



Chapter

1

Introduction

BIOLOGY AND ITS MAJOR FIELDS OF SPECIALIZATIONS

MCQS

- (1) The study of microorganisms is called:
 - (a) Molecular Biology
 - (b) Microbiology
 - (c) Bacteriology
 - (d) Virology
- (2) Study of fossils is called:
 - (a) Zoogeography
 - (b) Morphology
 - (c) Paleontology
 - (d) Physiology
- (3) The study of *Plasmodium* and its life cycle is included in:
 - (a) Parasitology
 - (b) Microbiology
 - (c) Virology
 - (d) Both a & b
- (4) Biology does not deal with:
 - (a) Living part of nature
 - (b) Non living things which effect life
 - (c) Meaning of life
 - (d) Interaction with non-living thing
- (5) Behaviour and communal life of human is studied in:
 - (a) Human biology
 - (b) Environmental biology
 - (c) Social biology
 - (d) Ecology
- (6) Virus, bacteria and Tape worm can be collectively studied in:
 - (a) Microbiology
 - (b) Parasitology
 - (c) Bacteriology
 - (d) Virology
- (7) Microscopic study of tissues:
 - (a) Cytology
 - (b) Histology
 - (c) Biotechnology
 - (d) Microbiology
- (8) Chlorine is _____ percentage of human body out of all bio-elements.
 - (a) 0.15%
 - (b) 0.35%
 - (c) 0.25%
 - (d) 0.05%
- (9) The study of living organisms present in Rivers, Lakes etc. is called:
 - (a) Social biology
 - (b) Human biology
 - (c) Biotechnology
 - (d) Fresh water biology

PAST PAPERS MCQS

- (10) Study of tissue is called: (LHR 2022)
 - (a) Morphology
 - (b) Anatomy
 - (c) Histology
 - (d) Microbiology
- (11) The Study of functions of different parts of an organism (SGD 2017)
 - (a) Morphology
 - (b) Physiology
 - (c) Anatomy
 - (d) Ecology
- (12) Study of social behaviour of human is called: (GRW 2018)
 - (a) Anatomy
 - (b) Social biology
 - (c) Paleontology
 - (d) Physiology

- (13) **The branch of biology which deals with study of ancestral history is:** (DGK 2019)
 (a) Genetics (b) Zoogeography
 (c) Evolution (d) Paleontology
- (14) **Internal morphology is also called.** (SGD 2019)
 (a) Physiology (b) Anatomy
 (c) Histology (d) Palaeontology
- (15) **Zoogeography is study of distribution of what in nature:** (LHR 2021)
 (a) Animals (b) Plants
 (c) Trees (d) Zoos
- (16) **Study of distribution of animals in nature is called _____.** (LHR 2021)
 (a) Ecology (b) Environmental Biology
 (c) Zoogeography (d) Social Biology
- (17) **The branch of biology which deals with the use of living organisms, systems or processes in manufacturing and service industry is called _____.** (LHR 2021)
 (a) Biotechnology (b) Human biology
 (c) Molecular biology (d) Social biology
- (18) **The study of fossils is called:** (LHR 2022)
 (a) Histology (b) Genetics
 (c) Paleontology (d) Morphology

LEVELS OF BIOLOGICAL ORGANIZATION

.MCQS

- (19) **Oxygen carbon & nitrogen constitute _____ % of man.**
 (a) 86 (b) 65
 (c) 96 (d) 90
- (20) **The living component of cell is called:**
 (a) Leucoplast (b) Protoplasm
 (c) Nucleoplasm (d) Cytoplasm
- (21) **Which one is a macromolecule?**
 (a) H₂O (b) CO₂
 (c) Starch (d) All of the above
- (22) **All of the followings are trace elements except:**
 (a) Cu (b) Zn
 (c) P (d) Mn
- (23) **A large regional community which is primarily determined by climate is called:**
 (a) Biome (b) Environment
 (c) Topography (d) Climate
- (24) **%age of Mg in human is**
 (a) 0.35% (b) 0.25%
 (c) 0.15% (d) 0.05%
- (25) **The organ level organization is less definite in _____ than in animals.**
 (a) Plants (b) Chordates
 (c) Virus (d) All of the above
- (26) **The total number of rats in rice field is an example of:**
 (a) Community (b) Population
 (c) Individual (d) None of these

