BIOLOGY NMDCAT

PMC Practice Tests Data

BIODIVERSITY (ACELLULAR LIFE/VARIETY OF LIFE)

Classification of Viruses

Q.1 Where can viruses replicate?
A. Animals B. Plants
C. Bacteria D. All

Q.2 These are largest animal viruses:
A. HIV B. Poxviruses
C. Covid-19 D. HBV

Q.3 Viruses do not have:
Fossil record B. Traces in history
C. Reproductive ability D. Nucleic acid

Q.4 In plants, tumors are induced due to:
A. Bacteria B. Virus
C. Fungi D. All of these

Q.5 Cell theory does not explain:
A. Fungi B. Virus
C. Algae D. Protista

Q.6 Which of the following has no nucleic acid?
A. Bacteria B. Virus
C. Prions D. Viroid

Q.7 It is a biological weapon:
A. Radiation B. Chemical
C. Virus D. All of these

Q.8 Virus transmission is affected by:
A. Biotic factors B. Chemical factors
C. Physical factors D. Both A and C

Q.9 Viruses are_____entity between living and non-living.
A. Balanced B. Transitional
C. Threshold D. None

Q.10 Virus when attack on unfamiliar organism, it is mutated many times and come as:
A. More virulent and dangerous B. More mutated
C. More transmissible D. All of these

Q.11 Viruses are classified into many groups on the basis of:
A. Nucleic acid B. Capsid symmetry
C. Host cell infectivity D. None of these

Q.12 Viruses use which of the following enzyme for break-down of bacterial cell wall?
Lysozyme B. Lipase
C. Protease D. Nuclease

Q.13 Viral proteins and genome in host cell are assembled at:
Cytoplasm B. Cell wall
C. Cell membrane D. Cell matrix

Q.14 Virus can bud from:
A. RER B. Golgi complex
C. Nuclear envelope D. All of these

Q.15 _____ refers to removal or breakdown of capsid.
Uncoating B. Assembly
C. Integration D. Maturation

Q.16 Which viruses enter the host cell as a whole?
A. Plant virus B. Bacteriophages
C. Animal virus D. None

Discovery of Viruses

Q.17 The branch that deals with the study of viruses is known as?
A. Entomology
B. Virology
C. Epidemiology
D. Bacteriology

Q.18 Louis Pasteur made vaccines for:
A. Rabies
B. Anthrax
C. Fowl cholera
D. All of Above

Q.19 According to Iwanowski what are soluble living germs?
A. Bacteria
B. Viruses
C. Fungi
D. Both A and B

Q.20 When was the bacteriophage phenomena rediscovered by D'Herelle?
A. 1918
B. 1917
C. 1920
D. 1990

Q.21 When were bacteriophages discovered by Twort?
A. 1915
B. 1920
C. 1910
D. 1820

Q.22 Virus that was discovered in 1901:
Yellow fever
B. Tobacco mosaic
C. Bacteriophages
D. Corona

Q.23 Earliest life form on earth is:
A. Virion
B. Viroid
C. Prion
D. None

Structure of Viruses

Q.24 It is very stable and allows viruses to exist in water, air, and the ground:
A. Nucleoproteins
B. Nucleocapsid
C. Tail of virus
D. None of the above

Q.25 The complete, mature and infectious particle is known as:
A. Capsid
B. Virion
C. Bacteriophage
D. Nucleus

Q.26 Virus is composed of:
Nucleic acid and capsid
B. RNA only
C. Genome
D. Capsid

Q.27 Protein coat of a virus enclosing nucleic acid is called?
A. Vector
B. Capsid
C. Plasmid
D. Genome

Q.28 What molecule would you not expect to find in a retrovirus?
A. Adenine
B. Thymine
C. Uracil
D. Guanine

Q.29 What is the size of Parvovirus?
A. 200nm
B. 30nm
C. 20nm
D. 100nm

Q.30 The viral DNA or RNA is protected by:
A. Shell of lipids
B. Shell of proteins
C. Shell of carbohydrates
D. Shell of amino acids

Q.31 What type of virus is the smallpox virus?
DNA enveloped virus
B. RNA enveloped virus
C. DNA virus
D. RNA enveloped virus

Q.32 What is the viral nucleocapsid made up of?
Genome and capsid
B. Capsid and spikes
C. Envelope and capsid
D. Capsomere

Q.33 What types of viruses is the poliovirus?
A. DNA enveloped virus
B. RNA enveloped virus
C. DNA naked virus
D. RNA naked virus

Q.34 Herpes simplexes are caused by which virus?

A. Adenovirus
B. Pox virus
C. Influenza Virus
D. Herpes virus

Q.35 What type of virus is the herpes simplex virus?

DNA enveloped virus
B. RNA enveloped virus
C. DNA virus
D. RNA naked virus

Q.36 The numbers of capsomeres found in adenovirus capsid is:

A. 162
B. 200
C. 252
D. 155

Q.37 The numbers of capsomeres found in herpes virus capsid is:

A. 162
B. 200
C. 234
D. 155

Q.38 The genome of the virus includes:

A. Deoxyribonucleic acid
B. Ribonucleic acid
C. Amino acids
Deoxyribonucleic acid or Ribonucleic acids

Q.39 Viruses without nuclear envelope are called as:

A. Icosahedral vims
B. Naked virus
C. Enveloped virus
D. Bilayer virus

Q.40 Which of the following are the main functions of the capsid?

A. Determines the antigenic specificity of the virus
B. Protects genetic material from nuclease attack
C. Both A and B
D. None of the above

Q.41 Which of the following statements explains why viruses are only able to multiply in living cells?

A. Their binary fission is controlled by host cell genes
Virus do not possess the necessary components for self-replication
C. DNA is only able to replicate inside living cells
D. They have only enough genetic information for DNA replication

Q.42 A chemical component that is not found in all viruses is:

A. Protein
B. DNA
C. Lipids
D. RNA

Q.43 A common polyhedral capsid shape of viruses is:

A. Pentagon
B. Cube
C. Icosahedron
D. Pyramid

Q.44 Identify the true statement about virus:

A. Viruses were discovered 2 billion years ago
B. Viruses came from outer space
C. Viruses evolved before bacteria
D. Viruses can infect all type of cells

Q.45 The average diameter of large viruses is approximately:

A. 100 to 160 nm
B. 100 to 200 nm
C. 100 nm to 360 nm
D. Always below than 100 nm

Q.46 What are the subunits of capsids?

Capsomeres
B. Flagella
C. Hyphae
D. Septa

Q.47 Viral envelope is composed of:

A. Proteins
B. Glycoproteins
C. Lipids and proteins
D. All of the above

Q.48 It refers to the final changes within an immature virion that result in an infectious virus particle:

Assembly
B. Coating
C. Integration
D. Maturation

Q.49 All of the following descriptions regarding viral multiplication and nucleic acids are true except that:

A. Viruses contain DNA or RNA, not both
Viral mRNA, viral tRNA, and viral ribosomes are used in viral replication
C. Viruses replicate only in living cells
D. Viruses use the cell's biosynthetic machinery to synthesize copies of them

Q.50 Which of the following is not true of a virion?
Reproduce independently
B. Contain DNA
C. Contain RNA
D. Extracellular

Q.51 Protein coat of a virus enclosing nucleic acid is called:
A. Vector
B. Capsid
C. Plasmid
D. Genome

Q.52 What is the approximate diameter of retroviruses?
A. 150 nm
B. 100 nm
C. 200 nm
D. 250 nm

Q.53 When a virus enters a cell and incorporates its RNA or DNA into host DNA, what is this stage called?
Lysogeny
B. Fermentation
C. Symbiosis
D. Synergism

Q.54 Phage DNA incorporated into host DNA is referred as:
A. T_4 phage
B. Provirus
C. Prophage
D. Bacteriophage

Q.55 Infectious RNA without capsid:
A. Virion
B. Viroid
C. Prion
D. Virus

Q.56 What does the size of virus ranges between?
A. 100 mm to 150 mm
B. 20 nm to 250 nm
C. 300 nm to 3000 nm
D. 3 nm to 30 nm

Q.57 Which of the following statement is not true of viruses?
Viruses have been successfully grown in pure cultures in test tubes
B. All viruses are obligate intracellular parasites
C. All viruses have either DNA or RNA as their genetic material
D. Viruses probably arose from small fragments of cellular chromosomes

Q.58 What is the shape of the TMV?
Rod
B. Helical
C. Tadpole
D. Spherical

Q.59 In icosahedral, the capsomeres are arranged in____triangles:
A. 100
B. 200
C. 1000
D. None of these

Q.60 In nucleus the ssDNA viral genome is converted to dsDNA by:
DNA polymerase
B. RNA polymerase
C. Cell enzymes
D. Proteins

Q.61 Reverse transcriptase is a useful enzyme to have when:
RNA virus converts its RNA to DNA
B. There are no host cells present
C. Nutrients are scarce
D. Spikes are forming in the new virus

Q.62 What is a Provirus?
A. Free virus
B. Free DNA
C. Primitive vims
D. Integrated viral genome

Q.63 The function of a viral capsid is?
A. Protection against the viral genome from physical and enzymatic destruction
B. Providing binding sites that enable the virus to attach to specific receptor sites on the host cell
C. Serving as a vehicle of transmission from one host to another
D. All of the above

Q.64 Which of the following virus is enveloped?
A. Adenovirus
B. Herpes virus
C. Poliovirus
D. None of these

Q.65 Which of the following is not a described type of virus?

A. Virus containing double strand DNA
B. Virus containing single strand DNA
C. Virus containing single strand RNA
Virus containing single strand RNA and single strand DNA

Q.66 The size of viruses is usually measured in:
A. Centimeters B. Micrometers
C. Nanometers D. Millimeters

Q.67 Icosahedral viruses have how many faces?
A. 20 B. 30
C. 10 D. 40

Q.68 Virus differ from bacteria by:
Having capsids B. Having DNA
C. Having RNA D. Having ribosomes

Q.69 It is not true about viruses:
A. Capsid has capsomeres B. Both DNA and RNA together as genome
C. Some are enveloped D. Many infect animals

Q.70 Causative agent of small pox is:
DNA enveloped virus B. RNA enveloped virus
C. DNA virus D. RNA naked virus

Q.71 Which of the following statements are true about the viruses?
A. Free living
Obligate parasites
C. Both A and B
D. None of the above

Q.72 Which factors may help to determine the antigenicity of a virus?
Capsomeres B. Size of virus
C. Whole capsid D. Internal proteins

Q.73 Which of the following has morphology of a helical virus?
TMV B. T4 Phage
C. Poxvirus D. Herpes virus

Q.74 HBV is:
DNA enveloped virus B. RNA enveloped virus
C. DNA Virus D. RNA naked virus

Q.75 A structure which is located between the nucleocapsid and the envelope:
A. Capsid B. Matrix protein
C. Envelop D. Nucleocapsid

Q.76 Viroids lacks:
A. RNA B. Enzyme
C. Protective protein coat D. All of these

Q.77 What type of viruses are the paramyxoviruses?
A. DNA enveloped virus B. RNA enveloped virus
C. DNA virus D. Naked virus

Q.78 Which of the following viruses possess an envelope?
Herpes virus B. Reovirus
C. Polio virus D. Papillomavirus

Q.79 What does an icosahedral capsid consists of?
Hexagonal capsomeres B. Pentagonal capsomeres
C. Triangular Capsomeres D. Both A and B

Q.80 Viruses are limited in their host range because?
A. Can only replicate in certain types of cells
B. Certain cells are susceptible to viral infections
They can only enter cells that have proper/specific receptors
D. They can only enter cells with glycoproteins

Q.81 Viruses replicate on their own:
A. Too small B. Lack metabolic machinery

C. Have no cell wall
D. All of these

Q.82 It is incorrect about virus:
A. Acellular nature
B. DNA
C. RNA
D. Metabolism

Viral Disease (For Example AIDS)

Q.83 The Long chains of HIV-Proteins is cut down by proteases of:
HIV
B. Host proteases
C. Both viral and host proteases
D. None of these

Q.84 Whenever a virus encounters an unfamiliar organism, the virus may undergo multiple mutations and emerge as a variant that produces:
A. Severe and novel disease
B. Novel disease
C. Non mutated
D. None of these

Q.85 In which year causative agent of AIDS was named?
A. 1986
B. 1980
C. 1992
D. 1970

Q.86 The Herpes virus is responsible for which of the following types of Herpes?
Simplex
B. Quadruplex
C. Triplex
D. Duplex

Q.87 Edward Jenner prepared vaccine against:
Small pox
B. Mumps
C. Measles
D. Chicken pox

Q.88 Major cell infected by HIV:
A. T killer lymphocytes
B. T helper lymphocytes
C. T suppressor lymphocytes
D. T memory lymphocytes

Q.89 Which of the following molecule facilitates the entry of HIV in human body?
A. Liposomes
B. Glycoprotein
C. Polysaccharides
D. Lipopolysaccharides

Q.90 Prominent symptoms of AIDS:
A. Pneumonia
B. Rapid weight loss
C. Extreme and unexplained tiredness
D. All of these

Q.91 For the synthesis of mRNA, HIV uses:
A. Viral RNA polymerase
B. Cytoplasmic RNA polymerase
C. Host RNA polymerase
D. None of the above

Q.92 A person with viral load of HIV 1 if untreated leads to:
A. Cancer
B. Hepatitis
C. Jaundice
D. AIDS

Q.93 Which of the following is more virulent?
A. HIV-2
B. HIV-1(a)
C. HIV-1
D. HIV-2 (a)

Q.94 There is no vaccine against HIV. What is the possible reason for this?
Virus mutates rapidly
B. Vaccine is very expansive
C. Vaccine can be controlled by change in hygiene
D. None of these

Q.95 HIV mainly attacks on:
CD_4 site of T cells
B. B cells
C. White blood cells
D. None of these

Q.96 Chimpanzee has_____instead of HIV.
SIV
B. CIV
C. HBV
D. HIV-2

Q.97 AIDS is caused:
Human immunodeficiency virus
B. Paramyxoviruses
C. Influenza Virus
D. Retroviruses

Q.98 What is meant by HIV-Positive?
A person has AIDS

B. A person having two positive tests for HIV
C. A person can transmit the HIV
D. A person is safe from aids

Q.99 The replication of the HIV nucleic acid depends on:
A. Replicase
B. Reverse transcriptase
C. Transcriptase
D. Reverse replicase

Q.100 Viral genome in integrated into host genome by which of the following enzymes?
Integrase
B. DNA incorporase
C. Reverse transcriptase
D. Protease

Q.101 Three stages of HIV infection are:
Acute infection → Chronic infection → AIDS
B. AIDS → Acute infection → Chronic infection
C. Chronic infection → AIDS → Acute infection
D. Acute infection → AIDS → Chronic infection

Q.102 Mumps and Measles are caused by which of the following?
A. Adenoviruses
B. Pox viruses
C. Influenza viruses
D. Paramyxoviruses

Q.103 HAV is transmitted by:
Faeces
B. Sexual contact
C. Blood
D. All of these

Q.104 _____ is usual causative agent of genital herpes.
HSV-1
B. HSV-2
C. Both A and B
D. None of these

Q.105 When did experimental administration of the HIV virus begin?
A. 2001
B. 1999
C. 2005
D. 2000

Q.106 Pigs are reservoir of:
A. HAV
B. HBV
C. HCV
D. HEV

Q.107 Which of the following statement correctly describes the tobacco mosaic virus?
RNA virus
B. DNA virus
C. Bacteriophage
D. dsDNA virus

Q.108 Pox virus is different from all others due to:
A. Structure
B. Size
C. Nucleic acid
D. All of above

Q.109 A remarkable feature of pox virus:
Largest in size
B. DNA genome
C. Envelope
D. None of these

Q.110 It is true about Mumps:
A. Can affect testes and ovaries
B. Passive immunization is only treatment
C. Vaccine is not available for this
D. Widely spread

Q.111 Genetically engineered vaccine is available for which of the following hepatitis virus?
A. HBV
B. HAV
C. HCV
D. Both A and B

Q.112 Poxvirus has:
Double stranded DNA
B. Single stranded DNA
C. Double stranded RNA
D. Both A and C

Q.113 For attachment rabies virus bind to:
A. Complement receptor
B. Integrin ICAM-1
C. Acetylcholine receptor
D. Epidermal growth factor

Q.114 Where does the AIDS virus infect?
A. RBCs
B. Platelets
C. Leukocytes
D. None

Q.115 Which specialized enzyme do retrovirus have?
A. DNA polymerase
B. Ligase

C. Reverse transcriptase
D. Helicase

Q.116 Hepatitis D also known as:
A. Serum hepatitis
B. Infectious hepatitis
C. Bacterial hepatitis
D. Delta hepatitis

Q.117 How the HIV is transmitted?
A. Sexual contact
B. Blood
C. Breast feeding
D. All of the above

Q.118 Which of the following is not a viral disease?
A. Smallpox
B. AIDS
C. Tetanus
D. Cowpox

Q.119 Which of the following is not a component of HIV?
A. RNA
B. Ribosomes

Q.120 HIV differs from many viruses because it has high genetic:
A. Sensitivity
B. Complexity
C. Variability
D. Viability

Q.121 Influenza virus protein HA binds with_____residues found on the surface of respiratory epithelial cells.
A. Uncoding protein
B. Sialic acid
C. Antigen P
D. Antigen HI

Q.122 All are HIV symptoms except:
A. Sore throat, chills, fever, body aches
B. Chills, fever, flu, muscle cramps
C. Cardiac arrest, bloody stools, chills
D. Rash, fatigue, mouth ulcers

Q.123 SIV is the abbreviation of:
Simian immunodeficiency virus
B. Silurian immunodeficiency virus
C. Siberian immunodeficiency virus
D. Both A and C

Q.124 The enzyme which plays important role in HIV pathogenesis:
A. RNA polymerase I
B. DNA polymerase II
C. Reverse Transcriptase I
D. Reverse Transcriptase

Q.125 All of the following are the current preventive methods of HIV infection except:
A. Safe and protected lifestyle
B. Use of sterile injections and needles
C. Use of available vaccines
D. Safe blood transfusion methods

Q.126 Influenza is caused by:
A. Adenovirus
B. Pox virus
C. Influenza Virus
D. Herpes virus

Q.127 This locks the HIV genome into capsid:
Gag protein
B. Env protein
C. Pol protein
D. All of these

Q.128 The genetically engineered vaccine is not available for which of the following?
A. HAV
B. HCV
C. HBV
D. HDV

Q.129 In what year did WHO declare that smallpox was completely eradicated?
A. 1990
B. 2001
C. 1980
D. 1995

Q.130 AIDS was firstly reported in which types of individuals?
A. Heterosexuals
B. Homosexuals
C. Both
D. None

Q.131 Mad cow disease is caused by which of the following:
Prion
B. Virus
C. Bacteria
D. Both A and B

Q.132 _____is associated with a number of tumors in humans:
A. HSV-2
B. Varicella-zoster virus
C. Oncoviruses
D. Picomavirus

Q.133 Which virus causes the second major form of hepatitis?
A. Hepatitis A
B. Hepatitis B
C. Hepatitis C
D. Hepatitis D

Q.134 Which can convert normal cells into cancer cells?
Retrovirus | B. Adenovirus
C. Poliovirus | D. All

Q.135 People with chronic hepatitis are at risk of:
A. kidney damage | B. Liver damage
C. Heart damage | D. Lung damage

Q.136 Virus for making viral DNA uses whose RNA polymerase:
Host | B. Viral
C. Encoded by viral genome | D. None

Q.137 Retro viruses are characterized by:
A. Lack envelope | B. Have no capsid
C. Reverse transcriptase enzyme | D. DNA genome

Out of Syllabus

Q.138 Bacteriophages, or phages are also known as:
A. Bacteria facilitator | B. Bacteria eater
C. Animal viruses | D. Plant viruses

Q.139 The bacteriophage incorporates in the viral genome in which phase?
Lysogenic cycle | B. Both
C. Lytic cycle | D. None

Q.140 How many bacteriophages are formed after 25 minutes of initial infection?
A. 250 | B. 200
C. 150 | D. 100

Q.141 What is the first step in the replication of bacteriophage?
A. Replication | B. Penetration
C. Attachment | D. Injection

Q.142 Viruses that attack bacteria are called:
A. Virophage | B. Lysophage
C. Bacteriophage | D. None of the above

Q.143 Where the double stranded DNA of the bacteriophage is found?
A. Tail | B. Sheath
C. Collar | D. Head

Q.144 The phage that causes the lytic cycle is called:
A. Virulent phage | B. Lytic phage
C. Temperate phage | D. Both A and B

Q.145 During lytic cycle how many phages are released from infected host cell:
A. 100-300 | B. 100-500
C. 100-200 | D. 100-400

Q.146 Bacteriophages have been used widely in genetic research, since they are the smallest and simplest biological entities capable of:
A. Self-replication in host cell | B. Duplication
C. Self-duplication | D. Multiplication in host cell

Q.147 Binary fission occurs in which stage of the bacteriophage life cycle?
Lysogenic cycle | B. Lytic cycle
C. Both A and B | D. None

Q.148 The structure of which bacteriophage resembles a tadpole?
A. T_2 | B. T_4
C. Both A and B | D. None

Q.149 These viruses usually occur in two structural forms:
A. HIV | B. HCV
C. Bacteriophage | D. COVID-19

Q.150 In which step is lysozyme released by the bacteriophage?
A. Attachment | B. Penetration
C. Injection | D. Replication

Q.151 What type of the phage is a T_2 Phage?
A. ssDNA Phage | B. dsDNA phage

C. ssRNA Phage D. ds RNA Phage

Q.152 Which type of viruses infect *E. coli* bacteria?

T phages B. P phages

C. Both A and B D. None

Q.153 What is the function of lysozyme released by bacteriophages?

A. Injecting DNA B. Replication

C. Dissolve bacterial cell wall D. All of these

Q.154 Where does the bacteriophage replicate?

A. Human B. Horse

C. Bacteria D. Animal

Q.155 The phage that causes the lysogenic cycle is?

A. Virulent phage B. Lytic phage

C. Temperate phage D. Both A and B

Q.156 When the tobacco mosaic virus was successfully crystallized?

A. 1935 B. 1930

C. 1932 D. 1920

Q.157 They show complexity:

A. Influenza virus B. Herpes virus

C. T_4 virus D. All of these

Q.158 Viral DNA, incorporated into bacterial DNA, is called:

A. T_4 phase B. Bacteriophage

C. Prophage D. Lytic phage

Q.159 What was the correct classification according to Linnaeus?

A. Similar genera in one family B. Similar species in one genus

C. Similar families in one order D. All of above

Q.160 Pathogens inside body are killed by:

A. Antibodies B. Immune system cells

C. Interferon D. All of these

Q.161 Binomial nomenclature was introduced by:

C. Linnaeus B. L. Margulis

C. J. Schleiden D. R. Whittaker

ANSWER KEY

BIODIVERSITY (ACELLULAR LIFE/VARIETY OF LIFE)

1	D	21	A	41	B	61	A	81	B	101	A	121	B	141	C	161	A
2	B	22	A	42	C	62	D	82	D	102	D	122	C	142	C		
3	A	23	D	43	C	63	D	83	A	103	A	123	A	143	D		
4	D	24	B	44	D	64	B	84	B	104	A	124	D	144	D		
5	B	25	B	45	B	65	D	85	A	105	A	125	C	145	C		
6	C	26	A	46	A	66	C	86	A	106	D	126	C	146	D		
7	C	27	B	47	C	67	A	87	A	107	A	127	A	147	A		
8	D	28	B	48	A	68	A	88	B	108	B	128	B	148	B		
9	B	29	C	49	B	69	B	89	B	109	A	129	C	149	C		
10	D	30	B	50	A	70	A	90	D	110	D	130	B	150	B		
11	B	31	A	51	B	71	B	91	C	111	D	131	A	151	B		
12	A	32	A	52	B	72	A	92	D	112	A	132	C	152	A		
13	A	33	D	53	A	73	A	93	C	113	C	133	B	153	C		
14	D	34	D	54	C	74	A	94	A	114	C	134	A	154	C		
15	A	35	A	55	B	75	B	95	A	115	C	135	B	155	C		
16	C	36	C	56	B	76	C	96	A	116	D	136	A	156	A		
17	B	37	A	57	A	77	B	97	A	117	D	137	C	157	C		
18	D	38	D	58	A	78	A	98	A	118	C	138	B	158	C		
19	B	39	B	59	D	79	A	99	B	119	B	139	A	159	D		
20	B	40	C	60	AA	80	C	100	A	120	C	140	B	160	D		

BIOENERGETICS

Anaerobic respiration (respiration without oxygen)

Q.1 Fermentation products produced by the yeast are:
A. $H_2O + CO_2$ B. Methyl alcohol + CO_2
C. Methyl alcohol + CO_2 D. Ethyl alcohol + CO_2

Q.2 In anaerobic respiration only_____% of the energy present within the chemical bond of glucose is converted into ATP.
A.1 B. 2
C. 3 D. 4

Q.3 In which of the following component of the body, lactic acid fermentation takes place?
A. Heart B. Brain
C. Liver D. Muscles

Q.4 In alcoholic fermentation pyruvic acid is broken down into?
A. Acetaldehyde B. Methyl alcohol
C. Ethyl alcohol D. Lactic Acid

Q.5 Pyruvate is broken down to_____in yeast.
A. Acetyl CoA B. Alcohol
C. Lactic acid D. All of these

Q.6 Lactic acid is produced as a result of:
A. Glycolysis B. Anaerobic respiration
C. Aerobic respiration D. ALL A, B, C

Q.7 Which of the following is not respiration?
A. Breakdown of glucose B. Formation of glucose
C. Release of energy D. Exchange of gases

Electron transport chain

Q.8 Oxygen plays____role in respiration.
A. It combines with acetyl-CoA at the start of the Krebs cycle
B. It plays no role
C. It is given off as a by-product during the oxidation of pyruvates
It is the final electron acceptor at the end of the electron transport chain

Q.9 What is the product of the ETC in animals?
A. Oxygen B. Carbon dioxide
C. Water D. All of these

Q.10 Cytochromes are electron transport intermediates containing:
A. Myoglobin B. Haem
C. Globulin D. Fibrin

Q.11 How does the electron transport system generate ATP?
A. Symbiosis B. Chemiosmosis
C. Both A and B D. None of these

Q.12 What is the end product of the ETC in animals?
A. ATP B. Carbon dioxide
C. Water D. Both A and C

Q.13 Final acceptor of electrons in respiratory chain is?
A. NADH B. Cytochrome a3
C. Water D. Oxygen

Q.14 Cytochrome a is oxidised by which of the following in ETC?
A. Carbon dioxide B. Oxygen
C. ATP D. Cytochrome a_3

Q.15 What is the copper containing protein involved in the ETC in plants?
A. Pq B. Pc
C. Pt D. Po

Q.16 Coenzyme Q is oxidized by which coenzyme?
A. Coenzyme c B. Coenzyme q
C. Cytochrome b D. Cytochrome a

Q.17 Cytochrome b is reduced by:
A. Cytochrome c
B. Coenzyme Q
C. NADH
D. Cytochrome a

Q.18 Cancer cells require large amounts of ATP. Which of the following produce high number of ATP?
A. Glycolysis
B. Krebs cycle
C. Oxidative phosphorylation
D. Electron transport chain

Q.19 Enzymes for oxidative phosphorylation are present on:
Cristae
B. Inner compartment
C. Outer compartment
D. Outer membrane

Q.20 Electrons from NADH accepted by oxygen forms how many ATPs?
A. 2
B. 3
C. 4
D. 1

Q.21 Electron transport chain occurs in:
A. Inner membrane of mitochondria
B. Outer compartment of mitochondria
C. Thylakoid membrane
D. Both A and C

Q.22 Terminal carrier of cytochrome complex present in ETC:
A. Q
B. C
C. a
D. None

Q.23 NADH is oxidized by:
Co-enzyme Q
B. Cytochrome b
C. Cytochrome c
D. Cytochrome a

Glycolysis/glycolytic pathway/aerobic respiration

Q.24 $FADH_2$ is produced during:
A. Glycolysis
B. The oxidation of pyruvates
C. Krebs cycle
D. All of these

Q.25 Complete breakdown of glucose molecule takes place in which of the following?
A. Alcoholic fermentation
B. Lactic acid fermentation
C. Aerobic respiration
D. None of these

Q.26 Glycolysis takes place in:
A. Nucleus
B. Cytosol
C. Mitochondria
D. Ribosomes

Q.27 Phosphofructokinases enzyme converts fructose-6-phosphate into:
A. Fructose-1, 4-phosphate
B. Fructose-1,6-bisphosphate
C. Bisphosphate
D. Fructose

Q.28 What is the coenzyme that facilitates the oxidation of fumarate?
FAD
B. $PADH_2$
C. NAD
D. NADPH

Q.29 Where does the first stage of cellular respiration occur?
Cytosol
B. Membrane surface
C. Nucleus
D. All of these

Q.30 Acetyl CoA completely is oxidized to carbon dioxide and liberate:
A. NADH and FAD
B. NADP and FADP
C. ATP
D. ATP, NADH and FADH

Q.31 Which process can take place in the presence and absence of oxygen?
Glycolysis
B. Pyruvic acid oxidation
C. Krebs cycle
D. Electron transport chain

Q.32 What energy rich organic compound is produced as a result of the Calvin cycle?
A. NADPH
B. CO_2
C. ATP
D. Glucose

Q.33 Oxaloacetate combines with which molecule to enter the Krebs cycle again?
A. ATP
B. NADPH

C. FAD
D. Acetyl CoA

Q.34 Hexokinase plays role in:
A. Krebs cycle
B. Electron transport chain
C. Glycolysis
D. Pyruvate oxidation

Q.35 Glucose is converted to_____before entering Krebs cycle.
Pyruvate
B. Lactic acid
C. Acetyl CoA
D. Ethanol

Q.36 Hexokinase is the enzyme found in
Glycolysis and pentose pathway
B. Pentose pathway only
C. Glycolysis only
D. Krebs cycle

