BIOLOGY

Worksheet-12

STEP

A PROJECT BY PUNJAB GROUP

Worksheet-12

(Variety of Life)

Q.1 Reverse transcriptase can convert:

A) Single stranded RNA genome into single stranded DNA

B) Single stranded RNA genome into double stranded DNA

C) Double stranded DNA genome into single stranded RNA

D) Double stranded DNA genome into double stranded RNA

Q.2 In case of HIV, only _____ can infect host cells.

A) Single stranded RNA

B) Double stranded DNA

C) Double stranded RNA

D) Single stranded DNA

Q.3 The double stranded viral DNA can be incorporated into host T_4 genome as a:

A) Prophage C) Bacteriophage

B) Provirus D) Phage virus

Q.4 Some retroviruses can convert:

A) Cancer cells into normal cells

B) Cancer cells into germ line cells

C) Cancer cells into degenerated cells

D) Normal cells into cancer cells

Q.5 The AIDS was reported by some physicians in early 1980's in young homosexual males. They showed following symptoms, EXCEPT:

A) Severe pneumonia and a rare vascular cancer

B) Rare pneumonia and a severe vascular cancer

C) Sudden weight loss and swollen lymph nodes

D) Swollen lymph nodes and general loss of immune functions

Q.6 Soon after the initial victims of AIDS, the disease was discovered in _____ patients, who were given blood products.

A) Homosexuals

B) Females

C) Non-homosexuals

D) Transsexuals

Q.7 The agent causing the AIDS was identified by research teams from:

A) Pasteur institute in USA

B) National institute of health in France

C) Pasteur Institute in USA and National Institute of health in France

D) Pasteur Institute in France and National Institute of health in USA

Q.8 Human immunodeficiency virus causes:

A) Severe combined immunodeficiency syndrome

B) Acquired immunodeficiency syndrome

C) Non-Hodgkin's lymphoma

D) Bubble boy disease

Q.9 Recent studies on HIV reveal that the virus infects and multiplies in _____ but does not cause disease in them.

A) Heterosexual males

B) Young homosexual males

C) Monkeys

D) Young homosexual females

Q.10 Following are the means of transmission of AIDS, EXCEPT:

A) Intimate sexual contact and breast feeding

B) Use of common syringes and surgical instruments

C) Blood transfusion without screening

D) Human immunodeficiency virus

Q.11 The most important measure to prevent AIDS and HIV is:

A) Avoiding intravenous drugs

B) Avoiding intracellular drugs

C) Avoiding use of syringes

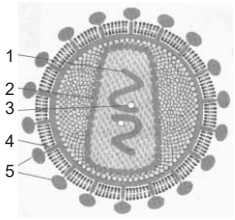
D) Avoiding the direct contact with HIV

Q.12 Now vaccine against _____ have been synthesized and its experimental administration in humans started in South Africa.

A) Hepatitis – C C) Hepatitis – A

B) HIV D) Hepatitis – B

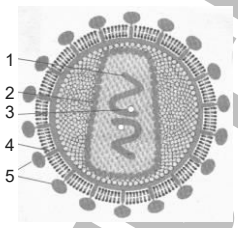
Q.13 Which of the following are of viral origin?



A) 1,2,3,4 C) 2,3,4,5

B) 1,2,3,5 D) 1,2,4,5

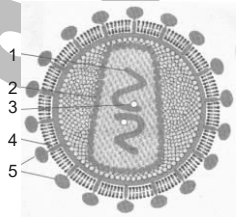
Q.14 Which one of the following is not of viral origin?



A) 2 C) 4

B) 3 D) 5

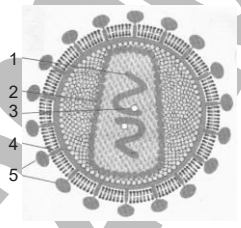
Q.15 Which of the following is viral envelope?



A) 2 C) 4

B) 3 D) 5

Q.16 Pick up the reverse transcriptase:



A) 2 C) 4

B) 3 D) 5

Q.17 HIV is uncoated:

A) Outside the cytoplasm

B) At the surface of the host cell

C) Inside the cytoplasm

D) Inside the nucleus of the host cell

Q.18 How many molecules of RNA are found in HIV:

A) 2 C) 4

B) 3 D) 5

Q.19 How many molecules of reverse transcriptase are found in HIV:

A) 2 C) 4

B) 3 D) 5

Q.20 In infection cycle of HIV RNA is converted into DNA duplex by:

A) Replication

B) Transcription

C) Reverse transcription

D) Translation

Q.21 In infection cycle of HIV after attachment there comes:

A) Entry

B) Uncoiling

C) Reverse transcription

D) Integration

Q.22 Cd_4 receptor bearing T Lymphocyte is infected by:

A) HIV C) HCV
B) HBV D) HAV

Q.23 T_4 phage consists of:

A) Head C) Nucleocapsid
B) Tail D) Head and tail

Q.24 Following are true about head of T_4 phage EXCEPT:

A) Hexagonal structure
B) Pyramidal structure
C) Prism shaped structure
D) An oval structure

Q.25 "Two triangular structures with common base" is the description of the structure of _____ of T_4 phage.

A) Tail C) Head
B) Collar D) Base plate

Q.26 Within the head of T_4 phage _____ molecule is present.

A) Single Stranded DNA
B) Double stranded DNA
C) Single Stranded RNA
D) Double stranded RNA

Q.27 The structure of phage _____ is more complex than _____.

A) Head, Tail
B) Tail, Head
C) Collar, Base plate
D) Head, Base plate

Q.28 About tail of T_4 phage which one is not true:

A) Core or tube is made up of distinct protein
B) Core or tube is enclosed in sheath
C) Core and sheath are made of same type of protein
D) Sheath is made of another type of protein

Q.29 The volume of T_4 phage is about _____ times shorter than that of host:

A) 01 C) 100
B) 10 D) 1000

Q.30 The bacteriophage is adsorbed to host cell at _____ of bacterium.