- (27) The dynamic collection of all the organisms constitute:
(a) Community (b) Population
(c) Both a & b (d) None of these
- (28) The number of bio-elements are:
(a) 92 (b) 2
(c) 16 (d) 4
- (29) The %age of sodium in cell is:
(a) 1 (b) 0.35%
(c) 0.25% (d) 0.15%
- (30) A group of cells which are similar in structure & function forms:
(a) Tissue (b) Organ
(c) Organ system (d) Population
- (31) The bio element with highest % age in human body is:
(a) Nitrogen (b) Hydrogen
(c) Carbon (d) Oxygen
- (32) Stomach has secretory:
(a) Epithelium (b) Endometrium
(c) Endodermis (d) Endothelium
- (33) Lowest level in biological organization is:
(a) Atom (b) Tissue
(c) Organ (d) Organ system
- (34) How many bio-elements account for 99% biomass of human body?
(a) 10 (b) 16
(c) 6 (d) 4
- (35) Which bio-element among the following has highest percentage?
(a) Chlorine (b) Sulphur
(c) Sodium (d) Potassium
- (36) All living and non-living things are formed of simple units called:
(a) Atom (b) Cell
(c) Molecules (d) Organ
- (37) The part of earth inhabited by living organisms is called:
(a) Community (b) Biosphere
(c) Ecosystem (d) Biome
- (38) Micro and macromolecules are arranged to form:
(a) Conjugated molecule (b) Cell
(c) Organelle (d) Both b & c
- (39) In plants long term regulation of activities is brought about by:
(a) Endocrine system (b) Hormones
(c) Nervous system (d) Enzymes
- (40) Number of individuals of same species located in the same place at the same time:
(a) Community (b) Biosphere
(c) Ecosystem (d) Population
- PAST PAPERS MCQs**
- (41) The bio-element which account 18% of total mass in human body is:
(LHR 2017, GRW 2017)
(a) Oxygen (b) Carbon
(c) Hydrogen (d) Nitrogen

- (42) A group of living organism of the same species located in the same place and time is called: (SWL 2017)
 (a) Population (b) Community
 (c) Individual (d) Biome
- (43) In human body amount of oxygen is : (LHR 2017)
 (a) 50 % (b) 65 %
 (c) 70 % (d) 40 %
- (44) Which one is not a viral disease: (LHR 2018)
 (a) Cow pox (b) Mumps
 (c) Tetanus (d) Measles
- (45) The bio elements which account for 98% of the total mass in the human's body are: (LHR 2018)
 (a) Four (b) Six
 (c) Eight (d) Three
- (46) In human body percentage of nitrogen accounts for: (SWL 2019)
 (a) 2 % (b) 3 %
 (c) 1 % (d) 10 %
- (47) Population of different species living in the same Habitat form: (BWP 2019)
 (a) Community (b) Population
 (c) Biome (d) Biosphere
- (48) A group similar cells that perform similar function is: (RWP 2021)
 (a) Organ (b) Organelles
 (c) Tissue (d) System
- (49) In human body the amount of iron is: (FSD 2022)
 (a) 0% (b) 0.4%
 (c) 0.04% (d) 0.004%
- (50) The 16 elements that occur in organism are called: (GRW 2022, RWP 2022)
 (a) Essential elements (b) Bio elements
 (c) Common elements (d) Important elements
- (51) Percentage of calcium in human body is: (BWP 2022)
 (a) 1% (b) 2%
 (c) 3% (d) 10%

LIVING WORLD IN TIME AND SPACE

MCQS

- (52) The biomes are named on the basis of:
 (a) Climate (b) Major plants
 (c) Major animals (d) countries
- (53) The total number of species which have been discovered until now is:
 (a) 1.5 million (b) 2.0 million
 (c) 2.5 million (d) 3.0 million
- (54) Life today has come into existence through:
 (a) Chance (b) Phyletic lineage
 (c) Evolution (d) Both b & c
- (55) Vascular plants have _____ % of total organisms.
 (a) 53.1% (b) 19.9%
 (c) 17.6% (d) 9.4%