Q.37 Succinate is oxidized and form:
A. FAD
B. FADH
C. $FADH_2$
D. $NADH_2$

Q.38 If a molecule is reduced it gains:
A. Energy
B. Electrons
C. Hydrogen protons
D. All of above

Q.39 ATP synthase is located in the of the mitochondrion:
A. Intermembrane space
B. Outer membrane
C. Matrix
D. Inner membrane

Q.40 What is the final product of the Krebs cycle?
A. Malate
B. Succinate
C. Oxaloacetate
D. Fumarate

Q.41 From one pyruvate passing through Krebs cycle, how many NADH are formed?
A. 1
B. 2
C. 3
D. 4

Q.42 Cellular respiration is essentially what type of process:
A. Oxidation B. Reduction
C. Redox
D. None of the above

Q.43 What are products of respiration in plants?
A. CO_2 and H_2O
B. CO_2, H_2O and ATP
C. $C_6H_{12}O_6$ and H_2O
D. None

Q.44 The pay-off phase of glycolysis conserve:
A. Molecules of glucose
B. ATP
C. Molecules of fructose
D. water

Q.45 Fatty acid release considerable amount of energy in oxidation during:
A. Calvin cycle
B. Krebs cycle
C. Dark reaction
D. Light reactions

Q.46 How many carbons does citrate have in the Krebs cycle?
A. 5
B. 6
C. 8
D. 4

Q.47 What is formed at the end of the preparatory phase of glycolysis?
A. G_3P
B. Dihydroxyacetone phosphate
C. Pyruvate
D. Both A and B

Q.48 End product of citric acid cycle:
A. Pyruvate
B. CO_2 and H_2O
C. CO_2
D. Lactic acid

Q.49 Oxaloacetate contains how many carbon atoms?
4
B. 5
C. 6
D. 2

Q.50 $FADH_2$ is produced in?
A. Glycolysis
B. Pyruvic acid oxidation
C. Krebs cycle
D. None

Q.51 Hans Krebs discovered_____.
A. Glycolysis
B. Fermentation
C. Pyruvate oxidation
D. Citric acid cycle

Light dependent and light independent phases/reactions

Q.52 Which of the following organisms have the greatest problem with photorespiration?
A. C_4 plants
B. Heterotrophs
C. C_3 plants
D. CAM plants

Q.53 In which stage of photosynthesis, ATP and NADPH are converted to ADP+Pi and $NADP^+$?
A. Light dependent reaction
B. Light independent reaction
C. Both of these
D. None of above

Q.54 The stage of photosynthesis that actually produces sugar is_____.
Calvin cycle
B. Photosystem I
C. Photosystem II
D. The light reaction

Q.55 ATP molecules are consumed during which process?
Glycolysis
B. Light dependent phase
C. Krebs cycle
D. None

Q.56 Molecular oxygen is released during:
A. Calvin cycle
B. Light reactions in photosynthesis
C. Krebs cycle
D. Glycolysis

Q.57 When is sugar formed in photosynthesis?
Light independent reactions
B. Light dependent reactions
C. Both A and B
D. None of these

Q.58 Which one is a light gathering structure?
Antenna complex
B. Reaction center
C. Photosystem
D. None of these

Q.59 Molecular formula of chlorophyll b is:
A. $C_{55}\ H_{10}\ O_4\ N_6\ Mg$
B. $C_{55}\ H_{70}\ O_6\ N_5\ Mg$
C. $C_{55}\ H_{71}\ O_6\ N_4\ Mg$
D. $C_{55}\ H_{70}\ O_6\ N_4\ Mg$

Q.60 Light reaction takes place in/on:
A. Chloroplast
B. Stroma
C. Thylakoids
D. Grana

Q.61 Calvin cycle is:
A. Inhibited by light
B. Supported by light
C. Independent of light
D. Dependent upon light

Q.62 RuBisCO converts addition of_____with RUBP to glyceraldehyde 3-phosphate.
A. ATP
B. O_2
C. NADH
D. CO_2

Q.63 Location of dark reactions in chloroplast:
A. Inner membrane
B. Grana
C. Stroma
D. Thylakoid

Q.64 How many number of carbon atoms are present in a molecule of RUBISCO?
A. 4
B. 6
C. 5
D. 7

Q.65 How many carbon atoms are present in Ribulose phosphate?
5
B. 4
C. 6
D. 3

Q.66 It moves in cyclic manner in cyclic photophosphorylation:
A. Oxygen
B. Electrons
C. ATP
D. NADPH

Q.67 How many molecule/s of carbon dioxide enter the Calvin cycle to produce one molecule of carbohydrate?
A. 2
B. 3
C. 4
D. 1

Q.68 Which enzyme is found in the thylakoid membrane that facilitates chemiosmosis?
A. ATP ligase
B. ATP kinase
C. ATP synthase
D. ATP dehydrogenase

Q.69 Out of the 6 molecules of G_3P, how many molecules are used to make glucose?
1
B. 3
C. 3
D. 4

Q.70 What does ATP provide during photosynthesis?
A. Mechanical energy B. Physical energy
C. Chemical energy D. All of these

Q.71 Which reaction is catalysed by the enzyme RuBisCO?
Carboxylation of ribulose bisphosphate (RuBP)
B. Conversion of triose phosphate (TP) to ribulose phosphate (RuP)
C. Oxidation of giycerate-3 -phosphate (GP)
D. Reduction of glycerate-3-phosphate (GP)

Q.72 Enzymes for light-dependent reactions are present in:
A. Outer membrane of the chloroplast B. Inner membrane of the chloroplast
C. Stroma of the chloroplast D. Thylakoid membranes of the chloroplast

Q.73 The water splitting step of photosynthesis is called?
A. Chemiosmosis B. Hydrolysis
C. Photolysis D. Photosynthesis

Q.74 In photosynthesis dark reaction, is called so because:
A. It occurs in dark B. It does not require light energy
C. It cannot occur during daytime D. It occurs more rapidly at night

Q.75 How much net gain of G_3P is obtained after one Calvin cycle?
A. 3 B. 6
C. 2 D. 1

Q.76 Which one of these occur in dark reactions of photosynthesis?
A. Formation of ATP B. Release of oxygen
C. Release of hydrogen D. Synthesis of PGAL

Q.77 The path of electrons through the two photosystems is called?
A. S scheme B. X scheme
C. Z scheme D. Y scheme

Q.78 The G_3P is the end product of:
A. Krebs cycle B. Calvin cycle
C. Chemiosmosis D. Electron transport chain

Q.79 Cooperation of the two photosystems of the chloroplast is required for_____.
A. ATP synthesis
Reduction of NADP
C. Cyclic photophosphorylation
D. Oxidation of the reaction center of photosystem I

Q.80 The part of chloroplast where CO_2 is fixed to manufacture sugar is?
Stroma B. Grana
C. Thylakoid D. Outer membrane

Q.81 $NADPH_2$ provides which of the following?
A. Assimilatory power B. Energized electron
C. Chemical energy D. Both A and B

Q.82 The ATP synthesis in plants during the ETC is called?
Photophosphorylation B. Photolysis
C. Chemiosmosis D. All of these

Q.83 Which molecule passes the mitochondrial membrane to begin the Krebs cycle?
A. ATP B. Acetyl CoA
C. NADH D. ADP

Q.84 The most important photosynthetic pigment is:
Chlorophyll a B. Chlorophyll b
C. Xanthophyll D. Carotenes

Q.85 For every 3 molecules of carbon dioxide in Calvin cycle how much G3P is produced?
6 B. 2
C. 4 D. 8

Q.86 Find out the correct sequence for movement of electrons during the light dependent reaction:
A. p680, p700, water, NADP B. Water, p700, NADP, p680

C. p700, p680, NADP, water
D. Water, p680, p700 , NADP

Q.87 Photosystem I absorbs maximum wavelength of light?
A. 700
B. 600
C. 750
D. 770

Q.88 Which two reactions occur during photophosphorylation?
A. ATP is hydrolyzed and NADP is reduced
B. ATP is hydrolyzed and NADPH is oxidized
C. ATP is synthesized and NADP is reduced.
D. ATP is synthesized and NADPH is oxidized

Q.89 Photosystems are located in:
A. Stroma
B. Chloroplast envelope
C. Thylakoid membranes
D. Intergranam

Q.90 What are the different stages of the Calvin cycle?
A. Carbon fixation
B. RUBP
C. Reduction
D. A and C

Q.91 Carbon dioxide is fixed in
A. Light reaction
B. Dark reaction
C. Aerobic respiration
D. Anaerobic respiration

Q.92 The reaction of carbon dioxide and RUBP is catalyzed by?
A. ATP synthase
B. Globulin
C. RuBisCo
D. NADH dehydrogenase

Q.93 Chlorophylls are found embedded in the_____membranes.
A. Stroma
B. Grana
C. Thylakoid
D. Intergrana

Q.94 Which statement correctly outlines some of the main events in photosynthesis?
A 5C carbohydrate accepts carbon dioxide and is then reduced by NADPH derived from photosynthesis
B. A 3C carbohydrate is regenerated and reduced by hydrogen molecules derived from photophosphorylation
C. Photolysis uses light to produce reduced NADP and oxygen which are used to reduce a 3C carbohydrate
D. Photolysis produces NADPH and ATP which are used to reduce a 5C carbohydrate

Oxidative phosphorylation /cyclic and non- cyclic phosphorylation

Q.95 Cooperation of the two photosystems of the chloroplast is required for :
A. ATP synthesis
Reduction of $NADP^+$
C. Cyclic photophosphorylation
D. Oxidation of the reaction center of photosystem I

Q.96 It is most energy rich compound:
A. $FADH_2$
B. ATP
C. NADH
D. GTP

Q.97 The synthesis of ATP in the presence of oxygen is called:
A. Respiration
B. Calvin cycle
C. Oxidative phosphorylation
D. Chemiosmosis

Q.98 Where does the molecular mechanism of oxidative phosphorylation take place?
A. Cytosol
B. Mitochondria
C. Nucleus
D. All of these

Photosynthesis

Q.99 Photosystem II has molecules which absorbs maximum light of:
680 nm
B. l00 nm
C. 700 mil
D. 670nm

Q.100 The point at which there is no net exchange of gases between leaves and atmosphere is known as?
A. Neutral point
B. Compensation point
C. Parallel point
D. Competitive point

Q.101 If more oxygen is present, the RuBisCO starts:
A. Respiration
B. Photorespiration
C. Carboxylase
D. None of these

Q.102 Which type of light causes the highest rate of photosynthesis?
A. Blue
B. Red
C. Orange
D. Violet

Q.103 About what % of photosynthesis is carried by terrestrial plants, while rest occurs in ocean, lakes, and ponds
A. 40
B. 10
C. 20
D. 30

Q.104 Which cells absorb carbon dioxide in leaf?
A. Neutrophil cells
B. Basophil cells
C. Mesophyll cells
D. All of these

Q.105 Bacteriochlorophylls do not include which of the following?
A. Chlorophyll a
B. Chlorophyll c
C. Chlorophyll b
D. All of these

Q.106 The part of chlorophyll molecule that is embedded in the core of thylakoid membrane is:
A. Hydrophilic
B. Hydrophobic
C. Both of these
D. None of these

Q.107 The electrons from Ferrodoxin (Fd) to $NADP^+$ are transferred by which enzyme?
A. NADP Oxidase
B. NADP reductase
C. ATP synthase
D. Both A and B

Q.108 Molecular formula of chlorophyll a is?
A. $C_{55}\ H_{10}\ O_4\ N_6\ Mg$
B. $C_{55}\ H_{70}\ O_6\ N_5\ Mg$
C. $C_{55}\ H_{71}\ O_6\ N_4\ Mg$
D. $C_{55}\ H_{72}\ O_5\ N_4\ Mg$

Q.109 Wavelength of light that is mainly absorbed by the plants:
A. Orange
B. Red
C. Green
D. Both A and B

Q.110 The first action spectrum was obtained by:
T.W Engelmann
B. Malleus
C. TW Inws
D. W Stapes

Q.111 First action spectrum was obtained by using:
A. Algae
B. Fungi
C. Bacteria
D. *Spirogyra*

Q.112 Early organisms used_____as a source of hydrogen.
A. Water
B. Hydrogen sulphide
C. Hydrogen cyanide
D. Hydrogen potassium permanganate

Q.113 Water insoluble photosynthetic pigment:
A. Chlorophyll a
B. Chlorophyll b
C. Carotenoids
D. All of these

Q.114 Photosynthesis is absent in:
A. Seaweeds
B. Mushrooms
C. Purple sulphur bacteria
D. Angiosperms

Q.115 What is the color of xanthophyll pigment?
Yellow
B. Red
C. Orange
D. Blue

Q.116 Chlorophyll b is found in which organism?
A. Green plants
B. Green algae
C. Animals
D. Both A and

Q.117 What do two peaks in action spectrum represent?
A. Light absorption
B. Consumption of carbon dioxide
C. Light emission
D. Both A and B

Q.118 These all are inorganic compounds except:
A. NO_2
B. $C_6H_{12}O_6$

C. H_2O D. H_2SO4

Q.119 What is generated during noncyclic flow of photosynthesis?

A. ATP B. NADPH

C. Oxygen D. All of these

Q.120 Which is the correct order of energy transfer from accessory pigments to main photosynthetic pigment?

A. Carotenoids, Chlorophyll a, Chlorophyll b.

B. Chlorophyll b, Carotenoids, Chlorophyll a.

C. Carotenoids, Chlorophyll b, Chlorophyll a.

D. Chlorophyll a, Chlorophyll b, Carotenoids.

Q.121 What type of plant cells carry out photosynthesis?

A. Sclerenchymatous cells B. Parenchymatous cells

C. Chlorenchymatous cells D. Both B and C

Q.122 Which chemical reactions occur during the process of photosynthesis?

A. Oxidation B. Reduction

C. Both A and B D. None of these

Q.123 What is reduced during sugar production in photosynthesis?

A. NADH B. DNA

C. Oxygen D. None of these

Q.124 Photosynthesis is process in which_____compounds of carbon and hydrogen are reduced to carbohydrate like (glucose) using light energy.

A. Organic B. Energy poor

C. Energy rich D. Reduced

Q.125 Magnesium is important for the synthesis of which of the following?

Chlorophyll B. Protein synthesis

C. Glucose metabolism D. All of these

Q.126 Chlorophyll is insoluble in?

A. Carbon tetrachloride B. Carbon chloride

C. Organic Solvents D. None of these

Q.127 Van Neil's hypothesis about the production of oxygen during photosynthesis was based on the study and investigations on?

Bacteria B. Algae

C. Protonema D. Cyanobacteria

Q.128 Rate of photosynthesis does not depend upon:

Quality of light B. Intensity of Light

C. Duration of Light D. Temperature

Q.129 Quantitative study of energy relationships in biological systems obeys:

A. Bioenergetics

Laws of thermodynamics

C. Laws of thermochemistry

D. Laws of chemical energetic

Q.130 The graph that shows relative effectiveness of different wavelengths in photosynthesis is?

A. Actin spectrum B. Action spectrum

C. Absorption spectrum D. Emission spectrum

Q.131 The percentage of light absorbed by the leaf is:

A. 0.2 B. 0.15

C. 0.05 D. 0.01

Q.132 Which of the following statement about the head of a chlorophyll molecule is incorrect?

A. It is a porphyrin ring or tetrapyrrole ring structure

B. It is flat, square and light absorbing

C. Composed of carbon and nitrogen atoms with magnesium as central metal ion,

D. It is hydrophobic

Q.133 What does $NADPH_2$ provide during photosynthesis?

Energized electron B. Uncharged electron

C. Energy D. All of these

Q.134 Carotenoids perform protective function in which of the following organism?

A. Animal B. Plants

C. Both A and B D. None of these

Q.135 Chlorophyll molecule contains which of the following as a central metal ion?

A. Fe^{2+} B. Zn^{2+}

C. Cu^{2+} D. Mg^{2+}

Q.136 In all plants the major sites of photosynthesis are:

Leaf B. Stems

C. Roots D. Branches

Q.137 The organisms able to use sunlight directly as a source of energy are:

Plants B. Animals

C. Fungi D. Omnivores

Q.138 Which one is not an energy releasing process?

A. Glycolysis B. Photosynthesis

C. Respiration D. Krebs cycle

Q.139 Which pair of areas within a chloroplast will show the steepest pH gradient between them?

A. DNA and stroma

B. Ribosome and stroma

C. Stroma and the space between the outer and inner membrane

D. Stroma and the thylakoid interior space

Q.140 Excretory products of autotrophic plants:

A. CO_2 B. O_2

C. H_2O D. All of these

Q.141 Autotrophs live best in_____environment:

A. Wet B. Terrestrial

C. Organic D. Inorganic

Production of ATP

Q.142 It is false about ATP:

A. It is a RNA nucleotide B. It provides energy for cellular reactions

C. It is produced by endoplasmic reticulum D. All of these

Q.143 Breaking of terminal phosphate of ATP releases about Kcal of energy?

A. 6.1 B. 6.3

C. 7.1 D. None of these

Q.144 Primary function of ATP is:

A. Act as catalyst B. Allosteric modulation of enzymes

C. Energy source D. To store energy

Q.145 One of the most important molecules found in living organisms is ATP. What is its major function?

Energy source of the cell B. Coenzyme

C. Cofactor D. Both A and B

Q.146 Which one is dollar of the cell?

ATP B. DNA

C. Chromosome D. Enzyme

Role of light, water, CO_2/Factors affecting photosynthesis

Q.147 At which times there is no net gaseous exchange between leaves anal the atmosphere?

A. Day B. Night

C. Dawn and Dusk D. Midnight

Q.148 Which of the following is a compensation point?

A. Leaves respire and utilize O_2 and release CO

B. Photosynthesis and respiration occur at same rate. So there is not net exchange of gases between atmosphere and plants.

C. Rate of photosynthesis increases, so do the O_2 production, with a net release of oxygen coupled with the uptake of CO?

D. Rate of respiration becomes more than rate of photosynthesis. 16 Net yield of H_2O in Photosynthesis is

Q.149 Photosynthetic pigments are organized in form of?

A. Clusters B. Stacks

C. Photosystems D. Both a and b

Out of Syllabus

Q.150 Evolution of pollen tube is parallel to the evolution of which of the following?

A. Leaf B. Flower

C. Seed D. Plant

Q.151 Which cells regulate the opening and closing of the stroma?

A. Neutrophil cells B. Guard cells

C. Mesophyll cells D. Basophil cells

ANSWER KEY

BIOENERGETICS

1	D	21	D	41	C	61	C	81	B	101	B	121	B	141	D
2	B	22	C	42	C	62	D	82	A	102	B	122	C	142	C
3	D	23	A	43	B	63	C	83	B	103	B	123	D	143	D
4	C	24	C	44	B	64	C	84	A	104	C	124	B	144	C
5	B	25	C	45	B	65	A	85	A	105	D	125	A	145	A
6	B	26	B	46	D	66	B	86	D	106	B	126	D	146	A
7	B	27	B	47	D	67	B	87	A	107	B	127	A	147	C
8	D	28	A	48	B	68	C	88	C	108	D	128	A	148	B
9	C	29	A	49	A	69	A	89	C	109	B	129	B	149	C
10	B	30	D	50	C	70	C	90	D	110	A	130	B	150	C
11	B	31	A	51	D	71	A	91	B	111	D	131	D	151	B
12	C	32	D	52	C	72	D	92	C	112	B	132	D		
13	D	33	D	53	B	73	C	93	C	113	D	133	A		
14	D	34	C	54	A	74	B	94	A	114	B	134	C		
15	B	35	A	55	A	75	D	95	B	115	A	135	D		
16	C	36	A	56	B	76	D	96	C	116	D	136	A		
17	B	37	C	57	A	77	C	97	C	117	B	137	A		
18	C	38	D	58	A	78	B	98	B	118	B	138	B		
19	A	39	D	59	D	79	B	99	A	119	D	139	D		
20	B	40	C	60	C	80	A	100	B	120	C	140	B		

BIOLOGICAL MOLECULES

Introduction to biological molecules

Q.1 Which of the following is a trace element?
A. Hydrogen
B. Copper
C. Oxygen
D. Carbon

Q.2 In catabolic reaction_____free the _____.
A. Fatty acids, polysaccharides
B. Proteins, amino acids
C. Lipids, glucose
D. None of these

Q.3 Which of the following is a chemical link between catabolism and anabolism?
A. AMP
B. ADP
C. ATP
D. All of these

Q.4 Which one is the basic element found in all organic compounds?
A. Oxygen
B. Carbon
C. Hydrogen
D. All of these

Q.5 Interconversion of carbohydrates, proteins and lipids in living cells are an example of:
A. Coordinated catabolic activities
B. Coordinated anabolic activities
C. Both A and B
D. None of these

Q.6 How are high energy phosphate bonds broken down in ATP?
A. Anabolism
B. Catabolism
C. Hydrolysis
D. All of these

Q.7 The branch of biology which deals with the study of chemical compounds and the chemical processes in the living organisms is called?
A. Chemistry
B. Molecular Biology
C. Biochemistry
D. Both a and b

Q.8 Reactions in which simple substances are combined to form complex substances are called?
A. Metabolic reactions
B. Catabolic reactions
C. Anabolic reactions
D. Both B and C

Water

Q.9 Specific heat of vaporization of water is:
A. 774 Kcal/kg
B. 874 Kcal/kg
C. 574 Kcal/kg
D. 674 Kcal/kg

Q.10 What percentage of water is found in brain cells?
A. 50
B. 80
C. 85
D. 90

Q.11 The attraction between water molecules and cell wall of xylem is termed as:
A. Cohesion
B. Tension
C. Adhesion
D. Imbibition

Q.12 In living organisms, the lubricant which provides protection against damage resulting from friction is?
Water
B. Carbohydrates
C. Lipids
D. Proteins

Q.13 The number of calories required to raise the temperature of lg of water from 15 to 16 °C is called?
A. Specific Heat of Vaporization
B. Specific heat capacity
C. Caloric heat
D. Both a and b

Q.14 Liposomes are:
A. Drug carriers
B. Water in middle
C. Sac of phospholipids
D. ALL A, B, C

Carbohydrates

Q.15 Glycogen is an example of:
A. Phospholipid
B. Polysaccharides

C. Carbohydrates D. Both B and C

Q.16 What percentage of glucose is normally found in human blood?

A. 0.008 B. 0.0008

C. 0.018 D. 0.08

Q.17 The covalent bond between two monosaccharide subunits is called?

A. Phosphodiester bond B. Peptide bond

C. Ionic bond D. Glycosidic bond

Q.18 Which of following cannot be hydrolyzed?

A. Polysaccharides B. Monosaccharides

C. Oligosaccharides D. Sucrose

Q.19 Animal starch is called:

A. Cellulose B. Agar

C. Glycogen D. Chitin

Q.20 It is not a monosaccharide:

A. Fructose B. Glucose

C. Sucrose D. All are monosaccharides

Q.21 Sucrose is present in:

Sugar cane B. Milk

C. Almonds D. None

Q.22 It is _____ is valuable for diabetic control.

Green vegetable B. Grapes

C. Rice D. All of these

Q.23 Glycogen is most abundantly present in:

A. Liver B. Muscles

C. Kidneys D. Both A and B

Q.24 Which of the following is soluble in hot water?

A. Starch B. Glycogen

C. Amylose D. Amylopectin

Q.25 Glucose is also called as:

Dextrose B. Lymph sugar

C. Grape sugar D. None

Q.26 Glycosidic bond is present between:

Monosaccharides B. Carbon atoms

C. Amino acids D. Fatty acids

Q.27 Which of the following is a trisaccharide?

A. Mannose B. Galactose

C. Maltose D. Raffinose

Q.28 Glycogen on hydrolysis gives:

Glucose B. Galactose

C. Fructose D. Ribose

Q.29 Cellulose on hydrolysis yields:

A. α D-Glucose B. α L-Glucose

C. β D-Glucose D. β L-Glucose

Q.30 Carbohydrate catabolism is concerned with the fate of:

A. ATP B. Amino acid

C. Glucose D. All of these

Q.31 A complex substance which on hydrolysis yields polyhydroxy aldehyde or ketone subunits is called?

A. Lipid B. Carbohydrate

C. Protein D. All of these

Q.32 Which one gives blue color?

Starch B. Glycogen

C. Cellulose D. None of these

Q.33 To synthesis l0g of glucose, how much energy is essentially required?

A. 727 Kcal B. 712 Kcal

C. 717 Kcal
D. 719 Kcal

Q.34 Glycogen is present in all body except
A. Brain
B. Heart
C. Blood
D. Tissues

Q.35 Alpha 1-4 glycosidic linkage is present in:
Maltose
B. Sucrose
C. Cellulose
D. Cellobiose

Q.36 The 5 carbon sugar present in the heart muscle is:
Lyxose
B. Ribose
C. Xylose
D. Glucose

Q.37 Which is true regarding open chain structure of glucose?
A. There are six asymmetric carbons
B. There are five asymmetric carbons
C. There are four asymmetric carbon
D. There are three asymmetric carbon

Q.38 Rarely occurring monosaccharides observed in some bacteria is?
Tetroses
B. Hexoses
C. Pentoses
D. Trioses

Q.39 In the molecular formula Cx(H2O)y, the value of x ranges from?
A. 1000
B. 2000
C. 3 to 7000
D. 3000 and more

Q.40 How many monosaccharide units do oligosaccharides yield upon hydrolysis?
A. 2
B.5
C. 10
D. All of these

Q.41 Which one of the following biomolecules is most abundant in animals?
A. Starch
B. Cellulose
C. Glycogen
D. All of these

Q.42 This is non-reducing sugar:
A. Maltose
B. Sucrose
C. Cellobiose
D. Lactose

Q.43 What type of atom is carbon atom?
A. Divalent
B. Monovalent
C. Trivalent
D. Tetravalent

Q.44 Which bond provides stability to complex carbohydrate molecule?
A. C – H
B. C – N
C. C – O
D. C – C

Q.45 Which of the following constitute large organic molecules?
Cellulose
B. Glucose
C. Amino acids
D. All of these

Q.46 These are crystalline, water soluble, forming pyranose rings
Monosaccharides
B. Polysaccharides
C. Oligosaccharides
D. Disaccharides

Q.47 When the glucose level in blood comes down, glucose is synthesized from_____.
A. Fats
B. Glycogen
C. Amino acids
D. DNA

Q.48 Which are the most physiologically significant disaccharides?
A. Maltose
B. Sucrose
C. Lactose
D. All of these

Q.49 Which of the following is the most complex sugar?
A. Monosaccharides
B. Oligosaccharides
C. Polysaccharides
D. Carbohydrates

Q.50 $(CH_2O)n$ is a general formula of:
Monosaccharides
B. Oligosaccharides
C. Polysaccharides
D. Carbohydrates

Q.51 The functional group that best represents ketoses is?
CO
B. COOH
C. HCOH
D. HOH

Q.52 Unit of carbohydrate is:

Monosaccharides
B. Amino acids
C. Fatty acids
D. All

Q.53 Glycogen is present in all body except:
A. Brain
B. Tissues
C. Heart
D. Blood

Q.54 The smallest monosaccharide is:
Triose
B. Pentose
C. Tetrose
D. None of these

Q.55 Ribose is a monosaccharide constituent of many _____.
A. Enzymes
B. Coenzymes
C. Vitamins
D. Antibiotic

Proteins

Q.56 This amino acid not found in proteins is
Beta alanine
B. Glutamine
C. Tyrosine
D. Histidine

Q.57 The high content of which amino acid confers resistance, stability and insolubility to hairs, nails and skin:
A. Glycine
B. Alanine
C. Methionine
D. Cysteine

Q.58 Which structure of protein gives information about the folding of a protein?
A. Primary structure
B. Tertiary structure
C. Secondary structure
D. Quaternary structure

Q.59 The protein contains bonds:
A. Inorganic bonds
B. Peptide bonds
C. Glycosidic bonds
D. Covalent bonds

Q.60 Protein constitutes of what percentage of the total dry weight found in cells?
A. 50
B. 55
C. 40
D. 65

Q.61 Which structural organization is most common in globular proteins?
A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q.62 An enzyme containing 2 chains of polypeptide has:
A. Primary structure
B. Primary and secondary structure
Primary, secondary, tertiary and quaternary structure
D. It has all structures

Q.63 Word Protein is derived from:
A. Latin
B. Greek
C. Roman
D. English

Q.64 Keratinized epithelium is present in:
A. Hair
B. Skin
C. Bone
D. Muscle

Q.65 Which of the molecules is formed by peptide bond?
A. Ammonia
B. Iron
C. Water
D. None of the above

Q.66 Which of the following is not an amino acid?
A. Histidine
B. Lactic acid
C. Glutamic acid
D. Glycine

Q.67 What are the distinguishing features of fibrous proteins?
A. Elastic
B. Non-crystalline
C. Disorganized
D. Both A and B

Q.68 Avidin is a protein that:
Binds egg white with biotin
B. Binds egg white with egg albumin
C. Both A and B
D. This protein do not belong to egg white

Q.69 The molecular basis of sickle cell anemia was found by:
A. F. Sanger B. Beadle
C. Tatum D. Ingram

Q.70 What are the main distinguishing features of globular proteins?
A. Crystalline B. Elastic
C. Functional D. Both A and C

Q.71 Antibodies play important role against microorganisms and other pathogens to which type of proteins do they belong?
A. Globular B. Functional
C. Fibrous D. Both A and B

Q.72 Proteins are the polymers of?
Amino acids B. Fatty acids
C. Nucleotides D. None of these

Q.73 What type of protein is Fibrin?
A. Functional B. Structural
C. Enzymatic D. All of these

Q.74 The total number of amino acids that have been found in tissues and cells are?
A. 250 B. 200
C. 20 D. 170

Q.75 What are the distinguishing features of fibrous proteins?
A. Non-crystalline B. Elastic
C. Disorganized D. Both A and B

Q.76 An insulin molecule is made up of how many polypeptide chains?
A. 1 B. 2
C. 3 D. 4

Q.77 It is protein in nature:
A. Fats /cholesterol B. ATP
C. Glycogen D. Ligase

Q.78 In glycine, R group of amino acids is replaced by?
A. COOH B. CH2
C. CH2 D. None of these

