



# Chapter

# 5

## Variety of Life

### INTRODUCTION & NOMENCLATURE

#### KIPS MCQs

- (1) Which one of the following is mismatched?
 

(a) Plant- autotroph	(b) Animal- heterotroph
(c) Protist- prokaryotae	(d) Bacterium- non nucleated
- (2) Euglena is plant like because of:
 

(a) Presence of cell wall	(b) Presence of Chloroplast
(c) Presence of flagellum	(d) Presence of nucleus
- (3) *Allium cepa* is the scientific name of:
 

(a) Amaltas	(b) Rose
(c) Onion	(d) Radish
- (4) In binomial system, first name is the name of:
 

(b) Species	(b) Genus
(c) Order	(d) Class
- (5) Which one of the following is correct?
 

(a) Genus → family → order → class	(b) Phylum → kingdom → species → order
(c) Genus → family → species → class	(d) Species → Genus → order → family
- (6) Large groups are divided into smaller groups upto level:
 

(a) Phylum	(b) Order
(c) Species	(d) Classes
- (7) Order includes related:
 

(a) Families	(b) Genera
(c) Species	(d) Classes
- (8) The basic unit of classification is:
 

(a) Phylum	(b) Order
(c) Species	(d) Kingdom
- (9) Over one and a half million species of animals and over a half million species of plants: are:
 

(a) Known	(b) Dead
(c) Extinct	(d) Endangered
- (10) Classification is based on relationship amongst individuals, that is, similarity in:
 

(a) Form	(b) Structure
(c) Function	(d) Both a & b
- (11) The highest group in classification:
 

(a) Phylum	(b) Kingdom
(c) Species	(d) Classes
- (12) Corn belongs to family:
 

(a) Poaceae	(b) Solanaceae
(c) Fabaceae	(d) Brassicaceae
- (13) The order of Corn is:
 

(a) Poaceae	(b) Poales
(c) Zea	(d) Mays

- (14) **The name Black Bird is used for:**  
 (a) Crow (b) Raven  
 (c) Cray fish (d) Both a & b
- (15) **Initially classification was just based on:**  
 (a) Genetics (b) Evolution  
 (c) Morphology (d) Molecular biology

**PAST PAPERS MCQs**

- (16) **Solanum esculentum is the scientific name of:** (MTN 2017)  
 (a) Potato (b) Tobacco  
 (c) Onion (d) Tomato
- (17) **Binomial nomenclature system was given by:** (LHR 2017)  
 (a) Pasteur (b) De Duve  
 (c) Lamarck (d) Linnaeus
- (18) **The common name of *Allium Cepa* is:** (BWP 2017)  
 (a) Piyaz (b) Bathu  
 (c) Channa (d) Potato
- (19) **Orders include related** (GRW 2018)  
 (a) Families (b) Genera  
 (c) Species (d) Classes
- (20) **Scientific name for planaria is:** (DGK 2019)  
 (a) Taenia sloium (b) Fasciola hepatica  
 (c) Schistosoma (d) Dugesia
- (21) **The number and variety of species in a place is called:** (FSD 2019)  
 (a) Population (b) Community  
 (c) Diversity (d) Biodiversity
- (22) **Genus for corn plant is:** (FSD 2019)  
 (a) Zea (b) Cassia  
 (c) Allium (d) Solanum
- (23) **Solanum tuberosum is the scientist name of:** (LHR 2021)  
 (a) Onion (b) Tomato  
 (c) Potato (d) Garlic
- (24) **Family include related:** (MTN 2021)  
 (a) Species (b) Genera  
 (c) Order (d) Class
- (25) **Which is an insect?** (FSD 2021)  
 (a) Cray fish (b) Silver fish  
 (c) Jelly fish (d) Star fish
- (26) **The biological name of kachnar is:** (RWP 2021)  
 (a) Tamarinds indica (b) Cassia fistula  
 (c) Cassia renna (d) Bauhinia variegata
- (27) **Phylum includes related:** (DGK 2022)  
 (a) Families (b) Orders  
 (c) Classes (d) Genera

**ENTERY TEST BASED MCQs**

- (28) **Taxonomy includes the arrangement of organisms into different taxa. Which of the following represents the correct hierarchy of various taxa of classification?** (MDCAT 2019)  
 (a) Species, genus, family, order, class, phylum  
 (b) Order, family, class, phylum, kingdom  
 (c) Species, genus, order, family, class, phylum  
 (d) Order, genus, family, class, phylum