- (56) **The era of reptiles is:**
 (a) Proterozoic (b) Cenozoic
 (c) Mesozoic (d) Palaeozoic
- (57) **Biomes are primarily determined by:**
 (a) Major plants (b) Major animals
 (c) Climate (d) Water
- (58) **Older fossils are present in:**
 (a) Deeper layers
 (b) Upper layers
 (c) Evenly distributed
 (d) Layer having more radioactive elements isotopes
- (59) **First living organism evolved about _____ million years ago.**
 (a) 2000 M (b) 70 M
 (c) 600 M (d) 3000 M
- (60) **We are living in _____ era.**
 (a) Proterozoic (b) Palaeozoic
 (c) Mesozoic (d) Cenozoic
- (61) **Which one of the following is a Biome?**
 (a) An ocean (b) A river
 (c) Conifer forest (d) A garden
- (62) **Life started in which of the following Era:**
 (a) Proterozoic (b) Palaeozoic
 (c) Mesozoic (d) Cenozoic
- (63) **Which group of the following has lowest number and most diverse group?**
 (a) Vascular plants (b) Animals
 (c) Insects (d) Algae, Protozoa and prokaryotes

PAST PAPERS MCQs

- (64) **Mammals become dominant in:** (DGK 2017)
 (a) Coenozoic period (b) Paleozoic period
 (c) Mesozoic period (d) Proterozoic period
- (65) **The number of plant species in biodiversity is:** (FSD 2019)
 (a) 53.1% (b) 17.6%
 (c) 19.9% (d) 9.4%
- (66) **Mammals become dominant in the:** (LHR 2019)
 (a) Ordovician period (b) Silurian period
 (c) Cenozoic period (d) Devonian period
- (67) **The most recent era is:** (RWD 2019, SGD 2021)
 (a) Proterozoic (b) Paleozoic
 (c) Cenozoic (d) Mesozoic
- (68) **A large regional community primarily determined by climate:** (LHR 2019, MTN 2022)
 (a) Biomas (b) Biosphere
 (c) Biome (d) Population
- (69) **The Devonian period started about _____ years ago.** (DGK 2022)
 (a) 300 Million (b) 350 Million
 (c) 400 Million (d) 440 Million

- (70) **Mammals become dominant in:** (GRW 2022)
 (a) Proterozoic era (b) Paleozoic era
 (c) Mesozoic era (d) Cenozoic era
- (71) **The geological period starting from 225 million years ago is:** (SGD 2022)
 (a) Jurassic (b) Permian
 (c) Triassic (d) Silurian

BIOLOGICAL METHOD

. MCQS

- (72) **Hypothesis is a tentative explanation of:**
 (a) Experiment (b) Discussion
 (c) Theory (d) Observation
- (73) **Hypothesis may be formed by:**
 (a) Intuition (b) Religious ideas
 (c) Esthetic preferences (d) All of the above
- (74) **A _____ is based upon observations.**
 (a) Hypothesis (b) Deductions
 (c) Theory (d) Law
- (75) **The logical consequence of observations is called:**
 (a) Hypothesis (b) Deductions
 (c) Theory (d) Law
- (76) **Organized form of observations is called:**
 (a) Data (b) Hypothesis
 (c) Deduction (d) Theory
- (77) **Quantitative observations have accuracy over qualitative as:**
 (a) It provide better quality (b) It is based on hypothesis
 (c) Recorded in term of numbers (d) It is based on experience
- (78) **_____ is a systematized knowledge.**
 (a) Biology (b) Science
 (c) Sociology (d) Geography
- (79) **A productive theory must:**
 (a) Be more general than a law (b) Be based on hypothesis
 (c) Suggest new hypothesis (d) All of the above