Q.79 What type of bonding in proteins maintains the integrity of the helical secondary structure?
Hydrogen bonds B. Ionic bonds
C. Disulfide linkages D. Both A and B

Q.80 How many bond/s are in a dipeptide?
1 B. 3
C. 2 D. 4

Q.81 Vegetative source of protein:
A. Egg B. Soyabean
C. Pulses D. Both B and C

Q.82 Which structure of protein gives information about number and sequence of amino acids?
Primary structure B. Secondary structure
C. Tertiary structure D. Quaternary structure

Q.83 Globular structure of protein is due to:
A. Primary structure B. Secondary structure
C. Tertiary structure D. Quaternary structure

Q.84 Most abundant protein in blood:
A. Collagen B. Hemoglobin
C. Actin D. Rubisco

Q.85 Abundant protein in human body:
A. Rubisco B. Collagen
C. Cellulose D. Albumin

Q.86 Coagulated protein is:

A. Insoluble
B. Non folded
C. Nonfunctional
D. All of above

Q.87 How many types of amino acids form proteins in human body?
A. 25
B. 70
C. 20
D. 400

Q.88 Proteins are polymers of:
Amino acids
B. Fatty acids
C. Nucleotides
D. None of these

Q.89 Number of essential amino acids is?
A. 10
B. 20
C. 9
D. 110

Q.90 Which of the following is important secondary structure in proteins?
A. α-helix
B. β-pleated sheet
C. β-pleated sheet parallel
D. Both A and B

Q.91 Enzymes that are integral part of ribosomes are involved in the synthesis of which of the following molecules?
A. Lipids
B. Protein
C. Carbohydrates
D. All of these

Lipids

Q.92 A fatty acid is composed of_____.
Acid group at one end
B. Acid groups at both ends
C. Amino group at one end
D. Amino group at both ends

Q.93 A compound produced as a result of a chemical reaction of an alcohol with an acid in which water molecule is released is called?
A. Monosaccharide
B. Fatty acid
C. Nucleic acid
D. Neutral lipid

Q.94 Serine is a component of:
A. Lipid
B. Haemoglobin
C. Phospholipid
D. Waxes

Q.95 Choline is component of:
Phospholipids
B. Phosphatidic acid
C. Terpenoids
D. Waxes

Q.96 Sterols are:
Lipid
B. Protein
C. Carbohydrates
D. All of these

Q.97 Steroid are naturally:
A. Lipoproteins
B. Proteins
C. Lipids
D. A and B

Q.98 These are properties of lipids:
A. Insoluble in water and soluble in fat solvent.
B. High energy content
C. Structural component of cell membrane
D. All of these

Q.99 Fatty acids containing 18 C atoms and a single double bond are?
A. Saturated
B. Unsaturated
C. Oleic acid
D. Palmitic acid

Q.100 Which of the following is a phospholipid?
A. Sterol
B. Cholesterol
C. Lecithin
D. Steroid

Q.101 Lipids show solubility in which of the following solvents?
A. Water
B. Ether
C. Inorganic solvents
D. All solvents

Q.102 Lipids have great functional significance in the human body. What are the main functions of the lipids?
A. Energy source
B. Structure of membrane

C. Mechanical protection
D. All of these

Q.103 Lecithin contains_____.
A. Ethanolamine
B. Choline
C. Serine
D. Betaine

Q.104 Hydrophilic substances are_____and hydrophobic substances are_____.
A. Water loving, Water fearing
B. Polar, Non-polar
C. Soluble in water, Soluble in lipid
D. All are correct

Q.105 A triglyceride is:
A. Protein
B. Nucleic acid
C. A simple sugar
D. Lipid

Q.106 Nitrogenous bases such as choline and serine arc significant part of which of the following?
A. Sphingolipids
B. Phospholipids
C. Phosphodiester
D. none of these

Q.107 Saponification number describes_____.
A. Unsaturation in fat
B. Average molecular weight of fatty acid
C. Acetyl number
D. Acid number

Q.108 Lipids show solubility in which of the following solvents?
A. Water
B. Ether
C. Inorganic solvents
D. All solvents

Q.109 Essential fatty acids show all the characters except_____.
A. Lipotropism
B. Blood clotting factors
C. Used for energy production
D. None of these

Q.110 Fatty acid contains:
A. Alcohol and esters
B. Carboxylic and alkyl groups
C. Carboxylic group and isoprenoid
D. Phospholipids and alkyl groups

Q.111 In water, hydrophobic interactions of phospholipids are:
A. In heads
B. In tails
C. Both A and B
D. None

Q.112 Liposomes are:
A. Vesicles
B. Have water
C. Drug carrier
D. All of the above

Q.113 Glycerol is component of:
A. Fatty acids
B. Acylglycerols
C. Phospholipids
D. Both B and C

Q.114 Oils are:
A. Saturated fatty acids
B. Unsaturated fatty acids
C. Glycerides with unsaturated fatty acids
D. Glycerides with saturated fatty acids

RNA

Q.115 In contrast to eukaryotic mRNA, prokaryotic mRNA:
Can be polycistronic
B. Is synthesized with introns
C. Can only be monocistronic
D. Has a poly A tail

Q.116 A sample of RNA is sequenced and found to contain 22% adenine. Which of the following conclusions can also be drawn about the sample?
22% uracil
B. 22% thymine
C. 22% cytosine
D. 22% guanine

Q.117 For a protein molecule of 2000 amino acids, the mRNA will have a length of how many nucleotides?
A. 3000
B. 2000
C. 6000
D. 5000

Q.118 Most abundant intracellular free nucleotide is:
A. UTP
B. FAD
C. NAD
D. ATP

Q.119 RNA does not contain:
A. Adenine
B. Hydroxy methyl cytosine

C. Phosphate D. Thymine

Conjugated molecules (glycolipids, glycoproteins)

Q.120 Lipoproteins rich in cholesterol are:

A. Chylomicrons B. VLDL
C. LDL D. HDL

Q.121 HDL is synthesized in:

Adipose tissue B. Liver
C. Intestine D. Liver and intestine

Q.122 Which of the following statement is not true for compounds like glycoprotein and glycolipids?

A. They are conjugated molecules of carbohydrates
B. Both have role in the extracellular matrix of animals
C. They are components of biological membranes.
Both are produced and secreted by endoplasmic reticulum

Q.123 The basic framework structure of all types of membranes are:

A. Glycolipids B. Glycoproteins
C. Lipoproteins D. Nucleoproteins

Q.124 Glycosphingolipid are made up of

A. Sphingolipids B. Alcohol and fatty acids
C. Carbohydrate and sphingolipids D. Carbohydrates and fatty acids

Out of syllabus

Q.125 The oldest mineral discovered so far is which of the following, which dates back to 4.4 billion years:

A. Iron B. Cadmium
C. Diamond D. Zircon

Q.126 Which of the following makes protective coatings around the plant organs

A. Lipids B. Waxes
C. Glycerols D. Glycolipids

Q.127 Which of the following is a water-soluble vitamin?

A. Riboflavin B. Vitamin c
C. Niacin1 D. All of these

Q.128 In DNA molecules, Adenine pairs with which of the following nucleic acid bases?

A. Guanine B. Thymine
C. Cytosine D. Uracil

Q.129 Nontoxic vitamins include which of the following?

A. Vitamin c B. Vitamin b
C. Both A and B D. None of the above

Q.130 Reactions in which simple substances are combined to form complex substances are called:

A. Metabolic reactions B. Catabolic reactions
C. Anabolic reactions D. None of these

Q.131 Which of the following is water soluble vitamin?

A. A B. B
C. D D. K

Q.132 The number of water-soluble vitamins is:

A. 3 B. 6
C. 9 D. 12

ANSWER KEY

BIOLOGICAL MOLECULES

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

CELL STRUCTURE AND FUNCTION

Cell wall

Q.1 Cellulose is the major component of?
Primary wall | B. Secondary wall
C. Middle lamella | D. All of these

Q.2 The outermost layer in a typical plant cell would be_____.
Primary cell wall | B. Secondary cell wall
C. Middle lamellae | D. Cell surface membrane

Q.3 A plant cell wall is mainly composed of which of the following?
A. Protein | B. Starch
C. Cellulose | D. Lipid

Q.4 The first layer of cell wall which is formed is called?
A. Primary wall | B. Secondary wall
C. Middle lamella | D. All of these

Q.5 Secondary cell wall of sclerenchyma cells is impregnated with?
A. Cellulose | B. Lignin
C. Murein | D. Pectin

Q.6 The cementing material between adjacent plant cells.
A. Cellulose | B. Hemicellulose
C. Middle lamella | D. All of the above

Q.7 Which of the following is non-living component of plant cell?
A. Nucleus | B. Cell wall
C. Cell membrane | D. All of these

Q.8 Cell wall of fungi contains:
A. Cellulose | B. Chitin
C. Peptidoglycan | D. Glycogen

Q.9 Components of secondary cell wall:
A. Cellulose, hemicellulose, pectin | B. Cellulose, hemicellulose, lignin
C. Cellulose only | D. Magnesium and calcium salts and pectin

Q.10 Cell wall is secreted by:
A. Cell membrane | B. Vacuole
C. Cytoplasm | D. Protoplast

Q.11 A cell without cell wall is termed as:
A. Tonoplast | B. Protoplast
C. Symplast | D. Epiblast

Q.12 Rectangular shape of plant cells in due to:
Cell wall | B. Cell membrane
C. Vacuole | D. Cytoskeleton

Q.13 Which has high affinity for water?
A. Lignin | B. Cellulose
C. All of them | D. None of these

Cytoplasm and cell organelles

Q.14 Ribosomes combined with mRNA are called?
A. Lysosome | B. Nucleosome
C. Polysome | D. Polysomic

Q.15 Ribonucleoprotein particle are the name of?
A. RNA | B. DNA
C. Nucleus | D. Eukaryotic ribosomes

Q.16 If 3 ribosomes attach to single mRNA at different points then how many similar proteins will form?
1 | B. 2
C. 3 | D. No similar protein

Q.17 What is the approximate ratio of RNA and protein in a ribosome?
A. 1:1 | B. 2:l

C. 1:2 D. 1:3

Q.18 Ribosomes are chemically composed of which of the following?

A. Protein B. DNA

C. RNA D. Both A and C

Q.19 It helps in attachment of two ribosomal units:

A. Calcium ions B. Magnesium ions

C. Chloride ions D. Sodium ions

Q.20 Which of the following organelles is not bound by a membrane?

Ribosomes B. ER

C. Mitochondria D. Nucleus

Q.21 60S and 40S subunit combine to form what size particle?

80S B. 90S

C. 100S D. 110S

Q.22 Which of the following is synthesized by free floating ribosomes of cytoplasm in humans?

DNA polymerase B. Salivary amylase

C. Pancreatic amylase D. Salivary lipase

Q.23 The soluble part of the cytoplasm is known as?

Cytosol B. Polysomes

C. Cisternae D. Chitin

Q.24 Enzymes that are integral part of ribosomes are involved in the synthesis of which of the following molecules?

A. Lipids B. Proteins

C. Carbohydrates D. All of these

Nucleus

Q.25 _____is the heaviest particulate of the cell.

A. Golgi apparatus B. Cytoplasm

C. Mitochondria D. Nucleus

Q.26 Which of the following cells do not possess a nucleus?

A. Sieve tube cells B. Bacteria

C. Red blood cells D. All of the above

Q.27 An animal has 80 chromosomes in its gametes, how many chromosomes will be seen in the animal's muscle cells?

A. 120 B. 240

C. 40 D. 160

Q.28 The number of nuclear pores is highly variable in eukaryotic cells because of?

A. Cell size

B. Number of chromosomes Level of gene expression

C. Size of the nucleus

D. Maturation

Q.29 Which statement about the nucleolus is not true?

A. No membranous boundary B. Composed of two regions

C. Site of synthesis for rRNA D. Hereditary centre

Q.30 If an organism has a diploid number of 36, what is its haploid number?

A. 12 B. 9

C. 18 D. 22

Q.31 The 23rd pair of chromosomes in man is:

A. Polymorphic B. Heteromorphic

C. Homomorphic D. Automorphic

Q.32 Which of the following cell structure contains the highest concentration of RNA?

A. Centriole B. Mitochondria

C. Nucleolus D. Nucleus

Q.33 All chromosomes other than sex chromosomes are called:

Autosomes B. Allosomes

C. Microsomes D. None of them

Q.34 Somatic cells of humans have how many pairs of chromosomes in total?
A. 10 B. 23
C. 24 D. 48

Q.35 _____is responsible for making ribosomal RNS (rRNA)
A. Nucleus only B. Nucleus & nucleolus only
C. Nucleolus only D. None of above

Q.36 The soluble sap of the nucleus in a plant cell is called?
A. Cytoplasm B. Protoplasm
D. Protoplast

Q.37 Factory of ribosomal synthesis is?
A. Cytoplasm B. Nucleus
C. D. Endoplasmic reticulum

Q.38 Double membranous organelle having pores:
A. Chloroplast B. Mitochondria
C. Nucleus D. Cell membrane

Endoplasmic reticulum

Q.39 Which of the following is not a function of Smooth Endoplasmic Reticulum (SER)?
A. Synthesis of steroid hormones from cholesterol.
B. Detoxification of harmful drugs.
C. Synthesis of phospholipids for plasma membrane.
D. Synthesis of membrane proteins

Q.40 Which of the following is a mesh of interconnected membranes involved in protein synthesis and transport?
ER B. Cytoskeleton
C. Golgi apparatus D. All of these

Q.41 Which of the following is false about the sarcoplasmic reticulum?
A. The sarcoplasmic reticulum is a specialized smooth endoplasmic reticulum
B. The sarcoplasmic reticulum releases calcium ions into the cytoplasm of the muscle cell
C. A change in membrane potential causes the sarcoplasmic reticulum to become more permeable to calcium ions
The sarcoplasmic reticulum is found

Q.42 Cytoplasmic streaming movement causes flow of all of the following except?
A. Glucose and salts B. Mitochondria
C. Golgi D. RER

Q.43 Which one of the following is involved in lipid metabolism?
A. RER B. Golgi apparatus
C. Chloroplast D. None

Q.44 Sarcoplasm is different form cytoplasm:
A. It contains sarcoplasmic reticulum
B. It contains glycogen
C. It contains glycogen and oxygen binding protein, myoglobin
D. All of these

Q.45 _____are storage bodies for intracellular calcium.
A. RER B. SER
C. Vacuoles D. Golgi complex

Q.46 Smooth endoplasmic reticulum is not involved in:
A. Hormone secretion B. Detoxification
C. Conversion of mRNA to amino acids D. Lipoproteins and glycoproteins formation

Q.47 Which of the following is not the function of endoplasmic reticulum?
A. Transport of material B. Mechanical support
C. Synthesis of conjugated molecules D. All of theses

Q.48 Function of Smooth Endoplasmic Reticulum (SER) is_____.
A. Synthesis of intracellular proteins. B. Synthesis of lipids.
C. Synthesis of extracellular enzymes. D. Synthesis of extracellular proteins

Q.49 Spherical or tubular membranes which separate the material present in endoplasmic reticulum from that of cytoplasmic material are called?
A. Cytosol B. Cisternae
C. Lysosomes D. Cristae

Q.50 Which of the following is not the function of endoplasmic reticulum?
A. Transport of material B. Mechanical support
C. Synthesis of conjugated molecules D. All of these

Q.51 Network of tubules continuous with nuclear membrane:
RER B. SER
C. Both A and B D. None

Q.52 If a radioactive amino acid is given to an organism, the organelle that shows radioactivity very first time:
A. Golgi complex B. Mitochondria
C. Nucleus D. RER

Q.53 Sarcoplasmic reticulum cells are those cells that contain:
A. SER less B. SER more
C. RER less D. RER more

Q.54 _____extend from nucleus and touch cell membrane.
A. SER B. RER
C. Gogli apparatus D. Both A and B

Q.55 It is not found in composition of ER:
A. Carbohydrates B. Lipids
C. Proteins D. DNA

Q.56 Which of the following is not a function of SER?
A. Synthesis of steroid hormones of cholesterol
B. Detoxification of harmful drugs
C. Synthesis of phospholipids for plasma membrane
D. Synthesis of membrane proteins

Mitochondria

Q.57 ADP is regenerated by mitochondria into which of the following?
A. AMP B. ATP
C. ADP D. All of these

Q.58 Which of the following is not present in mitochondria?
A. Enzymes B. Coenzymes
C. Ribosomes D. Thylakoid

Q.59 The outer and inner membranes of mitochondria are?
Structurally and functionally different
B. Structurally different but functionally similar
C. Structurally and functionally similar
D. Structurally similar but functionally different

Q.60 Which of the following is not a character of mitochondria?
A. It contains F 1 particles B. It is double membranous
C. is a self-replicating organelle D. Number of mitochondria is constant

Q.61 Inner membrane convulsions of the mitochondria are called?
A. Grana B. Cnstae
C. Thylakoid membrane D. Intergrana

Q.62 Diameter of mitochondria ranges between:
A. 0.5-1 µm B. 0.5-1 nm
C. 100-200 µm D. 100-200 nm

Q.63 It is a true statement:
A lot of mitochondria are present in axons
B. Less number of mitochondria are present in axons
C. A lot of mitochondria are present in dendrites
D. A lot of mitochondria are present in dendron

Q.64 Enzymes in mitochondrial matrix help in which of the following metabolic processes?

A. Krebs cycle
B. Aerobic respiration
C. Fatty acid metabolism
D. ALL A, B, C

Q.65 _____ plays role in respiration.
Mitochondria
B. Chloroplast
C. Ribosome
D. Golgi apparatus

Q.66 Which of the following combination is an example of self-replicating organelles?
A. Mitochondria and Ribosomes
B. Mitochondria and Chloroplast
C. Mitochondria and Vacuole
D. Mitochondria and Nucleus

Q.67 Which of the following is double membranous organelle?
A. Nucleus
B. Mitochondria
C. Chloroplast
D. All A, B, C

Q.68 F_1 particles are present in:
A. Chloroplast
B. Mitochondria
C. Ribosome
D. All of these

Golgi apparatus/Golgi complex /Golgi bodies

Q.69 Golgi complex was discovered by which scientist?
A. Robert Brown
B. Camillo Golgi
C. De Duve
D. Robert Hooke

Q.70 Proteins and lipids are converted into glycolipids and glycoproteins by adding carbohydrates by?
A. Ribosomes
B. Cytoplasm
C. Golgi apparatus
D. Endoplasmic reticulum

Q.71 Golgi complex is responsible for the formation of secretory granules in_____cell.
A. Stomach
B. Liver
C. Pancreatic
D. Muscle

Q.72 Pancreas produces secretory granules that help in digestion. These granules after passing through endoplasmic reticulum are pinched off from the surface of Golgi apparatus?
A. Forming phase
B. Maturing phase
C. Any of these
D. None of these

Q.73 Shape of the maturing phase of the Golgi apparatus is?
A. Biconcave
B. Convex
C. Spherical
D. Concave

Q.74 Which organelle form cell membrane?
A. Cell wall
B. SER
C. RER
D. Golgi body

Q.75 Which is incorrectly matched:
Golgi apparatus – intercellular digestion
B. Cell membrane – cell recognition
C. SER – Carbohydrate metabolism
D. RER – protein synthesis

Lysosomes

Q.76 What are Autophagosomes?
A. Those lysosomes which eat parts of their own cells to generate energy.
B. Those lysosomes which eat old and worn-out cellular organelles.
C. Lysosomes which help in extracellular digestion
D. Both A and B

Q.77 Lysosomes are known as "suicidal bags" because of?
A. Parasitic activity
B. Presence of food vacuoles
C. Hydrolytic activity
D. Catalytic activity

Q.78 Which of the following cell organelle does not contain DNA?
A. Nucleus
B. Mitochondria
C. Lysosomes
D. Chloroplast

Q.79 The process of self-digestion of selective nonfunctional organelle by cells through the actions of enzymes originating from the cell is called?

A. Pinocytosis B. Endocytosis
C. Autophagy D. Cytotoxicity

Q.80 Phagocytosis, autophagy and extracellular digestion are the functions of?
Lysosomes B. Mitochondria
C. Golgi apparatus D. All of these

Q.81 A disease caused by the absence of a lysosomal enzyme responsible for lipid catabolism:
Tay-Sach's disease B. Phenylketonuria
C. Klinefelter's syndrome D. Down's syndrome

Q.82 The cells which lack lysosomes would have difficulty in which of the following?
Digesting food B. Moving cytoplasm
C. Protein packaging D. Storage of energy

Q.83 Lysosomes are formed by:
A. RER B. SER
C. Golgi complex D. Mitochondria

Plastids/chloroplasts

Q.84 The type of plastids found in roots of plants:
A. Chloroplasts B. Chromoplasts
C. Leucoplasts D. All of them

Q.85 In the plants, 50 or more thylakoids piled upon each other to form?
Granum B. Centrosome
C. Stroma D. Multinucleate

Q.86 The dense fluid filled region in the chloroplast is called?
A. Grana B. Stroma
C. Thylakoid D. Intergrana

Q.87 Enzymes in Calvin cycle are found in which cell organelle?
A. Smooth endoplasmic reticulum B. Chloroplast
C. Mitochondrion D. Golgi complex

Q.88 Which type of cell would be the most appropriate for the study of chloroplasts?
A. Conducting cell B. Pericycle cell
C. Photosynthetic cell D. All of these

Q.89 Stacked of thylakoids in chloroplasts is called?
Grana B. Stroma
C. Nucleus D. None of these

Q.90 Which of the following organelle is involved in the release of oxygen?
A. Mitochondria B. Chloroplast
C. Ribosomes D. Both A and B

Q.91 The matrix surrounding the grana in the inner membrane of the chloroplast is called?
A. Cytosol B. Frets
C. Stroma D. Intergranal lamellae

Q.92 Plants store food in:
A. Chloroplast B. Chromoplasts
C. Leucoplast D. Both A and B

Q.93 Double membranous structure having coins like stacks of membranes are known as:
A. Mitochondria B. Nucleus
C. Chloroplast D. Golgi apparatus

Q.94 Yellowing and brown end of leaf is because of deficiency of:
Chlorophyll B. Nitrogen
C. Potassium D. Iron

Q.95 Colour of petals is due to:
A. Chloroplast B. Plastid
C. Chromoplast D. Leucoplast

Q.96 Enzymes for light dependent reaction are present in:
Thylakoid membrane of chloroplast B. Lumen of grana
C. Stroma D. Outer membrane

Vacuoles

Q.97 The membrane around the vacuole Is known as?
Tonoplast
B. Elaioplast
C. Cytoplast
D. Amyloplast

Q.98 The largest organelle in a mature living plant cell is?
A. Chloroplast
B. Nucleus
C. Central vacuole
D. Mitochondria

Q.99 Which of the following organelles are found in both plant and animal cells?
Vacuole
B. Peroxisomes
C. Cell wall
D. None of these

Q.100 Under microscopic examination, which cellular structure would differentiate a plant cell from an animal cell?
A. Ribosomes
B. Cell membrane
C. Cytoplasm
D. Cell vacuole

Q.101 Which one of the following is not double membranous structure?
Vacuole
B. Mitochondria
C. Chloroplast
D. Nucleus

Prokaryote and eukaryote

Q.102 Which combination of organelles is usually present in both animal and plant cells?
A. Golgi complex, plastids, mitochondria
B. Plastids, mitochondria, endoplasmic reticulum
C. Golgi complex, endoplasmic reticulum, centrioles
D. Mitochondria, endoplasmic reticulum, ribosomes

Q.103 Unlike eukaryotes, prokaryotes have no membrane-bound organelles. How, then, are prokaryotes able to generate energy?
A. Prokaryotes do not generate energy
B. Prokaryotes produce energy via photosynthesis
C. Prokaryotes have specialized mitochondria
Prokaryotes generate proton gradients across their plasma membranes

Q.104 Which statement describes an incorrect difference between a plant cell and bacterial cell?
A. Bacterial cell has 70S ribosomes whereas a plant cell has 80S ribosomes.
B. Bacterial cell divides by binary fission whereas a plant cell divides by mitosis.
C. Bacterial cells do not have a nuclear membrane whereas plant cells have.
D. None of the above

Q.105 Which of the following components of an animal cell is not observed in a bacterial cell?
Nucleus
B. Ribosomes
C. Cell membrane
D. DNA

Q.106 Eukaryotes can share which of the following structures with prokaryotes?
Cell wall
B. Golgi
C. Mitochondria
D. Nucleoid

Q.107 The presence of which of the following feature would best indicate a eukaryotic cell?
A. Cilia
B. Plasma membrane
C. Organelles
D. Ribosomes

Q.108 Which structure differentiates eukaryotic from a prokaryotic cell?
A. Ribosomes
B. Cell wall
C. Cell membrane
D. Golgi complex

Fluid mosaic model

Q.109 The structure of plasma membrane is mainly held together by:
A. Proteins
B. Carbohydrates
C. Phospholipids
D. All of the above

Q.110 Ions cannot cross which part of the plasma membrane?
Phospholipid bilayer
B. Channel proteins

C. Both A and B
D. None of the above

Q.111 Damage to one of the following immediately kills the cell whether it is prokaryotic or eukaryotic?
A. Nucleus
B. Mitochondria
C. Cell membrane
D. All of these

Q.112 What part of the cell serves as an intracellular highway?
A. ER
B. Golgi apparatus
C. Cell membrane
D. Mitochondria

Q.113 Glycolipids in the plasma membrane are located at?
A. Inner leaflet of the plasma membrane
The outer leaflet of the plasma membrane
C. Evenly distributed in the inner and outer leaflets
D. Varies to cell types

Q.114 Which statement is true about lipid bilayer of plasma membrane?
A. Permeable to large ionic polar molecule
B. Permeable to small ionic molecule
C. Permeable to only polar molecule
D. None of the above

Q.115 Which among the following defines GPI anchored proteins?
A. Integral proteins of the plasma membrane
B. Proteins that bind to ion gated channels in plasma membrane
C. Proteins which randomly bind to lipids of plasma membrane
D. Peripheral proteins of plasma membrane

Q.116 Secretion of insulin from beta cells of pancreas is an example of which membrane function?
A. Endocytosis
B. Phagocytosis
C. Exocytosis
D. Pinocytosis

Q.117 Glycolipids and glycoproteins have structural role in which matrix structure of animal and bacterial cell?
A. Extracellular
B. Intracellular
C. Both A and B
D. Plasma membrane

Q.118 Fatty acids move through the plasma membrane by which transport method?
Passive transport
B. Non-facilitated transport
C. Active transport
D. Facilitated transport

Q.119 What percentage of protein is found in the cell membrane?
A. 20-40
B. 40-50
C. 60-80
D. 90

Q.120 Cell membrane contains:
A. Lipoproteins and glycolipids
B. Phospholipids and proteins
C. Lipoproteins and phospholipids
D. All of these

Q.121 Fluidity of cell membrane is due to:
Lipid bilayer
B. Proteins partially and fully embedded in it
C. Phospholipids slide pass each other and proteins embedded in it in mosaic manner
D. All of these

Q.122 Cell membrane is chemically composed of lipids and_____.
A. Protein
B. Carbohydrates
C. Both A and B
D. None of these

Q.123 According to fluid mosaic model, the plasma membrane is composed of which of the following?
A. Phospholipid
B. Intrinsic proteins
C. Extrinsic proteins
D. All of these

Q.124 Distribution of intrinsic proteins in the plasma membrane is?
Random
B. Symmetrical
C. Asymmetrical
D. None of these

Q.125 Movement of the material across the cell membrane which does not requiring expenditure of metabolic energy is called?

A. Active transport
B. Passive transport
C. Diffusion
D. Both B and C

Q.126 Protein for cell membrane are made by:

Rough endoplasmic reticulum
B. Smooth endoplasmic reticulum
C. Nucleus
D. Mitochondria

Q.127 The fluid mosaic model of plasma membrane proposes that membranes are:

A. Solid
B. Semi-solid
C. Fluid
D. Liquid

Q.128 Which is not an example of transmembrane transport between different subcellular compartments?

A. Transport from the stroma into thylakoid space
B. Transport from the cytoplasm into the lumen of the endoplasmic reticulum
C. Transport from mitochondrial intermembrane space into the mitochondrial
D. Transport from the endoplasmic reticulum into the Golgi complex

Q.129 Which of the modes of cellular transport requires energy?

Active transport
B. Passive transport
C. Osmosis
D. Diffusion

Q.130 Why phospholipids are major part of the lipid bilayer in plasma membranes?

A. They have a nitrogenous base in the head region
B. They have fatty acids in the tail region
C. They are amphipathic in nature
D. They have a phosphate group in the head region

Q.131 Carbon dioxide passes through plasma membrane of cells by:

A. Active transport
B. Passive transport
C. Facilitated diffusion
D. Passive diffusion

Q.132 Which of the statement about cell membrane is not true?

A. It contains protein molecules embedded in lipid bilayer
B. It is a differentially permeable membrane
It contains charged pores thus ions being charged particles across cell membrane much easier than neutral particles
D. It may get infolded to engulf solid or liquid material

Q.133 What was the unit membrane model?

Plasma membrane has lipid bilayer
B. Proteins are embedded in the lipid bilayer
C. Plasma membrane has charged pores for transport of materials which cannot penetrate through the lipid bilayer
D. All of the above

Q.134 Transverse diffusion (flip-flop) is the movement due to which of the following molecules?

A. Cholesterol molecule
B. Phospholipid
C. Protein
D. Amino acid

Q.135 How is the ATP molecule used by the cell?

A. Synthesis of complex compounds
B. Active transport
C. Muscular contraction
D. All of these

Q.136 Diffusion is opposite to

A. Osmosis
B. Effusion
C. Affusion
D. None of these

Q.137 Which of the following substance is most favorable structural component of biological membranes?

