YAKEEN NEET 2.0

2026

The Living World

Botany | Lecture - 02

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Topics to be covered

1. TAXONOMIC CATEGORIES ✓

2. QUESTIONS : 50 ✓ HOME WORK (TEST)

3. NCERT READ
   - INTRODUCTION
   - SCIENTIST
   - SUMMARY

4.

TAXONOMIC CATEGORIES

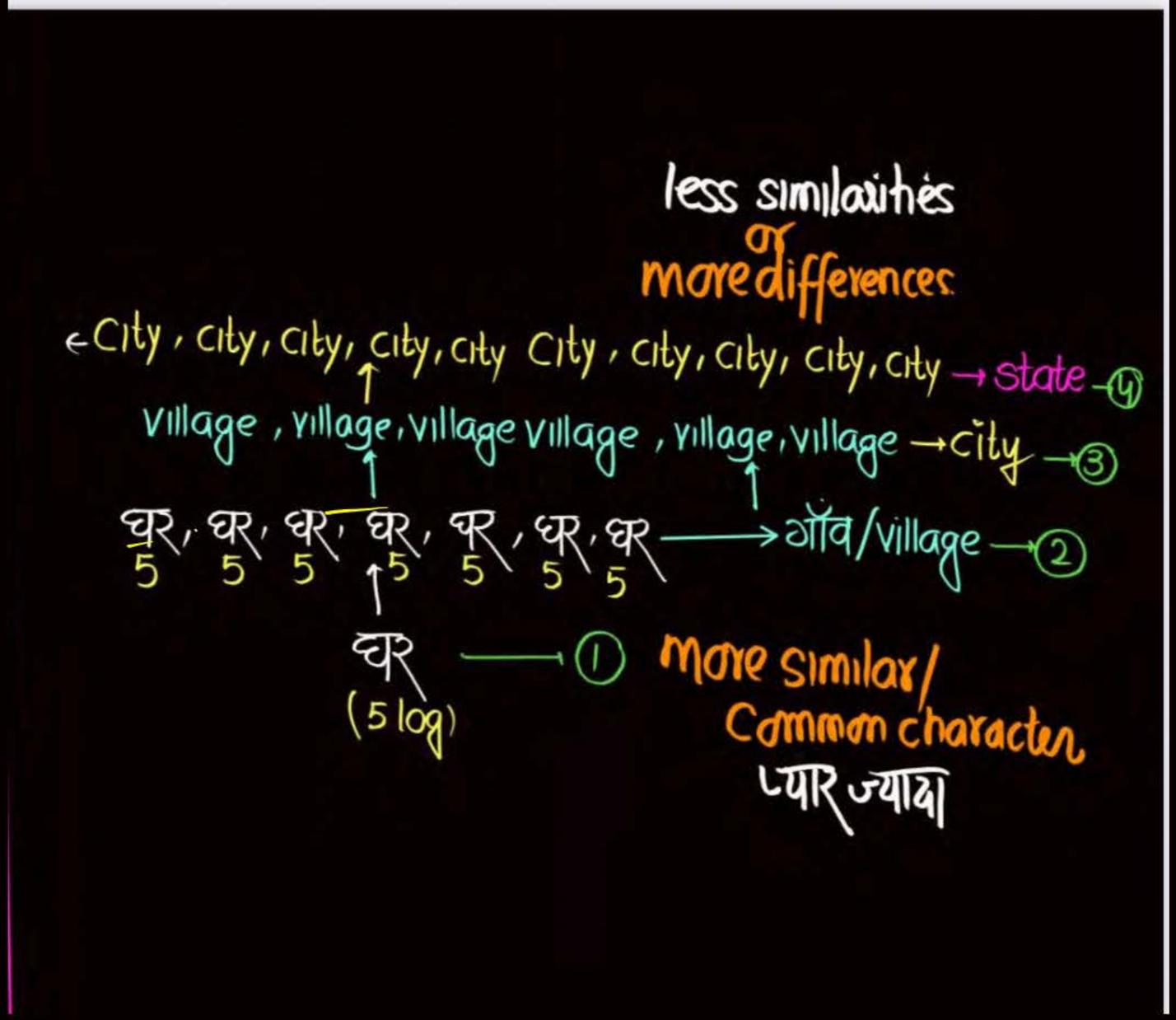
SPECIES

- BASIC / SMALLEST UNIT OF CLASSIFICATION
- TERM: JOHN RAY
- BIOLOGICAL CONCEPT OF SPECIES: MAYR'S
- INDIVIDUALS WHICH ARE INTERBREEDING TOGETHER (REPRODUCTION), FUNDAMENTAL SIMILARTIES: CONSIDERED AS ONE SPECIES
- ONE SPECIES REPRODUCINVELY ISOLATED FROM OTHER SPECIES