A) Receptor site C) Cell membrane
B) Cell wall D) Capsule

Q.31 A bacteriophage is attached to the receptor site on the host cells:

A) Slime C) Cell membrane
B) Cell wall D) Envelope

Q.32 In Rhizopus zygote is formed by fusion of hyphae of:

A) Minus mating strains
B) Minus mating and plus mating strain
C) Plus mating strain
D) Same fungus

Q.33 In life cycle of Rhizopus, the hyphal tips after coming in contact with each are transformed into:

A) Sporangia C) Sporangiophores
B) Conidiophores D) Gametangia

Q.34 In life cycle of Black bread mold, gametangia after plasmogamy and karyogamy give rise to:

A) Zygospore C) Basidiospores
B) Ascospores D) Conidiophore

Q.35 In the life cycle of Rhizopus diploid spores are produced in:

A) Asexual reproduction only
B) Sexual reproduction only
C) Both in sexual and asexual reproduction

D) Both in fragmentation and budding

Q.36 Pick up the true choice with respect to the life cycle of Rhizopus:

A) Haploid Zygospores $\xrightarrow{mitosis}$ Haploid spores

B) Diploid Zygospores $\xrightarrow{mitosis}$ Diploid spores

C) Diploid Zygospores $\xrightarrow{meiosis}$ Haploid spores

D) Diploid Zygospores $\xrightarrow{meiosis}$ Diploid spores

Q.37 Which one of the following phases of life cycle of Rhizopus is delayed?

A) Dikaryotic C) Diploid

B) Heterokaryotic D) Meiosis

Q.38 Without the activity of _____ along with _____ all the essential nutrients would soon become locked up in the mounds of dead animals and plants:

A) Fungi, Saprobic bacteria

B) Algae, Saprobic bacteria

C) Fungi, Parasitic bacteria

D) Algae, Parasitic bacteria

Q.39 Mycorrhizal fungi improves the growth of _____ of all kinds of vascular plants through its association:

A) 95% C) 85%

B) 90% D) 80%

Q.40 _____ growing on rocks breaks them, setting stage for other organisms during the course of ecological succession.

A) Ectomycorrhizae C) Bacteria

B) Endomycorrhizae D) Lichen

Q.41 _____ are very good bioindicators of air quality as they are very sensitive to pollution.

A) Lichens C) Rhizopus

B) Mycorrhizae D) Penicillium

Q.42 Some fungi are also used for:

A) Bioabsorption

B) Environmental degradation

C) Bioremediation

D) Biological control

Q.43 Bioremediation means:

A) Degrading pollutants

B) Removing pollutants

C) Degrading or removing environmental poisons

D) Degrading or removing environmental poisons or pollutants by organisms

Q.44 Give example of edible fungi:

A) *Agaricus sp.*

B) *Tuber sp.*

C) *Morchella esculenta*

D) *Agaricus sp., Morchella esculenta and Tuber sp.*

Q.45 Give example of poisonous mushrooms:

A) Death cap/death angel

B) Saccharomyces cerevisiae

C) Jack – O Lantern

D) Death cap/death angel and Jack – O Lantern

Q.46 Reindeers moss is used as food for reindeers and some other large animals in:

A) Arctic regions

B) Boreal regions

C) Sub-arctic regions

D) Arctic, Sub-arctic and boreal regions

Q.47 Because of its fermenting ability it is used in the production of bread and liquor:

A) *Saccharomyces cerevisiae*

B) *Neurospora*

C) *Penicillium notatum*

D) *Asperillus fumigatus*

Q.48 Yeasts are heavily used in genetic/molecular biological research, because of the:

A) Rapid generation

B) Rapid increasing pool of genetic information
C) Rapidly increasing pool of biochemical information
D) Rapid generation and rapidly increasing pool of genetic and biochemical information

Q.49 Some species of _____ are used for producing soya sauce and soya paste from soya beans.
A) *Penicillium* C) *Yeast*
B) *Aspergillus* D) *Neurospora*

Q.50 *Penicillin* is dominated from:
A) *Saccharomyces cerevisiae*
B) *Penicillium griseofulvum*
C) *Penicillium notatum*
D) *Neurospora crassa*

Q.51 It is used in organ transplantation in preventing transplant rejection:
A) Lovastatin C) Penicillium
B) Cyclosporine D) Griseofulvin

Q.52 Lovastatin is used for:
A) Lowering blood cholesterol
B) Relief in migraine
C) Preventing transplant rejection
D) Inhibiting fungal growth

Q.53 Griseofulvin is used for:
A) Lowering blood cholesterol
B) Relief in migraine
C) Preventing transplant rejection
D) Inhibiting fungal growth

Q.54 It is used to relieve one kind of headache called migraine:
A) Lovastatin C) Ergotine
B) Cyclosporine D) Griseofulvin

Q.55 Antibiotics are synthesized by:
A) Actinomycetes
B) Fungi
C) Bacteria
D) Actinomycetes, Bacteria and Fungi

Q.56 Some antibiotics are synthesized in:
A) Bacteria C) Fungi
B) Actinomycetes D) Laboratory

Q.57 Massive quantities of antibiotics are being prepared and used, which are followed by the widespread problems of:
A) Drug resistance in microorganisms
B) Drug addiction in microorganisms
C) Drug sensitivity in microorganisms
D) Intoxication in human being

Q.58 These are the first eukaryotes to be used by genetic engineers:
A) Lichen C) Mycorrhizae
B) Yeast D) Rhizopus

Q.59 A functional artificial chromosome was made in:
A) *Aspergillus fumigatus*
B) *Saccharomyces cerevisiae*
C) *Penicillium notatum*
D) *Penicillium griseofulvin*

Q.60 _____ has also been used for genetic research.
A) Pink bread mold
B) Blue bread mold
C) Black bread mold
D) Pink bread mold called Neurospora

Q.61 Fungi are responsible for many serious plant diseases because they produce several enzymes that can break down the following substances, EXCEPT:
A) Cellulose C) Lignin
B) Cutin D) Chitin

Q.62 Extensive damage due to _____ and _____ diseases of wheat, corn and

rice prompted mass displacement and starvation to death many people.