A. Hydrophilic carbohydras
B. Hydrophobic fats
C. Both A and B
D. None of these

Q.138 Phosphatidylserine residues in the plasma membrane are located at?
A. The outer leaflet of the plasma membrane
B. Inner leaflet of the plasma membrane
C. Evenly distributed in the inner and outer leaflet
D. None of these

Q.139 Which one is not cytoplasmic body?
A. Mitochondria
B. Vacuole
C. Cell membrane
D. Ribosome

Q.140 Plasma membrane by volume is mainly made up of:
A. Proteins
B. Phospholipids
C. Glycoproteins
D. Carbohydrates

Q.141 It is not a role of cell membrane:
Initiation of cell division
B. Transport of material
C. Transmission of nerve impulse
D. Site for receptors

Q.142 Self-repairing is present in:
A. Cell wall
B. Cell membrane
C. Capsule
D. Slime

Q.143 The basic framework structure of all types of membranes re :
A. Glycolipids
B. Glycoproteins
C. Lipoproteins
D. Nucleoproteins

Q.144 Fibers of extracellular matrix are attached to_____plasma membrane.
A. Phospholipids
B. Glycolipids
C. Proteins
D. Carbohydrates

Q.145 Which of the statements correctly describes why ions are unable to cross the plasma membrane without channel proteins?
A. They are unable to cross the hydrophilic phosphate heads of the lipid bilayer
B. They are unable to cross the hydrophobic tails of the lipid bilayer
C. They are unable to cross both the phosphate heads and fatty acid chains of the lipid bilayer
D. They are too big to cross the plasma membrane

Q.146 Hydrophobic character in plasma membrane is exhibited by:
Fatty acids in tail
B. Phospholipid head
C. Intrinsic protein
D. Extrinsic protein

Out of Syllabus

Q.147 What would be the resolving power of the objective length in a microscope, if the eyepiece is of 10X and total magnification is 40X?
A. 4
B. 10
C.40
D. 400

Q.148 The function of the centrosome is?
A. Osmoregulation
B. Secretion
C. Protein synthesis
D. Formation of spindle fibres

Q.149 Centrioles are composed of how many triplets of microtubules?
A. 6
B. 9
C. 12
D. 15

Q.150 A chromosome in which a centromere stays at one end is called?
A. Metacentric
B. Telocentric
C. Acrocentric
D. All of these

Q.151 Who opposed the idea that cell is an empty space bounded by thick wall?
A. Lorenz oken
B. Schwann
C. Robert Hook
D. Rudolph Virchow

Q.152 The image represent by compound microscope is:
A. Real
B. Virtual inverted
C. Virtual
D. Real inverted

Q.153 Cellular organelles that interact with hydrogen peroxide are called?

A. Glyoxysomes
B. Lysosomes
C. Ribosomes
D. Peroxisomes

Q.154 Compound Microscope was first used by:
A.V. Leeuwenhoek
B. Pasture
C. Janssen and Hans
D. None of these

Q.155 The long unbranched, slender tubulin protein is called?
Microtubules
B. Intermediate filament
C. Actin
D. All of these

Q.156 Which of the following is not a tenet of the Cell Theory?
Cells carry genetic information in the form of DNA
B. Cells are the basic functional unit of life
C. Cells arise from pre-existing cells
D. All cells have membrane-bound organelles

Q.157 A cell with fully elastic wall is placed in hypertonic solution. What will not occur?
A. Change in cell size and shape
B. The whole cell will shrink
Cytoplasm shrinks from the cell wall and undergoes plasmolysis
D. Decries in cell size

Q.158 Which of the following is involved in the conversion of fats to carbohydrates by oxidation of fats?
A. Peroxisomes
B. Microsomes
C. Lysosomes
D. Glyoxysomes

Q.159 Magnifying power of electron microscope as compared to eye is?
A. 500 X
B. 100 000 X
C. 500 000 X
D. 250 000 X

Q.160 The human naked eye can differentiate between two points which are how much apart?
A. 1 mm
B. 0.1 mm
C. 2 dm
D. 1 dm

Q.161 The rigidity of leaves and younger parts of the plants is contributed by?
Microtubules
B. Mitochondria
C. Actin
D. Glyoxysomes

Q.162 The isolation of different cellular components to determine their chemical composition can be achieved by?
A. Cell differentiation
B. Chromatography
C. Cell fractionation
D. All of these

Q.163 Which of the following statement is incorrect about Glyoxysomes?
A. They contain enzymes which help in conversion of fatty acids into carbohydrate
B. They are abundant in soybeans but absent in pea
C. They are single membranous organelles
D. They are present throughout life of a plant and provide them with energy through Glyoxylate cycle

Q.164 What is the correct sequence of steps in cell fractionation?
A. Homogenization, centrifugation, separation
B. Separation, homogenization, centrifugation
C. Centrifugation, homogenization, separation
D. Homogenization, separation, centrifugation

Q.165 Size of eukaryotic cell is:
A. 10-20 µm
B. 10-100 µm
C. 100-200 µm
D. 20-40 µm

Q.166 Omnis cellula a cellula is hypothesized by:
A. Schleiden
B. Lorenz Oken
C. Louis Pasteur
D. Rudolph Virchow

Q.167 Cytoskeleton provides:
Motility, maintenance, synthesis
B. Maintenance, synthesis only
C. Movement. Maintenance only
D. None of above

Q.168 Cells have energy in the form of:

A. Chemical and electrical
B. Mechanical
C. Kinetic
D. Chemical

ANSWER KEY

CELL STRUCTURE AND FUNCTION

1	A	21	A	41	D	61	B	81	A	101	A	121	A	141	A	161	A
2	A	22	A	42	D	62	A	82	A	102	D	122	C	142	B	162	C
3	C	23	A	43	D	63	A	83	C	103	D	123	D	143	C	163	B
4	C	24	B	44	D	64	D	84	C	104	D	124	A	144	C	164	B
5	B	25	D	45	B	65	A	85	A	105	A	125	D	145	B	165	B
6	C	26	D	46	C	66	B	86	B	106	A	126	A	146	A	166	D
7	B	27	D	47	C	67	D	87	B	107	C	127	C	147	A	167	A
8	B	28	C	48	B	68	B	88	C	108	B	128	C	148	D	168	D
9	B	29	D	49	B	69	B	89	A	109	C	129	A	149	B		
10	D	30	C	50	C	70	C	90	B	110	A	130	C	150	B		
11	B	31	B	51	A	71	C	91	C	111	C	131	B	151	C		
12	A	32	C	52	D	72	B	92	C	112	C	132	C	152	D		
13	B	33	A	53	B	73	D	93	C	113	B	133	A	153	D		
14	C	34	B	54	D	74	D	94	A	114	D	134	B	154	A		
15	D	35	C	55	D	75	A	95	C	115	D	135	D	155	A		
16	A	36	C	56	D	76	D	96	A	116	C	136	D	156	A		
17	A	37	C	57	B	77	C	97	A	117	D	137	B	157	C		
18	D	38	C	58	D	78	C	98	C	118	A	138	B	158	D		
19	B	39	D	59	A	79	C	99	A	119	C	139	C	159	D		
20	A	40	A	60	D	80	A	100	D	120	D	140	B	160	B		

COORDINATION AND CONTROL/NERVOUS & CHEMICAL COORDINATION

Nervous system

Q.1 Which part of the nervous system controls actions like walking and running?
Somatic nervous system
B. Parasympathetic nervous system
C. Sympathetic nervous system
D. Peripheral nervous system

Q.2 Which of the following does not form part of the central nervous system?
A. Brain
B. Spinal cord
C. Brain stem
D. Spinal nerves

Q.3 Central nervous system consists of:
Brain and spinal cord
B. Cerebrum and spinal column
C. Spinal nerves only
D. Cerebellum and brain stem only

Q.4 Nervous system is absent in:
A. *Sycon*
B. *Euplectella*
C. Jelly fish
D. Both a and b

Q.5 Brachial plexus supply to:
A. Heart
B. Upper limbs
C. Lower limbs
D. Abdomen

Q.6 The response of the sympathetic nervous system is known as:
A. Autonomic response
B. Flight response
C. Somatic response
D. Reflex response

Q.7 Parasympathetic system causes:
Digestion of food
B. Accelerated heart beat
C. High metabolism
D. Rapid muscle movement

Q.8 One of the actions of the parasympathetic nervous system is?
A. Inhibits peristalsis
B. Sweat secretion
C. Constriction of Pupils
D. Dilates Bronchioles

Q.9 The autonomic nervous system functions?
A. Act on external environment
B. Regulate the internal environment
C. Transmit motor information to brain
D. None of these

Q.10 The abundant inhibitory neurotransmitter found in the CNS is called?
A. Gamma-glutamyltransferase
B. Gamma-linolenic acid
C. Gamma-Aminobutyric acid
C. None of these

Transmission of action potential between cells–synapse

Q.11 The main transmitter for synapses that lie outside the central nervous system is?
A. Adrenaline
B. Serotonin
C. Dopamine
D. Acetylcholine

Hormones

Q.12 What is the chemical nature of antidiuretic hormone?
It is a protein
B. It is an amino acid derivative
C. It is made from cholesterol
D. It is a lipoprotein

Q.13 When vasopressin is not secreted, the condition that occurs is called?
A. Acromegaly
B. Diabetes mellitus
C. Dwarfism
D. Diabetes insipidus

Q.14 Cortisol brings about an increase in blood glucose level mainly by its production from protein and _____.
Glucagon
B. Insulin
C. Estrogen
D. Progesterone

Q.15 Which disease is represented by excess MSH secretion?
Addison's
B. Alzheimer's
C. Parkinson's
D. Cohn's

Q.16 Primary hormone is:
A. STH
B. FSH
C. LH
D. Prolactin

Q.17 Which of the following is not a gonadotrophic hormone?
Estrogen
B. LH

C. FSH D. Prolactin

Q.18 In females testosterone is produced from:

A. Graffian follicle B. Adrenal cortex

C. Adrenal medulla D. None

Q.19 Vascularization in endometrium in induced by:

A. LH B. Estrogen

C. FSH D. ICSH

Q.20 Which of the following is taken from blood by the liver due to insulin?

A. Glucagon B. Glucose

C. Glucocorticoid D. All of these

Q.21 Deficiency in the production of parathormone causes which of the following disease?

A. Brittle bones B. Soft bones

C. Rickets D. Tetany

Q.22 Tetany is considered to be the result of a

A. Hyperglycemia B. Hypercalcemia

C. Hypoglycemia D. Hypocalcaemia

Q.23 Thyroid stimulating hormone is produced by:

A. Anterior lobe of thyroid B. Exterior lobe of pituitary gland

C. Posterior lobe of pituitary gland D. Anterior lobe of pituitary gland

Q.24 In humans placenta is established by:

A. Hypothalamus B. Progesterone

C. Thalamus D. Estrogen

Q.25 Deficiency of cortical hormones causes:

A. Cushing syndrome B. Addison's disease

C. Dwarfism D. Cretinism

Q.26 Goiter develops in which case?

A. Hyperthyroidism B. Hypothyroidism

C. Both A & B D. None of the above

Q.27 Thyroid hormone increases metabolic rate by:

A. Breakdown of nucleic acids B. Breakdown of vitamins

C. Breakdown of proteins D. Breakdown of carbohydrates

Q.28 Insufficient thyroxine in adults leads to:

A. Dwarfism B. Myxedema

C. Cretinism D. Grave's disease

Q.29 Which of the following is the effect of STH?

Growth of body B. Body metabolism

C. Glucose breakdown D. Heat production

Q.30 Decreased production of parathyroid leads to:

A. Increase in calcium levels B. Increase in vitamin B_{12}

C. Decrease in calcium levels D. Decrease in vitamin B_{12}

Q.31 It is not secreted by placenta:

A. Progesterone B. Estrogen

C. Human placental lactogen D. LH

Q.32 FSH is released from:

Pituitary gland B. Hypothalamus

C. Brain D. Blood

Endocrine glands

Q.33 The pea-shaped gland attached to the brain's hypothalamus is known as:

A. Iodopsin glands B. Thyroid gland

C. Rhodopsin glands D. Pituitary glands

Q.34 Thymus is found in human body_____.

A. In the medulla oblongata B. In the mediastinum if the upper thorax

C. Both A & B D. None

Q.35 Largest endocrine gland is_____.

Pancreas B. Pituitary

C. Thyroid D. Thymus

Feedback mechanism

Reflexes and reflex arc

Q.36 Which of these does not participate in reflex actions?
A. Motor neuron B. Effector
C. Pituitary D. Spinal cord

Q.37 Most reflex arcs are:
A. Monosynaptic reflex B. Polysynaptic reflex
C. Hemi Synaptic Reflex D. None of these

Q.38 The patellar reflex and the Achilles reflex are examples of:
Monosynaptic reflex B. Blood and water
C. Hemi Synaptic reflex D. Blood and fluid

Q.39 The term that should be last in the reflex sequence is:
A. Receptor B. Effector
C. Sensory neuron D. Motor neuron

Q.40 Reflex action is controlled by:
A. Peripheral nervous system B. Central nervous system
C. Autonomic nervous system D. Circulatory system

Q.41 The path taken by the nerve impulses in a reflex is called:
A. Nerve cell B. Reflex arc
C. Receptor cells D. Mixed nerve

Q.42 Reflex action is the simplest form of response in:
Higher Animals B. Smaller animals
C. Simpler animals D. Lowest animals

Q.43 Which part of the nervous system is responsible for controlling reflex action?
A. Corpus callosum B. Pons
C. Vermis D. Spinal cord

Q.44 Monosynaptic refers to the presence of how many chemical synapse/s?
1 B. 2
C. 3 D. 4

Q.45 All of the following about reflex action are true except:
It is voluntary B. It is found in higher animals
C. It is involuntary D. All of these

Q.46 Which of the following is an example of superficial reflex?
A. Ankle jerk B. Knee jerk
C. Abdominal reflex D. Both A & B

Q.47 Reflex arc comprises of:
A. Motor nerve B. Sensory nerve
C. Both A and B D. Mixed nerve

Q.48 Which type of reflex affect inner organs?
A. Autonomic reflex arc B. Somatic reflex arc
C. Both A and B D. None of these

Q.49 A neural pathway that controls an action reflex is called:
A. Nerve cell B. Reflex arc
C. Receptor cells D. Mixed nerve

Q.50 Which of the following is made up of an afferent pathway from a receptor and an efferent pathway to an effector?
A. Nerve cell B. Reflex arc
C. Receptor cells D. Mixed nerve

Q.51 An involuntary and nearly instantaneous movement in response to a stimulus is called:
Reflex B. Reflex arc
C. Neuron D. Synapse

Q.52 The shortest way by which impulses travel from the receptor to the effector is called?

A. Synapse
B. Reflex actin
C. Reflex arc
D. Voluntary response

Q.53 The stretch reflex, the Golgi tendon reflex, the crossed extensor reflex and the withdrawal reflex are included in:
A. Stretch reflex
B. Spinal reflex
C. Golgi tendon reflex
D. Crossed extensor reflex

Levels of the spinal cord and its main functions

Q.54 Gray matter is primarily composed of:
A. Axons
B. Synapse
C. Neuron somas
D. None of these

Q.55 The spinal cord is part of:
A. Brain
B. Central nervous system
C. Peripheral nervous system
D. Somatic division

Q.56 What is the length of spinal cord?
A. 10-20 cm
B. 20-30 cm
C. 40-50 cm
D. 60-90 cm

Q.57 The spinal cord and spinal nerve roots are wrapped within three layers called:
A. Pleura
B. Meninges
C. Synapse
D. None of these

Q.58 The spinal cord acts as a link between body parts and_____.
Brain
B. Skull
C. Heart
D. Lungs

Q.59 The material in brain and spinal cord contains cell bodies and dendrite of nerve cells is:
A. White matter
B. Blue matter
C. Brown matter
D. Gray matter

Q.60 Choose the region of spinal cord:
A. Cervical
B. Thoracic
C. Lumbar
D. All of these

Q.61 The spinal cord is continuous with which part of the brain?
A. Cerebrum
B. Medulla oblongata
C. Cerebellum
D. Pons

Q.62 In the peripheral nervous system, the nerves that arise from spinal cord and brain are called?
Frontal nerves
B. Temporal nerves
C. Cranial nerves
D. Spinal nerves

Q.63 Out of 31 pairs of spinal nerves, how many pairs of coccygeal nerves are there?
1
B. 5
C. 10
D. 12

Q.64 The ventral root of the spinal cord contains axons of:
A. Sensory neuron
B. Motor neuron
C. Mixed neuron
D. Spinal neuron

Q.65 Out of 31 pairs of spinal nerves, how many pairs of lumbar nerves are there?
A. 5
B. 10
C. 15
D. 20

Q.66 The medulla oblongata is found on which of the following regions?
A. Top of brain
B.
C. Behind the hypothalamus
D. Behind the thalamus

Q.67 Out of 31 pairs of spinal nerves, how many pairs of sacral nerves are there?
A. 5
B. 10
C. 12
D. 15

Q.68 The dorsal root of spinal cord is:
Sensory
B. Motor
C. Mixed
D. All A, B and C are correct

Q.69 White matter has:
A. Myelinated sheath
B. Non-myelinated sheath

C. Myelinated neuron
D. Non-myelinated neuron

Q.70 The shape of grey matter is:
A. Spherical
B. Mosquito
C. Butterfly
D. Rectangular

Q.71 The spinal cord is divided into how many different regions?
A. 2
B. 6
C. 4
D. 8

Q.72 How many laminae present in the spinal cords grey matter?
A. 10
B. 8
C. 12
D. 9

Q.73 White matter is primarily composed of:
Axons
B. Synapse
C. Neuron somas
D. None of these

Q.74 Out of 31 pairs of spinal nerves, how many pairs of thoracic nerves are there?
A. 8
B. 10
C. 12
D. 15

Q.75 Number of pairs of spinal nerves are:
A. 31
B. 12
C. 13
D. None

Q.76 What is the most important structure between body and brain?
A. Neck
B. Spinal cord
C. Blood vessels
D. Skeleton

Parts of the brain with their main functions

Q.77 Regulation of_____is not a function of hypothalamus in humans.
A. Body temperature
B. Blood water potential
C. Urine osmolarity
D. Circadian rhythms & emotions

Q.78 The part of forebrain which lies below the cerebrum is?
A. Hypothalamus
B. Thalamus
C. Cerebellum
D. Cerebral cortex

Q.79 Which portion of the brain is primarily responsible for transmitting the information to other parts of the nervous system?
A. White matter
B. Gray matter
C. Medulla
D. All A, B and C

Q.80 The largest part of forebrain which controls the intelligence, emotions and skeletal muscles is classified as?
A. Hypothalamus
B. Thalamus
C. Cerebellum
D. Cerebrum

Q.81 Sensory areas that receive impulses from the skin are contained by which of the following?
A. Frontal lobe
B. Parietal lobe
C. Occipital lobe
D. Temporal lobe

Q.82 Breathing and heart rate is controlled by which of these?
A. Corpus callosum
B. Hippocampus
C. Medulla
D. Thalamus

Q.83 Which of the following is required for learning?
A. Medulla
B. Thalamus
C. Hypothalamus
D. Hippocampus

Q.84 Which of the followings is related to hypothalamus?
A. Sleep-wake cycle
B. Water balance
C. Thermoregulation
D. All of these

Q.85 Midbrain is also known as:
A. Pons
B. Mesencephalon
C. Medulla
D. All of these

Q.86 It is not correct about cerebrospinal fluid:
A. Present between meninges
B. Provides protection

C. Fills central canal of spinal cord
D. pH is below 7

Q.87 Brain part that coordinates skeletal muscles:
A. Cerebrum
B. Cerebellum
C. Amygdala
D. Medulla

Q.88 It acts as a relay center connecting hindbrain with the forebrain:
A. Forebrain
B. Midbrain
C. Hindbrain
D. Limbic system

Q.89 Which of the following is not the function of medulla oblongata?
A. Breathing
B. Swallowing
Connection between brain and spinal cord
D. Heart beat

Q.90 Which is involved in long term memory?
A. Cerebrum
B. Hypothalamus
C. Hippocampus
D. Thalamus

Q.91 Which of these is involved in coordinated movements of the body?
Cerebellum
B. Cerebrum
C. Medulla
D. Pons

Q.92 The diencephalon comprises of:
A. Pons and medulla
B. Thalamus and limbic system
C. Pons and medulla
D. Hypothalamus and limb

Q.93 The brain is protected by:
A. Sacrum
B. Cranium
C. Humerus
D. Scapula

Q.94 The cerebrospinal fluid is similar in composition to_____.
A. Amniotic fluid
B. Pleural fluid
C. Synovial fluid
D. Blood plasma

Q.95 Which fluid bathes the neurons of brain and spinal cord and provides cushions against the bumps and jolts?
A. Blood
B. Interstitial fluid
C. Intracellular fluid
D. Cerebrospinal fluid

Q.96 The brain is mainly divided into_____parts.
A. 2
B. 3
C. 4
D. 5

Q.97 The embryonic hindbrain gives rise to which structures in brain?
A. Diencephalon
B. Midbrain
C. Cerebrum and basal ganglia
D. Cerebellum, pons and medulla oblongata

Q.98 The communication between the two hemispheres is the function of:
Corpus callosum
B. Hindbrain
C. Cerebellum
D. Cerebrum

Q.99 The composition of brain stem is:
A. Spinal cord, axon, vertebra
B. Cerebrum, cerebellum, pons
C. Medulla, pons, midbrain
D. Thalamus, midbrain, pons

Q.100 Which lobe is involved in short-term memory, speech, musical rhythm and some degree of smell recognition?
A. Frontal
B. Parietal
C. Temporal
D. Occipital

Q.101 Which of the following is involved in sleeping and waking?
A. Thalamus
B. Brain stem
C. Hypothalamus
D. Cerebellum

Q.102 Which part of the brain connects the cerebrum with the spinal cord?
A. Forebrain
B. Cerebrum
C. Cerebellum
D. Brainstem

Q.103 The functional parts of forebrain are:
A. Thalamus and limbic system
B. Thalamus and cerebrum

C. Cerebrum, limbic system and thalamus D. Cerebrum and limbic system

Q.104 The brain portion that is reduced in humans is:
A. Forebrain B. Midbrain
C. Hindbrain D. Limbic system

Q.105 The auditory relay center is found in:
A. Corpus callosum B. Hindbrain
C. Forebrain D. Midbrain

Q.106 Hindbrain includes:
Medulla, pons and cerebellum. B. Medulla, cerebellum and hypothalamus.
C. Cerebellum, medulla and brainstem. D. All of the above.

Q.107 Which part increase the surface area of forebrain?
Cerebral cortex B. Infundibulum
C. Corpus callosum D. None of the above

Q.108 Which brain part is responsible for our basic and primitive emotions?
Limbic system B. Thalamus
C. Hypothalamus D. Cerebrum

Q.109 The thalamus and the hypothalamus are located in which region of the brain?
A. Brain stem B. Cerebrum
C. Cerebellum D. Diencephalon

Q.110 The left side of the body is controlled by:
A. Left cerebral hemisphere B. Right cerebral hemisphere
C. Hippocampus D. Corpus callosum

Q.111 The lighter, inner section of the brain is called:
White matter B. Gray matter
C. Reflex arc D. Medulla

Q.112 The brain area responsible for screening all incoming sensory data is:
A. Hypothalamus B. Thalamus
C. Cerebellum D. Cerebral cortex

Q.113 The brain part involved in conscious activities is:
Cerebral cortex B. Limbic system
C. Brain stem D. Thalamus

Q.114 Medulla, pons and cerebellum are found in which brain part?
A. Corpus callosum B. Midbrain
C. Forebrain D. Hindbrain

Q.115 The darker, outer portion of the brain is called:
A. White matter B. Gray matter
C. Reflex arc D. Medulla

Q.116 Central nervous system is present in:
A. Asymmetrical animals B. Bilaterally symmetrical animals
C. Radial symmetrical animals D. Both B and C

Nerve impulse

Q.117 Terminal branches of axons end in:
A. Myelin sheath B. Dendrites of the next neuron
C. Synaptic cleft D. Postsynaptic membrane

Q.118 Resting potential in nerve cells is maintained by:
A. Sodium pumps B. Potassium pumps
C. Calcium pumps D. None of the above

Q.119 What is the condition of the neurons under resting membrane potentials?
A. Inner surface of neuron is more positive
B. Both of these surfaces are equally positive
C. Outer surface of neuron is more positive
D. All of these

Q.120 Resting membrane potential is:
A. -80 mv B. -70 mv
C. 50 mv D. -85 mv

Q.121 What is the approximate value of the active membrane potential?

A. 0.17V
B. -50mv
C. 0.05 V
D. Both A and B

Q.122 In myelinated neurons the impulse jumps from node to node, what is this transmission called?

A. Myelinated impulse
B. Jumping impulse
C. Saltatory impulse
D. All of these

Q.123 Nerve cells transmit messages faster when they have:

A. Many dendrites
B. Myelinated axons
C. Non-myelinated axons
D. Many genes

Q.124 The sites where nerve impulse is transmitted from the nerve endings to the skeleton muscle cell membranes?

A. Z discs
B. Dendrites
C. Sarcomeres
D. Neuromuscular junctions

Q.125 Repolarization is restored when:

A. Sodium ions diffuse in
B. Potassium diffuses out
C. Potassium diffuses in
D. Sodium diffuses out

Q.126 Acetylcholine is:

A. Enzyme
B. Metabolic intermediate
C. PNS neurotransmitter
D. CNS neurotransmitter

Steps involved in nervous coordination

Q.127 Stretch receptors are present in _____ of the tetrapods.

A. Hepatic arteries
B. Carotid arteries
C. Renal arteries
D. Pulmonary arteries

Q.128 Stimulus of deep pressure is detected by:

A. Pacinian corpuscles
B. Krause end bulb
C. Meissner's corpuscles
D. Merkel's endings

Q.129 Stretch receptors are present in_____of tetrapods.

A. Muscles only
B. Organs only
C. Both A and B
D. Bone only

Q.130 Receptors are:

A. Brain
B. Muscle and glands
C. Eye and nose
D. Nerve cells

Q.131 Which types of the receptors are present in the ear?

A. Chemoreceptors
B. Photoreceptors
C. Thermoreceptors
D. Mechanoreceptors

Q.132 After leaving the spinal cord, the spinal nerve gets divided into nerve fibers, connecting to which of the following?

A. Receptors
B. Effectors
C. Midbrain
D. All parts of the body

Q.133 The sensory neuron has pain-sensitive endings in_____.

A. Hypothalamus
B. Bones
C. Skin
D. Muscles

Q.134 Synaptic vesicles discharge which of the following chemical at the neuromuscular junction?

A. Acetylcholine
B. Adrenaline
C. Estradiol
D. Testosterone

Q.135 Components of neural arc:

A. 5
B. 6
C. 7
D. 4

Neurons (Structure and Types)

Q.136 One of the functions of the neuroglial cells is to protect and support which of the following?

A. Nephrons
B. Myoid cells
C. Neurons
D. none of these

Q.137 The gap in the myelin sheath between adjacent Schwann cells is called?
A. Dendrite B. Soma
C. Node of Ranvier D. Stroma

Q.138 It carries impulses away from neuron:
Axon B. Dendrites
C. Soma D. Dendron

Q.139 The concentrations of the cell bodies of the neurons called?
A. Axons B. Introns
C. Ganglia D. Dendrites

Q.140 _____ carry information towards the soma of neuron.
Dendrites B. Axon
C. Perikaryon D. Both A and B

Q.141 Staining part of neuron is called:
A. Axon B. Dendrites
C. Cell body D. A and C

Q.142 The neurons responsible for converting various external stimuli that come from the environment into corresponding internal stimuli is called:
A. Motor B. Sensory
C. Both A and B D. Mixed

Q.143 Interneuron is also known as:
Relay neuron B. Sensory neuron
C. Mixed neuron D. Synapse

Q.144 Which of the following statement about neuron is incorrect?
A. They not only conduct impulses but also generate them
B. They are not the only cellular component of nervous system
C. They may show limited regenerative capabilities
Like all the living cell, when they mature and divide to form similar cells

Q.145 Motor neuron are multipolar but:
Less branched B. More branched
C. No branched D. None

Q.146 Node of Ranvier are also known as:
A. Myelin sheath B. Neurofibril node
C. Myofibril node D. None

Q.147 Nicotine may induce:
A. Vomiting B. Diarrhoea
C. Tetanus D. Both A & B

Q.148 A motor neuron and all the muscle fibers it supplies is called:
Motor unit B. Neuromuscular junction
C. Neural unit D. Microtubules

Q.149 The neurons that interpret and receive information and stimulate motor neurons are what type of neuron?
A. Sensory neurons B. Motor neurons
C. Interneurons D. Rotator neurons

Q.150 Which is not a neurotransmitter?
A. Nor-epinephrine B. L-Dopa
C. Dopamine D. None

Q.151 Which form brain and spinal cord?
A. Sensory neurons B. Motor neurons
C. Interneurons D. Dendrites

Q.152 Cytoplasm and ribosomes are present in which part of neuron?
A. Dendrite B. Cell body
C. Axon D. All of these

Positive feedback mechanism

Q.153 Which of the following is not an example of positive feedback?

A. A forest fire slowly expands outward, which provides it with even more fuel to bum.
B. During childbirth, oxytocin creates a stimulus which causes the hypothalamus to release more oxytocin
C. As more buffalo begin to run in a herd, the overall level of panic increases. This results in even more buffalo running.
As blood calcium levels increase, parathyroid hormone (PTH) is reduced.

Negative feedback mechanism

Q.154 One of these processes does not happen as a result of negative feedback mechanism in humans?

A. Secretion of insulin by pancreas in response to increased blood glucose concentration.
B. Secretion of oxytocin in response to dilation of cervix during childbirth.
C. Secretion of glucagon by pancreas in response to decreased blood glucose concentration.
D. All of the above.

Out of Syllabus

Q.155 When cocaine is used as a stimulant, it interferes with the CNS at the reuptake of which hormone?

A. Testosterone
B. Dopamine
C. Serotonin
D. Adrenaline

Q.156 Experience has no influence on which type of behavior?

Kinesis
B. Imprinting
C. Habituation
D. Insight learning

Q.157 Which of the following is not a function of Abscisic acid?