PAST PAPERS MCQS

- (80) **The tentative explanation of observations is called:** (MTN 2017)
 (a) Law (b) Theory
 (c) Hypothesis (d) Deduction
- (81) **The reasoning that moves from general to specific is called:** (LHR 2021)
 (a) Inductive (b) Deductive
 (c) Scientific (d) None of these

BIOLOGY AND THE SERVICE OF MANKIND

. MCQS

- (82) **Plants having foreign DNA are called:**
 (a) Transgenic plants (b) Transgenic organisms
 (c) Biotechnological organisms (d) None of these
- (83) **Cloning is a technique to achieve:**
 (a) Hygienic aims (b) Eugenic aims
 (c) Transgenic aims (d) All of the above

- (84) **AIDS is caused by:**
(a) T.M. virus (b) HIV
(c) H virus (d) Retrovirus
- (85) **Astronauts use this technology to grow vegetables:**
(a) Cloning (b) Tissue culture technique
(c) Genetic engineering (d) Hydroponic culture technique
- (86) **First vaccine was developed against _____ disease.**
(a) Viral (b) Bacterial
(c) Fungal (d) Algal
- (87) **Removal or degradation of environmental pollutants or toxic materials by living organisms is known as:**
(a) Biological control (b) Immunization
(c) Bioremediation (d) Integrated disease management
- (88) **Exhaust of automobiles is adding _____ to atmosphere.**
(a) Lead (b) Nitrogen
(c) Oxygen (d) All of the above
- (89) **In 1997, scientists of Scotland succeeded in cloning a/an:**
(a) Buffalo (b) Dog
(c) Sheep (d) Mouse
- (90) **All members of a clone are genetically identical except when a:**
(a) Mutation occurs (b) Change occurs
(c) Hazard occur (d) An evolution occur
- (91) **Which is used to treat cancer?**
(a) Radio therapy (b) Chemotherapy
(c) Vaccination (d) Both a & b
- (92) _____ **has been totally eradicated from world.**
(a) Cowpox (b) Tetanus
(c) Small pox (d) AIDS
- (93) **Most of the viral diseases are controlled by:**
(a) Antibiotics (b) Publicity
(c) Vaccination (d) All of the above
- (94) **Pasteurization technique was developed by:**
(a) Louis Pasteur (b) Lewis
(c) Jenner (d) Watson
- (95) **The organisms whose numbers are reducing & are in imminent danger of extinction are called:**
(a) Threatened species (b) Endangered species
(c) Extinct species (d) None of these
- (96) **Technique by which mineral requirement of plants can be found is:**
(a) Genetic engineering (b) Tissue culture technique
(c) Hydroponic culture technique (d) Integrated disease management
- (97) **Technique likely to be adopted for commercial production of animal of known pedigree:**
(a) Hydroponics (b) Gene therapy
(c) Cloning (d) Integrated disease management
- (98) **First vaccination technique was developed by:**
(a) Jenner (b) Koch
(c) Pasteur (d) Brown

- (99) The technique used to preserve milk and milk products is called:
 (a) Pasteurization (b) Vaccination
 (c) Lactation (d) All of the above
- (100) Which of the following is the best technique of controlling diseases in human?
 (a) Biological control (b) Bio pesticides
 (c) IDM (d) None of these

PAST PAPERS MCQs

- (101) An aphid that attacks walnut tree is being controlled biologically by a: (MTN 2017)
 (a) Wasp (b) House fly
 (c) Honey bee (d) Mosquito
- (102) The first ever clone was prepared in 1997 in: (FSD 2017)
 (a) England (b) Ireland
 (c) Scotland (d) Maryland
- (103) In biological control an aphid is being controlled by: (SWL 2021)
 (a) Honey bee (b) Wasp
 (c) Mosquito (d) Dragon fly
- (104) Pasteurization technique is widely used for preservation of: (LHR 2022)
 (a) Water (b) Meat
 (c) Milk and milk products (d) Vaccines
- (105) A method in which pests are destroyed by using some living organism is called: (SWL 2022)
 (a) Biological control (b) Insecticide control
 (c) Cultural control (d) Pesticide control

ANSWER KEY

(Topic-Wise Multiple Choice Questions)