A) Rusts, Smuts

B) Ergot of eye, red rot of sugarcane

C) Brown rot of plums and apricots

D) Cotton seed rot and apple scab

Q.63 Rust and smut cause extensive damage to following crops:

A) Wheat, corn, rice

B) Peaches, Plums, Apricots

C) Sugarcane, Potato, Cotton

D) Cotton, Apple, Rye

Q.64 Fungus causes:

A) Root rot in cotton

B) Scab in cotton

C) Brown rot in cotton

D) Ergot in cotton

Q.65 Fungus causes:

A) Ergot in potato C) Scab in potato

B) Wilts in potato D) Brown rot in apple

Q.66 Ringworm and athlete's foot are superficial fungal infections caused by certain:

A) Club fungi

B) Sac fungi

C) Conjugating fungi

D) Imperfect fungi

Q.67 *Candida albicans* cause:

A) Oral thrush

B) Vaginal thrush

C) Oral and vaginal thrush

D) Ringworm

Q.68 Histoplasmosis becomes fatal:

A) Usually

B) Always

C) Never

D) Very occasionally

Q.69 Aspergillosis is caused by:

A) *Aspergillus fumigatus*

B) *Aspergillus albicans*

C) *Aspergillus notatum*

D) *Penicillium notatum*

Q.70 Histoplasmosis can be serious and fatal if it spreads in:

A) Blood stream

B) Nervous system

C) Organs other than lungs

D) Blood stream and then to other organs

Q.71 Pick up the correct sequence:

A) Aspergillus ⟶ Aspergillosis ⟶ AIDS ⟶ Death

B) Aspergillosis ⟶ Aspergillus ⟶ AIDS ⟶ Death

C) AIDS ⟶ Aspergillosis ⟶ Aspergillus ⟶ Death

D) AIDS ⟶ Aspergillus ⟶ Aspergillosis ⟶ Death

Q.72 Improperly stored grains such as peanuts and corn etc. are contaminated by:

A) *Aspergillus* C) *Neurospora*

B) *Candida* D) *Agaricus*

Q.73 It is caused by eating bread made from purple ergot contaminated rye flour:

A) Histoplasmosis C) Ringworm

B) Ergotism D) Aspergillosis

Q.74 Which one of the following is wood rotting fungi:

A) Bracket fungi or shelf fungi

B) Truffles or morels

C) Mushrooms or truffles

D) Black bread mold or pink bread mold

Q.75 Viruses that infect bacteria are called:

A) Prophage C) Bacteriophage

B) Provirus D) Virions

Q.76 Who used the term bacteriophage for the first time?

A) Twort
B) D'Herelle
C) Louis Pasteur
D) Charles chamberland

Q.77 In Charles Chamberland's experiment which one of the following represented filterable viruses:

A) Bacteria C) TMV
B) Rabies virus D) HIV

Q.78 The virus that was first ever obtained in purified form was:

A) TMV C) Pox virus
B) Rabies virus D) Polio virus

Q.79 The transmittable nature of TMV was first observed by:

A) W.M Stanley C) Chamberland
B) Ivanowsky D) Twort

Q.80 The size of the largest virus is:

A) 250 nm C) 150 nm
B) 20 nm D) 200 nm

Q.81 What gives definite shape to a virion?

A) Tail C) Capsid
B) Base plate D) Genome

Q.82 Pick up the one which is absent in viruses:

A) DNA
B) RNA
C) Enzymes
D) Metabolic machinery

Q.83 The protein subunits which make the protein coat of viruses are called:

A) Capsids C) Monomers
B) Capsomeres D) Amino acids

Q.84 The capsid of herpes virus and that of adenovirus differ from each other with respect to:

A) Chemical nature
B) Type of subunits
C) Number of subunits
D) Role in life cycle

Q.85 How many additional capsomeres are found in adenovirus, as compared to those in herpes virus:

A) 70 C) 90
B) 80 D) 100

Q.86 Which one of the following characters, does not belong to fungi?

A) Absorptive heterotrophic mode
B) Eukaryotic organization
C) Centrioles present
D) Nuclear mitosis

Q.87 The body of a fungus is called:

A) Hypha C) Mycelium
B) Fruiting body D) Coenocyte

Q.88 Non-hyphal unicellular fungi are called:

A) Yeast C) Toadstools
B) Mushrooms D) Fruiting bodies

Q.89 The only exception with respect to sexual reproduction in fungi is that of:

A) Conjugation fungi C) Sac fungi
B) Imperfect fungi D) Club fungi

Q.90 Conidia are also called as:

A) Naked spores C) Zoospores
B) Zygospores D) sexual spores

Q.91 Heterokaryotic hyphae/cell contains:

A) Two nuclei of same types
B) Two nuclei of different types
C) Many nuclei of same types
D) Many nuclei of different types

Q.92 The word virus was generally referred to as a poison associated with disease and death at the time of:

A) Louis Pasteur and Charles Chamber land
B) Louis Pasteur and Ivanowski
C) Louis Pasteur and W. M Stanley
D) Louis Pasteur and Robert Koch

Q.93 A particle of nucleic acid wrapped in a protein coat is recognized as a:

A) Cell C) Virus
B) Bacterium D) Prion

Q.94 Study of nucleocapsids is carried out in:

A) Microbiology C) Virology
B) Mycology D) Cell biology

Q.95 For the synthesis of their proteins, a virus uses:

A) Its own metabolism
B) Metabolism of its host organism
C) Metabolism of its host cell
D) Metabolism of its host cell

Q.96 Which one of the following organisms can pass through the porcelain filter?