A. Inhibits stem and root growth during drought.
B. Closing of stomata during wilting.
C. Inhibits flowering in long-day plants
Promotes bud initiation during growth season

Q.158 Which statement is incorrect about ethylene production?

Climacteric is burst of respiratory activity in fruit ripening
B. It is associated with ethane production
C. It helps in fruit ripening
D. It helps in fruit set

Q.159 The promoter of leaf senescence is?

A. Gibberellins
B. Cytokinins
C. Auxins
D. Abscisic acid

Q.160 Disorders caused due to disturbance in nerve impulse generation and transmission is called?

A. Nerve impulse disorder
B. Nervous disorder
C. Transmission disorder
D. Functional disorder

Q.161 A crawling snail when we tab glass retract into its shell, tapping has no effect. This form of learning is:

Habituation
B. Imprinting
C. Insight learning
D. Latent learning

Q.162 Most of brain tumors are caused by:

A. Mutation in DNA of proteins involved in glycolysis
Mutation in DNA of proteins involved in cell cycle regulation
C. Mutation in DNA of proteins involved in fatty acid metabolism
D. Mutation in DNA of proteins involved in extracellular transport

Q.163 Type of behavior that evolves during life cycle of individual:

Learning
B. Instinctive
C. Both A and B
D. None

Q.164 Brain tumors are due to:

Neuroglial cells
B. Neurons
C. Epithelial cells
D. Connective tissues

Q.165 Memory loss occurs in which disease?

A. Parkinson
B. Alzheimer

C. Epilepsy D. All of these

Q.166 In which condition, brain produced more impulses than normal:

Epilepsy B. Alzheimer's disease

C. Parkinson's disease D. Lou Gehrig's disease

Q.167 Commercial use of cytokinins:

A. Keeping flower fresh B. Keeping lettuce fresh

C. Break seed dormancy D. All of these

Q.168 Which plant hormone promotes abscission?

A. Auxins B. Gibberellins

C. Cytokinins D. Abscisic acid

ANSWER KEY

COORDINATION AND CONTROL/NERVPUS AND CHEMICAL COORDINATION

1	A	21	D	41	B	61	B	81	B	101	C	121	C	141	C	161	A
2	D	22	D	42	A	62	A	82	C	102	D	122	C	142	B	162	B
3	A	23	D	43	D	63	A	83	D	103	C	123	B	143	A	163	A
4	D	24	B	44	A	64	B	84	D	104	B	124	D	144	D	164	A
5	B	25	B	45	A	65	A	85	B	105	D	125	B	145	A	165	B
6	B	26	C	46	C	66	B	86	D	106	A	126	C	146	D	166	A
7	A	27	D	47	C	67	A	87	B	107	A	127	B	147	D	167	D
8	C	28	B	48	C	68	A	88	B	108	A	128	A	148	A	168	D
9	B	29	A	49	B	69	C	89	C	109	D	129	C	149	C		
10	C	30	C	50	B	70	C	90	C	110	B	130	C	150	B		
11	D	31	D	51	A	71	C	91	A	111	A	131	D	151	C		
12	A	32	A	52	C	72	D	92	B	112	D	132	B	152	B		
13	D	33	D	53	B	73	A	93	B	113	A	133	C	153	D		
14	A	34	B	54	C	74	C	94	D	114	D	134	A	154	B		
15	A	35	A	55	B	75	A	95	D	115	B	135	A	155	B		
16	D	36	C	56	C	76	B	96	B	116	B	136	C	156	A		
17	A	37	B	57	B	77	D	97	D	117	C	137	C	157	D		
18	B	38	A	58	A	78	B	98	A	118	D	138	A	158	A		
19	B	39	B	59	D	79	C	99	C	119	C	139	C	159	D		
20	B	40	B	60	D	80	D	100	C	120	B	140	A	160	B		

DIVERSITY AMONG ANIMALS

Characteristics and diversity among the animals (animal phyla, characteristics)

Q.1 The fate of each blastomere is foretold. What will be the cleavage?
A. Spiral and indeterminate
B. Radial and indeterminate
C. Radial and indeterminate
D. Spiral and determinate

Q.2 All of the following coelenterates show alternation of generation except:
Hydra
B. *Obelia*
C. *Aurelia*
D. All of these

Q.3 Which system is present in nematodes?
A. Sac - like digestive system
B. Circulatory system
C. Respiratory system
D. Tube - like digestive system

Q.4 These give rise to nematocysts in Cnidaria:
Cnidocytes
B. Gastrozooids
C. Hydrozoids
D. Mesoglea

Q.5 Typically spiders' blood is blue due to the presence of which of the following?
A. Haemoglobin
B. Haemoerythrin
C. Haemocyanin
D. Both B and C

Q.6 80% of the food of sponges consists of which of the following?
Detrital organic particles
B. Phytoplanktons
C. Zooplankton and small animal
D. All of these

Q.7 Pseudocoelom develops from which of the following?
A. Blastopore
B. Plastoquinone
C. Splitting of mesoderm
D. Blastocoel

Q.8 Exoskeleton of coelenterates is made up of which of the following material?
Calcium
B. Silica
C. Chitin
D. Lignin

Q.9 Which of the following use book lungs to breathe?
A. Earthworm
B. Scorpions
C. Fish
D. All of these

Q.10 Sub-kingdom parazoa includes:
A. Annelida
B. Cnidaria
C. Porifera
D. Protozoa

Q.11 It is not a parasite:
A. Annelida
B. Nematoda
C. Porifera
D. Platyhelminthes

Q.12 Proglottids are present in:
A. Dugesia
B. *Schistostoma*
C. *Fasciola*
D. *Taenia*

Q.13 Respiratory pigment present in Molluscs is:
A. Hemoglobin
B. Haemocyanin
C. Myoglobin
D. None of the above

Q.14 Deuterostomes have:
A. Spiral cleavage
B. Mouth develop form blastopore
Mesoderm is formed form developing gut
D. Schizocoelous

Q.15 Malpighian tubules are characteristic of:
A. Earth worm
B. Leech
C. Cockroach
D. Star fish

Q.16 In which era mammals dominated?
A. Paleozoic
B. Mesozoic
C. Cenozoic
D. Proterozoic

Q.17 Gut of acoelomates develop from:
A. Mesoderm
B. Endoderm
C. Mesoglea
D. Ectoderm

Q.18 ***Periplaneta*** **belongs to which phylum?**
A. Mollusca B. Annelida
C. Echinodermata D. Arthropoda

Q.19 **The survival of an animal depends upon its ability to take some_____from its environment?**
A. Hydro carbons B. Organic molecules
C. Chemical D. Inorganic molecules

Q.20 **Free living example of Platyhelminthes is?**
Dugesia B. *Fasciola*
C. *Taenia* D. All of these

Q.21 **Chitinous Setae are the locomotary organs of annelids which are present on?**
A. Cell wall B. Prostomium
C. Nucleolus D. Parapodia

Q.22 **Polychaeta have which of the following organs?**
A. Tentacles B. Palps
C. Eyes D. All of these

Q.23 **Which is not the characteristic of triploblasts?**
They may be coelomate pseudocoelomate or acoelomate
B. They are included in grade bilateria
C. All of them have digestive system
D. All of them have blood vascular system

Q.24 ***Ascaris Lumbericoides*** **is a:**
Intestinal parasite B. Blood parasite
C. Stomach parasite D. Ureteral parasite

Q.25 **In which of the following mesoderm is derived from wall of archenteron:**
A. Protostomes B. Diploblastic
C. Deuterostomes D. Acoelomates

Q.26 **Class Aves has advanced:**
A. Pons B. Medulla
C. Cerebrum D. Cerebellum

Q.27 **An example of largest invertebrate:**
Squid B. Spider
C. Octopus D. *Armillaria*

Q.28 **In which of the following animals, placenta is formed?**
A. Prototherians B. Metatherians
C. Eutherians D. All of these

Q.29 **Circulatory system is open type in all of the following except?**
A. Arthropoda B. Gastropoda
C. Pelecypoda D. Cephalopoda

Q.30 **Which of the following is correct about insects?**
A. Four pair of legs B. Six jointed legs
C. Thorax is not present D. Abdomen is attached to head

Q.31 **Sperms released in water are carried to the mesenchyme in sponges by?**
A. Stipules B. Spicules
C. Spines D. Amoeboid cell

Q.32 **The organs of locomotion in annelids are which of the following?**
A. Muscles B. Hydrostatic skeleton
C. Parapodia D. Bones

Q.33 **Division of labor is not seen in which of these multicellular animals?**
Hydra B. Euplectella
C. Blood fluke D. Tapeworm

Q.34 **Birds are different from mammals in all except:**
A. They have feathers instead of hairs B. They are warm blooded
C. They lay hard shell eggs D. They have syrinx as voice organ

Q.35 **Mammary glands are present in:**
A. Eutheria B. Metatheria

C. Prototheria D. All of these

Q.36 Which of the following has lungs?

A. Shark B. Dipnoi

C. Rays D. None

Q.37 Placenta is related to:

Sheep B. Spiny ant eater

C. Duck bill platypus D. Kangaroo

Q.38 Main difference between hemichordata and chordata lies in:

A. Possession of body cavity B. Number of germinal layers

C. Nervous system D. Body symmetry

Q.39 Pseudocoelom is a characteristic feature of which of the following?

A. Coelenterates B. Platyhelminthes

C. Annelids D. Aschelminthes

Q.40 Polymorphism is a characteristic feature of which group of animals?

Cnidaria B. Annelida

C. Platyhelminthes D. Echinodermata

Q.41 The single main opening of the sponge cavity is known as?

A. Ostia B. Osculum

C. Sponogocoel D. both a and b

Q.42 All the animals of the grade radiata are which of the following?

A. Unicellular B. Triploblastic

C. Both a and b D. Diploblastic

Q.43 The only aquatic arthropods:

Crustaceans B. Arachnida

C. Myriapods D. Gastropods

Q.44 Cnidaria is characterized by which of the following?

A. Tissue level of organization B. Coelenteron

C. Nematoblasts D. All of these

Q.45 These animals have only left aortic arch in their circulatory system.

A. Crocodiles and mammals B. Birds and mammals.

C. Mammals only D. All of the above

Q.46 The animals in which coelom is formed due to splitting of mesoderm are known as which of the following?

A. Pseudocoelom B. Schizocoelous

C. Amphicoelous D. Enterocoelous

Q.47 *Mytilus* and *Anodonta* are example of which type of Molluscs?

A. Gastropods B. Bivalves

C. Cephalopods D. None of the above

Q.48 Which of the following is not a characteristic feature of tapeworm?

Each body segment has two sets of male and female reproductive organs

B. The digestive tract develops from endodermal cells in the embryo

C. The body can be cut into two parts, which are mirror images of each other, in one plane only

D. None of the above

Q.49 The skeleton of the sponges is in the form of variously shaped needle like structures called:

A. Stipules B. Brails

C. Spine D. Spicules

Q.50 *Euplectella* belongs to phylum

Porifera B. Ctenophora

C. Echinoderm D. None of the above

Q.51 All of the following are true for Platyhelminthes except?

A. Triploblastic B. Bilateral symmetry

C. Coelomate D. Flatworms

Q.52 The larvae of which of these animals resemble those of chordates?

A. Starfish
B. Cuttlefish
C. Catfish
D. Butterfly

Q.53 Inner layers of the sponges are made up of which of the following?
A. Pinacocytes
B. Choanoderm
C. Pinacoderm
D. Choanocytes

Q.54 The animals which belongs to division Radiata is/are?
A. Triploblastic
B. Diploblastic
C. Radioblast
D. All of these

Q.55 The sponges in which sperms develop first are included in the category of?
A. Peritandrous
B. Protandrous
C. Protandrous
D. Protandrous

Q.56 Lack of symmetry is identified in which group of animals?
A. Protozoa
B. Porozoa
C. Parazoa
D. Coelomates

Q.57 Midgut in cockroach is a short narrow tube called which of the following?
Hepatic caeca
B. Rectum
C. Stomach
D. Gizzard

Q.58 Which of the following statement about chordates is true?
A. They are protostomes
B. All chordates are vertebrates
C. They lack a coelom
D. Their anus is formed from the blastopore

Q.59 Centipedes belong to class_____of arthropoda.
A. Arachnida
B. Insect
C. Cephalopoda
D. Myriapoda

Q.60 Which one is not the characteristic of Kingdom Animalia?
A. All animals are ingestive heterotrophs
B. It is largest kingdom
C. All animals are eukaryotes
All animals develop from the dissimilar gametes

Q.61 What is the origin of the acoelomate gut?
A. Ectodermal
B. Mesodermal
C. Endodermal
D. None of these

Q.62 Which of the following animals is not a protostome?
A. Cockroach
B. Butterfly
C. Sting ray
D. Earthworm

Q.63 Radial symmetry is found in which of the following organisms?
A. Coelenterata and Platyhelminthes
B. Arthropoda and Mollusca
C. Porifera and Coelenterata
D. Coelenterata and Echinodermata

Q.64 Which one of the following animals is not a tetrapod?
A. Snake
B. Cow
C. Mantis shrimp
D. Human

Q.65 These animals have three germinal layers but no coelom:
Flat worms
B. Round worms
C. Cnidarians
D. Chordates

Q.66 Which of the following are motile zooids in cnidarians?
A. Polyps
B. Medusae
C. Both A and B
D. None of these

Q.67 The name animal is derived from what word?
A. Aname
B. Anima
C. Anemia
D. None of these

Q.68 Which of the following are the first groups of invertebrates which have developed a closed circulatory system?
A. Nematodes
B. Annelids
C. Arthropods
D. Molluscs

Q.69 Which statement is true about gastropods?
Body is bilaterally symmetrical

B. Both aquatic and land species breathe through lungs
C. Triploblastic and acoelomates
D. All of the above

Q.70 Excretory system of Platyhelminthes consists of which of the following?
A. Nephridia
B. Flame cells
C. Malpighian tubules
D. Nephrons

Q.71 Which of the following organism has an eel like body?
A. Chondrichthyes
B. Osteichthyes
C. Cyclostomata
D. Both A and B

Q.72 Which combination of class and its description is correct?
Osteichthyes - a bony endoskeleton & gills covered by operculum
B. Reptilia - left aortic arch & internal fertilization
C. Nematoda - triploblastic & acoelomates
D. Cephalopods - dorsal nerve cord & bilateral symmetry

Q.73 *Ascaris* is characterized by which of the following?
A. Presence of true coelom and metamerism
B. Absence of tine coelom and metamerism
Presence of true coelom but the absence of metamerism
D. Absence of true coelom but the presence of metamerism

Q.74 Garden snail belongs to which class of Mollusca?
Gastropoda
B. Cephalopoda
C. Myriapoda
D. None of them

Q.75 The Venus flower basket is also known as which of the following?
A. *Sycon*
B. *Leucosolenia*
C. *Spongilla*
D. Euplectella

Q.76 S-band locomotion is characteristically seen in which of the following?
A. Bony fish
B. Fish like mammals
C. Cartilaginous fish
D. All of these

Q.77 Which group of animals is not a deuterostome?
Echinodermata
B. Arthropoda
C. Mollusca
D. Both A and C

Q.78 One similarity between annelids and arthropods:
A. Closed circulatory system
B. Nitrogenous waste product is uric acid
C. Ventral nerve cord
D. None of the above

Q.79 The pores through which water enters the sponge body are called:
A. Osculum
B. Ostia
C. Operculum
D. None of the above

Q.80 All of the following coelenterates show alternation of generation except?
Hydra
B. *Obelia*
C. *Aurelia*
D. All of these

Q.81 Both radial and bilateral symmetry is found in which of the following phylum?
A. Protozoa
B. Porifera
C. Echinodermata
D. All of these

Q.82 Phylum porifera is classified based on which of the following characteristic?
A. Branching
B. Symmetry
C. Spicules
D. Reproduction

Q.83 The outer body wall of sponges is made up of which cells?
A. Choanocytes
B. Pinacocytes
C. Mesenchymal cells
D. Cnidocytes

Q.84 Shell of egg is leathery in appearance in which of the following?
A. Amphibians
B. Prototherians
C. Birds
D. Reptiles

Q.85 Which of following system is segmentally arranged in annelids?

Excretory system
B. Digestive system
C. Circulatory system
D. Nervous system

Q.86 One of these animals is a prototherian:
A. Green plants
B. Green algae
C. Animals
D. Both A and B

Q.87 The only aquatic arthropods:
Crustaceans
B. Arachnids
C. Myriapods
D. Gastropods

Q.88 In sponge's fertilization takes place in which of the following?
A. Ectoderm
B. Endoderm
C. Uterus
D. Mesenchyme

Q.89 Aschelminthes is also known as which of the following?
A. Protozoans
B. Eumetazoa
C. Protoctista ancestors
D. Nematodes

Q.90 Which of the following are believed to have common origin with annelids?
A. Nematodes
B. Arthropods
C. Molluscs
D. None of these

Q.91 Which of the following combinations is incorrect?
A. Nematoda - roundworms, pseudocoelomate
B. Arthropoda - coelom present, bilateral symmetry
C. Platyhelminthes - gastrovascular cavity, flatworms, acoelomate
D. Calcarea - gastrovascular cavity, coelom present

Q.92 Which statement correctly describes the alimentary canal of Hydra?
A. The alimentary canal is formed from the endodermal cells
B. The alimentary canal has a single opening
C. The alimentary canal is sac-like
D. All of these

Q.93 Nematoda is a taxon of the ranking:
A. Kingdom
B. Sub-kingdom
C. Phylum
D. Class

Q.94 Of the following which one is not included in Protostomes?
A. Arthropods
B. Hemichordates
C. Annelids
D. Molluscs

Q.95 Flame cells in *Planaria* constitute the:
A. Mechanoreceptors
B. Reproductive system
C. Respiratory system
D. Excretory system

Q.96 All the animals of the grade radiata are which of the following?
A. Unicellular
B. Triploblastic
C. Both A and B
D. Diploblastic

Q.97 Which of the following is not found in series proterostomia?
A. Annelida
B. Mollusca
C. Arthropoda
D. Echinodermata

Q.98 The outer body wall of sponges is made up of which cells?
A. Choanocytes
B. Pinacocytes
C. Mesenchymal cells
D. Cnidocytes

Q.99 Water vascular system is present in coelom in which phylum:
Echinodermata
B. Annelida
C. Arthropoda
D. Cnidaria

Q.100 Which of the following is incorrect about annelida?
A. Triploblastic organization
B. Bilateral symmetry
C. Segmentation
D. Pseudocoelom

Q.101 The internal buds are known as which of the following?
A. Spicules
B. Choanocytes
C. Gemmules
D. Both A and B

Q.102 Cnidaria is characterized by which of the following?
A. Tissue level of organization
B. Coelenteron
C. Nematoblasts
D. All of these

Q.103 How is the body plan of a lobster similar to that of a whale?
A. Closed circulatory system
B. Mouth develops from the blastopore
A tubular digestive system with a mouth and an anus
D. The gut is not lined by coelomic epithelium

Q.104 The nervous system of arthropods has:
A brain, a ventral nerve cord and several ganglia
B. A brain, a dorsal nerve cord and several ganglia
C. A brain, a dorsal and ventral nerve cord and several ganglia
D. A ventral nerve cord and several ganglia

Q.105 Aschelminthes is also known as which of the following?
A. Eumetazoa
B. Protoctista
C. Ancestors
D. Nematodes

Q.106 A sponge of Antarctica which is more than a meter tall is known as?
A. *Euplectella*
B. *Spongilla*
C. *Leucosolenia*
D. *Scolymastra joubini*

Q.107 Gut in pseudocoelomates is made from which of the following?
A. Ectoderm
B. Mesoderm
C. Endoderm
D. All of these

Q.108 Asymmetrical body is a feature of phylum:
A. Annelida
B. Arthropoda
C. Porifera
D. Cnidaria

Q.109 Carapace is present in which class of arthropoda?
Arachnids
B. Insects
C. Crustaceans
D. All of these

Q.110 All of the following are coelomates except which?
A. Deuterostomes
B. Hemichordates
C. Proterostomes
D. Aschelminthes

Q.111 Which system is present in nematodes?
A. Sac - like digestive system
B. Circulatory system
C. Respiratory system
D. Tube - like digestive system

Q.112 How are flat worms not similar to round worms?
They are both acoelomates
B. They are both worms
C. They are both triploblastic
D. They both show bilateral symmetry

Q.113 Polychaeta have which of the following organs?
A. Tentacles
B. Palps
C. Eyes
D. All of these

Q.114 *Periplaneta* (cockroach) belongs to which phylum?
A. Mollusca
B. Annelida
C. Echinodermata
D. Arthropoda

Q.115 Radula is characteristic feature of:
A. Myriapods
B. Mollusca
C. Echinoderms
D. Cnidaria

Q.116 The body of which of the following organism is globular?
Cake urchin
B. Brittle star
C. Sea cucumber
D. Sea urchin

Q.117 Mantle in molluscs is present over which of the following regions?
A. Head
B. Dorsal muscular foot
C. Dorsal visceral foot
D. Both A and B

Q.118 A hydrostatic skeleton is:
A. Arthropods
B. Fishes
C. Annelids
D. Nematodes

Q.119 One similarity between annelids and arthropods:
A. Closed circulatory system
B. Nitrogenous waste product is uric acid
C. Ventral nerve cord
D. None of the above

Q.120 Animals like starfish have small groups of neurons in each arm connected to a ring of neurons in the centre.
This type of nervous system is called .
A. Centralized nervous system
B. Partially centralized nervous system
C. Diffuse nervous system
D. Partially diffuse nervous system

Q.121 Subkingdom parazoa includes:
A. Annelida
B. Cnidaria
C. Porifera
D. Protozoa

Q.122 Which class has the largest number of animals?
A. Fishes
B. Reptiles
C. Insects
D. Mammals

Q.123 Nephridia are the excretory organs of members of which phylum?
A. Arthropoda
B. Cnidaria
C. Annelida
D. Mollusca

Q.124 Aquatic arthropods respire through which of the following?
Gills
B. Spiracles
C. Book lungs
D. Both A and B

Q.125 Vertebrates belong to phylum chordata because:
A. They have a vertebral column
B. The brain is enclosed by the skull
C. The embryos have gills
The body develops from three germinal layers

Q.126 Coelom that develops from the archenteron as outpouching is?
A. Pseudocoelom
B. Enterocoelom
C. Schizocoelom
D. Both a and b

Q.127 Aquatic arthropods belonging to this class breathe through gills:
A. Insects
B. Arachnids
C. Crustaceans
D. None of the above

Q.128 Salamander belongs to which of the following class?
A. Pisces
B. Aves
C. Reptiles
D. Amphibians

Q.129 The best function of coelom is described as:
A. To increase the size of the animals
B. To help in the functioning of reproductive system
To provide space for the development of organs and system
D. All of these

Q.130 Most multicellular organisms are which of the following?
A. Haploid
B. Diploid
C. Single nucleus
D. None of these

Q.131 Identify the characteristic of acoelomates?
A. Absence of mesoderm
B. Absence of brain
C. Coelom that is incompletely lined with a mesoderm
Solid body without a cavity surrounding internal organs

Q.132 Nervous system of nematodes consists of which of the following?
A. Ventral nerve cord
B. Dorsal nerve cord
C. Lateral nerve cord
D. All of these

Q.133 Which among the following is a diploblastic organism?
Hydra
B. Crabs
C. Squid
D. Earthworm

Q.134 Which of the following is an example of a tetrapod?
A. Flesh fly
B. Tarantula
C. Blue-ringed octopus
D. Hummingbird

Q.135 In most triploblasts after embryonic development the three layers are represented as?
A. Separate layers of cells
B. Structures formed from them
C. Their functions in body
D. Structures associated with them

Q.136 Lack of symmetry is identified in which group of animalia:
A. Protozoa B. Porozoa
C. Parazoa D. Coelomates

Q.137 Layer absent in diploblastic organisms:
A. Endoderm B. Epidermis
C. Mesoderm D. Ectoderm

Q.138 do not perform photosynthesis:
Animals B. Bacteria
C. Pine tree D. *Spirogyra*

Q.139 It is a detritus feeder:
A. Leech B. Earthworm
C. Hook worm D. Pin worm

Q.140 Opossum, Kangaroo and Tasmanian wolf are examples of:
Metatheria B. Prototheria
C. Eutheria D. None of the above

Q.141 Most flatworms are:
Endoparasite B. Ectoparasite
C. Pesuodparasite D. External parasite

Q.142 Which of the following system is segmentally arranged in annelids?
Excretory system B. Circuatory system
C. Nervous system D. Digestive system

Q.143 Which of the followings are characteristics of mollusca?
A. Segmented body B. Closed circulatory system
C. Muscular foot D. All of the above

Q.144 Polychaeta are present in:
A. Echinodermata B. Annelida
C. Arthropoda D. Mollusca

Q.145 One of these animals is prototheria:
A. Alligator B. Spiny ant eater
C. Penguin D. Porcupine

Q.146 In sponges fertilization takes place in which of the following?
Mesenchyme B. Endoderm
C. Ectoderm D. UterusWw

Q.147 Canal system in sponges develop due to which of the following?
A. Porous walls B. Reproduction
C. Folding of inner walls D. Gastrovascular system

Q.148 It is not a characteristics of kingdom animalia:
A. All animals are Ingestive heterotrophs
B. All animals are eukaryotes
C. It is largest kingdom
All animals develop from two dissimilar gametes

Q.149 Which one is non-cellular in most cases in animals?
A. Chlorenchyma B. Mesoderm
C. Sclerenchyma D. Mesenchyme

Q.150 *Sycon* is an example of:
A. Platyhelminthes B. Annelida
C. Protozoa D. Porifera

Q.151 Pinworm is a common used for which if the following?
A. Rhabditis B. *Ancylostoma duodenale*
C. *Taenia solium* *D. Enterobius vermicularis*

Q.152 Which of the following are modern day descends of theropoda dinosaurs?
Birds B. Lions
C. Panther D. Bears

Q.153 Chitinous setae are locomotary organs of annelids which are present on:
A. Cell wall B. Prostomium

C. Nucleolus
D. Parapodia

Q.154 Porcupine is a mammals because:
A. Scales on its body are modified as spines for protection against predators
B. It lays eggs and has mammary glands
C. Fur on its body is modified as spines and it is warm blood
D. None of the above

Q.155 It is considered a missing link between reptiles and birds:
A. Pterandon
B. Avimimus
C. Caudipteryx
D. Archaeopteryx

Q.156 Which is not a mammal?
A. Whale
B. Walrus
C. Shark
D. Seal

Q.157 Which of them excretes in form of uric acid?
Birds
B. Human
C. Frog
D. None of these

Q.158 Which of the following class of mammals is believed to have strong resemblance with reptile?
A. Metatheria
B. Eutheria
C. Prototheria
D. Both eutheria and prototheria

Q.159 Difference between chordates and hemichordates are:
A. Chordates are invertebrates
Chordates have well developed nervous system
C. Chordates have brain enclosed in skull
D. Chordates have symmetrical body

Q.160 Which phylum is considered the largest?
Arthropoda
B. Mollusca
C. Annelida
D. Platyhelminthes

Q.161 Which of the following is ancient fossil fuel?
A. Fish
B. Reptile
C. Bird
D. Amphibian

Q.162 In arthropods, body cavity is in the form of:
A. Coelom
B. Haemocoel
C. Pseudocoelom
D. Enteron

Q.163 Largest invertebrate is:
Squid
B. Octopus
C. Sycon
D. Jelly fish

Q.164 Jelly fish belong to:
A. Deuterostomes
B. Proterostomes
C. Triploblastic
D. Diploblastic

Q.165 Placenta develops in embryonic state in:
A. Prototheria
B. Metatheria
C. All mammals
D. Eutheria

Q.166 Largest vertebrates are:
A. Elephants
B. Whales
C. Sharks
D. Anacondas

Q.167 Which of the following pigment present in mollusca?
Haemocyanin
B. Haemoglobin
C. Myoglobin
D. None

Q.168 Ancestors to animals:
Protozoan
B. Algae
C. Slime molds
D. Bacteria

Q.169 Which of the following are not amniotes?
A. Mammals and birds
B. Birds and reptiles
C. Reptiles and amphibians
D. Amphibians and fishes

Q.170 Cephalothorax is characteristic of:

Arthropods
B. Myriapods
C. Gastropods
D. None of these

Q.171 Arachnids have simple eyes. Which means:

A. Every eye has a single lens
B. Every eye has a simple lens
C. All eyes have a single lens
D. All eyes have simple lens

Q.172 Rhodophyta belong to:

Algae, Protista
B. Zygomycota, Fungi
C. Zooflagellates, Protista
D. Slime molds, Protista

Q.173 Many_____expel large amount of water by special structures called contractile vacuoles:

A. Porifera
B. Fish
C. Echinoderm
D. Protozoa

ANSWER KEY

DIVERSITY AMONG ANIMALS

1	D	21	D	41	B	61	C	81	C	101	C	121	C	141	A	161	B
2	A	22	D	42	D	62	C	82	B	102	C	122	C	142	A	162	B
3	D	23	A	43	A	63	D	83	B	103	C	123	C	143	C	163	A
4	A	24	A	44	D	64	C	84	D	104	A	124	A	144	B	164	D
5	C	25	C	45	C	65	A	85	A	105	D	125	D	145	B	165	D
6	A	26	D	46	B	66	B	86	C	106	D	126	B	146	A	166	B
7	D	27	A	47	C	67	B	87	A	107	C	127	C	147	C	167	A
8	A	28	C	48	A	68	B	88	D	108	C	128	D	148	D	168	A
9	B	29	D	49	D	69	A	89	B	109	A	129	C	149	D	169	D
10	C	30	B	50	A	70	B	90	C	110	D	130	B	150	D	170	A
11	C	31	D	51	C	71	C	91	D	111	D	131	D	151	D	171	B
12	D	32	C	52	D	72	A	92	D	112	A	132	D	152	A	172	A
13	B	33	A	53	B	73	C	93	C	113	B	133	A	153	D	173	D
14	C	34	B	54	B	74	A	94	B	114	D	134	D	154	B		
15	C	35	D	55	D	75	D	95	D	115	B	135	B	155	D		
16	C	36	B	56	C	76	D	96	D	116	A	136	C	156	C		
17	B	37	A	57	A	77	A	97	D	117	C	137	C	157	A		
18	D	38	C	58	D	78	C	98	B	118	C	138	A	158	C		
19	D	39	D	59	D	79	B	99	A	119	C	139	B	159	B		
20	A	40	A	60	D	80	A	100	D	120	D	140	A	160	A		

ENZYMES

Introduction/Characteristics of Enzymes

Q.1 The reaction will proceed faster if the activation energy is?
A. High
B. Low
C. Remains same
D. None of these

Q.2 The energy required to start a reaction is called?
A. Startup energy
B. Initial energy
C. Point energy
D. Activation energy

Q.3 An enzyme which requires a biological change in order to become active is called?
A. Transferase
B. Zymogen
C. Hydrogenase
D. Trypsin

Q.4 An enzyme without its cofactor is called:
A. Coenzyme
B. Apoenzyme
C. Holoenzyme
D. Proenzyme

Q.5 If the non-protein part of enzyme is covalently bonded to the enzyme it is known as?
A. Coenzyme
B. Activator
C. Cofactor
D. Prosthetic group

Q.6 Small organic, non-protein part that helps in enzyme reactions:
Co-factor
B. Catalyst
C. Activator
D. Prosthetic group

Q.7 An activated enzyme made up of a polypeptide with its cofactor is:
A. Substrate
B. Holoenzyme
C. Coenzyme
D. Apoenzyme

Q.8 Nicotinamide adenine dinucleotide is an example of:
Coenzyme
B. Holoenzyme
C. Cofactor
D. Apoenzyme

Q.9 Co-enzyme require:
Vitamins
B. Proteins
C. Fats
D. Carbohydrate

Q.10 Which of the following form weak linkage with enzyme?
A. Co-factor
B. Activator
C. Co-enzyme
D. Activator

Q.11 Co-factors are divided into groups:
A. 2
B. 3
C. 4
D. 4

Q.12 The substrate binds to specific region of enzyme called?
A. Key
B. Active site
C. Hyperactive site
D. None of these

Q.13 All enzymes are:
Globular proteins
B. Fibrous proteins
C. Glycoproteins
D. Lipoproteins

Q.14 What does the active site of the enzyme determine?
A. Looks like a lump projection from the surface of an enzyme
B. Forms no chemical bond with substrate
C. Never changes
Determines by its structure the specificity of an enzyme

Q.15 Enzymes showing substrate specificity are specific to how many substrates?
1
B. 3
C. 2
D. 4

Q.16 Which term is used to refer to an inactive enzyme precursor?
A. Apoenzyme
B. Null enzyme
C. Zymogen
D. Inhibitor

Q.17 Catalysts that increase the rate of biological chemical reaction are called:
A. Proteins
B. Vitamins
C. Enzymes
D. Minerals

Q.18 Which of the following best describes a coenzyme?