**TWO TO FIVE KINGDOM CLASSIFICATION SYSTEMS**

- (29) \_\_\_\_\_ are heterotrophic organisms that are absorptive in their nutritional mode:
- (a) Algae (b) Protists  
(c) Plants (d) Fungi
- (30) In 1969, the five kingdom system was proposed by:
- (a) Robert Koch (b) Robert Whittaker  
(c) Robert Hooke (d) Robert Brown
- (31) Eukaryotic unicellular producers can be placed in kingdom:
- (a) Fungi (b) Protista  
(c) Plantae (d) Monera
- (32) Three kingdom classification was presented by:
- (a) Earnst Hackle (b) E. Chatton  
(c) Robert Whittaker (d) Margulis & Schwartz
- (33) The terms kingdom eu-caritique and procaryotique were suggested by:
- (a) Robert Hooke (b) Ernst Hackle  
(c) John Hogg (d) E. Chatton
- (34) Robert Whittaker's classification was based on:
- (a) Cellular organization & nutrition (b) Nutrition & Genetics  
(c) Genetics, cytology, embryology (d) Organelles of symbiotic origin

**PAST PAPERS MCQs**

- (35) Organelle of symbiotic origin is: (LHR 2017)
- (a) Mitochondria (b) Vacuole  
(c) Ribosome (d) Golgi body
- (36) Which is organelle of symbiotic origin: (BWP 2019)
- (a) Mitochondria (b) Vacuole  
(c) Cell Membrane (d) Cell Wall
- (37) John Hogg in 1861 proposed kingdom \_\_\_\_\_ for microorganisms. (RWP 2022)
- (a) Monera (b) Protista  
(c) Plantae (d) Prokaryote

**VIRUSES DISCOVERY AND STRUCURE****KIPS MCQs**

- (38) Mad cow infection is caused by:
- (a) Phage virus (b) Temperate phage  
(c) Virulent phase (d) Prion
- (39) Chemical nature of Prions is:
- (a) Lipids (b) Monosaccharides  
(c) Proteins (d) Protein and DNA
- (40) The capsid of adenovirus is made up of \_\_\_\_\_ capsomeres.
- (a) 252 (b) 162  
(c) 152 (d) 262
- (41) Virus was discovered in 1892 in tobacco plants suffering from tobacco mosaic disease by a Russian biologist:
- (a) Lederberg (b) W.M. Stanley  
(c) Jenner (d) Ivanowski
- (42) In 1796, first vaccinated an 8 years old boy with material removed from cowpox lesion on the hand of milkmaid:
- (a) Edward Jenner (b) Edward Jacky  
(c) Louis Pasteur (d) Twort

- (43) The filterable agents were first purified in 1935, when Stanley was successful in crystallizing the virus:  
 (a) Polio (b) Tobacco mosaic  
 (c) Hepatitis (d) Influenza
- (44) Viruses range in size from 250 (nm) of poxviruses to the 20 nm of:  
 (a) Parvoviruses (b) Provirus  
 (c) Herpes virus (d) Adenovirus
- (45) At the time of Louis Pasteur and Robert Koch the word virus was generally referred to as a poison associated with:  
 (a) Disease (b) Death  
 (c) Both a & b (d) Life
- (46) The word virus is derived from Latin word venome meaning:  
 (a) Toxic fluid (b) Poisonous fluid  
 (c) Harmful fluid (d) Teasing fluid
- (47) The term vaccination was used by Louis Pasteur for inoculation against:  
 (a) Virus (b) Bacteria  
 (c) Disease (d) Wounds
- (48) Viruses are extremely small infectious agents, which can only be seen under:  
 (a) Compound microscope (b) Dissecting microscope  
 (c) Electron microscope (d) Telescope
- (49) All viruses are generally resistant to broad range of available antibiotics such as:  
 (a) Penicillin (b) Streptomycin  
 (c) Tetracycline (d) All of these
- (50) Capsid is made up of protein subunits known as:  
 (a) Capsidomeres (b) Capsomeres  
 (c) DNA (d) RNA
- (51) Which of the following is not essential part of virus?  
 (a) Nucleic acid (b) Capsid  
 (c) Envelope (d) None of these
- (52) All are RNA viruses except:  
 (a) Poliovirus (b) Paramyxovirus  
 (c) Influenza virus (d) Herpes simplex
- (53) Viruses are:  
 (a) Intracellular parasites (b) Extracellular parasites  
 (c) Both a and b (d) Facultative parasites
- (54) Cubical phages having 20 faces are called:  
 (a) Icosahedral (b) Helical  
 (c) Hexagonal (d) Pyramidal
- (55) Number of capsomeres in capsid of Herpes virus is:  
 (a) 152 (b) 162  
 (c) 252 (d) 262