GENUS	SPECIES	
Panthera	tigris	tiger
Panthera	leo	LION
Panthera	pardus	LEOPARD

→ SHOW MORE SIMILAR CHARACTER COMPARE TO SPECIES OF ANOTHER GENERA. (GENUS)

Solanum	tuberosum	POTATO
Solanum	melongena	BRINJAL
Solanium	nignum	MAKOI / BLACK NIGHT SHADE
Canis	familiaris	DOG
Canis	lupus	WOLF
Canis	aureus	JACKAL.


less similarities
or
more differences
City, City, City, City, City City, City, City, City, City → state ④
Village, Village, Village Village, Village, Village → city ③
घर, घर, घर, घर, घर, घर, घर → गाँव/village ②
5 5 5 5 5 5 5
घर → ①
(5 log)
more similar/
Common character
प्यार ज्यादा

GENUS

★ DIFFERENT SPECIES PLACED IN SAME GENUS

↓

SHOW SIMILAR CHARACTER.

MONOTYPIC

★ ONE SPECIES

Eg HOMO SAPIENS.

POLYTYPIC

★ GENUS CONTAIN MORE THAN ONE SPECIES

Eg: SOLANUM

★ FELIS CATUS (CAT)

↓

GENUS.

FAMILY

★ GROUP OF RELATED GENUS.

★ FELIS, PANTHERA → FELIDAE.

★ DOG → CANIDAE

★ SOLANUM TUBEROSUM
DATURA INNOXIA
PETUNIA INFLATA
⇝ SOLANACEAE

(CRITERIA: VEGETATIVE & REPRODUCTIVE CHARACTER)

★ CONVOLVULACEAE : SWEET POTATO.

ORDER

	SIMILAR CHARACTER	DISIMILAR CHARACTER	CLASSIFICATION COMPLEXITY
KINGDOM, PHYLUM/DIVN, CLASS	LESS	MORE	MORE
ORDER, FAMILY, GENUS			
SPECIES	MORE	LESS	LESS

KINGDOM, PHYLUM/DIVN, CLASS → DIFFERENCES INCREASE

ORDER, FAMILY, GENUS → SIMILAR CHARACTER MORE

★ GROUP OF RELATED FAMILY.

SOLANACEAE, CONVOLVULACEAE → POLYMONIALES (FLORAL CHARACTER)

FELIDAE., CANIDAE → CARNIVORA (CANINE TEETH)

★ MANGO : SAPINDALES (ORDER)

Maximum similarity at
(A) Solanaceae (Family)
(B) Solanum (Genus)
(C) Polynomials (ORDER)
(D) Dog (SPECIES)

Minimum similarity at
(A) Cat (SP)
(B) Panthera (GENUS)
(C) Poales (ORDER)
(D) Dicotyledonae (CLASS)

Complexity of classification complex
(A) Kingdom
(B) Phylum
(C) Class
(D) Family

CLASS

* GROUP OF RELATED ORDER.

POLYMONIALES, SAPINDALES. → DICOTYLEDONAE

RODENTIA (RAT), CARNIVORA, PRIMATA (MONKEY, GORILLA, GIBBON) → MAMMALIA

HAIR ON SKIN, MAMMARY GLAND.

PHYLUM / DIVISION → PLANT, ANIMAL.

* GROUP OF RELATED CLASS

DICOTYLEDONAE, MONOCOTYLEDONAE → ANGIOSPERMAE (DIVISION)

* AMPHIBIAN, REPTILE, MAMMALS → CHORDATA (NOTOCHORD, DORSAL NEURAL SYSTEM)

KINGDOM

* PLANTAE : CW ✓
* ANIMALIA : CW X

CW: CELL WALL.