A) Virus C) Fungi
B) Bacteria D) Protozoans

Q.97 Who determined that, viruses are smaller than bacteria?

A) Ivanovsky
B) Edward Jenner
C) Charles Chamberland
D) W. M. Stanley

Q.98 Pick up the notorious fungus:

A) Mushrooms C) Smuts
B) Morels D) Truffles

Q.99 Taxonomically fungi was a:

A) Kingdom
B) Group of plant kingdom
C) Group of animal kingdom
D) Group of protist kingdom

Q.100 Unlike plants and like animals, fungi lack:

A) Cell wall C) Chitin
B) Cellulose D) Definite nucleus

Q.101 Fungi resembles to the arthropods unlike to the rest of the animals with respect to:

A) Heterotrophic mode of nutrition
B) Absence of chloroplast
C) Presence of exoskeleton
D) The chemical found in external covering of the body

Q.102 It have been estimated by mycologists that fungi and animals probably arose from:

A) Different ancestors
B) Common ancestors
C) Ingestive heterotrophs
D) Absorptive heterotrophs

Q.103 Fungi have been assigned to a separate kingdom because they are distinct from:

A) Plants
B) Animals
C) Protists
D) Rest of the eukaryotes

Q.104 Mention some unique characteristic of the fungi:

A) Absorptive heterotrophic mode of nutrition
B) Occurrence of chitin
C) Capability of reproduction
D) Nuclear mitosis

Q.105 The body of fungus consists of:

A) Mycelium
B) Hyphae

C) Fruiting body
D) Rhizoids

Q.106 It is more resistant to decay than cellulose and lignin:
A) Glycogen C) Chitin
B) Amylose D) Amylopectin

Q.107 Which one of the following statement about spores of fungi is wrong?
A) These are produced by sexual process
B) These are produced by asexual process
C) These are haploid
D) These are motile and flagellate

Q.108 Resting spore of fungi is called:
A) Ascospore C) Conidium
B) Basidiospore D) Zygospore

Q.109 Non-motile asexual spores produced uncovered on hyphal tips are called:
A) Teliospores C) Zygospores
B) Basidiospores D) Conidia

Q.110 Appearance of mold on Jams and jellies indicate the fungal resistance against:
A) Extreme pH
B) Immense osmotic pressure
C) Decomposition
D) Desiccation

Q.111 The fruiting body of mushroom is called:
A) Ascocarp C) Mycelium
B) Basidiocarp D) Thalamus

Q.112 Formation of ascospores or basidiospores is the consequence of:
A) Karyogamy C) Diploidization
B) Dikaryotization D) Meiosis

Q.113 Formation of a resistant structure in Rhizopus is consequence of:
A) Plasmogammy
B) Karyogammy
C) Heterokaryotization
D) Dikaryotization

Q.114 _____ species of animals are known:
A) One million
B) Over one million
C) One and a half million
D) Over one and a half million

Q.115 _____ species of plants are known:
A) One million
B) Half million
C) Over one million
D) Over a half million

Q.116 The smallest taxon in plant nomenclature is:
A) Order C) Phylum
B) Species D) Class

Q.117 Two individuals organisms belong to same species if they can:
A) Interbreed
B) Reproduce
C) Produce sterile offspring
D) Produce fertile offspring

Q.118 Each kingdom divided into smaller taxon, called:
A) Phylum C) Family
B) Classes D) Order

Q.119 Classes are further sub-divided into:
A) Families C) Genera
B) Orders D) Species

Q.120 The family of corn is:
A) Poales C) Poaceae
B) Plantae D) Angiospermae

Q.121 Following names are used for onion in different regions of Pakistan, EXCEPT:
A) Bassal C) Ganda
B) Argavad D) Piyaz

Q.122 Pick up the odd one:
A) Golden shower C) Purging cassia
B) Brinjal D) Gurmala

Q.123 To biologist a fish is a:
A) Cray fish C) Jelly fish
B) Vertebrate D) Starfish

Q.124 Different classification systems recognize:
A) Two to six kingdoms
B) Two to five kingdoms
C) Two to three kingdoms
D) Two to four kingdoms

Q.125 Which one of the following organisms have both plant like and animal like characters?

A) Yeast C) Paramecium
B) Trichonympha D) Euglena

Q.126 Five kingdom classification system was modified by:

A) Robert Whittaker
B) Marguilis and Schwartz
C) Carlous Linnaeus
D) Ernst Haeckel

ANSWER KEY (Worksheet-12)

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

EXPLANATION

Q.1 Answer is "A single stranded RNA genome into a double stranded DNA"

Explanation: Reverse transcription is a process in which an RNA acts as a template for synthesis of RNA-DNA hybrid. Then that DNA is replicated to get double stranded DNA. The enzyme involved in this process in called reverse transcriptase because this process is reverse of transcription.

Q.2 Answer is "Double stranded DNA"

Explanation: The host of HIV is a lymphocyte T4 containing DNA as a genetic material that is why the viral genome should also be converted into DNA by reverse transcription.

Q.3 Answer is "Provirus"

Explanation: A viral DNA incorporated into the DNA of host animal cell is called provirus which means before becoming virus.

Q.4 Answer is "Normal cells into cancer cells"

Explanation: Such retroviruses are called oncoviruses (cancer causing viruses).

Q.5 Answer is "Rare pneumonia and a severe vascular cancer"

Explanation: Actually it is severe pneumonia and a rare vascular cancer.

Q.6 Answer is "Non-homosexuals"

Explanation: As the infection was initially discovered in homosexuals but later on it was transmitted to heterosexuals from infected homosexuals.

Q.7 Answer is "Pasture institute in France and National institute of Health in USA"

Explanation: HIV, the agent causing the AIDS was discovered at Pasteur Institute of France and National institute of Health in USA in 1984.