**PAST PAPERS MCQs**

- (56) Number of capsomeres in the capsid of Herpes virus is: (DGK 2017)  
 (a) 162 (b) 252  
 (c) 154 (d) 175
- (57) The capsomeres present in the capsid of Adeno-virus are: (MTN 2019)  
 (a) 162 (b) 252  
 (c) 164 (d) 258
- (58) The size of parvovirus is: (DGK 2019)  
 (a) 100 nm (b) 20 nm  
 (c) 250 nm (d) 75 nm

- (59) Capsomers are subunits which form capsid of a virion. These capsomeres are chemically (SGD 2019)  
 (a) Lipids (b) Nucleic Acids  
 (c) Carbohydrates (d) Proteins
- (60) Madcow infection is caused by: (RWP 2019)  
 (a) Bacteria (b) Prions  
 (c) Virions (d) Protozoans
- (61) Number of capsomeres present in the capsid of herpes virus are: (MTN 2022)  
 (a) 152 (b) 162  
 (c) 252 (d) 262
- (62) Madcow infection is caused by: (SGD 2021)  
 (a) Bacteria (b) Prions  
 (c) Virions (d) Protozoans
- (63) The mysterious brain infection in man is caused by: (SWL 2022)  
 (a) Virion (b) Fungi  
 (c) Bacteria (d) Prions
- (64) Prions are made of: (LHR 2022)  
 (a) Nucleic acids (b) Proteins  
 (c) Lipids (d) Carbohydrates

**ENTRY TEST BASED MCQs**

- (65) Cilia and flagella are absent in: (MDCAT 2017)  
 (a) Viruses (b) Higher plants  
 (c) Bacteria (d) Lower animals
- (66) In viruses, a combined structure formed by core (Nucleic Acid) and capsid is: (MDCAT 2018)  
 (a) Nucleocapsid (b) Capsomeres  
 (c) Envelope (d) Prion
- (67) Capsid, the protective coat of a virus is made up of \_\_\_\_\_ subunits known as capsomeres. (MDCAT 2019)  
 (a) Lipid (b) RNA  
 (c) Protein (d) DNA

**BACTERIOPHAGE****KIPS MCQs**

- (68) The nucleic acid of most of the bacteriophage is:  
 (a) DNA (b) rRNA  
 (c) tRNA (d) mRNA
- (69) The best known phages are T phages that infect:  
 (a) Salmonella typhi (b) Mycoplasma  
 (c) Pseudomonas (d) Escherichia coli
- (70) The bacteriophage replicates only inside the:  
 (a) Animal cell (b) Plant cell  
 (c) Bacterial cell (d) Fungal cell
- (71) The tail of bacteriophage releases the enzyme to dissolve a portion of the bacterial cell wall. This enzyme is:  
 (a) Lipase (b) Lysozyme  
 (c) Ligase (d) Trypsin
- (72) The phage which causes lysis of the host cell is known as:  
 (a) Lytic phage (b) Virulent phage  
 (c) Lysogenic phage (d) Both a & b

- (73) About 25 minutes after initial infection, about \_\_\_\_\_ new bacteriophages are formed:  
 (a) 100 (b) 200  
 (c) 25 (d) 1000
- (74) Twort in 1915 and D Herelle in 1917 discovered independently:  
 (a) Bacteriophages (b) Bacteria  
 (c) Viruses (d) Algae
- (75) The T phages used in phage studies are mainly:  
 (a) T4 only (b) T2 only  
 (c) T2 & T4 (d) None of these
- (76) The overall structure of T4 studied by electron microscope, resembles that of:  
 (a) Cup (b) Tadpole  
 (c) Rod (d) Eagle
- (77) Volume of bacteriophage is about \_\_\_\_\_ of host.  
 (a) 1/10 (b) 1/100  
 (c) 1/1000 (d) 100 times
- (78) The word bacteriophage was used by:  
 (a) D'herelle (b) Twort  
 (c) Pasteur (d) Robert Koch
- (79) Temperate phage may exist as:  
 (a) Prophage (b) Capsid  
 (c) Viroid (d) Retrovirus