GROWTH, REPN, METAB, CONSCIOUS → 15 minute (RECORDED)

→ EKaR / दखा

NOTE :

CATEGORY

FAMILY → SOLANACEAE.

TAXON.

TAXON AT HIGHER RANK.

DIFF TAXON AT DIFF. LEVEL.

SPECIES → POTATO, TOMATO

TAXON AT LOWER RANK

TAXON TAXON

DIFF TAXON AT SAME LEVEL

* A CATEGORY CAN HAVE MORE THAN ONE TAXON (TRUE)
* CATEGORY REPRESENT TAXON
* CATEGORY OR TAXON

TABLE 1.1 Organisms with their Taxonomic Categories

Common Name	Biological Name	Genus	Family	Order	Class	Phylum/ Division
Man	*Homo sapiens*	*Homo*	Hominidae	Primata	Mammalia	Chordata
Housefly	*Musca domestica*	*Musca*	Muscidae	Diptera	Insecta	Arthropoda
Mango	*Mangifera indica*	*Mangifera*	Anacardiaceae	Sapindales	Dicotyledonae	Angiospermae
Wheat	*Triticum aestivum*	*Triticum*	Poaceae	Poales	Monocotyledonae	Angiospermae

SUMMARY

The living world is rich in variety. Millions of plants and animals have been identified and described but a large number still remains unknown. The very range of organisms in terms of size, colour, habitat, physiological and morphological features make us seek the defining characteristics of living organisms. In order to facilitate the study of kinds and diversity of organisms, biologists have evolved certain rules and principles for identification, nomenclature and classification of organisms. The branch of knowledge dealing with these aspects is referred to as taxonomy. The taxonomic studies of various species of plants and animals are useful in agriculture, forestry, industry and in general for knowing our bio-resources and their diversity.

Biology is the science of life forms and living processes. The living world comprises an amazing diversity of living organisms. Early man could easily perceive the difference between inanimate matter and living organisms. Early man deified some of the inanimate matter (wind, sea, fire etc.) and some among the animals and plants. A common feature of all such forms of inanimate and animate objects was the sense of awe or fear that they evoked. The description of living organisms including human beings began much later in human history. Societies which indulged in anthropocentric view of biology could register limited progress in biological knowledge.

Micro-organism, Plants, animals.

GROWTH REPRODN, METABOLISM, CONSCIOUSNESS.

NON LIVING.

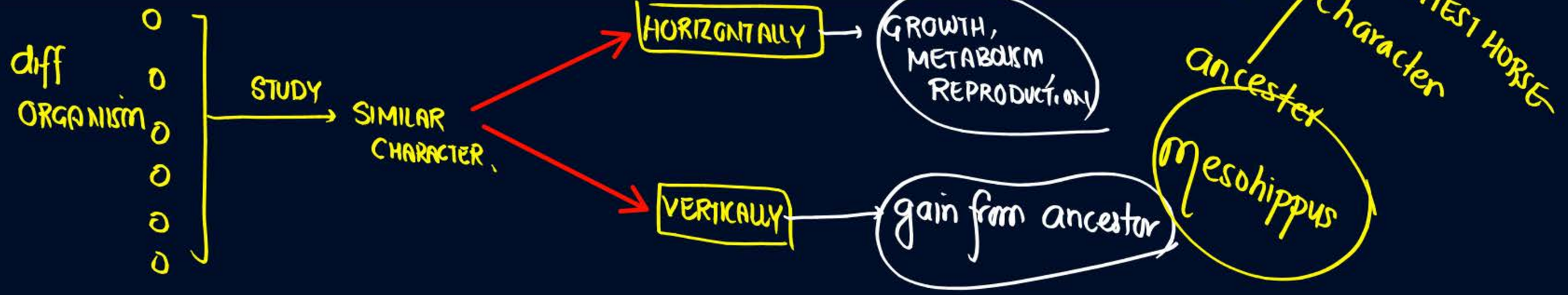
Animate

TABLE, FAN ETC

HUMAN CENTRIC (FOCUS: STUDY).

Systematic and monumental description of life forms brought in, out of necessity, detailed systems of identification, nomenclature and classification. The biggest spin off of such studies was the recognition of the sharing of similarities among living organisms both horizontally and vertically. That all present day living organisms are related to each other and also to all organisms that ever lived on this earth, was a revelation which humbled man and led to cultural movements for conservation of biodiversity. In the following chapters of this unit, you will get a description, including classification, of animals and plants from a taxonomist's perspective.