Q.8 Answer is "Acquired immunodeficiency syndrome"

Explanation: It is abbreviated as AIDS.

Q.9 Answer is "Monkeys"

Explanation: Recent studies of HIV reveal that the virus infects and multiplies in monkey but does not cause disease in them which means that HIV is host specific.

Q.10 Answer is "Human immunodeficiency virus"

Explanation: Human Immunodeficiency Virus (HIV) is the causal agent not vector or transmitter.

Q.11 Answer is "Avoiding the direct contact with HIV"

Explanation: All sources of transmission become effective by contact with HIV, which should be avoided for the prevention of AIDS. Actually the body fluids of the HIV positive person should not come in contact with the body fluids of any healthy person.

Q.12 Answer is "HIV"

Explanation: It have been claimed in 2001 that a vaccine against HIV have been developed and after successful trials it will be in the market for consumers.

Q.13 Answer is "1,2,3,5"

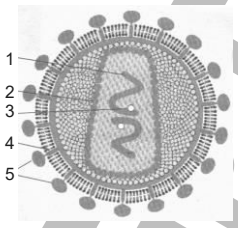
Explanation: Other than envelop which have been derived from the cell membrane of host cell, rest of the all parts of virus are genetically encoded on viral (HIV) genome.

Q.14 Answer is "4"

Explanation: Envelope have been labeled by 4. It is part of the plasma membrane of host cell and its genetic information is not located on the viral genome.

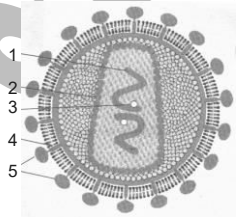
Q.15 Answer is "4"

Explanation:



Q.16 Answer is "03"

Explanation:



Q.17 Answer is "Inside the cytoplasm"

Explanation: HIV is uncoated inside the cytoplasm of host cell.

Q.18 Answer is "2"

Explanation: There are two molecules of reverse transcriptase i.e. one molecule is associated with each RNA.

Q.19 Answer is "2"

Explanation: HIV have two identical strands of RNA, each having its own reverse transcriptase molecule.

Q.20 Answer is "Reverse Transcription"

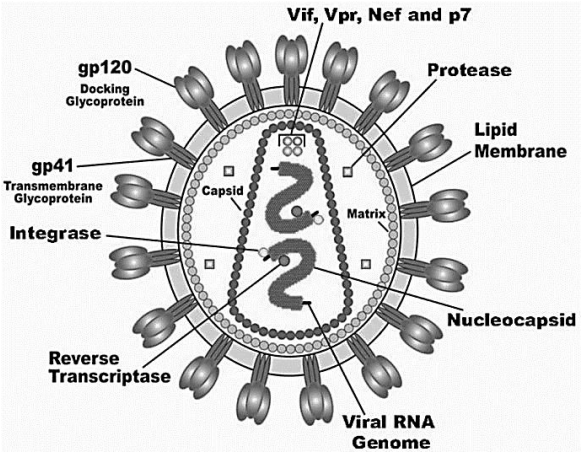
Explanation: RNA is converted into DNA by a process called reverse transcription. It is controlled by reverse transcriptase enzyme.

Q.21 Answer is "Entry"

Explanation: In infection cycle of HIV after attachment of virus to host cell, there comes entry which is followed by uncoiling.

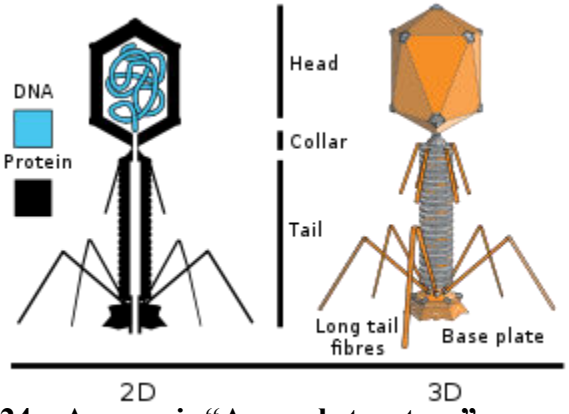
Q.22 Answer is "HIV"

Explanation: Viruses are intracellular obligate parasites and they require a specific receptor site for their adsorption. The receptor site required by HIV is called Cd_4 receptor site (cluster of differentiation 4). It is a cluster of specific glycoproteins which develops on the surface of T_4 lymphocyte.



Q.23 Answer is "Head and tail"

Explanation: It is tadpole shaped with a head consisting up of nucleocapsid and a tail attached with head.



Q.24 Answer is "An oval structure"

Explanation: The head of bacteriophage is an elongated, pyramidal, hexagonal, prism shaped structure, to which straight tail is attached.

Q.25 Answer is "Head"

Explanation: Head of T_4 phage Pyramidal

Q.26 Answer is "Double stranded DNA molecule"

Explanation: T_4 phage have double stranded DNA molecules.

Q.27 Answer is "Tail, Head"

Explanation: Tail contains two types of proteins whereas head contains only one type of protein.

Q.28 Answer is "Core and sheath are made of same type of protein"

Explanation: Core of tail is made up of a rigid and inflexible protein whereas sheath is made up of flexible and contractile protein.

Q.29 Answer is "1000"

Explanation: The volume of the phage is about $1/1000^{th}$ of the host.

Q.30 Answer is "Receptor site"

Explanation: Being obligate parasite viruses require receptor site on host surface for attachment.

Q.31 Answer is "Cell Wall"

Explanation: The receptor site develops on cell wall of host bacterium.

Q.32 Answer is "Minus Mating strain and plus mating strain"

Explanation: In fungi due to homothallic body the terms of male and female cannot be used.

Q.33 Answer is "Gametangia"

Explanation: Means bodies containing gametes.

Q.34 Answer is "Zygospore"

Explanation: It is a diploid resistant body which comes into being by fusion of two haploid nuclei of different strains.