**PAST PAPERS MCQs**

- (80) The single stranded RNA-tumor viruses are: (LHR 2018)  
 (a) Spherical (b) Elongated  
 (c) Spiral (d) Cubical
- (81) About 25 minutes after initial infections approximate number of new bacteriophages formed is: (GRW 2019)  
 (a) 100 (b) 200  
 (c) 2000 (d) 500
- (82) Bacteriophage replicates only in cells: (LHR 2013, GRW 2015, FSD 2022)  
 (a) Animal (b) Plant  
 (c) Bacterial (d) Fungi

**ENTRY TEST BASED MCQs**

- (83) What does the term bacteriophage refer to? (UHS 2022)  
 (a) A virus that infects bacteria (b) A bacterium that infects virus  
 (c) A virus which behaves as bacteria (d) Combination of bacterium and virus
- (84) How many tail fibrils are attached to the end plate of a bacteriophage? (UHS 2022)  
 (a) 2 (b) 4  
 (c) 6 (d) 8

**VRAL DISEASES**

**(Small pox, Herpes Simplex, Influenza, Mumps and Measles, Polio)**

**KIPY MCQs**

- (85) Mumps and Measles viruses belong to group:  
 (a) Oncoviruses (b) Retroviruses  
 (c) Prions (d) Paramyxoviruses
- (86) The shape of Polio virus is:  
 (a) Rod shaped (b) Spherical  
 (c) Tad pole like (d) Triangular

- (87) **Virus causing small pox is:**  
 (a) DNA non enveloped (b) DNA enveloped  
 (c) RNA non enveloped (d) Rétrovirus
- (88) **Smallpox is caused by:**  
 (a) Bacteria (b) Fungi  
 (c) Viruses (d) Protozoans
- (89) **Which one of the following is not a viral disease?**  
 (a) Cow pox (b) Mumps  
 (c) Tetanus (d) Small pox
- (90) **The branch which deals with the study of virus is called:**  
 (a) Biology (b) Cytology  
 (c) Virology (d) Taxonomy
- (91) **Which of the following diseases is not caused by virus:**  
 (a) Cholera (b) Hepatitis  
 (c) Influenza (d) Polio
- (92) **Influenza viruses are:**  
 (a) DNA enveloped (b) DNA naked  
 (c) RNA naked (d) RNA enveloped

**PAST PAPERS MCQs**

- (93) **A disease, which is highly contagious is:** (FSD 2017)  
 (a) Measles (b) Mumps  
 (c) Influenza (d) herpes
- (94) **First infectious disease against which, effective method of prevention was developed:** (SGD 2017)  
 (a) Small pox (b) Yellow fever  
 (c) Measles (d) Mumps
- (95) **The smallest known viruses contain RNA in spherical Capsid are the.** (MTN 2017)  
 (a) Polio Viruses (b) Pox Viruses  
 (c) Herpes Viruses (d) Influenza Viruses
- (96) **Which one of the following is not viral disease?** (RWP 2017)  
 (a) Cow pox (b) Mumps  
 (c) Tetanus (d) Small pox
- (97) **The smallest known viruses are:** (RWP 2017)  
 (a) Bacteriophage (b) Small pox virus  
 (c) Polio (d) E-Coli
- (98) **Which one is not a viral disease:** (LHR 2018)  
 (a) Cow pox (b) Mumps  
 (c) Tetanus (d) Measles
- (99) **Influenza viruses are:** (MLT 2019)  
 (a) RNA enveloped (b) RNA non-enveloped  
 (c) DNA enveloped (d) DNA non-enveloped
- (100) **Which of the following viral disease is caused by DNA virus?** (GRW 2021)  
 (a) Herpes simplex (b) Influenza  
 (c) Mumps (d) Polio
- (101) **Which one of the following viral disease is not caused by RNA virus?** (GRW 2021)  
 (a) Small pox (b) Influenza  
 (c) Poliomyelitis (d) Mumps
- (102) **Small pox is caused by:** (DGK 2021)  
 (a) Bacteria (b) Virus  
 (c) pesudomonas (d) Clotridium

- (103) About 60% of adults are immune to: (SGD 2022)  
 (a) Measles (b) Small pox  
 (c) Rubella (d) AIDS

**ENTRY TEST BASED MCQs**

- (104) Which of the following virus contains single stranded DNA? (UHS 2022)  
 (a) Adenovirus (b) Herpes virus  
 (c) Parvovirus (d) Pox virus