IMPORTANCE



Born on 5 July 1904, in Kempten, Germany, ERNST MAYR, the Harvard University evolutionary biologist who has been called 'The Darwin of the 20th century', was one of the 100 greatest scientists of all time. Mayr joined Harvard's Faculty of Arts and Sciences in 1953 and retired in 1975, assuming the title *Alexander Agassiz Professor of Zoology Emeritus*. Throughout his nearly 80-year career, his research spanned ornithology, taxonomy, zoogeography, evolution, systematics, and the history and philosophy of biology.

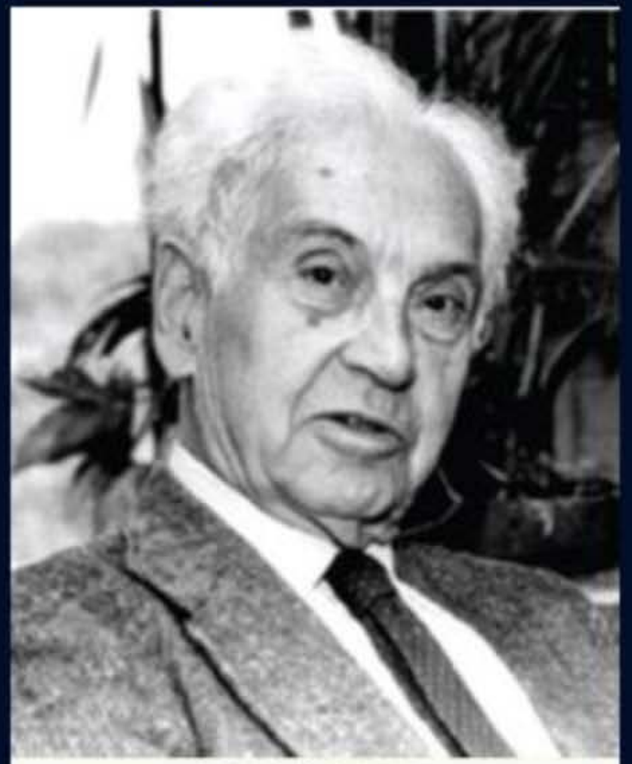
SYSTEMATIC & ORIGIN OF SPECIES : WORK.

ZOOLOGIST

SON OF LOUIS AGASSIZ

diff animals on diff place study.

STUDY OF BIRD



Ernst Mayr
(1904 – 2004)

He almost single-handedly made the origin of species diversity the central question of evolutionary biology that it is today. He also pioneered the currently accepted definition of a biological species. Mayr was awarded the three prizes widely regarded as the *triple crown* of biology: the *Balzan Prize* in 1983, the *International Prize for Biology* in 1994, and the *Crafoord Prize* in 1999. Mayr died at the age of 100 in the year 2004.

INTERBREED

Question

'X' and 'Y' are the components of Binomial nomenclature. This naming system was proposed by 'Z': (2023 Manipur)

1. X-Specific epithet, Y - Generic name, Z - Carolus Linnaeus
2. X - Generic name, Y - Specific epithet, Z - R.H. Whittaker
3. X - Generic name, Y - Specific epithet, Z - Carolus Linnaeus ✓
4. X-Specific epithet, Y - Generic name, Z - R.H. Whittaker

Question

House fly belongs to family. (2023 Manipur)

1. Calliphoridae
2. Muscidae
3. Cyprinidae
4. Hominidae

Question

Which one of the following belongs to the family Muscidae? (2021)

1. Grasshopper
2. Cockroach
3. Housefly
4. Fire fly

Question

Select the correctly written scientific name of Mango which was first described by Carolus Linnaeus. (2019)

1. *Mangifera indica Car. Linn.*
2. *Mangifera indica Linn.*
3. *Mangifera indica* Linn.
4. Mangifera Indica

Question

Which of the following is against the rules of ICBN? (2019 odisha)

1. Hand written scientific names should be underlined. C
2. Every species should have a generic name and a specific epithet. C
3. Scientific names are in Latin and should be italized. C.
4. Generic and specific names should be written starting with small letters. ✓

C Small

Question

Match Column-I with Column-II for housefly classification and select the correct option using the codes given below. (2016-II)

	Column-I		Column-II
A.	Family	p.	Diptera
B.	Order	q.	Arthropoda
C.	Class	r.	Muscidae
D.	Phylum	s.	Insecta

1. A-(S); B-(R); C-(Q); D-(P)
2. A-(S); B-(Q); C-(P); D-(R)
3. A-(R); B-(P); C-(S); D-(Q)
4. A-(R); B-(Q); C-(S); D-(P)

Question

Which of the following is a class?