Q.35 Answer is "Sexual reproduction only"

Explanation: Somatic body of fungus is haploid and it divides by mitosis to produce asexual spores.

Q.36 Answer is "Diploid zygospore $\longrightarrow$ Haploid spores"

Explanation: Diploid zygospore undergoes meiosis to produce four haploid spores, two of plus strain and two of minus strain.

Q.37 Answer is "Meiosis"

Explanation: Zygospore is a resistant dormant body which waits for arrival of favorable conditions and meiosis is delayed.

Q.38 Answer is "Fungi, saprobic bacteria"

Explanation: Both of them are decomposers and recycler of nature.

Q.39 Answer is "95%"

Explanation: Symbiotic association is common in vascular plants.

Q.40 Answer is "Lichen"

Explanation: Lichens are hardy invaders which act as pioneers in xeroseres.

Q.41 Answer is "Lichens"

Explanation: They are sensitive to air pollution particularly to SO_2 and start dieing immediately if air becomes polluted.

Q.42 Answer is "Bioremediation"

Explanation: They eradicate the pollutant from nature.

Q.43 Answer is "Degrading or removing environmental poisons/pollutants by organisms"

Explanation: Degrading or removing environmental poisons/pollutants by organisms is called bioremediation.

Q.44 Answer is "*Agaricus sp., Morchella esculenta and Tuber sp.*"

Explanation: All of them are edible.

Q.45 Answer is "Death cap / death angel and Jack O Lantern"

Explanation: These are poisonous fungi having strong neurotoxins.

Q.46 Answer is "Arctic, subarctic and boreal regions"

Explanation: Reindeers are found in these areas and consume the fruticose lichen (*Cladonia rangiferina*) as fodder.

Q.47 Answer is "*Saccharomyces cervisiae*"

Explanation: It is the scientific name of baker's or brewer's yeast which acts as fermenting agent in bakeries and breweries.

Q.48 Answer is "Rapid generation and rapidly increasing pool of genetic and biochemical information"

Explanation: It has short generation time and budding enables it to multiply rapidly.

Q.49 Answer is "*Aspergillus*"

Explanation: It produces some highly proteolytic enzymes which breakdown the grain proteins.

Q.50 Answer is "*Penicillium notatum*"

Explanation: Historically it happened so.

Q.51 Answer is "Cyclosporine"

Explanation: It is an immunosupressent.

Q.52 Answer is "Lowering blood cholesterol"

Explanation: It is an inhibitor of that enzyme which is associated with cholesterol anabolism.

Q.53 Answer is "Inhibiting fungal growth"

Explanation: It makes the cells resistant to fungal infections.

Q.54 Answer is "Ergotine"

Explanation: It is also called ergotamine. It have structural similarity with neurotransmitters such as serotonin, dopamine and epinephrine. It induces the constriction of the intracranial extra cerebral blood vessels to relieve migraine.

Q.55 Answer is "Actinomycetes, bacteria and fungi"

Explanation: Biological antibiotics are produced by certain fungi actinomycetes and bacteria, whereas synthetic antibiotics are usually derived from dyes.

Q.56 Answer is "Laboratory"

Explanation: Synthetic antibiotics.

Q.57 Answer is "Drug resistance in microorganisms"

Explanation: Widespread use of antibiotics and easy availability are causes of increased microbial resistance against antibiotics.

Q.58 Answer is "Yeast"

Explanation: Various yeast species have been genetically engineered to produce various drugs; *Saccharomyces cervisiae* is a simple eukaryotic cell, serving as a model for all eukaryotes. It is easy to genetically engineer. Its physiology, metabolism and genetics are amendable for use in harsh industrial conditions. A wide variety of chemicals of different

classes can be produced by engineered yeast, including phenolics, isoprenoids, alkaloids and polyketides. About 20% biopharmaceuticals are produced by *Saccharomyces cervisiae*, including insulin, vaccine for hepatitis and human serum albumin.

Q.59 Answer is "Saccharomyces cervisae"

Explanation: Yeast artificial chromosomes (YACs) are genetically engineered chromosomes derived from the DNA of the yeast *Saccharomyces cervisae*, which is then ligated into a bacterial plasmid.

Q.60 Answer is "Pink bread mold called Neurospora"

Explanation: *Neurospora Crassa* is a model organism because it is easy to grow and have haploid life cycle that makes genetic analysis simple since recessive traits will be shown in the offspring. For example, it was used by Beadle and Tatum in their experiments

Q.61 Answer is "Chitin"

Explanation: Fungi have battery of enzymes to decompose cellulose, lignin and cutin but chitin cannot be broken down by it.

Q.62 Answer is "Rusts, Smuts"

Explanation: The most devastating parasitic fungi for cereal crops.

Q.63 Answer is "Wheat, Corn, Rice"

Explanation: These are obligate parasites of cereal crops i.e. members of family poaceae.

Q.64 Answer is "Root rot in cotton"

***Explanation*:**

Fungal Diseases	Affected Plants
Root rot	Cotton
Brown rot	Peaches, Plums Apricots and Cherries
Scab	Apple
Ergot	Rye
Red rot	Sugar came
Rust, smut	Wheat, Corn, Barley, Rice, Oat, Sugar cane etc.
Powdery mildews	Grapes, Rose, Wheat, etc
Wilts	Potato

Q.65 Answer is "Wilts in potato"

Explanation:

Fungal Diseases	Affected Plants
Root rot	Cotton
Brown rot	Peaches, Plums Apricots and Cherries
Scab	Apple
Ergot	Rye
Red rot	Sugar came
Rust, smut	Wheat, Corn, Barley, Rice, Oat, Sugar cane etc.
Powdery mildews	Grapes, Rose, Wheat, etc
Wilts	Potato

Q.66 Answer is "Imperfect Fungi"

Explanation:

Fungal Diseases	Causal Agent
Ringworm	Imperfect fungi (Deuteromycota)
Athlete's foot	Imperfect fungi (Deuteromycota)
Vaginal thrush (Candidiasis)	*Candida albicans*
Histoplasmosis	Histoplasma capsulatum(grows)
Aspergillosis	*Aspergillus fumigatus*
Cancer	*Aspergillus sp.*

Q.67 Answer is "Oral or vaginal thrush"

Explanation: *Candida albicans*, a yeast causes oral and vaginal thrush commonly called candidacies or candidiasis.