**RETROVIRUS**

**KIPS MCQs**

- (105) Reverse transcriptase is present in:  
 (a) Prions (b) Retroviruses  
 (c) Phage viruses (d) Polioviruses
- (106) The major cell infected by HIV is:  
 (a) Helper T-lymphocyte (b) B-lymphocyte  
 (c) Monocyte (d) Phagocyte
- (107) First of all AIDS was reported in young males, all these were:  
 (a) Cats (b) Dogs  
 (c) Pigs (d) Homosexuals
- (108) The retroviruses have a special enzyme called \_\_\_\_\_ which can convert a single stranded RNA genome into double stranded:  
 (a) Transcriptase (b) RNA polymerase  
 (c) Reverse transcriptase (d) DNA polymerase
- (109) Cells in \_\_\_\_\_ system can also be infected by HIV along with helper T lymphocyte:  
 (a) Central nervous (b) Digestive  
 (c) Circulatory (d) Respiratory
- (110) Virus convert normal cell into cancer cells:  
 (a) Pox virus (b) Paramyxovirus  
 (c) Provirus (d) Retrovirus
- (111) HIV is:  
 (a) DNA enveloped virus (b) DNA non-enveloped virus  
 (c) RNA enveloped virus (d) RNA non-enveloped virus
- (112) Major cells infected by HIV are:  
 (a) Leukocytes (b) Monocytes  
 (c) Helper T-Lymphocytes (d) Lymphocytes
- (113) AIDS is caused by:  
 (a) Fungi (b) Bacteria  
 (c) Virus (d) Lichen

**PAST PAPERS MCQs**

- (114) HIV belongs to the group of viruses called: (SWL 2017)  
 (a) Pox virus (b) DNA virus  
 (c) Retro virus (d) Bacteriophage
- (115) AIDS is caused by: (LHR 2019)  
 (a) Fungi (b) Bacteria  
 (c) Virus (d) Algae
- (116) The major cell infected by HIV is: (LHR 2021)  
 (a) B-lymphocytes (b) Neutrophils  
 (c) Helper T-lymphocytes (d) Basophils



**ENTRY TEST BASED MCQs**

- (117) Among followings, \_\_\_\_\_ enzyme is naturally found in human immunodeficiency virus (HIV). (MDCAI 2019)  
 (a) DNA polymerase (b) Reverse transcriptase  
 (c) RNA polymerase (d) Ligase
- (118) The enzymes integrase, protease and reverse transcriptase are found in which virus? (UHS 2022)  
 (a) Hepatitis 'A' virus (b) Herpes virus  
 (c) Influenza virus (d) Human immunodeficiency virus

**HEPATITIS****MCQs**

- (119) Genetically engineered vaccine is not available for:  
 (a) HAV (b) HCV  
 (c) HBV (d) HEV
- (120) Hepatitis D is also called:  
 (a) Serum hepatitis (b) Infectious hepatitis  
 (c) Delta hepatitis (d) Infusion hepatitis
- (121) Hepatitis is the inflammation of:  
 (a) Lung (b) Brain  
 (c) Pancreas (d) Liver
- (122) Hepatitis A is transmitted by contact with \_\_\_\_\_ from infected individuals:  
 (a) Serum (b) Faeces  
 (c) Blood (d) Saliva
- (123) Viruses of hepatitis are better studied:  
 (a) A, B&C (b) A, C&E  
 (c) D, E&C (d) E, F&G
- (124) Hepatitis C was formerly called:  
 (a) Serum hepatitis (b) Infusion hepatitis  
 (c) Delta hepatitis (d) Infectious hepatitis
- (125) Which of the following is caused by DNA virus?  
 (a) Influenza (b) AIDS  
 (c) Hepatitis B (d) Polio
- (126) Recent researches reveal that pig could be the source of infection of Hepatitis:  
 (a) E (b) C  
 (c) A & B (d) D
- (127) Which type of hepatitis leads to chronic liver disease?  
 (a) Hepatitis A (b) Hepatitis E  
 (c) Hepatitis C (d) Hepatitis D

**PAST PAPERS MCQs**

- (128) Hepatitis is an inflammation of. (DGK 2017)  
 (a) Stomach (b) Pancreas  
 (c) Liver (d) Kidney
- (129) Hepatitis "B" is also called (GRW 2017)  
 (a) Delta hepatitis (b) Infectious hepatitis  
 (c) Infusion hepatitis (d) Serum hepatitis
- (130) Hepatitis C is caused by virus: (SWL 2019)  
 (a) DNA non-enveloped (b) DNA enveloped  
 (c) RNA non enveloped (d) RNA enveloped

