans: **Endangered and Extinct Species:** Due to human activities such as entertainment or food, animals are becoming endangered (at risk of extinction in future) of some have gone extinct (surety of not finding the last individual that species in ecosystem). Some of the endangered species are mentioned below:

Long Billed Vulture
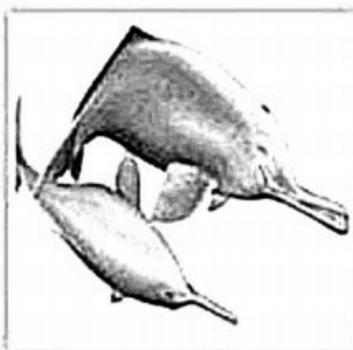
Green Sea Turtle

Snow leopard

Marco polo sheep

European Otter

Baluchistan Forest Dormouse

Indus river dolphin

Asian black bear

Sindh Ibex (Markhor)

Q.23: Why amoeba is not placed in animal kingdom?

Ans: We can't say amoeba or any other single celled hetrotropic organism as animal because they don't come under the kingdom Animalia. They all comes under Kingdom Protista.

As we consider five kingdom classification system in which following characters were took into account:

1) cell type (prokaryote or eukaryotes)

2) complexity of cell organization (differentiated or non-differentiated)

3) mode of nutrition (autotrophic or hetrotrophic)

4) Reproduction

5) evolutionary relationship.

According to which all such organisms like amoeba, paramaecium, egulena, slime moulds, diatoms, dinoflagellates, etc fall under the kingdom Protista.

Amoeba is a unicellular, made up of only one cell, thus it cannot be an animal.

Explanation: Because animals are multicellular, means that organisms consist of more than one cell.

Q.24: Why cyanobacteria are placed in monera?

Ans: Bacteria are neither plants nor animals and today are placed in a separate kingdom called the Monera. Some bacteria, including the very important cyanobacteria or blue-green algae, are capable of photosynthesis, thereby acting like plants. Bacteria are very simple cells.

Blue-green algae, also called cyanobacteria, any of a large, heterogeneous group of prokaryotic, principally photosynthetic organisms. Algae have since been reclassified as protists, and the prokaryotic nature of the blue-green algae has caused them to be classified with bacteria in the prokaryotic kingdom Monera.

Cyanobacteria are included in Kingdom Monera because they are neither plants nor animals, they are single celled organism and are prokaryotes. They are simplest organism . So, they were placed in Kingdom Monera.

Q.25: **Distinguish between the following in tabulated form**

    (i)   **Plan't kingdom and Animal kingdom**

    (ii)   **Monera and protista**

    (iii)   **Fungi and Plantae**

Ans: **(i) Difference between Plant Kingdom and Animal Kingdom** 🏵️ **pakcity.org** 🏵️

	Plant Kingdom	Animal Kingdom
1.	It has multicellular eukaryote plants.	It has multicellular eukaryote animals.
2.	Presence of cell wall (made up of cellulose.)	Absence of cell wall.
3.	Capable of producing their own food (autotrophic mode of nutrition.)	Depend on others for their food requirements (heterotrophic mode of nutrition.)
4.	Photosynthesis occurrence due to the presence of chloroplast.	Since they are non-green in nature and do not produce chlorophyll, they do not undergo photosynthesis.
5.	They are immobile.	They are mobile.
6.	Can grow throughout their life.	Achieve a maximum size and then stop growing.
7.	Consume carbon dioxide and release oxygen.	Consume oxygen and release carbon dioxide.
8.	Have two sets of chromosomes (diploid.)	Have only one set of the chromosome (haploid.)
9.	Have reserved food in the form of starch.	Have reserved food in the form of glucose.

(ii) Difference between Kingdom Monera and Kingdom Protista

	Kingdom Monera	Kingdom Protista
1.	Monera are unicellular organism's having prokaryotic cellular structure.	Protista are also unicellular organisms though possess eukaryotic cellular organization.
2.	Cellular organelles are absent.	Well defined as well membrane-bounded cellular organelles are present.
3.	Monera are simple in structure, with no complexity.	Protista are complex in structure.

4.	It contains small microorganisms.	It contains organisms that are larger than Monera.
5.	Mitochondria and chloroplast are not present.	Mitochondria present for cellular respiration, chloroplast for photosynthesis.
6.	Moneras does not possess a true nucleus.	Protists have their own nuclei, bounded with nuclear membrane.
7.	Mode of nutrition can be autotrophic or heterotrophic.	Mode of nutrition can be holozoic or parasitic or photosynthetic.
8.	Flagella and cilia are not present in Monera.	Falagella and cilia are used for locomotion in some organisms, some also have pseudopodia.
9.	They are cosmopolitan, which means they are found everywhere.	They are found partially in aquatic environment, moist soil, shady places, etc.