Q.68 Answer is "Very occasionally"

Explanation: If person's immune system is weak, then it becomes fatal.

Q.69 Answer is "*Aspergillus fumigatus*"

Explanation: As the name indicates

Q.70 Answer is "Blood stream and then to other organs"

Explanation: Because ***s***ystemic fungus is difficult to be controlled and eradicated.

Q.71 Answer is "AIDS – Aspergillus – Aspergillosis – Death"

Explanation: Aspergillosus occurs in those persons who suffers from any type of immune deficiency e.g. AIDS

Q.72 Answer is "*Aspergillus*"

Explanation: It is decomposer and saprobic fungus.

Q.73 Answer is "Egotism"

Explanation: Ergot fungi refers to a group of fungi of genus *Claviceps*. The most prominent member in *Claviceps pupurea*. This fungus grows on rye and related plants and produces alkaloids that can cause ergotism in humans and other mammals who consume grains contaminated with its fruiting structure called ergot sclerotuim.

Q.74 Answer is "Bracket fungi or shelf fungi"

Explanation: Wood rotting fungi destroy not only living trees but also structural timber. Bracket fungi/shelf fungi cause lot of damage to stored cut lumber as well as stands of tumber of living trees.

Q.75 Answer is "Bacteriophages"

Explanation: A virus that attacks on bacteria are called bacterial viruses, bacteriophages or phage viruses.

Q.76 Answer is "D' Herelle"

Explanation: As far as discovery is conserned, Towrt discovered the bacterial viruses earlier than D'Herelle, however the term bacteriophage was used by D'Herelle for the first time. Bacteriophage means bacteria eater.

Q.77 Answer is "Rabies virus"

Explanation: Those days word virus was generally used for any poisonous fluid which caused any disease or death. That is why Chamberland used the term filterable viruses for rabies causing agents as they passed through the filter.

Q.78 Answer is "TMV"

Explanation: TMV was crystallized by W. M Stanley.

Q.79 Answer is "Ivanowsky"

Explanation: Ivanowsky took bacteria free extract from infected tobacco leaves and sprinkled it over healthy plants which suffered from TMV later on.

Q.80 Answer is "250nm"

Explanation: Pox virus is the largest virus with 250 nm size.

Q.81 Answer is "Capsid"

Explanation: Capsid gives definite shape to the virions.

Q.82 Answer is "Metabolic machinery "

Explanation: Viruses are acellular entities and lack biosynthetic machinery for their replication.

Q.83 Answer is "Capsomeres"

Explanation: Capsomeres are those protein subunits whereas capsid is entire protein coat.

Q.84 Answer is "Number of subunits"

Explanation: Herpes virus have 162 capsomeres, whereas adenovirus have 252 capsomeres. Net difference is that of 90 capsomeres.

Q.85 Answer is "90"

Explanation: Herpes virus have 162 capsomeres, whereas adenovirus have 252 capsomeres. Net difference is that of 90 capsomeres

Q.86 Answer is "Centriole present"

Explanation: Fungi like plants lack centrioles.

Q.87 Answer is "Mycelium"

Explanation: The body of fungus, called mycelium, consists of long, slender, branched tubular thread like filaments called the hyphae.

Q.88 Answer is "Yeast"

Explanation: Yeast are non-hyphal unicellular fungi.

Q.89 Answer is "Imperfect fungi"

Explanation: Perfect stage is sexual stage which is absent in Deuteromycota. That is why it is called imperfect fungi or fungi imperfecti.

Q.90 Answer is "Naked spores"

Explanation: Conidia being produced on conidrophore, without any covering like sporangial wall are called naked spores. These are haploid and asexual spores.

Q.91 Answer is "Two nuclei of different types"

Explanation: Heterokaryotic hyphae/cells also called dikaryotic hyphae/cells contain two nuclei of different genetic types or mating types.

Q.92 Answer is "Louis Pasteur and Robert Koch"

Explanation: as microscopic techniques were not well developed at the time of Louis Pasteur and Robert Koch, the study about virus was very limited and the only thing that is known about it was that it is a poison associated with disease and death.

Q.93 Answer is "Virus"

Explanation: Viruses are actually particles of nucleoproteins i.e. a nucleic acid core (DNA or RNA) have been coated in a protein coat called capsid.

Q.94 Answer is "Virology"

Explanation: That branch of biology which deals with the study of viruses is called virology and as structurally viruses are nucleocapsids so it may be study of nucleocapsids as well.

Q.95 Answer is "Metabolism of its host cell"

Explanation: Viruses are acellular entities having no cellular/metabolic machinery. Thus they have to rely upon the biosynthetic machinery of host for this purpose.

Q.96 Answer is "Virus"

Explanation: Viruses having smaller size as compared to bacteria can pass through the porcelain filter and it was first proved by Charles Chamberland by filtering rabies virus through porcelain filter.

Q.97 Answer is "Charles Chamberland"

Explanation: Charles Chamberlandt called the filtrate as filterable viruses and residue as non-filterable viruses.

Q.98 Answer is "Smuts"

Explanation: Smuts are such fungi which are pathogenic to cereal crops particularly to wheat, barley, oat, maize etc.

Q.99 Answer is "Group of plant kingdom"

Explanation: Fungi was included in Kingdom plantae due to the presence of cell wall and absence of centrioles. However, later on due to its heterotrophic mode of nutrition it was excluded from plants and given the status of an independent kingdom.