(131) Hepatitis is inflammation of: (SWL 2021)

- (a) Kidney (b) Heart  
(c) Liver (d) Lungs

(132) Pig could be the source of infection of hepatitis: (EVP 2021)

- (a) E (b) A  
(c) B (d) C

**ANSWER KEY**

(Topic Wise Multiple Choice Questions)

1	c	21	a	41	d	61	b	81	b	101	a	121	d
2	b	22	c	42	a	62	b	82	c	102	b	122	b
3	c	23	c	43	b	63	d	83	a	103	a	123	a
4	b	24	b	44	a	64	b	84	c	104	c	124	b
5	a	25	b	45	c	65	a	85	d	105	b	125	c
6	c	26	d	46	b	66	a	86	d	106	a	126	a
7	a	27	c	47	a	67	c	87	b	107	d	127	c
8	c	28	a	48	c	68	a	88	c	108	c	128	c
9	a	29	d	49	d	69	d	89	c	109	a	129	
10	d	30	b	50	b	70	c	90	c	110	d	130	d
11	b	31	b	51	c	71	b	91	a	111	c	131	c
12	a	32	a	52	d	72	d	92	d	112	c	132	a
13	a	33	d	53	a	73	b	93	c	113	c		
14	D	34	a	54	a	74	a	94	a	114	c		
15	c	35	a	55	b	75	c	95	a	115	c		
16	d	36	a	56	a	76	b	96	c	116	c		
17	d	37	b	57	b	77	c	97	c	117	c		
18	a	38	d	58	b	78	a	98	c	118	d		
19	a	39	c	59	d	79	a	99	a	119	b		
20	d	40	a	60		80	a	100	a	120	c		

**INTRODUCTION & NOMENCLATURE****KIPS QUESTIONS****Q:1 Define species.**

**Ans:** A species is a group of natural populations, which can interbreed freely among themselves and produce fertile offsprings, but are reproductively isolated from all other such groups in nature. For example humans.

**Q:2 Give Biological classification of corn.****Ans:****Biological classification of corn**

**Kingdom:** -----Plantae  
**Division (Phylum):** -----Anthophyta (Tracheophyta)  
**Sub-phylum** -----Pteropsida  
**Class:** -----Angiospermae  
**Order:** ----- Poales  
**Family:** ----- Poaceae  
**Genus:** -----Zea  
**Species:** -----mays

**Q:3 What are basic principles of binomial nomenclature?****Ans:**

- (i) Every species has only one scientific name the over.
- (ii) The scientific name has two parts. The first name refers to the genus (pl. genera), is called generic name, and always begins with a capital letter. The species is written after generic name and begins with small letter.
- (iii) The scientific names are taken from Latin word.
- (iv) The scientific name is Underlined or Italicized.

**Q:4 What is binomial nomenclature? Give few examples.****Ans: Binomial Nomenclature:**

Binomial nomenclature is a system of giving each organism a scientific name comprising of two words. The first word refers to the genus, is called generic name, and always begins with a capital letter. The species name follows the generic name and begins with small letter.

**Example:**

The botanical name of onion is *Allium cepa*.

**PAST PAPERS QUESTIONS:**

- Q:5** What is binomial nomenclature? (LHR 2017, 2021, CRW 2018, 2019, BWP 2017)
- Q:6** Give biological classification of corn. (DGK 2017)
- Q:7** Write down biological classification of corn. (LHR 2018)
- Q:8** Give disadvantages of common names. (LHR 2019)
- Q:9** Describe rules of Binomial Nomenclature. (DGK 2019)
- Q:10** Define binomial system of nomenclature. (LHR 2021)
- Q:11** Give biological classification of Corn plant. (SWL 2021)
- Q:12** Define species. (MLT 2021)
- Q:13** Define binomial nomenclature and give one example following its rules. (BWP 2021, 2022)
- Q:14** Write two rules of binomial nomenclature (DGK 2022)

**TWO TO FIVE KINGDOM CLASSIFICATION SYSTEMS****KIPS QUESTIONS**

**Q:15** Enlist the modified five kingdom system classification of Margulis and Schwartz.

**Ans:** Lynn Margulis and Karlene Schwartz (1983) modified five kingdom classification of Whittaker by considering cellular organization, mode of nutrition, cytology, genetic and organelles of symbiotic origin. The five kingdoms are Prokaryotae (Monera), Protocista (Protista), Plantae, Animalia, and Fungi.