1	b	21	c	41	b	61	c	81	b	101	a
2	c	22	c	42	b	62	a	82	a	102	
3	a	23	a	43	b	63	d	83	a	103	b
4	c	24	d	44	c	64	a	84	b	104	c
5	c	25	a	45	b	65		85	d	105	a
6	b	26	b	46	b	66	c	86	a		
7	b	27	a	47	a	67	c	87	c		
8	a	28	c	48	c	68	c	88	a		
9	d	29	a	49	d	69	c	89	c		
10		30	a	50	b	70	d	90	a		
11	b	31	d	51	b	71	c	91	c		
12	b	32	a	52	b	72	d	92	c		
13	c	33	a	53	c	73	d	93	c		
14	b	34	c	54	b	74	a	94	a		
15	a	35	d	55	c	75	a	95	b		
16	c	36	a	56	d	76	a	96	c		
17	a	37	b	57	c	77	a	97	c		
18		38	c	58	a	78	c	98	a		
19	a	39	b	59	d	79	b	99	a		
20	b	40	d	60	d	80		100	c		

BIOLOGY AND ITS MAJOR FIELDS OF SPECIALIZATIONS**SHORT QUESTIONS**

Q:1 What was the atmosphere of primitive earth?

Ans: It is believed that the primitive earth had an atmosphere of methane, ammonia, water-vapour, hydrogen sulphide and hydrogen. These simple substances gradually combined into complex molecules which served as models for organizing chemical substances around them. In his respect, Quran emphasizes:
“See they not how Allah originates creation, and then repeats it: truly that is easy for Allah.”

Q:2 Define Zoogeography.

Ans: It is the geographical distribution of animals on the earth

Q:3 Define molecular biology and fresh water biology.

Ans:

Molecular Biology:

Molecular biology is a branch of biology which deals with the structure of organisms, their cells and their organelles at molecular level.

Fresh Water Biology:

This branch of biology deals with the organisms living in freshwater bodies i.e., rivers, lakes etc and physical and chemical parameters of these water bodies.

Q:4 Differentiate between Morphology & Physiology.

Ans:

Morphology	Physiology
It is the study of form and structure of an organism.	It is the study of normal functioning of various parts of plants or animals.

Q:5 What are Bioelements?

Ans: **Bio-elements:**

The elements which are present in living organisms are called bio elements.

Number:

There are 16 elements and a few other bio elements

Q:6 List out the characters of life.

Ans: Living organisms:

- (1) Are highly organized and complex bodies.
- (2) Are composed of one or more cells.
- (3) Contain genetic material (program) which forms characters.
- (4) Can get and use energy.
- (5) Can carry out and control chemical reactions (metabolism)
- (6) Can grow in size
- (7) Can maintain homeostasis (a fairly constant internal environment)

(8) What are the properties of bio-elements?

Ans:

- (1) The bio-elements have special properties which make them suitable for life.
- (2) These are present in all organisms.
- (3) Their properties differ from those occurring in non-living world.

PAST PAPER SHORT QUESTIONS

Q:7 Define bio-elements. Give two examples.

(LHR 2017)

Q:8 Differentiate between molecular biology and biotechnology.

(SGD 2017)

Q:9 Define the term fresh water biology and biotechnology.

(MTN 2017)

Q:10 Differentiate between anatomy and morphology.

(LHR 2018)

Q:11 What are bioelements?

(GRW 2018)

- Q:12 Define molecular biology? (GRW 2018)
 Q:13 Differentiate between molecular biology and biotechnology. (FSD 2019)
 Q:14 Define social biology. (BWP 2019)
 Q:15 Define parasitology. (FSD 2019, FSD 2021)
 Q:16 Define biotechnology. (LHR 2019, LHR 2021)
 Q:17 Differentiate between fresh water and marine water biology. (GRW 2021)
 Q:18 Differentiate between microbiology and Biotechnology. (SWL 2021)
 Q:19 Define parasitology and molecular biology. (MTN 2021)
 Q:20 Define microbiology. (MTN 2021)
 Q:21 Define Life. (BWP 2021)

LEVELS OF BIOLOGICAL ORGANIZATION

SHORT QUESTIONS

Q:22 Differentiate between micro and macromolecules.