A. Covalently bonded non-protein part of an enzyme
B. Cofactor consists of metal ions
Loosely bonded non-protein part of an enzyme
D. Both A and B

Q.19 Which statement about enzyme is incorrect?
A. Some of them consist solely of protein with no non protein part
B. They catalyze a chemical reaction without being utilized
C. They without their cofactor are called apoenzyme
D. All enzymes are fibrous proteins

Q.20 Active form of an enzyme:
A. Coenzyme
B. Apoenzyme
C. Holoenzyme
D. Proenzyme

Q.21 A cofactor made of inorganic ion which is detachable is called?
A. Prosthetic group
B. Coenzyme
C. Activator
D. Cofactor

Q.22 Enzymes are globular proteins because:
A. They have a primary structure
B. They have a secondary structure
C. They have a tertiary structure
D. All of the above

Q.23 A small organic, non-protein molecule that carries chemical groups between enzymes is:
A. Cofactor
B. Catalyst
C. Substrate
D. Coenzyme

Q.24 Biological molecules which catalyze a biochemical reaction and remain unchanged after completion of reaction are called?
A. Cofactor
B. Coenzymes
C. Activator
D. Enzymes

Q.25 Enzymes bind with chemical reactant known as:
A. Product
B. Reactant
C. Substrate
D. All of these

Q.26 Which of the following vitamin acts as a coenzyme
A. Vitamin b
B. Vitamin b
C. Vitamin b_2
D. All of these

Q.27 If the non-protein part of enzyme is covalently bonded to the enzyme it is known as?
A. Coenzyme
B. Prosthetic group
C. Cofactor
D. Activator

Q.28 Enzyme reacts with substrate to form:
Product
B. Active site
C. Binding site
D. Catalytic site

Q.29 Enzymes are_____in nature:
A. Carbohydrates
B. Lipids
C. Nucleic acids
D. Proteins

Q.30 Which type of bond are never formed when substrate fits into active site of enzyme?
A. Hydrogen bonds
B. Ionic interactions
C. Covalent linkages
D. Hydrophobic interactions

Q.31 The mechanism of enzyme activation is referred to as:
A. Activation energy
B. Catalysis
C. Enzyme specificity
D. Denaturation

Q.32 The specificity of enzyme structure depends upon:
Active site
B. Allosteric site
C. Globe shape
D. All of these

Q.33 Catalytic activity takes place at:
Active site
B. Allosteric site
C. Regulatory site
D. All of these

Q.34 Which statement about active site is not true?
A. Active site is of spherical shape
B. Active site is nonspecific
C. Active site contains few amino acids
D. Active site converts substrate into product

Q.35 Type of bond present between enzyme and prosthetic group:
A. Hydrogen
B. Covalent
C. Ionic
D. Coordinate covalent

Q.36 Which one forms the raw material for coenzymes?
Vitamins
B. Carbohydrates
C. Lipids
D. Proteins

Mechanism of action of enzymes

Q.37 The lock and key model of enzyme action was proposed by:
A. Louis Pasteur
B. Emil Fischer
C. Daniel Koshland
D. Urey Miller

Q.38 The complex that forms when a substrate binds to enzyme is called:
Enzyme-substrate complex
B. Enzyme complex
C. Substrate complex
D. Structural complex

Q.39 Enzymes do not affect:
A. Substrate concentration
B. Product concentration
C. Both A and B
D. None

Q.40 Who proposed lock and key model of enzyme activity?
Emil Fischer
B. Daniel Koshland
C. Fredrick Sanger
D. James Watson

Q.41 In the lock and key model of enzyme activity, the substrate acts as the:
A. Key
B. Lock
C. Both A and B
D. None of the above

Q.42 Enzymes work by which of the following?
A. Increasing the activation energy
B. Reducing the activation energy
C. Making exergonic reactions endergonic
D. Making endergonic reactions exergonic

Q.43 How many models are present for enzyme-substrate complex or reaction?
A. 3
B. 2
C. 4
D. 5

Q.44 Which statement is incorrect about Lock and Key Model?
A. Specific enzyme can transform only a specific substrate
B. Active site of an enzyme is a non-flexible structure
C. Active site does not change before during or even after the reaction
D. It explains the mechanism of every chemical reaction

Q.45 Which types of bond are never formed when a substrate fits into the active site of an enzyme?
A. Hydrogen bonds
B. Ionic interactions
C. Hydrophobic interactions
D. Covalent linkages

Q.46 Koshland in 1959 proposed the modified form of which of the following?
A. Unit membrane model
B. Fluid mosaic model
C. Reflective index model
D. Induced fit model

Q.47 Induced fit model was introduced by Koshland in which of the following year?
A. 1960
B. 1961
C. 1959
D. 1966

Q.48 Lock and key model was proposed by:
A. Koshland
B. Fischer
C. Krebs
D. Darwin

Q.49 Which of the following is false about concerning enzymes?
A. Substrates must bind the enzyme's active site in order to initiate its effects
B. Enzymes increase both the forward rate and reverse rate of a reaction
C. Enzymes are not destroyed in a reaction and can be used in the same reaction countless times
D. Enzymes increase the amount of product created in a reaction

Q.50 Number of substrate molecules converted into product by one molecule of enzyme active site per unit time is called?
Turnover number
B. Substrate number
C. Reaction number
D. None

Q.51 According to the induced fit model, what happens when an enzyme-substrate complex is formed?

A. The contact between the substrate and the enzyme causes a change in the shape of the active site
B. The shape of the substrate and the shape of the active site is complementary to each other
C. The substrate fits into the active site and forms bonds with the amino acids at the active site
D. All of these

Q.52 What affect do enzymes have on the activation energy of a reaction?
A. Increases
B. Decreases
C. No affect
D. Increases or decreases depending upon individual enzyme

Q.53 While bound to the active site, the substrate is converted into which of the following?
A. Complex
B. Substrate of high energy
C. Product of reaction
D. Both A and B

Q.54 The primary function of cofactors is to?
A. Assist in enzyme synthesis
B. Assist in enzyme inhibition
C. Assist in enzyme activity
D. Both a and b

Q.55 In enzyme catalytic reaction the substrate is first converted to a high energy state called?
Transition state
B. High energy state
C. Activation state
D. Breaking point

Q.56 Allosteric enzymes consist of multiple:
A. Inhibitors
B. Polypeptide chains
C. Active sites
D. Temperature ranges

Q.57 Functions of enzymes include all of the following except:
A. Lessening the time required for a reaction to take place
Shifting substrates into more favorable positions in the active site
C. Decreasing the activation energy of a reaction
D. Shifting the equilibrium of a reaction

Factors effecting rate of enzyme action

Q.58 Upon increasing the temperature the shape of enzyme's active site?
A. Remains same
B. Changes
C. Adopts a geometric conformation
D. Denatures

Q.59 The optimum pH for enzyme arginase is which of the following?
A. 9
B. 9.3
C. 9.7
D. 10

Q.60 The optimum pH for the functioning of the enzyme pepsin is?
2
B. 3
C. 4
D. 5

Q.61 If we add more substrate to already occurring enzymatic reaction and it has no effect on the rate reaction, the process is called?
A. Denaturing
B. Saturation
C. Composition
D. Inhibition

Q.62 pH of salivary amylase is:
A. 6.8
B. 7.60
C. 2.00
D. 5.50

Q.63 It works in acidic medium:
A. Arginase
B. Pancreatic lipase
C. Catalase
D. Enterokinase

Q.64 Extreme change in pH results in which of the following?
A. Change in ionization of amino acids at the active site of the enzyme
B. Change in the ionization of the substrate
C. Increase in the reaction rate
D. Denaturation of the enzyme

Q.65 What is meant by optimum temperature of an enzyme?
A. The temperature at which the primary structure of an enzyme remains intact

The temperature at which an enzyme makes the maximum amount of product
C. The temperature at which an enzyme may be more affected by an inhibitor
D. The temperature at which an enzyme makes the least amount of product

Q.66 Rate of reaction is double for rise of every _____.
A. 20 °C
B. 10 °C
C. 30 °C
D. 20 °C

Q.67 Which of the following strategies of enzymatic inhibition is used by noncompetitive inhibitors?
A. Bind to substrate so that it cannot bind to the active site
B. Target the enzyme for destruction using a protease
C. Bind to the active site and prevent substrate from binding
Bind to an allosteric site to cause a conformational shift in the enzyme

Q.68 If more substrate to an already occurring enzymatic reaction is added more enzyme activity is seen because?
There is probably more substrate present than there is enzyme
B. There is probably more product present than either substrate or enzyme
C. The enzyme substrate complex is probably failing to from during the reaction
D. There is probably more enzyme available than there is substrate

Q.69 The optimum pH for the functioning of pancreatic lipase is?
9
B. 8
C. 7
D. 6

Q.70 A researcher has designed a new type of inhibitor that binds at the active site of an enzyme. What type of inhibition does this molecule display?
A. Uncompetitive inhibition
B. Competitive inhibition
C. Noncompetitive inhibition
D. All of these

Q.71 Which of the following changes could lead to loss of enzymatic function?
A. Decrease in activation energy of the reaction
B. Increase in enzyme concentration
C. Change in overall enthalpy of the reaction
D. Increase in pH of the reaction

Q.72 Which statement correctly describes why enzyme activity increases with increased enzyme concentration?
A. Collisions between enzyme and substrate molecules increase because of increased kinetic energy
B. Collisions between enzyme and substrate molecules increase because of increased heat energy
C. Collisions between enzyme and substrate molecules increase because of more active sites are available
D. Collisions between enzyme and substrate molecules increase because more substrate molecules are available

Q.73 The rate of reaction of enzyme directly depends upon which of the following?
A. Low temperature
Amount of enzyme present at a specific time at unlimited substrate concentration
C. Maximum pH level
D. Nature of substrate

Q.74 The enzyme-substrate complex is formed in which part of the enzyme molecule?
Binding site
B. Allosteric site
C. Catalytic site
D. None of the above

Q.75 Which step, causes activation of catalytic site of an enzyme?
A. Change in pH of the surroundings
B. Change in the charge of the active site
C. Change in temperature
Formation of enzyme substrate site

Q.76 If the concentration of enzyme is kept constant and amount of substrate is increased a point is reached where increase in substrates concentration does not affect the reaction rate because of?
A. Enzymes get denatured at higher substrate cone

B. Rate of reaction is indirectly proportional to substrate concentration at this point
C. All the active sites on enzyme molecule are occupied
D. All of these

Q.77 What is the optimum temperature for working of enzymes in human body?
A. 32°C B. 40°C
C. 37°C D. 35°C

Q.78 In acidic medium, amino acids carry positive charge and acts as:
A. Acid B. Base
C. Neutral D. None of these

Q.79 If we increase the concentration of substrate then increase in the enzyme activity is due to which of the following?
There is sufficient concentration of enzyme
B. There is sufficient concentration of substrate
C. Active sites are not working properly
D. None of these

Q.80 When we increase the pH then, enzyme reactivity is retarded due to:
Tertiary structure of enzyme is destroyed
B. Primary structure is destroyed
C. Active sites get blocked
D. Allosteric modulation

Q.81 At low enzyme concentration, optimum pH and temperature, rate of reaction can be increased by:
A. Increased substrate concentration B. Increasing pH
C. Increasing temperature D. Increasing enzyme concentration

Q.82 Number of substrate molecules converted into product by one molecule of enzyme active site per unit is called:
Turn over number B. Reaction number
C. Substrate number D. None of the above

Enzyme inhibition

Q.83 The effect of competitive inhibitor on enzyme activity is such that it affects which of the following?
A. Increases enzyme activity B. Doesn't change enzyme activity
C. Decreases enzyme activity D. None of these

Q.84 What is the characteristic of a non-competitive inhibitor?
A. Always binds at the active site
B. Adding more substrate reduces the effects of inhibition
C. Sometimes binds at the active site
Adding more substrate does not reduce the effects of inhibition

Q.85 Reversible inhibitors form weak linkages with which of the following?
Enzyme B. Reactant
C. Product D. Substrate

Q.86 Inhibitors which block the enzyme by forming weak bond are called:
Competitive inhibitors B. Non-competitive inhibitors
C. Irreversible inhibitors D. Both A and B

Q.87 Reversible inhibitors form weak linkages with which of the following?
Enzyme B. Reactant
C. Product D. Substrate

Q.88 The end product of an enzymatic reaction inhibits formation of product in an earlier step. This type of enzymatic regulation is known as?
A. Allosteric regulation B. Negative regulation
C. Metabolic pathway loop D. Feedback inhibition

Q.89 In uncompetitive inhibition, the inhibitor binds with:
Enzyme B. Substrate
C. ES-complex D. All of these

Q.90 In mixed inhibition, the allosteric affects:
A. Shape of substrate B. Shape of inhibitor
C. Shape of enzyme D. None of these

Q.91 The non-substrate molecules that bind to the allosteric sites are called?
Inhibitors B. Reactants

C. Allosteric substrates
D. Allosteric modulators

Q.92 A chemical substance which can react (in place of substrate) with the enzyme but is not transformed into product/s and thus blocks the active site temporarily or permanently is called?
A. Coenzyme
B. Blocker
C. Inhibitor
D. Cofactor

Q.93 Malonic acid is an example of which type of inhibitors?
A. Malonic acid is an example of which type of inhibitors?
B. Reversible inhibitor
C. Non-competitive inhibitor
D. Competitive inhibitor

Q.94 In non-competitive inhibition, the quantity which remains same as the reaction proceed is?
A. Vmax
B. Km
C. Ko
D. Vo

Q.95 A substance which binds at the active site of the enzyme but does not result in the formation of the products is called:
A. Irreversible inhibitor
B. Reversible inhibitor
C. Non-competitive inhibitor
D. Competitive inhibitor

Q.96 An inhibitor is added, disrupting the function of a particular enzyme. The experimenter adds more substrate, and enzyme function increases again. These results indicate the involvement of what type of inhibitor?
A. Non-competitive
B. Uncompetitive
C. Allosteric
D. Competitive

Q.97 What is meant by enzyme denaturation?
A. Peptide bonds between amino acid residues are broken
B. The enzyme loses its secondary structure
C. The enzyme loses its tertiary structure
D. All of the above

Q.98 The effect of competitive inhibitor on enzyme activity is such that it affects which of the following?
A. Increases enzyme activity
B. Doesn't change enzyme activity
C. Decreases enzyme activity
D. None of these

Q.99 The non-substrate molecules that binds to the allosteric sites are called?
Inhibitors
B. Reactants
C. Allosteric substrates
D. Allosteric modulators

Q.100 Which of the following best describes competitive inhibitors?
A. Do occupy active site
B. Destroy the structure of enzyme
Resemble structurally with substrate
D. None of the above

Q.101 is a competitive inhibitor of succinic dehydrogenase.
A. Malonic acid
B. Malic acid
C. Fumaric acid
D. Acetic acid

Q.102 In competitive inhibition, a thing that binds to enzyme active site are?
A. Substrate
B. Catalyst
C. Inhibitors
D. Both A and B

Q.103 Feedback inhibition in most metabolic pathways involves which type of enzymes?
A. Holoenzymes
B. Allosteric enzymes
C. Coenzymes
D. Apoenzyme

Q.104 These form weak linkages with enzymes:
A. Irreversible inhibitors
B. Reversible inhibitors
C. Both A and B
D. None

Q.105 In uncompetitive inhibition, the inhibitor binds with:
A. Enzyme
B. Substrate
C. ES complex
D. All of these

Q.106 An allosteric enzyme will have:
A. Many active sites
B. Many substrates

C. Many binding sites D. No binding site

Q.107 In mixed inhibition, the inhibitor binds to:

Allosteric site B. Active site

C. Binds to substrate D. Does not bind to enzyme

Q.108 Competitive inhibitors_____enzyme activity.

Decrease B. Increase

C. Does not affect D. None

Q.109 Structure of enzyme is altered by:

A. Competitive inhibitor B. Non- competitive inhibitor

C. Irreversible inhibitor D. Reversible inhibitor

Q.110 In competitive inhibition, two things attached to enzyme's active site are:

A. Inhibitor B. Substrate

C. Both A and B D. None of these

Q.111 The structure of an enzyme is altered by which of the following inhibitors?

A. Reversible inhibitor B. Competitive inhibitor

C. Non-competitive inhibitor D. Irreversible inhibitor

Out of the Syllabus

Q.112 This enzyme is used to cut DNA molecule in rDNA technology

A. Ligase B. Phosphatase

C. Ribonuclease D. Restriction enzyme

Q.113 Restriction endonucleases found in

A. Viruses B. Bacteria

C. Eukaryotes D. All of these

Q.114 Antibodies can be digested by using which of the following types of enzymes?

A. Lipase B. Protease

C. Amylase D. Polymerase

Q.115 Ligases help in which of the following reactions?

A. Splitting of two molecules B. Oxidation of molecules

C. Joining of molecules D. Both A and B

Q.116 What type of enzymes is involved in biological oxidation?

A. kinases B. Dehydrogenases

C. Polymerases D. Phosphatases

Q.117 Which of the following is not a class of enzyme?

A. Ligase B. Isomerase

C. Hydrolase D. Pyrimidine complex

Q.118 Enzymes which are involved in transfer of electrons are known as:

A. Oxidases B. Dehydrogenase

C. Hydrolyses D. Both A and B

Q.119 The following enzymes are regulated by calcium ions:

A. DNA polymerase B. Nitric oxide synthetase

C. Adenylate cyclase D. Phosphoprotein phosphatase

Q.120 Enzyme which helps in changing the shape of molecule is called:

A. Ligases B. Dehydrogenases

C. Hydrolyses D. Isomerases

Q.121 Phosphoglyceromutases are example of:

A. Lyases B. Hydrolases

C. Ligases D. Transferases

ANSWER KEY

ENZYMES

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

EVOLUTION

Concepts of evolution

Q.1 The process that has transformed life on earth from its earliest forms to vast diversity is?
A. Mutation
B. Evolution
C. Migration
D. Genetic drift

Q.2 Concept of evolution was first presented by which of the following scientists?
A. Lamarck
B. Aristotle
C. Wallace
D. Darwin

Q.3 Earliest life form on earth is:
A. Virion
B. Viroid
C. Prion
D. None

Q.4 During Aristotle time, it was thought that:
A. Organisms ranged from simple to complex
B. One type of organism give rise to another type of organism
C. Both A and B
D. All living things specially created by nature

Q.5 *Methanopyrus kandleri* is an organism which lives in a hydrogen-carbon dioxide environment, and was first discovered in a hydrothermal vent where temperatures reached 230°F. What sort of organism is this?
A. Protist
B. Cyanobacteria
C. Archaea
D. Bacteria

Q.6 Flagella might have arisen through the ingestion of which of the following?
A. Cyanobacteria
B. Chlamydomonas
C. Paramecium
D. Spirochetes

Q.7 Carolus Linnaeus was believer of which of the following?
A. Special creation
B. Catastrophism
C. Natural selection
D. Inheritance of acquired characters

Q.8 Which of the following is not an example of evidence supporting the endosymbiotic theory?
A. Mitochondria and other plastids multiply by binary fission
B. Mitochondria contain their own DNA, which is a single circular chromosome
C. Mitochondria have their own ribosomes, which are 70s
D. None of these

Q.9 Two populations of the same species over time grow distant from one another. At what point will these two populations be considered different species?
A. When the populations begin to eat different foods
B. When there is a physical barrier, such as a river
C. When the two populations have not been in contact with one another for two hundred years
D. When they are no longer able to interbreed

Q.10 Which scientist does not match his achievements in the following options?
A. Lamarck published his theory of evolution
B. Lyell published principles of geology
C. Malthus published essay on principle of population
D. Cuvier published papers on inheritance

Q.11 The process by which different kinds of living organism are believed to have developed from earlier forms during the history of the earth:
A. Evolution
B. Development
C. Growth
D. None of the above

Q.12 He explained earth's history by catastrophism:
A. Cuvier
B. Lyell
C. Malthus
D. Lamarck

Q.13 Eukaryotes evolved by prokaryotes through:

A. Commensalism
B. Symbiosis
C. Predation
D. All of the above

Q.14 Who wrote an essay on population?

Malthus
B. Darwin
C. Mendel
D. Wallace

Q.15 Lamarck was in-charge of the Natural History Museum in:

A. North America
B. Paris
C. England
D. Wales

Inheritance of acquired characteristics

Q.16 Which condition can be explained by Lamarckism?

How giraffes got their long neck
B. How humans lost their tail
C. How humans became bipedal
D. All of these

Q.17 Which of the following scientists hypothesized that organisms can pass down acquired traits during their lifetimes?

Lamarck
B. Linnaeus
C. Darwin
D. Mendel

Q.18 Lamarck's ideas on biological evolution contained correct and incorrect notions. Which of his ideas is correct?

A. Acquired traits can be passed on to offspring
B. Living forms become perfect with time
C. Nervous fluids are passed on from generation to generation
Evolution is related to changes in adaptation to the environment

Q.19 The idea of inheritance of acquired characteristics was given by:

Lamarck
B. Darwin
C. Aristotle
D. Lyell

Q.20 What are parts of Lamarck's theory of evolution?

A. Individuals lose traits that they don't need
B. Acquired characteristics are heritable
C. Individuals gain characteristics they need
D. All of these

Q.21 Which of the following are important points of Lamarck's theory?

A. Use and disuse of organs
B. Inheritance of acquired characters
C. Natural selection
D. Both A and B

Q.22 Which scientists gave postulate that giraffes have long necks because they wanted to eat the leaves of tall trees?

A. Watson and Crick
B. Lamarck
C. Darwin
D. All of these

Q.23 Who hypothesized that organisms evolved through inheritance of acquired characters?

A. Darwin
B. Hutton
C. Malthus
D. Lamarck

Q.24 Which of the following can be described by Lamarckism?

A. How giraffe got their long neck?
B. How humans lost their tails?
C. How humans became bipedal?
D. All of these

Q.25 Use and disuse organ theory was proposed by:

Lamarck
B. Darwin
C. Wallace
D. TH Morgan

Darwinism

Q.26 Natural selection can amplify or diminish variations that are?

Heritable
B. Non heritable
C. Both a and b
D. Acquired

Q.27 Who developed a theory of natural selection essentially identical to Darwin's?

A. Hardy-Weinberg
B. Malthus
C. Lamarck
D. Alfred Wallace

Q.28 Darwin was greatly influenced by:
Essay on population by Malthus | B. Lamarck's theory
C. L-Miller's evidence for origin of life | D. Mendel's paper on inheritance

Q.29 Darwin's theory mainly focuses on:
A. Origin of life | B. How organs extinct
C. How new species arise | D. How organisms form

Q.30 Which theory tells about adaptation:
Darwin's natural selection | B. Lamarck's theory
C. Hardy | D. Weinberg's principle

Q.31 Island present near South American cost line:
A. Maldives | B. Madagascar
C. Galapagos | D. New Zealand

Q.32 Darwin returned to great Britain in:
A. 1831 | B. 1855
C. 1836 | D. 1841

Q.33 Natural selection was the silent feature of which statement:
A. Lamarck | B. Darwin
C. Aristotle | D. Wallace

Q.34 Darwin collected how many types of finches?
A. 12 | B. 13
C. 14 | D. 15

Darwin's theory evolution

Q.35 Darwin's Theory of evolution by natural selection is based on all of the following postulates except:
A. Some individuals are more successful in surviving and reproduction than others
B. Individuals within a population are variable
C. The survival and reproduction of individuals is not random
D. The survival and reproduction of individuals is random

Q.36 Darwin described his theory of natural selection as which of the following?
A. Punctuated equilibrium | B. Survival of the fittest
C. Inheritance of acquired characteristics | D. Descent with modification

Q.37 Who developed a theory of natural selection essentially identical to Darwin's?
A. Hardy-Weinberg | B. Malthus
C. Lamarck | D. Allred Wallace

Q.38 Darwin gave his theory of evolution in:
A. 1859 | B. 1822
C. 1884 | D. 1913

Q.39 Galapagos finches indicated:
A. Seasonal migration | B. Immigration
C. Allopatric speciation | D. Parapatric speciation

Q.40 During which of the following levels of biological organization can natural selection occur?
A. Gene | B. Individual
C. Group | D. All

Q.41 Which of the following would best determine the fitness of an organism?
The number of offspring produced by the organism. X
B. How much food the organism consumes in its lifetime
C. How large the organism grows
D. The number of offspring produced by the organism's own offspring

Q.42 Which organism would be considered the most biologically fit?
A. Lives 45 years and produces 3 offspring
B. Lives 70 years and produces no offspring
C. Lives 27 years and produces 1 offspring
D. Lives 36 years and produces 6 offspring

Q.43 The book name in which Darwin published the theory of evolution:

A. The origin of species by natural selection
B. The origin of species
C. The evolution of species
D. The evolution of species by means of natural selection

Q.44 What is the definition of "fitness" in terms of evolution?
A. The organism's ability to attain resources while in competition with other organisms of its species
B. The organism's ability to attract the most mates
C. The organism's health
The ability of an organism to contribute its genes to future generations

Q.45 The ability to pass on genes is defined as which of the following?
A. Differential reproduction
B. Fitness
C. Evolution
D. Natural selection

Q.46 Darwin' theory was based on:
A. Mutation
B. Migration
C. Natural selection
D. None of the above

Q.47 The beats definition of natural selection is:
A. Survival of the fittest
Most fit individuals adapt to their environment better than less fit individuals
C. Those who eat better are healthier and love longer are most fit within a population
D. Preservation of traits leads to increase survival and reproduction

Q.48 Darwin's theory can be named as:
Classical theory
B. Advanced theory
C. Neo-Darwinism
D. Theory of special creation

Q.49 Specifics of natural selection are:
A. Regional and permanent
B. Local and constant
C. Regional and temporary
D. Both A and B

Neo-Darwinism's

Q.50 Neo-Darwinism has integrated discoveries and ideas from:
A. Genetics
B. Paleontology
C. Taxonomy
D. All of these

Q.51 Neo-Darwinism came on to surface during:
A. 1930's
B. 1940's
C. 1920's
D. 1950's

Evidence of evolution

Q.52 Homology means:
Similarity in characteristics resulting from common ancestors
B. Similarity in function from acquired characters
C. Study of similar organs but with different functions
D. Study of similar organs but with different functions

Q.53 If two species have similar proteins and genes it means:
A. They have same organs.
B. They have similar appearance
C. They have common ancestors
D. All of above

Q.54 Which of the following is not an evidence for evolution?
A. Fossil record
B. Common ancestor organisms
C. Vestigial structures
D. None of these

Q.55 Most of the fossils are found in which of the following?
A. Metamorphic rocks
B. Soil
C. Volcanic mountains
D. Sedimentary rocks

Q.56 Structures that were once functional in the past but no longer serve a purpose due to evolutionary adaptations and physiological changes are referred to as?
Vestigial
B. Analogous structures
C. Homologous structures
D. None of these

Q.57 Which type of evolution is represented by analogous organs?
A. Divergent evolution
B. Straight evolution

C. Zig-zag evolution
D. Convergent evolution

Q.58 It is not a vestigial organ in humans:
A. Appendix
B. Coccyx
C. Both A and B
D. None of the above

Q.59 Homologous organs show similarity in:
A. Shape
B. Origin
C. Function
D. Size

Q.60 Which of the following is ancient fossil fuel?
Fish
B. Reptile
C. Bird
D. Amphibian

Q.61 Embryo of a turtle, mouse and human show:
Comparative embryology
B. Distinct differences
C. Vestigial organs
D. Analogous structure

Q.62 The structures of the front flipper of a whale and the forearm of a wolf have similar bone structure and derive from a common ancestor. This is an example of which of the following?
A. Convergent evolution
B. Analogous structures
C. Homologous structures
D. Bottleneck effect

Q.63 Example of convergent evolution is:
A. Forelimbs of man and bat
B. Wings of birds and insects
C. Darwin's finches
D. All

Q.64 Study of fossils is called:
A. Mammalogy
B. Palaeontology
C. Herpetology
D. Ornithology

Q.65 Which of the following organs serve no apparent purpose?
A. Non vestigial organs
B. Homologous organs
C. Analogous organs
D. Vestigial organs

Q.66 The wings of a bird and the wings of a beetle are considered?
A. Taxonomic
B. Phylogenetic
C. Homologous
D. Analogous

Q.67 Which statement is incorrect?
A. Homologous organs are functionally different but structurally alike
B. Examples of homologous structures are of cat, flipper of whale
C. Examples of analogous structures are wings of bats, birds and insects
D. Analogous organs are functionally different but structurally alike

Q.68 In humans gill pouches have evolved into which of the following organs?
A. Nose
B. Ear
C. Pharynx
D. Eustachian tubes

Q.69 Which of the following is not an evidence for evolution?
A. Fossil record
B. Vestigial structures
C. Common ancestor organisms
D. None of these

Out of the Syllabus

Q.70 Mating with non-relatives is known as?
A. Inbreeding
B. Outbreeding
C. Breeding
D. None of these

Q.71 A population of birds encounters a dramatic event that results in a severe decrease in population size. As a result of the newly-decreased population, what type of genetic drift does this population now exhibit?
A. Artificial selection
B. Founder effect
C. Bottleneck effect
D. both a and b

Q.72 When resources get scarce, the population growth?
A. Becomes fast
B. Slows down
C. Remains same
D. None of these

Q.73 Which statement best describes the Hardy-Weinberg principle?
A. Recessive alleles eventually disappear in large populations

B. Expected frequencies of alleles are impossible to predict mathematically
C. Dominant alleles become more prevalent in 1aarge populations
When there is a large population, the mechanism of inheritance does not change allele frequencies.