1. Mammalia
2. Sapindales
3. Primata
4. Poales

Question

_____ is the assemblage of families which exhibit a few similar characters.

1. Class
2. Genus
3. Species
4. Order ✓

K
P
C
O ✓
F

Question

Fill in the blanks A and B.

Kingdom → Phylum → [A] → Order → [B]

1. A - Genus; B - Species
2. A - Family; B - Class
3. A - Class; B - Family
4. A - Species; B - Division

Question

Match the following columns

1. a(i), b(iii), c(iii), d(ii)
2. a(i), b(iii), c(ii), d(i)
3. a(ii), b(i), c(i), d(iii)
4. a(iii), b(i), c(ii), d(i)

	Column-I		Column-II
a.	Binomial nomenclature	(i)	Carolus Linnaeus
b.	Generic name	(ii)	Muscidae
c.	Family	(iii)	*Panthera*
d.	*Systema naturae*		

Question

Three different genera *Solanum*, *Petunia* and *Datura* are placed in the family

1. Poaceae
2. Anacardiaceae
3. Hominidae
4. Solanaceae

Question

Cat and dog are placed in which families respectively

1. Felidae and Hominidae
2. Muscidae and Felidae
3. Poaceae and Canidae
4. Felidae and Canidae

Question

In which of the following pair of category, greater is the difficulty of determining the relationship to other taxa at the same level, thus the problem of classification becomes more complex?

1. Genus and species
2. Tribe and genus
3. Division and phylum
4. Species and family

Question

In taxonomic hierarchy, which of the following group of taxa will have less number of similarities as compared to other?

1. Solanaceae, Convolvulaceae and Poaceae (F)
2. Polymoniales, Poales and Sapindales (O)
3. *Solanum*, *Petunia* and *Atropa* (G)
4. Leopard, tiger and lion (S)

DONE.

Question

Taxonomic categories which come lower to the rank of class are

1. Order, phylum, family, species
2. Order, family, genus, species
3. Division, family, order, genus
4. Order, division, genus, species

Question

Out of the following taxa which one represents the highest rank in taxonomic hierarchy?

1. Poales (ORDER).
2. Anacardiaceae (F)
3. Monocotyledonae (C)
4. Polymoniales (O)

उपर

K

P

C

Question

The correctly written scientific name of potato is

1. *Solanum tuberosum Linn*
2. *Solanum tuberosum* Linn
3. *Solanum tuberosum* Linn
4. Solanum *tuberosum* Linn

Question

Each genus

1. May have one or more than one specific epithets representing different organisms

SOLANUM ,, CANIS

2. Always has one specific epithet

HOMO SAPIENS.

3. Always has multiple specific epithets

4. May have more than one specific epithets representing the same organism

Question

Genus is a group of related

1. Species
2. Classes
3. Divisions
4. Phyla

Question

Find out the true (T) / false (F) statements and choose the correct option

I. Families are characterised on the basis of both vegetative and reproductive features of plant species

II. *Solanum, Petunia* and ~~*Lilium*~~ LILIACEAE. belong to the family Solanaceae

III. *Panthera* and *Felis* belong to the ~~order~~ Family Felidae

IV. Dog belongs the family Canidae

	I	II	III	IV
1	T	T	F	F
2	T	T	T	F
3	T	F	T	T
4	T	F	F	T

Question

Find out the missing category 'X'

Species → Genus → X → Order → Class

1. Class
2. Subspecies
3. Variety
4. Family

Question

Which of the following is correct?

1. Convolvulaceae and Solanaceae belong to the order Polymoniales ✓
2. The family Carnivora includes ~~orders~~ Family like Canidae and Felidae
3. ~~O~~nly seven categories are possible in classification system X
4. Taxonomic categories are merely morphological aggregates (FALSE)

Question

Find out the incorrect match

	Common name	Family	Order
1	Mango	Anacardiaceae	Sapindales
2	Man	Hominidae	Primata
3	Wheat	Poaceae	Poales
4	Housefly	Musca	Diptera

Question

Given organisms belongs to how many genera?