Ans:

MICROMOLECULES	MACROMOLECULES
The molecules with low molecular weight are called micromolecules	The molecules with large molecular weight are said to be macromolecules
Example: CO ₂ , H ₂ O	Example: Sugars, proteins etc.

Q:23 Differentiate between population and community.

Ans:

Population	Community
A population is a group of living organisms of the same species located in the same place at the same time.	Population of different species (plants and animals) living in the same habitat from a community.
Number of rats in field of rice.	All plants and animals in an area

Q:24 What are the different levels of biological organization?

- Ans: (1) Atomic and sub atomic level
 (2) Molecular level
 (3) Organelles and cell
 (4) Tissue level
 (5) Organ and system
 (6) Individual (whole organism)
 (7) Population
 (8) Community
 (9) Ecosystem
 (10) Biosphere

Q:25 Define the terms species.

Ans: Very similar, potentially interbreeding organisms that produce fertile off-springs are grouped under species.

Q:26 What is a community?

Ans: Two or more populations of different species living and interacting in the same area is called community.

Example

All plants and animals in an area.

Q:27 Compare between organelle and organ.

Ans:

Organelle	Organ
The sub-cellular structures of the cell are called organelles.	A group of different tissues, performing same function is called organ.
Example: Mitochondria, Golgi complex, endoplasmic reticulum, ribosome etc.	Example: Stomach, heart, lung

Q:28 What type of interactions occur in community level?

Ans: In a community the organism interaction occurs in many shapes. It may be predation, parasitism, commensalism, mutualism and competition etc.

PAST PAPER SHORT QUESTIONS

- Q:29** What is phyletic lineage? (LHR 2017)
- Q:30** How biome differ from biosphere? (FSD 2017)
- Q:31** Write the names of four eras of geological time chart. (MTN 2017)
- Q:32** Name any four geological eras? (DGK 2017)
- Q:33** What does biodiversity mean? (RWP 2017)
- Q:34** Differentiate between micromolecules and macro-molecules. (LHR 2018)
- Q:35** Define community. (FSD 2019)
- Q:36** What is community? Give two interactions among organisms of a community. (FSD 2019)
- Q:37** Define population and give its four attributes. (LHR 2022)
- Q:38** Why organ system is less complex in plants as compared to animals? (FSD 2022)
- Q:39** Define biome and community. (GRW 2022, RWP 2022)
- Q:40** Define the term species with example. (SGD 2022)

LIVING WORLD IN TIME AND SPACE

. SHORT QUESTIONS

Q:41 Define Biodiversity.

Ans: The number and variety of species in a place in particular time is called biodiversity.

Q:42 Define biome. How is it named?

Ans: Definition:

A biome is a large regional community primarily determined by climate. It has been found that the major types of plants determine the other kinds of plants and animals

Naming:

These biomes have been named after the type of major plants or major features of the ecosystem. (Forest, Grasslands, Deserts)

Q:43 How can we date/age the rocks?

Ans: The age of a rock can tell about the age of a fossil present in it.

Study of fossils:

The fossils can be dated by the following two methods.

Sedimentary method:

The age is determined by counting the layers of rocks.

With the passage of geological time, new layers of sediments are laid down.

Therefore the older organisms are in deeper layer (if the sequence of the layers is not disturbed)

Radioactive Method:

It is also possible to determine the age of a rock by comparing the amounts of radioactive isotopes they contain.

The older sediment layers have less radioactive isotopes than the younger layers.

By comparing the layers we can describe the age of the fossils.

We can say that the fossils of same layer were alive during the same geological period.

Q:44 Define phyletic lineage.

Ans: It is an unbroken series of species arranged in ancestor to descendant sequence with each later species evolved from former one.