Q.74 Adaptation of traits to better fill a niche is known as which of the following?
A. Polymorphism
B. Gene linkage
C. Specialization
D. Replication

Q.75 Which of the following may cause loss of alleles from a gene pool?
A. Interbreeding
B. Mutation
C. Migration
D. None

Q.76 As long as two species occupy different niches, there is:
A. Competition
B. No competition
C. Gene linkage
D. Polymorphism

Q.77 Two species can avoid competition and better use the environment's resources by occupying different?
A. Adaptations
B. Polymorphism
C. Niches
D. Specialization

Q.78 According to Hardy-Weinberg theorem, frequencies of alleles and genotypes in a population's gene pool remain?
A. Mobile in gene pool
B. Constant
C. Stationary in gene pool
Constant unless acted upon by agents other than sexual recombination

Q.79 Bottleneck increases the effect of which of the following:
A. Genetic linkage
B. Genetic expression
C. Genetic diversity
D. Gene pool

Q.80 Which of the following conditions is not required to be true for a population in Hardy-Weinberg equilibrium?
Random mutations
B. Large population
C. No natural selection
D. Random mating

Q.81 Population growth is checked by which of the following?
A. No competition
B. No polymorphism
C. Polymorphism
D. Competition

Q.82 Primordial soup is a set of hypothetical conditions on ancient earth first proposed by?
A. Dmitri Ivanovsky
B. Dmitry Anuchin
C. Nikolay Shatsky
D. Alexander Oparin

Q.83 The ultimate source of all the change is?
A. Migration
B. Mutation
C. Genetic drift
D. Selection

Q.84 The frequency of allele if it is evolutionary successful is?
A. Increased
B. Decreased
C. No change
D. None of these

Q.85 When two or more clearly different phenotypes exists in same population of species, the phenomenon is called?
A. Replication
B. Polymorphism
C. Gene linkage
D. Gene expression

Q.86 Mating between relatives is called which of the following?
Inbreeding
B. Ex breeding
C. Breeding
D. Outbreeding

Q.87 The selection for a trait on one extreme is called which of the following?
A. Natural selection
B. Stabilizing selection
C. Directional selection
D. All of these

ANSWER KEY
EVOLUTION

1	B	21	D	41	A	61	A	81	D
2	B	22	B	42	D	62	C	82	D
3	D	23	D	43	B	63	B	83	B
4	A	24	D	44	D	64	B	84	A
5	C	25	A	45	B	65	D	85	B
6	D	26	A	46	C	66	D	86	A
7	A	27	D	47	B	67	D	87	D
8	D	28	A	48	A	68	D		
9	D	29	C	49	C	69	D		
10	D	30	A	50	D	70	B		
11	A	31	C	51	B	71	B		
12	A	32	C	52	A	72	B		
13	B	33	B	53	C	73	D		
14	A	34	C	54	D	74	C		
15	B	35	D	55	D	75	C		
16	A	36	D	56	A	76	B		
17	A	37	D	57	D	77	C		
18	D	38	A	58	D	78	D		
19	A	39	C	59	B	79	C		
20	D	40	B	60	A	80	A		

LIFE PROCESS IN ANIMALS AND PLANTS (NUTRITION/GASEOUS EXCHANGE/ TRANSPORT)

Carnivorous plants/parasitic nutrition (pitcher plant, venus fly trap, sundew)

Q.1 The venous flower basket is also known as which of the following?
A. *Sycon* B. *Leucosolenia*
C. *Spongilla* D. *Euplectella*

Water and mineral uptake by roots, xylem and phloem

Q.2 The upward movement of sap by the xylem is:
Ascent of sap B. Plasmolysis
C. Deplasmolysis D. Guttation

Q.3 The attraction between water molecules and cell wall of xylem is termed as:
A. Cohesion B. Tension
C. Adhesion D. Imbibition

Q.4 Deficiency of which element causes yellowing in plants?
Magnesium B. Iron
C. Chlorine D. Oxygen

Q.5 Which of the following is incorrect for ascent of sap?
Water potential B. Cohesion tension
C. Root pressure D. Imbibition

Q.6 Stomata cover only what portion of the leaf surface?
A. 10% B. 50%
C. 1-2% D. 0.3 to 0.4%

Q.7 Which cells regulate the opening and closing of stomata?
A. Neutrophils B. Basophils
C. Guard cells D. Mesophyll cells

Q.8 Water vapors exit and carbon dioxide enters a leaf through:
Stomata B. Grana
C. Porphyrin ring D. Photons

Q.9 Which of these cells is not present in phloem?
A. Companion cell B. Sieve tube cells
C. Vessels D. Parenchyma

Q.10 The absorption of water through a compound without dissolving in it is known as:
A. Ascent of sap B. Plasmolysis
C. Imbibition D. Guttation

Q.11 The loss of liquid via the hydathodes is called:
A. Imbibition B. Guttation
C. Plasmolysis D. None of these

Q.12 Multisensory hydraulic valves are:
A. Stomata B. Lenticels
C. Guard cells D. Hydathodes

Q.13 Who proposal starch sugar hypothesis?
A. Sager B. Dixon
C. Mohl D. Drabs

Q.14 The movement of minerals or water via extracellular pathway is known as:
A. Symplast B. Apoplast
C. Vascular D. None of these

Q.15 Casparian strips are found in:
A. Epidermis B. Endodermis
C. Cortex D. Vascular bundle

Q.16 Guttation is caused due to:
A. Suppression of transpiration B. Humidity
C. Root pressure D. None

Q.17 Pressure flow theory was proposed by:
Ernst Munch B. Van Neil

C. Hans Krebs D. TH Morgan

Osmotic pressure/potential

Q.18 In osmosis water molecules move from area of:
A. Higher solute concentration to lower solute concentration
B. Lower solvent concentration to higher solvent concentration
C. Lower solute concentration to higher solute concentration
D. All of these

Q.19 The external solution having more concentration then the cell sap is known as:
A. Hypertonic solution B. Hypotonic solution
C. Isotonic solution D. Isotonic solution

Q.20 The total kinetic energy of water molecules is known as:
Water potential B. Pressure potential
C. Osmotic potential D. None of these

Cardiovascular system (including human heart structure, blood vessels)

Q.21 The osmotic pressure of blood is maintained by
A. Membrane proteins B. Fibrous proteins
C. Plasma proteins D. Myosin

Q.22 The number of stages involved in the heart beat is?
A. 2 B. 3
C. 4 D. 5

Q.23 The function of spleen is to filter_____.
Blood B. Amniotic fluid
C. Semen D. Lymph

Q.24 A 25 years old female with chronic fatigue was diagnosed with iron deficiency anemia and low blood count what is the cause of her fatigue?
A. Reduction in amount of Fe-S centers
B. Lowered production of water from the electron transport chain that cause dehydration
C. Iron is important for electron transport chain
D. Iron is important for NADH production

Q.25 Which of these is common in both lymph vessels and veins?
A. Both have small bore B. Both have valves
C. Both have low blood pressure D. Both are communicated

Q.26 Which one is thickest?
Left ventricle B. Right ventricle
C. Left auricle D. Right auricle

Q.27 Chordae tendineae are present in:
A. Aorta B. Atrium
C. Ventricle D. Vena cava

Q.28 Blood is collected from legs by:
A. Hepatic vein B. Vena cava
C. Renal vein D. Iliac veins

Q.29 The number of RBCs at high altitude will:
A. Increase in size B. Increase in number
C. Decrease in size D. Decrease in number

Q.30 A circulatory system has --------- characteristics.
A. 1 B. 2
C. 3 D. 6

Q.31 Pressure is highest in:
Aorta B. Arteries
C. Capillaries D. Arterioles

Q.32 Papillary muscles extension are responsible for:
A. Bicuspid constriction B. Tricuspid constriction
C. Mitral constriction D. All of these

Q.33 _____is a macromolecule found in blood.

Hemoglobin
B. Plasma
C. Creatinine
D. Plasmids

Q.34 Heart is enclosed in:
Pericardium
B. Plural membrane
C. Mesentery
D. Epimysium

Q.35 Pulse is found in:
Arteries
B. Capillaries
C. Veins
D. Both A and B

Q.36 Iliac arteries supply blood to:
A. Stomach
B. Large intestine
C. Esophagus
D. Gonads

Respiratory system

Q.37 The cluster of pouches opened from alveolar ducts is known as:
A. Bronchi
B. Bronchioles
C. Pharynx duct
D. Alveoli

Q.38 Which of the following is not respiration?
A. Breakdown of glucose
B. Formation of glucose
C. Release of energy
D. Exchange of gases

Q.39 A muscular passage that is common to both food and air is known as:
A. Bronchi
B. Bronchioles
C. Larynx
D. Pharynx

Q.40 The process of intake of oxygen and release of carbon dioxide is known as:
A. Respiratory exchange
B. Gaseous exchange
C. Diffusion
D. Osmosis

Q.41 Air contains what percentage of carbon dioxide?
A. 0.02-0.03
B. 0.03-0.04
C. 0.04-0.05
D. 0.05-0.06

Q.42 Which of these is functional unit of lungs?
Air sacs
B. Alveoli
C. Bronchi
D. Bronchioles

Q.43 What is correct about myoglobin?
A. It is iron containing protein pigment
B. It occurs in muscle fibres
C. It also stores some oxygen
D. All of these

Q.44 What is the intermediate part of the respiratory system between trachea and pharynx?
A. Glottis
B. Voice box
C. Bronchi
D. A and B

Q.45 Pleural membranes cover:
A. Brain
B. Heart
C. Kidneys
D. Lungs

Q.46 The flap like structure found on larynx is called:
A. Glottis
B. Vocal cords
C. Larynx
D. Epiglottis

Q.47 Lungs are porous due to the presence of:
A. Bronchi
B. Alveoli
C. Terminal bronchiole
D. Respiratory bronchiole

Q.48 Pick the odd one out:
A. Heart
B. Life
C. Kidney
D. Lungs

Q.49 The covering of lungs is termed as:
Pleural membrane
B. Myocardium
C. Pericardium
D. Both B and C

Q.50 The space inside the chest cavity during inspiration is:
A. Decreased
B. Increased

C. Remains same
D. First increased then decreased

Q.51 Which is not true about human lungs?
They are opened sacs
B. They are closed sacs
C. They are spongy in nature
D. They are placed in chest cavity

Q.52 The function of vocal cords is to help in:
Voice production
B. Energy production
C. Glucose production
D. Air production

Q.53 The factor which affect the oxygen saturation of hemoglobin:
A. CO_2
B. Temperature
C. pH of blood
D. All of these are correct

Q.54 Intercostal muscles are found in:
Ribs
B. Pharynx
C. Lungs
D. Both B and C

Q.55 Amount of oxygen in inspired air is 21 % while in expired air is:
A. 0.11
B. 0.12
C. 0.15
D. 0.16

Q.56 The wall of chest cavity is composed of:
A. Intercostal muscles
B. ribs
C. Both and A and B
D. Diaphragm

Q.57 A surfactant plays its role by:
A. No effect on surface tension
B. Increasing surface tension
C. Decreasing surface tension
D. None of these

Q.58 The cartilage protects the trachea from:
Collapsing
B. Vibrating
C. Swelling
D. Breaking

Q.59 The thick muscular structure which is present below the pair of lungs is known as:
A. Pharynx
B. Diaphragm
C. Bronchi
D. None of these

Q.60 The floor of the chest is called:
A. Alveoli
B. Trachea
C. Bronchi
D. None of these

Q.61 What is the length of the windpipe?
12 cm
B. 15cm
C. 18 cm
D. 20 cm

Q.62 Select the phase/s of breathing:
A. Inhalation
B. Exhalation
C. Both and A and B
D. Vocal waves

Q.63 The smaller tubes within the chest cavity having cartilaginous plates are known as
A. Pharynx
B. Bronchioles
C. Bronchi
D. Both B and C

Q.64 What is the human breathing rate during hard physical work?
A. 10 to 15 times per minute
B. 10 to 20 times per minute
C. 80 to 120 times per minute
D. 30-40 times per minute

Q.65 Each air-sac consists of several microscopic single layered structures called:
A. Bronchioles
B. Windpipe
C. Bronchi
D. Alveoli

Q.66 In human, the total inside capacity of lungs is about:
A. 3.5 liters
B. 2.5 liters
C. 4 liters
D. 6 liters

Q.67 Which of these does not contain cartilage?
Bronchioles
B. Larynx
C. Trachea
D. Bronchi

Q.68 A surfactant is a secretory product that is composed of:
A. Protein and disaccharide
B. Protein and lipid
C. Lipid and carbohydrate
D. Carbohydrate and vitamins

Q.69 What is the breathing rate in humans during exercise?
A. 15-20 times per minute
B. 30 times per minute
C. 20 times per minute
D. 10-20 times per minute

Q.70 The epiglottis, a flap of tissues covers the:
A. Pharynx
B. Larynx
C. Glottis
D. Nasal cavity

Q.71 How many pair of ribs are present in chest wall?
A. 10
B. 11
C. 12
D. 13

Q.72 Which of these is not involved in respiration?
A. Lungs
B. Trachea
C. Glucagon
D. Bronchi

Q.73 A surfactant is essential for:
A. Efficient gas exchange
B. Both A and C
C. Maintaining structural integrity of alveoli
D. None of these

Q.74 Trachea is also termed as:
A. Voice box
B. Epiglottis
C. Bronchi
D. Windpipe

Q.75 Which pigment protein is also known as muscle haemoglobin?
A. Melanin
B. Myoglobin
C. Rhodopsin
D. Lutein

Q.76 Which of the following is the key function of pleural cavity?
A. Reduces friction between membranes
B. Slide easily on one another
C. Allows membrane to adhere on one another
D. All of these are correct

Q.77 During transport of carbon dioxide, blood does not become acidic due to:
A Blood buffer
B Neutralization of H_2CO_3 by Na_2CO_3
C. Absorption by leukocytes
D. Non-accumulation

Q.78 The oxygen and carbon dioxide crosses the plasma membrane by the process of?
A. Active diffusion
B. Facilitated diffusion
C. Passive diffusion
D. Random diffusion

Q.79 Maximum capacity of hemoglobin to absorb oxygen is:
A. 19.6ml/100 ml blood
B. 25 ml/100 ml blood
C. 30 ml/100 ml blood
D. 20 ml/100 ml blood

Q.80 Most carbon dioxide is transported in the form of:
A. Carboxyhaemoglobin
B. Plasma proteins
C. Bicarbonate ions
D. In dissolved form

Q.81 In nostrils, the substance which moistens and keep the incoming air warm is called:
A. Bronchi
B. Mucous
C. Pharynx
D. Glottis

Q.82 Each nasal cavity is subdivided into_____passageways in man.
A. 1
B. 2
C. 3
D. 4

Q.83 A series of C shaped cartilage rings are found in the wall of:
A. Epiglottis
B. Trachea
C. Bronchi
D. None of these

Q.84 Air enters the nasal cavity through:
A. Lungs
B. Bronchi
C. Trachea
D. Nostrils

Q.85 The structures with a diameter less than 1mm are:
Bronchioles
B. Bronchi
C. Alveoli
D. Air sac

Q.86 Which product is formed when carbon dioxide combines with amino group of haemoglobin?
Carboxyhemoglobin
B. Plasma proteins

C. Bicarbonate ions D. Histamines

Q.87 The process through which organisms get oxygen for their cells from their surrounding environment is known as:

A. Respiratory exchange B. Diffusion
C. Gaseous exchange D. Osmosis

Q.88 Carbonic anhydrase is found in:

R.B.C B. Parabronchi
C. Pleura D. None of these

Q.89 The inflammation of bronchi or bronchioles is known as:

A. Emphysema B. Pneumonia
C. Asthma D. Bronchitis

Q.90 Breathing is considered as a:

A. Chemical process B. Biochemical process
C. Mechanical process D. Both A and B

Q.91 Glottis is lined with:

A. Plasma membrane B. Mucous membrane
C. Meninges D. Epithelial membrane

Q.92 The carbon dioxide transported in the form of carbonate ions is:

A. 30% B. 50%
C. 70% D. 95%

Q.93 Hemoglobin can carry:

A. 1 molecule of oxygen B. 2 molecules of oxygen
C. 3 molecules of oxygen D. 4 molecules of oxygen

Q.94 The infection of lungs is called:

A. Emphysema B. Asthma
C. Pneumonia D. Bronchitis

Q.95 The disease characterized by the breakdown of alveoli is called:

A. Asthma B. Tuberculosis
C. Emphysema D. A and B

Q.96 How many compounds of tar of tobacco smoke are included in causing cancer?

A. 2 B. 8
C. 5 D. More than 10

Q.97 The inside of the lungs is damaged in:

Emphysema B. Lung cancer
C. Tuberculosis D. Asthma

Q.98 Asthma releases a compound named as:

Histamine B. Heparin
C. Epinephrine D. Antibodies

Q.99 Loss of lung tissue is caused by:

Emphysema B. Asthma
C. Pneumonia D. Bronchitis

Q.100 Cancer expands systematically by:

A. Locally B. Systemic
C. Metastasis D. Invasion

Q.101 The respiratory disorder in which cells division takes place without any control and causes tumors is known as:

A. Emphysema B. Asthma
C. Lung cancer D. Bronchitis

Q.102 What is the main cause of lung cancer?

A. Smoking B. Cough
C. Pollutants D. Mutagens

Q.103 The bronchitis is of types?

2 B. 4
C. 3 D. 5

Digestive system

Q.104 Pancreatic zymogens are only activated when they reached at?
A. Stomach B. Pancreas
C. Small intestine D. Large intestine

Q.105 The nodules of lymphoid tissue found in the wall of the intestinal tract are termed as:
A. Grave's region B. Peyer's patches
C. Hashimoto's nodes D. DiGeorge's nodes

Q.106 Zymogen cells secrete:
Pepsinogen B. Mucus
C. HCL D. Intrinsic factor

Q.107 It is not produced by duodenum:
A. Cholecystokinin B. Secretin
C. Mucus D. Biliverdin

Q.108 Salivary amylase acts on:
Starch B. Cellulose
C. Protein D. Lipid

Q.109 Trypsinogen is activated to trypsin by:
A. Kinases B. HCL
C. Mucus D. Enterokinase

Q.110 Cells that lower pH of stomach:
A. Mucous B. Chief
C. Zymogen D. Parietal

Q.111 Erypsin works on:
A. Polypeptide B. Dipeptide
C. Peptone D. All

Q.112 After stomach, digestion occurs in:
Small intestine B. Cecum
C. Colon D. Rectum

Q.113 Which is true about pepsin?
It is produced in inactivated form B. It is produced form esophagus
C. It requires basic medium D. It is an apoenzyme

Q.114 Secretion of secretin is forced by:
Food from stomach B. Bile form liver
C. Pancreatic juice D. All of these

Q.115 Botulism is severe form of:
A. Anemia B. Food poisoning
C. Beriberi D. Constipation

Q.116 Loss of weight takes place due to:
A. Anorexia nervosa B. Bulimia nervosa
C. Both A and B D. Constipation

Q.117 Which enzyme is found in saliva?
A. Pepsin B. Lipase
C. Ptyalin D. Lactase

Q.118 Its length is 2.4m and comprises 2/5 of small intestine.
A. Ileum B. Jejunum
C. Duodenum D. None of these

Q.119 Pair of salivary glands located behind the jaws is called
A. Sublingual gland B. Submaxillary glands
C. Parotid glands D. Adrenal glands

Q.120 A condition with abnormal amount of fats is called:
A. Anorexia B. Botulism
C. Piles D. Obesity

Q.121 Largest gland in human body:
Liver B. Adrenals
C. Thymus D. Parotid

Q.122 Largest part of large intestine:

A. Rectum
B. Colon
C. Caecum
D. Appendix

Q.123 What is the length of duodenum in cm?
A. 15-20
B. 20-25
C. 21-25
D. 25-30

Q.124 Which of the following would most greatly increase the activity of an enzyme functioning in the small intestine?
A. Decrease the temperature
B. Increase the amount of substrate
C. Decrease the pH
D. Increase the amount of enzymes

Q.125 What is the pH of fresh HC1?
A. 1.5
B. 5-7
C. 2-3
D. 4-5

Q.126 In the intestine, the branches of lymph capillaries, within villi, are called:
Lacteals
B. Lymph
C. Lymphatic vessels
D. Lymph nodes

Q.127 Bacteria live in human body for enzymatic source and vitamin:
Enterococcus
B. Pseudomonas
C. Campylobacter
D. Spirochete

Q.128 The semi solid mass in stomach is known as:
A. Bolus
B. Chyme
C. Serum
D. Food

Q.129 Choose the function irrelevant to oral cavity:
A. Grinding
B. Digestion
C. Lubrication
D. Absorption

Q.130 Lipid emulsification is done by:
A. Pancreatic juice
B. Bile
C. Gastric juice
D. Intestinal juice

Q.131 Incomplete or imperfect digestion is known as which of the following?
A. Obesity
B. Anorexia nervous
C. Bulimia nervous
D. Dyspepsia

Immune & system

Q.132 The deficiency of which of the following cause the immunodeficiency?
A. Hypoxanthine-guanine transferase
B. Xanthine oxidase
C. PRPP synthetase
D. Adenosine deaminase

Q.133 What is true about T-Cells?
A. A type of lymphocytes
B. Present in blood and work as defence
C. They kill the foreign invader
D. All

Q.134 Pathogens inside body are killed by:
A. Antibodies
B. Immune system cells
C. Interferon
D. All of these

Lymphatic system

Q.135 A fluid in transit between interstitial fluid and the blood:
A. Synovial fluid
B. Pleural fluid
C. Amniotic fluid
D. Lymph

Q.136 The number of efferent lymph vessels in a lymphatic system is:
1
B. 2
C. 3
D. Numerous

Q.137 Tonsils are related to:
Lymphatic system
B. Blood circulatory system
C. Nervous system
D. Defense system

Q.138 Slow rate of peristalsis causes:
A. Diarrhoea
B. Constipation
C. Vomiting
D. All of these

Q.139 Amount of lymph produced per day is:
2 to 3 liter
B. 7 to 8 liter

C. 8 to 12 liter
D. None

Q.140 Lymph nodes may be located in the human body in the tissues of:
A. Stomach
B. Brain
C. Thyroid gland
D. Groin and neck

Q.141 The flow of lymph is always towards:
A. Pancreatic duct
B. Thoracic duct
C. Bile duct
D. Parotid dust

Q.142 Lymph capillaries join together form larger lymph vessels, that gives rise to:
A. Thoracic duct
B. Lymph duct
C. Thoracic lymph duct
D. Sperm duct

Q.143 Lymphatic system consists of all the following except:
A. Lymph nodes
B. Blood
C. Lymphatic vessels
D. Lymph

Q.144 The function of lymph node is to filter _____.
A. Blood
B. Lymph
C. Semen
D. Amniotic fluid

Q.145 Thymus is found in human body_____.
A. In the medulla oblongata
B. In the mediastinum if the upper thorax
C. Both A & B
D. None

Q.146 Which of these is correct about thoracic duct?
A. It arises in the vessels of the brain
B. It drains the entire body above the diaphragm
C. It empties its contents into the subclavian vein
D. It carries blood into the lymphatic system

Q.147 Lymph vessels transfer the lymph into blood through:
A. Subclavian artery
B. Subclavian vein
C. Iliac artery
D. Iliac vein

Q.148 Lymphoid masses present in the wall of:
Digestive track
B. Sub Mucosa
C. Mucosa
D. All of these

Out of the Syllabus

Q.149 The space between the overtopped dichotomous branches was occupied by a sheet of which cells during evolution of megaphylls?
A. Sclerenchyma
B. Parenchyma
C. Collenchyma
D. Chlorenchyma

Q.150 There are how many stomata per square cm of leaf surface in Tobacco plants?
A. 10000
B. 12000
C. 15000
D. 20000

Q.151 Which element has function in opening and closing of stomata?
K
B. Mg
C. Cu
D. Fe

Q.152 Chlorosis, which is represented by yellowish hue on the leaves results from which of the following?
A. Accumulation of toxic waste products in leaves
B. Deficiency of chlorophyll
C. Short supplies of mineral nutrients in the soil
D. All of these

Q.153 Cell turgidity is caused by:
Endosmosis
B. Exosmosis
C. Plasmolysis
D. Active transport

Q.154 It is a detritus feeder:
A. Leech
B. Earthworm
C. Hook worm
D. Pin worm

Q.155 Autoimmune diseases act at the principal of:
Self against self
B. Self against antigens

C. Antigens self-destroyed
D. Antigens against self

Q.156 Thick, waxy & leathery cuticle around leaves is present in which of the following?