**PAST PAPERS QUESTIONS**

**Q:16** Differentiate between prokariotique and eucariotique. (LHR 2018)

**Q:17** Write down about five kingdom classification system proposed by Margulis and Schwartz. (GRW 2021)

**VIRUSES DISCOVERY & STRUCTURE****KIPS QUESTIONS**

**Q:18** What is capsid? Give number of capsomeres in capsid of adenovirus and herpes virus?

**Ans: Capsid:**

The genome is surrounded by a protein coat called as capsid.

Capsid gives definite shape to virus.

The capsid is made up of protein subunits known as capsomeres.

**Adenovirus:**

252 capsomeres are present in adenovirus which cause some types of common cold.

**Herpes Virus:**

162 capsomeres are present in the capsid of herpes viruses.

**Q:19** What are prions? Give examples of some diseases caused by them.

**Ans: Prions:**

These are infectious proteins discovered in 1983. They contain the information that codes for their own replication.

**Examples of Diseases:**

**Prions are responsible for:**

(i) Mad cow infection

(ii) mysterious brain infection in man.

**Q:20** Define virus.

**Ans:** Viruses are obligate intracellular parasites, which contain DNA or RNA as heredity material enclosed with proteinaceous material and replicating only inside living host.

**Q:21** Define virology.

**Ans:** Study of virus is known as virology.

**Q:22** What do you know about obligate intracellular parasite?

**Ans:** The parasite, which cannot live without its host, is called obligate intracellular parasite.

**Example:**

Virus

**PAST PAPERS QUESTIONS**

**Q:23** What is intracellular obligate parasites? Give example. (FSD 2017)

**Q:24** What is capsid and capsomeres? (LHR 2019, MLT 2019)

**Q:25** Differentiate between virion prion. (DGK 2019)

**Q:26** Write down any four characteristic features of viruses. (GRW 2021)

**Q:27** Define virology. (FSD 2021)

**Q:28** What are prions? Name two disease they cause. (SWL 2017, RWP 2017, LHR 2018, RWP 2022)

**Q:29** One the basis of morphology, How viruses are classified? (LHR 2022)

**Q:30** What are prions? (RWP 2022)

**BACTERIOPHAGE****KIPS QUESTIONS**

**Q:31** What are lysozymes? Give their role in viruses.

**Ans:** Lysozymes: These are the enzymes secreted by tail of bacteriophage and it dissolves a portion of bacterial cell wall.

**Q:32** Give four differences between lytic and lysogenic cycle.

**Ans:**

Lytic Cycle	Lysogenic Cycle
Bacterial cell bursts or is lysed.	Bacterial cell does not burst instead viral DNA becomes part of bacterial DN(a)
Master slave relation is developed.	Host guest relation is developed.
Virus involved is infectious or virulent.	Virus involved is non-virulent or non-infectious.
Bacterium involved is non-resistant to virus.	Bacterium involved is resistant to virus.

**Q:33** How we classify viruses?

**Ans:**

(i) **Morphology:**

On the basis of morphology viruses are classified into rod shaped (TMV) spherical (poliovirus), tadpole like (bacteriophage) and many more.

(ii) **Genetic Material:**

The genetic material may be DNA or RN (a)

(iii) **Cover:**

The genetic material may be naked, enveloped or complex.

**Q:34** How bacteriophages were discovered?

**Ans:** They were discovered independently by Twort (1915) and D'Herelle (1917). Twort observed that lysis occurs in some bacterial colonies. In a solution, this lysis can be transferred from one colony to another. Even highly diluted material from lysed colony can transfer the lytic effect. If filterate is heated then the lytic process does not occur. He said that lytic agent might be the virus. D'Herelle (1917) confirmed this process and used the word bacteriophage meaning "bacteria eater".

**Q:35** Define induction. What are its causes?

**Ans: Induction:**

Sometimes the viral DNA is removed from the host's chromosome and lytic cycle starts. This process is called induction.

**Causes:**

It can be spontaneous or induced by environment.

**Q:36** What is prophage and lysogeny?

**Ans: Prophage:**

The viral DNA which incorporated into the bacterial chromosome. The phage in this state is called **Prophage**.

**Lysogeny:**

The process in which viral DNA is incorporated into the bacterial chromosome is known as lysogeny.