PAST PAPER SHORT QUESTIONS

Q:45 How biome differ from biosphere? **(FSD 2017)**

Q:46 Write the names of four eras of geological time chart **(MTN 2017)**

Q:47 Name any four geological eras? **(DGK 2017)**

Q:48 What does biodiversity mean? **(RWP 2017)**

Q:49 Define phyletic lineage. **(LHR 2017, MTN 2019)**

Q:50 Name the four geological eras of history of earth. **(SWL 2019)**

Q:51 Define phyletic lineage and biodiversity? **(RWD 2021)**

Q:52 What do you know about biome? **(MTN 2022)**

BIOLOGICAL METHOD

SHORT QUESTIONS

Q:53 What is deductive reasoning?

Ans: Definition:

It involves drawing specific conclusion from some general principle to the specific. Here “if and then” is used to make hypothesis.

Example1:

If all birds have wings, and sparrows are birds, then sparrows have wings.

Example2:

If all green plants need sunlight for photosynthesis, then any green plant placed in the dark would not synthesize glucose. (Glucose is the end product of photosynthesis)

Q:54 List all the ways, by which Biologists or scientists form a hypothesis, OR form basis for hypotheses.

Ans: These are:

- (1) Deductive reasoning
- (2) Inductive reasoning
- (3) Imagination
- (4) Esthetic preference
- (5) Religious or philosophical ideas
- (6) Comparison and similarity with other processes
- (7) Discovery of one thing while looking for some other thing

Q:55 What is biological method?

Ans: Method used to solve biological problems based on experimental inquiry is called biological method.

Q:56 Differentiate between deductive and inductive reasoning

Ans:

Deductive Reasoning	Inductive Reasoning
In deductive reasoning moves from the general to the specific. It involves drawing specific conclusions from some general principles.	In inductive reasoning moves from the specific to general. It begins with specific observation and leads to the formation of the general principles.
Example: If we accept that all birds have wings, and sparrows are birds then sparrows have wings.	Example: If we know that a sparrows have wings and are birds, and we know that eagle, parrot, hawk and crow are also birds. Then we conclude that all bird have wings.

PAST PAPER SHORT QUESTIONS

- Q:57 Differentiate between inductive and deductive reasoning. (LHR 2017)
- Q:58 Differentiate between Law and Theory. (MTN 2017, RWD 2021)
- Q:59 What is deductive reasoning? (LHR 2019)
- Q:60 What is inductive reasoning give one example? (LHR 2021)
- Q:61 What is theory? Write down properties of a good theory. (GRW 2021)
- Q:62 How deductive reasoning is different from inductive reasoning. (MTN 2019)
- Q:63 Differentiate between inductive and deductive Reasoning. (BWP 2019)
- Q:64 Define deductive reasoning with example. (DGK 2021)
- Q:65 How does theory differ from law? (DGK 2021)
- Q:66 What is community? Give two interactions among organisms of a community. (FSD 2021)
- Q:67 Define the term hypothesis. (DGK 2022)
- Q:68 Differentiate between deductive and inductive reasoning. (MTN 2022)
- Q:69 What is inductive method to formulate a hypothesis? Give an example. (GRW 2022, RWP 2022)
- Q:70 Differentiate between inductive and deductive reasoning. (BWP 2022)
- Q:71 How does theory differ from law? (SGD 2022)

BIOLOGY AND THE SERVICE OF MANKIND**. SHORT QUESTIONS**

Q:72 Define transgenic plants.

Ans: Definition:

Transgenic plants are the plants having foreign DNA incorporated in their cells.

Q:73 What do you mean by integrated disease management?

Ans: Definition:

Combating disease by utilizing all methods as and when required and ensuring a participation of community in these programmes is known as integrated disease management.

Q:74 Define hydroponic culture technique. What is its significance?

Ans: Definition:

In this technique the plants are grown in aerated water to which nutrient mineral salts have been added.

Significance:

- It is used to test whether certain nutrients is essential for plants or not.
- It is used by astronauts to grow vegetables and fruits in space.

Q:75 What type of therapy or treatment is used for cancer patients?

Ans:

(1) **Radiotherapy:**

In radiotherapy, the cancerous part is exposed to short wave radiations from the radioactive material. This process is repeated at regular intervals.

In Pakistan there are several centers which are carrying out radiotherapy to control cancer.