Q.100 Answer is "Cellulose"

Explanation: Cellulose is found in the cell wall of plants and algae, fungi have chitinous cell wall. Animals cell lack cellulose as a structure component

Q.101 Answer is "The chemical found in external covering of the body"

Explanation: Fungi have chitinous cell wall as external covering and insects have chitinous exoskeleton as external covering.

Q.102 Answer is "Common ancestors"

Explanation: As both animals and fungi are heterotrophs and both have chitin as a structural component.

Q.103 Answer is "Rest of the eukaryotes"

Explanation: With respect to nuclear mitosis and molecular data fungi resemble none of the other eukaryote.

Q.104 Answer is "Nuclear mitosis"

Explanation: Nuclear mitosis is a unique feature of fungi as no other group of organisms carries out nuclear mitosis.

Q.105 Answer is "Hyphae"

Explanation: Hyphae are the structural units of fungi except yeast.

Q.106 Answer is "Chitin"

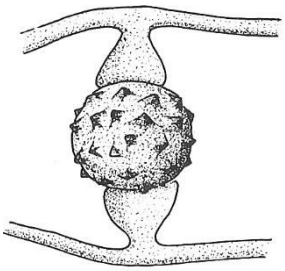
Explanation: Chitin in more resistant to decay than cellulose and lignin.

Q.107 Answer is "These are motile and flagellate"

Explanation: Fungi produces non-motile spores which lack flagella.

Q.108 Answer is "Zygospore"

Explanation: Zygospore formed in zygomycota is a resistant body which can withstand the unfavorable conditions and upon arrival of favorable conditions starts germination.



Q.109 Answer is "Conidia"

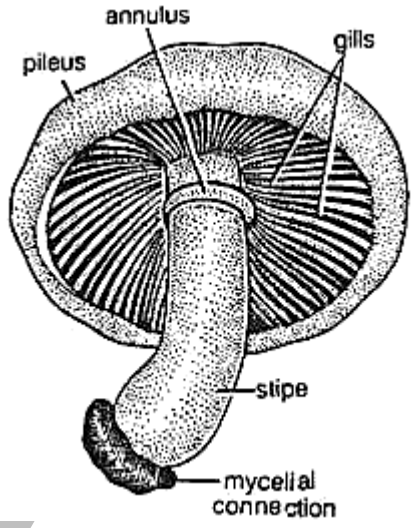
Explanation: Conidia are also called naked spores as they lack any sporangial cover.

Q.110 Answer is "Immense osmotic pressure"

Explanation: Jams and jellies are hyperosmotic media with saturation level of sugar and to grow in such medium requires immense osmotic resistance.

Q.111 Answer is "Basidiocarp"

Explanation: As mushroom (Agaricus) belongs to basidiomycota its fruiting body is called basidiocarp which bear basidia and basidiospores.



Q.112 Answer is "Meiosis"

Explanation: Both basidiospores and ascospores are haploid spores formed from diploid nucleus by reduction division or mitosis.

Q.113 Answer is "Karygammy"

Explanation: After karyogammy or diploidization, the diploid nucleus produces a resistant cyst around it and becomes resistant zygospore.

Q.114 Answer is "Over one million"

Explanation: According to the verified figures of biodiversity, over one and half million species of animals and over a half million species of plants are known.

Q.115 Answer is "Over a half million"

Explanation: According to the verified figures of biodiversity, over one and half million species of animals and over a half million species of plants are known.

Q.116 Answer is "Species"

Explanation:

1	Kingdom	As we move from species to kingdom the number of individuals per taxon increases but similarity among individuals decreases
2	Division	
3	Class	
4	Order	
5	Family	
6	Genus	
7	Species	As we move from kingdom to species the number of individuals per taxon decreases but similarity among individuals increases

Q.117 Answer is "Species"

Explanation: A species is a group of natural population which can interbreed freely among themselves and produce fertile offspring, but are reproductively isolated from all other such groups in nature. So mere interbreeding and reproduction is not enough to be a species as occurs in horse and donkey, both belong to differents species but they can interbreed and produce mule.

Q.118 Answer is "Phyla"

Explanation: See explanation of Q # 116.

Q.119 Answer is "Orders"

Explanation: See explanation of Q # 116.

Q.120 Answer is "Poaceae"

Explanation: Botanical classification of corn, Zea mays.

Kingdom	Plantae
Division (Phylum)	Anthophyta (Tracheoohyta)
Class	Angiospermae
Order	Poales
Family	Poaceae
Genus	*Zea*
Species	*Mays*

Q.121 Answer is "Argavad"

Explanation:

Sr. #	Plant	Common names
1)	Onion	Bassal, Vassal, Ganda, Piyaz
2)	Cassia	Amaltas, Argavad, Golden shower, Purging Cassia

Q.122 Answer is "Brinjal"

Explanation: See explanation of Q # 121.

Q.123 Answer is "Vertebrate"

Explanation: A sliver fish (*Lepsima saccharina*) is small primitive wingless insect. Crayfish are fresh water crustaceans resembling small lobsters. Starfish is an echinoderm. However, dogfish (*Squalis achanthias*) belongs to squalidae family of sharks.

Q.124 Answer is "Two to six kingdoms"

Explanation: Earliest classification was two Kingdom (Animals and plants) classification. However not due to the contribution of Ernst Haeckel, E. Chatton, Robert Whittaker, Lynn Margulis and Schwartz it have been extended upto 5 kingdoms.

Q.125 Answer is "Euglena"

Explanation: Euglenoids have at various times been classified in the plant kingdom (with algae) and in animal kingdom (in protozoa).

Q.126 Answer is "Marguilis and Schwartz"

Explanation: Five kingdom system was presented by Robert Whittaker but lateron it was modified by Lynn Marquitis and Carlene Schwartz.

STEP

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