Wheat, Brinjal, Potato, Lion, Dog, Tiger

TRITICUM SOLA. SOLA. PAN CANIS PAN

1. Three
2. Two
3. Four
4. Five

Question

Organisms which can freely interbreed and produce fertile offspring and have similar coded information or blue print for making these organisms are called

1. Species
2. Tribe
3. Genus
4. Sub-genus

Question

The correct sequence of taxonomic categories is

1. Division-class-family-tribe-order-genus-species
2. Division-class-order-family-tribe-genus-species
3. Phylum-order-class-tribe-family-genus-species
4. Class-phylum-tribe-order-family-genus-species

Question

Two species can be said to be reproductively isolated if they are

1. Interfertile
2. Not interfertile
3. Do not grow together in a common habitat
4. Growing together in a common habitat

Question

A genus having many species is known as

1. Polytypic
2. Monotypic
3. Polygamic
4. Both (1) and (3)

Question

In taxonomic hierarchy, which of the following group of taxa will have more number of similarities as compared to other?

1. Anacardiaceae, Convolvulaceae and Poaceae (F).
2. Polymoniales, Poales and Sapindales (O)
3. *Solanum*, *Petunia* and *Atropa* (9)
4. Leopard, tiger and lion (S).

नीचे.

Question

In which of the following pair of category, greater is the difficulty of determining the relationship to other taxa at the same level, thus, the problem of classification becomes more complex?

उपर : Similar Character less

1. Genus and species
2. Variety and genus
3. Division and phylum
4. Species and family

Question

Rice, cereals, monocots and plants represent

SP (POACEAE) CLASS

1. Different taxa at different level
2. Same taxa of different category
3. Different category of same taxa
4. Same category for different taxa

Question

The equivalent rank of Carnivora in taxonomic categories of man and housefly is respectively

ORDER.

1. *Homo* and *Musca*
2. Hominidae and Muscidae
3. Mammalia and Insecta
4. Primata and Diptera

Question

All given are suffixes used for category class, except

1. -phyta (Divn).
2. -opsida Class
3. -phyceae Class.
4. -ae

Dicotyledonae

Question

Which category comes after phylum in descending order in taxonomic hierarchy?

1. Genus
2. Family
3. Class
4. Species

Question

RODENTIA

Order primata and carnivora are placed in the same class, i.e.

1. Hominidae
2. Mammalia
3. Insecta
4. Chordata

Question

Fishes, amphibians, reptiles and birds are kept in the same _____

mammals.

1. Order
2. Class
3. Genus
4. Phylum (CHORDATA). ✓

Question

Choose odd one out w.r.t. *Panthera leo*

1. Common name of tiger (SCIENTIFIC)
2. *Panthera* represents generic name
3. *leo* represents specific epithet
4. *Panthera* represents higher level of taxon than *leo* (GENUS, SPECIES)

Question

Potato and brinjal belong to the genus *Solanum*, which reflects that

1. They belong to single species
2. They are a group of related species
3. They both are morphologically and structurally similar to each other in all respects
4. They can always produce fertile hybrid

Question

Class mammalia consists of

1. Order carnivora only ✗
2. Families like felidae and canidae only ✗
3. Related orders like carnivora, primata, etc. ✓
4. All animals belonging to various phyla ✗

Homework from YAKEEN NEET 2.0 2026 Module

MODULE : PYQ → SYLLABUS

NEW NCERT

15 minute (RECORDED)

G
R
M
C

EXTRA CHEESE

FOCUS नहीं करना

ONE TIME READ.

खुद से NCERT READ करना

मैं भी कराऊँगा।

Revision Planner

S : INTERPHASE + PROPHASE + 1-2 LECTURE (LIVING WORLD)

S : MET, ANA, TELO, CYTOKIN. + (QUESTION & TEST + NCERT READ) LIVING WORLD

M : Meiosis-I

T : Meiosis-II

W : All PROKARYOTE

T : CILIA FLAGELLA CENTRIOLE, CYTOSKELETON,

TIME TABLE : MONDAY

THANK YOU