(2) **Chemotherapy:**

In chemotherapy certain anticancer chemicals are given to the patients at regular intervals. These chemicals may kill both cancerous as well as normal cells.

(3) **Gene Therapy:**

In this technique the defective gene is repaired. In this case the normal gene is isolated and is inserted into host through bone marrow cells.

Q:76 Differentiate between Biological control & Bioremediation.

Ans: Biological Control:

In biological control the harmful organisms (e.g., pests) are killed by another living species e.g., an aphid that attacks walnut tree is being controlled biologically by a wasp that parasitizes this aphid.

Bioremediation:

The removal or degradation of environmental pollutants or toxic materials by living organisms is called bioremediation.

Q:77 What do you understand by bioremediation? What is its advantage?

Ans: Bioremediation:

It is defined as removal or degradation of environmental pollutants or toxic materials by living organism.

Advantage:

Algae reduce pollution of heavy metals by bioabsorption.

Q:78 What do you mean by gene therapy?

Ans: Gene Therapy:

Gene therapy is a recently introduced technique developed to repair the defective gene. This consists of isolating the normal gene and inserting it into the host through bone marrow cells.

Q:79 Define pasteurization.

Ans: The heating of every particle of milk or milk product to a specific temperature for a specified period of time without allowing recontamination of that milk or milk product during the heat treatment process.

Q:80 Define endangered species.

Ans: Various animals which if not protected would soon be extinct. Such animals are said to be endangered species.

Q:81 What are antibiotics?

Ans: Antibiotics are organic compounds that are synthesized and excreted by certain microorganisms and kill or inhibit the growth of other microorganisms.

Q:82 What is biotechnology?

Ans: The use of living organisms, their systems or processes in the manufacturing and services industries is called Biotechnology.

PAST PAPER SHORT QUESTIONS

- Q:83 Define hydroponic culture technique and give its application. (GRW 2017)
- Q:84 What is Hydroponic culture techniques? (RWP 2017)
- Q:85 Define bioremediation. Give one example. (SGD 2017)
- Q:86 What do you mean by integrated disease management? (SWL 2017)
- Q:87 Define bioremediation and endangered species. (SWL 2017)
- Q:88 What is Hydroponic Culture Technique? Give its importance. (MTN 2017)
- Q:89 Define biological control and biopesticides? (DGK 2017)
- Q:90 Differentiate between biopesticides and biological control. (DGK 2017)
- Q:91 What is Integrated Disease Management? (BWP 2017)
- Q:92 Differentiate between chemotherapy and radiotherapy. (DGK 2019)
- Q:93 What is biological control? Give its example. (GRW 2019)
- Q:94 Differentiate between biocontrol and bioremediation. (LHR 2019)
- Q:95 What is cloning? Write one method of cloning. (LHR 2019)
- Q:96 Define hydroponic culture technique. (LHR 2019)
- Q:97 What is Biological control? (MTN 2019)
- Q:98 What is Bioremediation? (MTN 2019)
- Q:99 What is hydroponic culture technique? Give its use. (GRW 2019, DGK 2019, DGK 2021)
- Q:100 What are endangered species? (SWL, 2021)
- Q:101 What is integrated disease management? (SWL 2019, MTN 2021)
- Q:102 Write briefly about hydroponic culture technique. (LHR 2021)
- Q:103 What are bio-pesticides? Give example. (GRW 2021)
- Q:104 Define integrated disease management. (GRW 2021)
- Q:105 Describe hydroponic culture technique. (MTN 2021)
- Q:106 What is pasteurization? (DGK 2021)
- Q:107 What is Integrated Disease management? (BWP 2021)
- Q:108 Differentiate between radiotherapy and gene therapy. (RWP 2019, 2021)
- Q:109 What do you know about integrated disease management? (LHR 2022)
- Q:110 What is meant by integrated disease management? (DGK 2022)
- Q:111 Differentiate between Biopesticides and biological control. (SWL 2022)
- Q:112 How a biologist can help to reduce environment pollution? (SWL 2022)
- Q:113 What are adverse effects of use of chemicals during its use to control pests? (FSD 2022)