(iii) Difference between Kingdom Fungi and Kingdom Plantae

	Kingdom Fungi	Kingdom Plantae
1.	Fungi are eukaryotic heterophs (without chlorophyll) living either as saprophytes; feeding on dead or decaying matter or as parasites.	Plants are eukaryotic autotrophs (with chlorophyll) therefore they can produce their own food.
2.	Fungi are the decomposers of the ecosystem.	Plants are the producers in an ecosystem.
3.	Fungi cell wall is made up of chitin.	Plant cell wall is made up of cellulose.
4.	Fungi may be septate or aseptate.	Plants have definite cell wall.
5.	Fungi cell may be uninucleate or multinucleate.	Plant cells generally possess single nucleus.
6.	Fungi body is filamentous made up of mycelium and hyphae, non-parachymatous without complex organs or differentiation.	Plant body is differentiated into stem, root and leaf.
7.	In plants, stored food is starch.	In fungi, stored food is glycogen.
8.	Plants reproduce by seeds.	Fungi reproduce by spores.

→ **BIODIVERSITY** pakcity.org

Q.1: <u>Define and explain 'Classification'.</u>

Ans: <u>Classification</u>: Biologists mapped the whole diversity of organisms exist on earth, into simple group. To understand about the characteristics of specific organisms individually, is simply called classification. Classification is actually based on the similar and dissimilar characteristics what organisms shared with each other and by this biologists can easily study and identify the organisms.

Q.2: <u>What is biodiversity?</u>

Ans: <u>Biodiversity</u>: Biodiversity is the combination of two words; Bio (life), diversity (variation) thus it is defined as, "The biodiversity or biological diversity is the degree of variation within or among the species exist on different regions of the earth". It is comprised of different organisms such as bacteria, protozoans, algae, fungi, animals and plants.

Q.3: <u>Define taxonomy.</u>

Ans: <u>Taxonomy</u>: Biologists classified the organisms in order to make them study easily, so the science of classification is called Taxonomy. (Tazm=group, Nomy=naming)

Q.4: <u>Explain the units of classification.</u>

Ans: <u>Units of Classification:</u>

1. **Species:** Species is a group of organisms which can interbreed and produce fertile offspring.

2. **Genus:** Group of closely related species is called genus.

3. **Family:** Group of closely related genera is called family.

4. **Order:** Group of closely related families is called order.

5. **Class:** Group of closely related order is called class. pakcity.org

6. **Phylum:** Group of closely related classes is called phylum.

7. **Kingdom:** Group of closely related phyla is placed together in Kingdom.

Q.5: What do you know about the structure of virus? Why virus is not placed in any kingdom? pakcity.org

Ans: <u>Structure of Virus</u>: Virus is non cellular obligate endoparasite (lives inside host cell) It does not have cellular organization but do have nuclear material either DNA or RNA. It has protein coat called capsid that encloses the nucleic acid. It reproduces only inside the host cell. It causes number of diseases in plant like tobacco Mosaic Disease etc. and animals like, cold, flue, dengue, polio, hepatitis, AIDS etc. Due to its non-cellular nature it cannot be placed in any of the five kingdoms.

Q.6: Define conservation of biodiversity.

Ans: <u>Conservation of Bioqiversity</u>: Conservation of biodiversity simply is the way of caring, saving the species, inhabit on earth from dangers.

Q.7: Write few lines on endangered and extinct species.

Ans: <u>Endangered and Extinct Species:</u> Due to human activities such as entertainment or food, animals are becoming endangered (at risk of extinction in future) of some have gone extinct (surety of not finding the last individual that species in ecosystem). Some of the endangered species are mentioned below:

Q.8: Why scientific naming is necessary?