**PAST PAPERS QUESTIONS**

- Q:37 Define virology. (SGD 2019)  
 Q:38 Draw a labeled diagram of a bacteriophage. (MLT 2021)  
 Q:39 What is lysogenic cycle of phage? (DGK 2021)  
 Q:40 In which state phage is called prophage. (SGD 2022)  
 Q:41 Sketch and label diagram of Bacteriophage. (MLT 2022, RWP 2017)

**VIRAL DISEASES****(Small pox, Herpes simplex, Influenza, Mumps & Measles, Polio)****KIPS QUESTIONS**

Q:42 What are effects of herpes virus?

Ans: Effects:

This disease most occurs in the mouth, on the lips and at other skin sites. In this disease, vascular lesions are formed in the epithelial layers of ectodermal tissues.

Q:43 Name some viral diseases (at least four).

Ans: Small Pox, Herpes Simplex, Influenza, Mumps and Measles &amp; Polio

Q:44 What are pocks?

Ans: In small pox, pustules are formed which later forms pitted scars and these scars are called pocks.

**PAST PAPERS QUESTIONS**

- Q:45 Write down the names of four common human viral diseases. (GRW 2017)  
 Q:46 What are mumps and measles? (SWL 2019)  
 Q:47 What is herpes simplex? (DGK 2021)  
 Q:48 Write short note on polio. (FSD 2022)

**RETROVIRUS****KIPS QUESTIONS**

Q:49 What are oncoviruses?

Ans: Oncoviruses are single stranded RNA tumor viruses.

**Shape:**

Spherical

**Diameter:**

About 100nm

Q:50 Define retroviruses. Give example.

Ans: **Retrovirus:**

The viruses, which have a special enzyme known as reverse transcriptase. Due to presence of this enzyme viruses have ability to convert single stranded RNA genome into double stranded viral DN(a) This process of conversion is known as reverse transcription hence the viruses are called as retroviruses.

Reverse transcriptase

Single stranded RNA  $\xrightarrow{\hspace{2cm}}$  Double stranded DNA**Example:**

HIV

Q:51 What is role of reverse transcriptase enzyme in viruses?

Ans: It can convert a single stranded RNA genome into double stranded viral DN (a)

Q:52 Give range size of viruses with examples.

Ans: **Range of Size:**

They range in size from 250 nm of Poxviruses to 20 nm of Parvoviruses.

Q:53 What are sources for transmission of HIV?

Ans: HIV is transmitted by:

- (i) Sexual contact      (ii) Blood contact (transfusion)      (iii) Breast feeding

**Q:54 Which human cells does HIV affect?**

**Ans:** The major cells of human, which are infected by the HIV, are helper T-lymphocyte. Helper T-Lymphocyte is major component of immune system. HIV also infects the cells of nervous system.

**Q:55 Write a short note on AIDS.**

**Ans:** Acquired immune deficiency syndrome (AIDS)

**Symptoms of AIDS:**

The patient of AIDS shows one or more complex symptoms like.

- (1) Severe pneumonia
- (2) A rare vascular cancer
- (3) Sudden weight loss
- (4) Swollen lymph nodes
- (5) General loss of immunity

**Virus of AIDS:**

HIV (human immunodeficiency virus)

### **PAST PAPERS QUESTIONS**

**Q:56** What is Reverse Transcriptase? (MTN 2017)

**Q:57** What are Retroviruses? (MTN 2017)

**Q:58** What are Retroviruses? Give examples. (DGK 2017)

**Q:59** Compare prophage with provirus. (FSD 2019)

**Q:60** What is reverse transcriptase? Give its function (RWP 2021)

**Q:61** Define retroviruses. (SWL 2022)

### **HEPATITIS**

#### **KIPS QUESTIONS**

**Q:62** Define hepatitis. Give its causes.

**Ans: Definition:**

It is an inflammation of the liver.

**Causes:**

It is usually caused by viral infection, toxic agents or drugs.

**Q:63** Write common names of hepatitis A, B & (c)

**Ans: Hepatitis A:**

Infectious hepatitis.

**Hepatitis B:**

Serum hepatitis

**Hepatitis C:**

Infusion hepatitis

#### **PAST PAPERS QUESTIONS**

**Q:64** What are prions? (GRW 2016, LHR 2017)

**Q:65** What are symptoms of AIDS? (SGD 2017)

**Q:66** What are the symptoms of AIDS? (MLT 2019)

**Q:67** Draw labelled diagram of HIV. (RWP 2019, SGD 2021)