Ans. The advantages of scientific over common names are that they are accepted by speakers of all languages, that each name applies only to one species, and that each species has only one name. As common names cause many problems to identify the organisms as different regions have different languages for the same thing for example; common name of onion in Urdu is "Piyaz" but in other regions it is also known as 'ganda' or 'basal' etc. but in scientific language it is k own as Allium cepa.
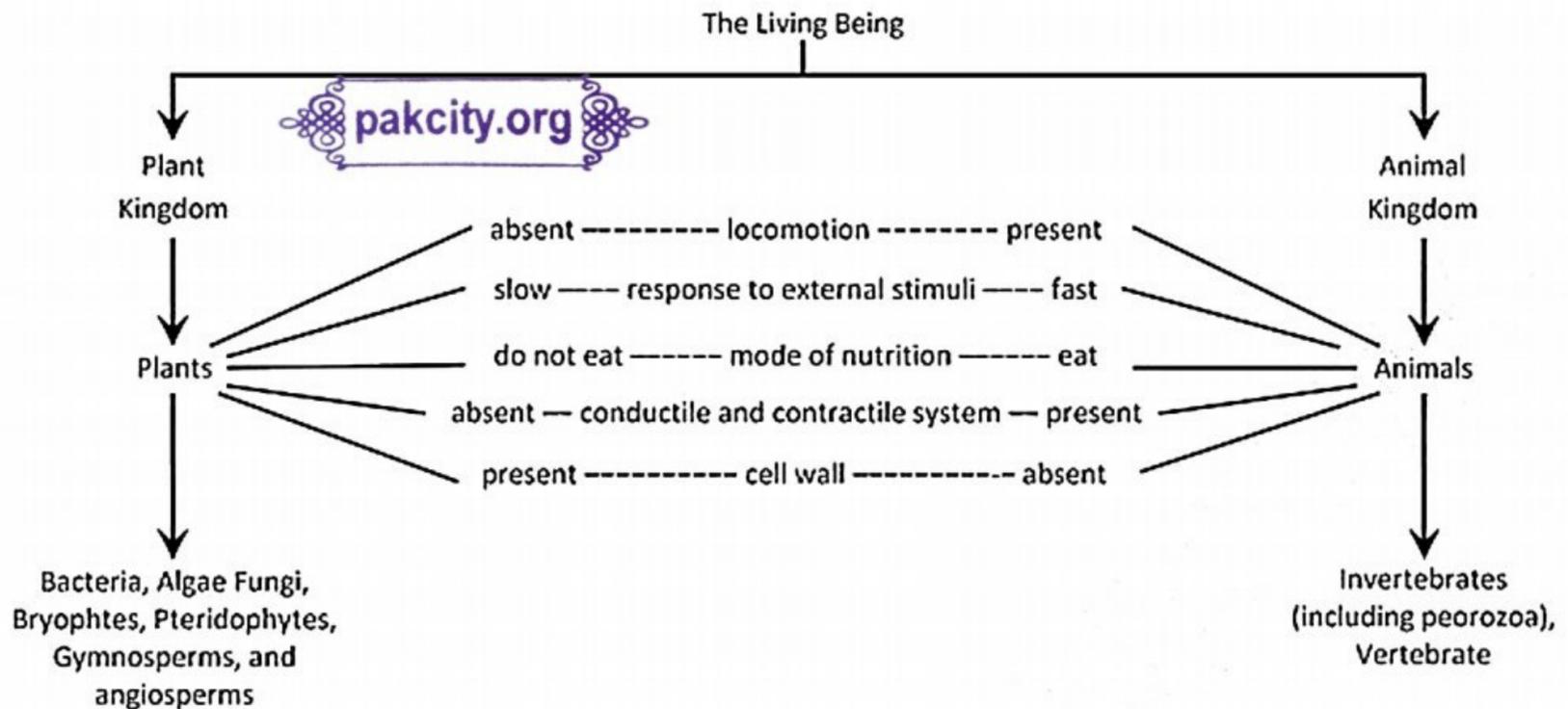
Q.9: Why amoeba is not placed in animal kingdom? pakcity.org

Ans. We can't say amoeba or any other single celled hetrotropic organism as animal because they don't come under the kingdom Animalia. They all comes under Kingdom Protista.

Q.10: How living organisms are classified into two kingdom classification?

Ans.   Two Kingdom Classification

Q.11: Why virus is not placed in any kingdom?

Ans.   Virus is non cellular obligate endoparasite (lives inside host cell) It does not have cellular organization but do have nuclear material either DNA or RNA. It has protein coat called capsid that encloses the nucleic acid. It reproduces only inside the host cell. It causes number of diseases in plant like tobacco Mosaic Disease etc. and animals like, cold, flue, dengue, polio, hepatitis, AIDS etc. Due to its non-cellular nature it cannot be placed in any of the five kingdoms.

Q.13: Why cyanobacteria are placed in monera?

Ans.   Blue-green algae, also called cyanobacteria, any of a large, heterogeneous group of prokaryotic, principally photosynthetic organisms. Algae have since been reclassified as protists, and the prokaryotic nature of the blue-green algae has caused them to be classified with bacteria in the prokaryotic kingdom Monera.

Q.12: Draw chart showing three kingdom classification.

Ans.   Three Kingdom Classification

THE LIVING BEING

All organisms lacking tissue-system, morphological complexities, and division of labour

↓

diversified type of modes of nutrition

↓

Kingdom Protista

↓

Algae (micro, macro)
Fungi (micro, macro).
Protoloa, Bacteria

All organisms having diverse tissue-system with well defined division of labour and maximum morphological complexities

Autotrophic mode of nutrition

↓

Kingdom Plantae

↓

Bryophytes, Pteridophytes Gymnosperms, Angiosperms

Holophagic mode of nutrition

↓

Kingdom Animalia

↓

Invertebrates, Vertebrates