A. Hydrophytes
B. Mesophytes
C. Halophytes
D. Xerophytes

ANSWER KEY

LIFE PROCESSES IN ANIMALS AND PLANTS

(NUTRITION/GASEOUS EXCHANGE/TRANSPORT)

1	D	21	C	41	B	61	A	81	B	101	C	121	A	141	B
2	A	22	B	42	A	62	C	82	C	102	D	122	B	142	B
3	C	23	A	43	D	63	C	83	B	103	A	123	D	143	B
4	A	24	C	44	D	64	D	84	D	104	C	124	D	144	B
5	A	25	B	45	D	65	D	85	A	105	B	125	A	145	B
6	C	26	A	46	D	66	D	86	A	106	A	126	A	146	C
7	C	27	C	47	B	67	A	87	C	107	D	127	A	147	B
8	A	28	D	48	B	68	B	88	A	108	A	128	B	148	A
9	C	29	B	49	A	69	B	89	D	109	D	129	D	149	B
10	C	30	C	50	B	70	B	90	C	110	D	130	B	150	B
11	B	31	A	51	A	71	C	91	B	111	C	131	D	151	A
12	C	32	D	52	A	72	C	92	C	112	A	132	D	152	B
13	B	33	A	53	D	73	B	93	D	113	A	133	D	153	A
14	C	34	A	54	A	74	D	94	C	114	A	134	B	154	B
15	B	35	A	55	D	75	B	95	C	115	B	135	D	155	A
16	C	36	D	56	C	76	D	96	D	116	C	136	A	156	D
17	A	37	D	57	C	77	A	97	A	117	C	137	A		
18	C	38	B	58	A	78	C	98	A	118	B	138	B		
19	A	39	D	59	B	79	D	99	A	119	B	139	A		
20	A	40	B	60	D	80	C	100	C	120	D	140	D		

PROKARYOTES

Cellular Structure of bacteria

Q.1 Cyanobacteria have which of the following type of cell wall?
A. Gram positive
B. Gram negative
C. Cellulose
D. Acid fast

Q.2 In a bacterial cell, plasma membrane with all things present within it is called:
A. Cytoplasmic matrix
B. Cytoplasm
C. Protoplast
D. Cell Structure

Q.3 Prokaron means before nucleus is word of _____language.
A. Dutch
B. Greek
C. Roman
D. Spanish

Q.4 Microbiologist place bacteria in following major categories:
A. Archaeobacteria and vibrio bacteria
B. Eubacteria and Streptococcus
C. Eubacteria and archaeobacteria
D. Cyanobacteria and archaeobacteria

Q.5 The Prokaryotic Life is characterized by
A. Absence of locomotion
B. Absence of nuclear envelope
C. Absence of Protein
D. Absence of nuclear material

Q.6 All of the following are characteristics of prokaryotic cells except?
A. Unicellular
B. Lack of membrane-bound organelle
C. Lack of a nucleus
They are usually found in protists and fungi

Q.7 Which of the following structures helps cyanobacteria to move?
A. Flagella
B. Capsule
C. Gas vesicles
D. None of these

Q.8 What is the strengthening material of the prokaryotic cell wall?
A. Cellulose
B. Chitin
C. Silica waxes and lignin
D. Peptidoglycan or murein

Q.9 What is not a part of protoplasm?
Capsule of bacteria
B. Nucleus
C. Cell membrane
D. Mitochondria

Q.10 The gram positive bacteria appear which colour under gram staining?
Purple
B. Red
C. Pink
D. Blue

Q.11 In Prokaryotes, are involved in respiration.
Mesosomes and cell membrane
B. Cell membrane and ribosome
C. Mesosomes and ribosomes
D. All of Above

Q.12 Methicillin-resistant Staphylococcus aureus is an antibiotic-resistant "superbug" that can cause deadly infections in humans. What would these Gram-positive bacteria look like under a microscope?
Purple spheres
B. Clear rods
C. Pink rods
D. Purple spirals

Q.13 The filamentous appendages called pilli are present only on:
A. Gram - Positive bacteria
B. Gram - Negative bacteria
C. Chemosynthetic bacteria
D. None of above

Q.14 The mode of reproduction for cyanobacteria is which of the following?
A. Mitosis
B. Binary fission
C. Meiosis
D. Conjugation

Q.15 Which of the following is found in bacterial cells, but not in mature red blood?
A. Nucleus
B. DNA
C. Cell membrane
D. Mitochondria

Q.16 A bacterium with tuft of flagella at both poles is called?
A. Lophotrichous B. Peritrichous
C. Monotrichous D. Amphitrichous

Q.17 The most common waste material produced by bacteria is?
Lactic acid B. Urea
C. Ammonia D. Uric acid

Q.18 Which of the following contains genes for drug and disease resistance in bacteria?
Plasmid B. Nucleotide
C. Mesosomes D. All of these

Q.19 Archaeobacteria can survive at which of the following temperature? (Celsius)
A. 300 B. 120
C. 150 D. 200

Q.20 Pilli are hollow appendages in bacteria that are used for:
A. Motility B. Conjugation
C. Chemical detection D. None of above

Q.21 Which of following is not considered as basic shape of a bacterium
A. Cocci B. Filamentous
C. Spiral D. Bacilli

Q.22 Cell wall is only absent in which of the following group of bacteria?
A. Staphylococci B. *Pseudomonas*
C. *Diplococcus pneumonia* D. *Mycoplasmas*

Q.23 In what category of bacteria does Neisseria most likely fall?
Cocci B. Bacilli
C. Spirochete D. None of these

Q.24 Which of the following structure is not present in all bacteria?
A. Cell membrane B. Chromatin
C. Ribosome D. Capsule

Q.25 Which of the following is not a method of genetic recombination in bacterium?
A. Conjugation B. Transformation
C. Transduction D. Binary Fission

Q.26 Which of the following bacteria do not commonly have flagella?
Cocci B. Bacilli
C. Streptobacillus D. Vibrio

Q.27 What allows bacteria to stain positively with gram stain?
A. The bacteria is anaerobic
B. The bacterial sample was pretreated with 3% ethanol
C. The bacteria's periplasmic space
The bacteria's thick peptidoglycan cell walls

Q.28 The process of recombination in prokaryotes takes place in which of the following ways?
A. Transformation B. Conjugation
C. Transduction D. All of these

Q.29 The flagella originate from which part of the cell?
Basal body B. Cell membrane
C. Cell wall D. Capsule

Q.30 Those bacteria which are fully dependent upon their host for nutrition are called?
A. Heterotrophic bacteria B. Saprotrophic bacteria
C. Chemosynthetic bacteria D. Parasitic bacteria

Q.31 Flagella are basically composed of?
Protein B. Enzyme
C. Chemical D. None of above

Q.32 Which of the following would not be found in a prokaryotic cell?
Mitochondria B. RNA
C. Ribosomes D. Plasma membrane

Q.33 Which of the following characteristics make plasmid DNA useful for researchers?
A. Readily incorporate cloned DNA

B. Capable of autonomous replication
C. Capable of being isolated from genomic DNA
D. All of these

Q.34 Characteristic of prokaryotic cells?
A. Absence of membrane bound cell organelles
B. Absence of nucleus
C. Presence of 70S ribosomes
D. All of these

Q.35 Which of the following would not be observed in a bacterial cell?
A. DNA
B. Golgi apparatus
C. Cell membrane
D. Ribosomes

Q.36 The function of cell wall in prokaryotes is:
A. To give cells rigidity
B. To give specific shape
C. To protect from osmotic lysis
D. All of the above

Q.37 True bacteria are termed as:
Eubacteria
B. Archaeobacteria
C. Cyanobacteria
D. None of above

Q.38 The presence of peptidoglycan in Gram positive bacteria is:
A. 40% of dry weight
B. 50% of dry weight
C. 10% of dry weight
D. 80% of dry weight

Q.39 Which of the following is true of both bacterial conjugation and meiosis?
A. Both processes produce four haploid cells
B. Both processes are a form of asexual reproduction
C. Both processes involve genetic recombination
D. None of these

Q.40 A type of bacterial cell that completely surrounded by flagella is called:
A. Diplococcus
B. Tetrad
C. Peritrichous
D. Monotrichous

Q.41 Which of the following is heat resistant organelle?
Spores
B. Cysts
C. Granules
D. All of Above

Q.42 Which of the following is false about conjugation?
A. It forms a bridge between two bacterial cells
It involves transport of genetic material via vectors
C. It is a form of sexual reproduction
D. Both A and B

Q.43 For respiratory metabolism, bacterial cell membrane contains:
A. Proteins
B. Lipids
C. Enzymes
D. Chemicals

Q.44 What is the name of the region where double-stranded single circular DNA is found in the prokaryotic cell?
A. Proton Nucleus
B. Nucleus
C. Nucleoplasm
D. Nucleoid

Q.45 What is true for pili and flagella like structures of bacteria:
A. Both are same in size
B. Both are involved in locomotion
C. Both are composed of proteins
D. All of Above

Q.46 Which of the following structure provides greater pathogenicity to the bacteria?
Slime
B. Cell wall
C. Cell membrane
D. Capsule

Q.47 The presence of which of these cell structures would confirm that the cell is prokaryotic?
A. Cytoplasm
B. Ribosomes
C. Flagella
D. Peptidoglycan cell wall

Q.48 In prokaryotic cells, ribosomes are of?
A. 50S + 40S
B. 80S
C. 60S + 40S
D. 70S

Q.49 Cell wall of a bacterial cell is more permeable in:
Gram positive bacteria
B. Gram negative bacteria
C. Both A & B
D. Mycoplasmas

Q.50 Which of the following is a form of asexual reproduction in prokaryotic cells?
A. Binary fission and mitosis
B. Binary fission and meiosis
C. Binary fission and transformation
n

Q.51 The cell wall of Archaeobacteria does not contain which of the following?
A. Glycoproteins
B. Polysaccharides
C. Proteins
D. Peptidoglycan

Q.52 Which of the following is most responsible for bacterial cell motility?
A. Cilia
B. Flagella
C. Pili
D. Pseudopodia

Q.53 Chromatin body in prokaryotes can also termed as:
A. Nuclear body
B. Nuclear region
C. Nucleoid
D. All of Above

Q.54 Cyanobacteria help in nitrogen fixation since they have:
Heterocyst
B. Hormogonia
C. Akinetes
D. Mesosomes

Q.55 Protein named as pilin is present in:
A. Flagella
B. Pilli
C. Capsule
D. Slime

Q.56 Periplasmic space is absent in:
A. Gram positive bacteria
B. Gram negative bacteria
C. Both and B
D. None

Q.57 Which part of bacteria is most delicate and damage can kill bacterial cell immediately?
A. Cell wall
B. Cell membrane
C. Slime
D. Capsule

Q.58 It occupies position near center of cell:
A. Chromosome
B. Plasmid
C. Nucleoid
D. Mitochondria

Q.59 Which is present in every bacterium?
A. Cell wall
B. Slime
C. Cell membrane
D. Capsule

Q.60 Cyanobacteria are related to eukaryotes in having:
A. PS1
B. PSII
C. Both A and B
D. None

Q.61 Which organelle is of prokaryotic origin?
A. Mitochondria
B. Chloroplast
C. Both A and B
D. None of the above

Q.62 Spores are resistant to:
A. Antibodies
B. Environmental stress
C. Disinfectants
D. All of these

Q.63 Cyanobacteria move by:
A. Gas vesicles
B. Gliding motility
C. Flagella
D. Both A and B

Q.64 Purple non-sulphur is an example of:
Photosynthetic bacteria
B. Heterotrophic bacteria
C. Saprotrophic bacteria
D. Chemosynthetic bacteria

Q.65 Which of the following type of bacterial replication is most similar to mitosis?
A. Transduction
B. Binary fission
C. Conjugation
D. Transformation

Q.66 Example of bacterial requiring low concentration of oxygen is:

A. Spirochete
B. *E. coli*
C. *Pseudomonas*
D. *Campylobacter*

Q.67 Bacteria that live in humus are_____.
A. Saprophytic
B. Anaerobic
C. Aerobic
D. Facultative

Q.68 Cyanobacteria are_____in nature.
Autotroph
B. Heterotroph
C. Decompose
D. None

Q.69 All bacterial species have this organelle in common:
Ribosome
B. Flagella
C. Pilli
D. Cell wall

Q.70 Aerobic bacteria release:
A. Sulphur
B. Oxygen
C. CO_2
D. Hydrogen

Q.71 Bacteria without flagella are called:
Atrichous
B. Amphitrichous
C. Lophotrichous
D. Peritrichous

Q.72 E. coli is a:
A. Facultative
B. Anaerobic
C. Gram negative
D. All of these

Q.73 Which true prokaryotes is a photosynthetic bacterium?
Cyanobacteria
B. *Nostoc*
C. *Chlorella*
D. *E. coli*

Q.74 The structure of prokaryote which is involved in attachment:
Pili
B. Flagella
C. Cell wall
D. Outer membrane

Q.75 Cyanobacteria undergo photosynthesis with help of:
Phycobilisome
B. Mesosomes
C. Spores
D. Cytoplasmic granule

Shape and size of bacteria

Q.76 Streptobacillus is basically a:
A. Single cell
B. Chain of bacilli
C. Pairs of bacilli
D All of Above.

Q.77 The several distinct arrangements of cocci is based on their
A. Long chain of cells
B. Planes of division
C. Grape like clustered shape
D. All of Above

Q.78 In cocci, three plane division results in the formation of sarcina which is a:
Cube of 8 cocci
B. Square of 4 cocci
C. Irregular structure
D. Triangular 6 cocci

Q.79 Division of cocci in three planes results in formation of:
Sarcina
B. Tetrad
C. Grape like clusters
D. All of above

Q.80 The size of Spirochete is approximately?
A. 0.75-1.25 um
B.100-200 nm
C. 0.1 -600 um
D. 500 um

Q.81 Spiral shaped bacteria is:
A. E. coli
B. *Vibrio*
C. *Mycoplasma*
D. *Bacillus*

Q.82 A huge microorganism, Acanthurus nigrofuscus is a_____discovered in intestine of brown surgeonfish.
Bacterium
B. Virus
C. Parasite
D. Protozoa

Q.83 Group of 8 cocci bacteria is called?
A. Diplococci
B. Streptococcus

C. Tetrad
D. Sarcina

Q.84 Which of the following has a chain-like arrangement?
A. Streptobacillus
B. Streptococci
C. Both A and B
D. None of these

Q.85 Which of the following bacteria possesses a spherical shape?
A. Bacillus anthracis
B. Escherichia coli
C. Spirillum minus
D. Staphylococcus aureus

Q.86 Coccobacillus has a shape similar to which of the following?
Egg
B. Rod
C. Ball
D. None of these

Q.87 Which is a spiral shape bacteria?
Spirochete
B. E. coli
C. *Pseudomonas*
D. *Streptococcus*

Q.88 Which of the following bacteria is equal to the size of hyphen?
Epulopiscium fishelsoni
B. *Pseudomonas aeruginosa*
C. *Escherichia coli*
D. *Streptococcus pneumoniae*

Importance and control of bacteria

Q.89 Chemical substances used on living tissues that inhibit the growth of microorganism are called?
A. Disinfectant
B. Sanitizer
C. Antibiotic
D. Antiseptics

Q.90 Approximately how many species of bacteria are known to cause diseases in humans?
A. 100
B. 150
C. 200
D. 250

Q.91 Discoloration of teeth is due to misuse of:
Tetracycline
B. Ampicillin
C. Kanamycin
D. Erythromycin

Q.92 For sterilization,_____are used.
UV rays
B. IR rays
C. Gamma rays
D. X-rays

Q.93 Deafness is caused by excess use of:
A. Tetracycline
B. Streptomycin
C. Levofloxacin
D. Erythromycin

Q.94 Bacteria play important role in:
Nitrogen cycle
B. Carbon cycle
C. Urea cycle
D. Water cycle

Q.95 For sterilization, which of the following is used:
A. Dry heat
B. Moist heat
C. Gamma rays
D. All of these

Q.96 Pesticide and insecticides are made up of:
A. Physical agents
B. Biological agents
C. Chemical agents
D. All of these

Q.97 Removal of a parasite from the body of the host is called:
A. Sterilization
B. Disinfection
C. Disinfestation
D. None of these

Q.98 What is the main role of bacteria?
A. CO_2 cycle
B. Nitrogen cycle
C. Phosphorus cycle
D. All of above

Out of Syllabus

Q.99 Who coined the term Animalcules for microorganisms like Bacteria and protozoa?
A. Robert Koch
B. Louis Pasteur
C. Alexander Fleming
D. Leeuwenhoek

Q.100 Rapid growth at exponential rate occurs in which phase of bacterial growth?

A. Lag [redacted]
C. Stationary D. Decline

Q.101 Which of the following refers to the region of RNA responsible for binding ribosomes during prokaryotic translation?

A. TATA box B. Promoter
C. Terminator D. Shine-Dalgarno sequence

Q.102 Compound Microscope was first used by:

A. A.V. Leeuwenhoek B. Pasture
C. Janssen and Hans D. None of these

Q.103 Which of the following will not survive in the presence of oxygen?

A. Constitutive anaerobe B. Facultative anaerobe
C. Constitutive aerobe. D. Obligate anaerobe

Q.104 Which of the following statement is incorrect regarding germ theory of diseases postulated by Robert Koch?

A. A specific organism can always be found in association with a given disease
B. The organism can be isolated and grown in pure culture in the laboratories
C. It is possible to recover the organism in pure culture from the experimentally infected animals.
The pure culture cannot produce the disease when inoculated into susceptible animal

Q.105 Example of bacteria requiring low concentration of oxygen is:

A. Spirochete B. *Escherichia*
C. *Pseudomonas* D. *Campylobacter*

Q.106 Robert Koch discovered bacteria that cause:

A. Tuberculosis and Typhoid B. Tuberculosis and Cholera
C. Tuberculosis and Measles D. All of Above

Q.107 Microscope's ability to distinguish between separate objects that are close together is called?

A. Magnification B. Resolving power
C. Contrast D. Scanning power

Q.108 The nitrifying bacteria are an example of which of the following?

A. Heterotrophic bacteria B. Saprotrophic bacteria
C. Chemosynthetic bacteria D. Parasitic bacteria

ANSWER KEY

PROKARYOTES

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

Male reproductive system

Q.1 In the male reproductive tract, sperm cells follow a specific path. Where sperm cells enter after traveling through the epididymis?
A. Urethra
B. Seminiferous tubules
C. Ejaculatory duct
D. Vas deferens

Q.2 The epididymis, vas deferens, and urethra are a series of ducts found in which body system?
A. Endocrine
B. Lymphatic
C. Digestive
D. Male reproductive

Q.3 Sperms are produced in:
A. Urethra
B. Pancreas
C. Sperm dust
D. Testis

Q.4 Spermatids differentiate into:
Spermatozoa
B. Mature sperms
C. Primary oocyte
D. Secondary spermatocyte

Q.5 The primary spermatocytes undergo meiotic division to form:
A. Spermatozoa
B. Secondary spermatocyte
C. Primary oocyte
D. Mature sperms

Q.6 Which one of the following is most likely to occur in a boy during puberty?
A. He produces eggs
B. His shoulders broaden
C. Color of his eyes changes
D. None of the above

Q.7 Protection and nourishment of sperms are provided by:
Fluid secreted by sertoli cells
B. Interstitial fluid
C. Fluid in scrotum
D. All of the above

Q.8 In mammalian male, the reproductive and excretory system share the same:
A. Vas deferens
B. Urinary bladder
C. Ureter
D. Urethra

Q.9 Human sperm moves by:
B. Cilia
C. Pilli
D. All of these

Q.10 The sperm duct from each side passes into which of the following?
A. Ureter
B. Urethra
C. Testes
D. Abdominal cavity

Q.11 Sperms are developed at what temperature?
Lower than body temperature
B. Higher than body temperature
C. Body temperature
D. All of these

Q.12 What is the name of the tube that carries sperm and urine out of the human body?
A. Penis
B. Seminal vesicles
C. Urethra
D. Ureter

Q.13 The highly complex duct system in male is called:
A. Scrotum
B. Seminiferous tubules
C. Prepuce
D. Epididymis

Q.14 The cells that secrete testosterone
A. Nerve cells
B. Fat cells
C. Muscle cells
D. Interstitial cells

Q.15 Select the function/s of male reproductive system:
A. To produce enzymes
B. To transfer sperms to the female
C. To produce sperms
D. Both B and C are correct

Q.16 The spermatic cord and spermatic duct are?
A. Same
B. Different
C. Same in function
D. Same in location

Q.17 Fluid secreted by sertoli cells provides sperms with which of the following?
A. Liquid medium
B. Nourishment
C. Protection
D. All

Q.18 The sperm duct open into which of the following?
A. Ureter
B. Urethra

C. Testes D. All of these

Q.19 All of the following statements are correct except:

A. The testicles produce millions of sperm.
B. Hormones are produced by the testicles.
C. Semen is produced in the seminal vesicles
D. All males are born with one testicle

Q.20 The scrotum is responsible for which of the following in the male reproductive system?

A. Synthesis of sperm B. Lubrication
C. Nourishment of sperm D. Temperature regulation

Q.21 Which of the following is not a true characteristic of spermatogonia?

A. They develop into primary spermatocytes through mitosis
B. They are undifferentiated
C. They are germ line cells
D. They are haploid

Q.22 The number of spermatids produced from primary spermatocytes is?

A. 1 B. 3
C. 3 D. 4

Q.23 Where does the human body store spermatozoa?

A. Ejaculatory duct B. Seminal vesicle
C. Seminiferous tubules D. Epididymis

Q.24 The male gonads are known as?

Testes B. Testosterone
C. Ovaries D. Ovum

Q.25 The hormone that is released from the testes is?

A. Progesterone B. Estrogen
C. Testosterone D. All of these

Q.26 Sperms are nourished and activated through?

A. Vas deferens B. Prostate gland
C. Semen D. All of these

Q.27 External genitalia of human male consist of a pair of testes which lie outside the body in the sac like?

A. Bag B. Scrotum
C. Pouch D. All of these

Q.28 Which of the following is found beneath the prostate gland?

A. Vas deferens B. Seminal vesicle
C. Urethra D. Cowper's gland

Q.29 Fluid secreted by three sets of glands combines with sperm to form:

A. Interstitial fluid B. Semen
C. Amniotic fluid D. Both A and B

Q.30 External male genitalia are:

A. A pair of testes B. Seminiferous tubules
C. Male copulatory organ D. Both A and C

Q.31 In male reproductive system which gland neutralizes the pH of urethra?

A. Ejaculatory gland B. Prostate gland
C. Seminal vesicle gland D. Bulbourethral gland

Q.32 How many million sperms are produced in human per day?

A. 10 B. 20
C. 30 D. 400

Q.33 Sperm secrete which enzyme?

A. Acrosome B. Hyaluronidase
C. Lipase D. Both A and B

Q.34 Which of these transports sperm from the testis to the penis?

Sperm duct B. Sacrotum
C. Urethera D. Gamete

Q.35 What is a key difference between spermatogenesis and oogenesis?
A. Spermatogenesis results in only 1 sperm; oogenesis results in 4 eggs.
B. Spermatogenesis results in 2 sperm; oogenesis results in only 1 egg.
C. Spermatogenesis results in 8 sperm; oogenesis results in only 4 eggs.
D. Spermatogenesis results in 4 sperm; oogenesis results in only 1 egg

Female reproductive system (including menstrual cycle)

Q.36 Human embryo is called fetus from the beginning of?
A. 2nd month B. 3rd month
C. 4th month D. 5th month

Q.37 Fusion of male and female gametes is called:
Fertilization B. Implantation
C. Development D. Growth

Q.38 Ovum receive sperm at:
Animal pole B. Vegetal pole
C. Both A and B D. None of these

Q.39 Another name for the sex cell is:
A. Hormone B. Gamete
C. Zygote D. Testicle

Q.40 Follicular phase ranges from_____days.
A. 1-5 B. 15-28
C. 11-15 D. 6-14

Q.41 During 6-28 days of menstrual cycle,_____is thickened.
A. Epiderm B. Myometrium
C. Endometrium D. Epimetrium

Q.42 Secondary oocyte maturation takes place in:
A. Ovary B. Uterus
C. Cervix D. Fallopian tube

Q.43 Proliferative phase lasts for_____days.
A. 1-5 B. 5-13
C. 15-28 D. 16-18

Q.44 Placenta is established between:
Uterine and foetal tissues B. Uterine and cervix
C. Cervix and vagina D. Ovary and oviduct

Q.45 In 16-28 days_____takes place.
A. Shedding to uterus B. Thickening of uterus wall
C. Development of follicle D. Implantation

Q.46 After fertilization the zygote increases in size and travels down the fallopian tube to become embedded in the walls of the womb. This process is called:
A. Ovulation B. Conception
C. Implantation D. Menstruation

Q.47 Which of these cycles operate in human females?
A. Oestrous cycle B. Menstrual cycle
C. Both A and B D. None of these

Q.48 Which does not occur in females at the puberty?
Voice deepens B. Pubic hair growth
C. Hips broadens D. Start of menstrual cycle

Q.49 Between the seminiferous tubules are interstitial cells which secrete which of the following hormone?
A. Progesterone B. Oxytocin
C. Testosterone D. Estrogen

Q.50 Development of primary follicles is induced by:
A. LH B. Estrogen
C. FSH D. Progesterone

Q.51 Labor pains are induced by:

A. Placenta disintegration
B. Distension of cervix
C. Secretion of oxytocin
D. Estrogen production

Q.52 Which of the following would not be expected during pregnancy?
A. Maintenance of the corpus luteum
B. Formation of the placenta
C. Blastocyst implantation
D. Formation of the corpus albicans

Q.53 In humans, fertilization involves the addition of chromosomes from the sperm and the egg. The resulting cell is called a?
Zygote
B. Egg
C. Embryo
D. Fetus

Q.54 Which characteristic is not in human girls if she is young?
Menopause
B. Menarche
C. Huge hips
D. Hairs

Q.55 Test tube helps in:
In vitro fertilization
B. In vivo fertilization
C. Both A and B
D. Ex vitro fertilization

Q.56 Sex is determined after:
A. 4-8 moths
B. 2-3 months
C. 6-8 moths
D. 8 months

Q.57 Lactation in stimulated by:
A. LTH
B. Lactogen
C. Placenta
D. ALL A, B, C

Q.58 In humans placenta is established by:
A. Hypothalamus
B. Progesterone
C. Thalamus
D. Estrogen

Q.59 The time in a woman's life when menstruation usually no longer occurs:
A. Late 50s
B. Mid 40s
C. Teens
D. Early 20s

Q.60 The organs that produce reproductive cells are known as?
A. Gametes
B. Gonads
C. Glands
D. Follicles

Q.61 When a female ovulates, in what phase of division is the oocyte?
A. Anaphase I
B. Prophase I
C. Metaphase I
D. Metaphase II

Q.62 The number of chromosomes in a zygote are?
A. n
B. 2n
C. 3n
D. 4n

Q.63 The uterine tube opens into:
A. Ovary
B. Ureters
C. Oviduct
D. None of these

Q.64 Fertilization of ovum occurs during which of the following?
A. In uterus
B. In ovary
C. In distal part of oviduct
D. In proximal part of oviduct

Q.65 Which is the largest cell in the human body?
A. Macrophage
B. Ovum
C. Granule cell
D. None of These

Q.66 Oogenesis starts:
A. From puberty
B. At menarche
C. At adult stage
D. Before birth

Q.67 It does not occur in female during menstruation:
A. Breast enlargement
B. Broadening of shoulder
C. Fatigue
D. Bloating

Q.68 Disturbance in_____may lead to miscarriage or premature birth.
A. LH
B. Progesterone
C. FSH
D. Estrogen

Q.69 The oviduct is also called as:

A. Fallopian tube
B. Uterine tube
C. Both A and B
D. Uterus

Q.70 Placenta is important as its function is to:
A. Exchange oxygen
B. Exchange carbon dioxide
C. Exchange nutrients
D. All A, B and C are correct

Q.71 In human female, the fertilized egg gets implanted in uterus:
A. After about 7 days of fertilization
B. After about 30 days of fertilization
C. After about two months of fertilization
D. After about 3 weeks of fertilization

Q.72 The union of meiotically produced specialized sex cells from each parents produce?
A. Fertilized egg
B. Porifera
C. Zygote
D. None of these

Q.73 2nd meiotic division in oocyte is completed during?
A. When ovum is discharged from the ovary
B. Just before fertilization
C. Before the onset of menstruation
D. When oocyte is fertilized by sperm

Q.74 The end or complete stop of the menstrual cycle is called:
A. Ovulation
B. Menopause
C. Fertilization
D. Menstruation

Q.75 Endometrium stimulation and vascularization is done by
A. Estrogen
B. Progesterone
C. FSH
D. LH

Q.76 The internal living of the uterus wall is called:
A. Endometrium
B. Perimetrium
C. Corpus luteum
D. None of these

Q.77 Which factors affect the female reproductive cycle?
A. Malnourishment
B. Emotional stress
C. Both A and B
D. None of these

Q.78 An egg is fertilized in laboratory and implanted in uterus for development. This is called:
A. Test tube baby
B. Cloning
C. In vitro fertilization
D. Both A and B

Q.79 Which one of the following is not part of the female reproductive system?
A. Ovary
B. Vagina
C. Urethra
D. Uterus

Q.80 Germ cells in the ovary produce many?
A. Spermatogonia
B. Oogonia
C. Zygospores
D. Eggs

Q.81 The proximal part of the oviduct is significant because:
A. Fertilization occurs here
B. Implantation occurs here
C. Placenta is established here
D. None of these

Q.82 Secondary oocyte is ovulated from:
A. Corpus luteum
B. Graafian follicle
C. Primary follicle
D. Germinal epithelium

Q.83 Which hormone is produced mainly by corpus luteum in the ovary following ovulation?
A. Progesterone
B. Chorionic gonadotrophic hormone
C. FSH
D. LH

Q.84 Nutrition to egg in ovary is provided by which of the following?
A. Germ cells
B. Milk cells
C. Follicle cells
D. All of these

Q.85 Uterus opens into the vagina through:
A. Uterus
B. Cervix
C. Oviduct (fallopian tube)
D. Ovary

Q.86 In a typical menstrual cycle of 28 days, what is the most likely fertile period?

A. Days 5 to 10 B. Days 1 to 5
C. Days 14 to 15 D. Days 11 to 14

Q.87 The discharge of ovum from ovary is called:
A. Lactation B. Ovulation
C. Placenta formation D. Menstruation

Q.88 Urethra and vagina have openings to the exterior:
A. Common B. Independent
C. Both A and B D. None of these

Q.89 What event occurs in the menstrual cycle when the level of progesterone declines?
A. Ovulation B. Menstruation
C. Menopause D. Fertilization

Q.90 Which cells produce oogonia in ovary?
A. Stromal cells B. Epithelial cells
C. Germ cells D. theca cells

Q.91 The period during which a girl sexually matures is called:
A. Menstrual cycle B. Puberty
C. Childhood D. Teens

Q.92 Average loss of blood during birth is about how many cm3?
A. 250 B. 300
C. 350 D. 400

Q.93 Gametes in animals are produced by which of the following?
A. Mitosis B. Meiosis
C. Fission D. All

Q.94 The uterus of the female reproductive system opens into the?
A. Placenta B. Birth canal
C. Cervix D. All of these

Q.95 During birth which of following act as birth canal?
A. Oviduct B. Ovary
C. Uterus D. Vagina

Q.96 The event happens in menstrual cycle when level of progesterone declines:
A. Ovulation B. Beginning of menses
C. Corpus luteum formation D. Maturation of ovarian follicle

Q.97 Which term refers to the formation of egg cells that begins in the developing ovaries of a female fetus?
A. Meiosis B. Ovulation
C. Fertilization D. Oogenesis

Q.98 Human embryo remains enclosed in:
A. Amniotic sac B. Amnion
C. Chorion D. Allantois

Q.99 The time when the sex organs start to become active is called:
A. The fertile period B. Adulthood
C. Pregnancy D. Puberty

Q.100 Which one of the following statements is incorrect?
A. Eggs in the ovaries ripen when they meet a sperm
B. Girls are born with thousands of eggs in their ovaries
C. Hormones control the release of the egg from the ovary
D. One egg is released from the ovary about every month

Q.101 Which of the following is not a true characteristic of gametocytes?
A. Male gametocytes are called spermatocytes
B. Gametocytes divide by mitosis into other gametocytes
C. Female gametocytes are called oocytes
D. They are eukaryotic somatic cells

Q.102 The human menstrual cycle generally repeats after how man days?
A. 20 days B. 28 days
C. 10 days D. 40 days

Q.103 The total gestation period (pregnancy) is usually about:

A. 28 days B. 250 days
C. 280 days D. 300 days

Q.104 Sexual characteristics in females develop during?
A. Menstruation B. Ovulation
C. Puberty D. Birth

Q.105 In female reproductive system, ovulation starts:
A. After menstruation B. After proliferative phase
C. After secretory phase D. Before proliferative phase

Q.106 Which of the following is not a secondary character in females?
A. Shoulders broaden B. Egg production
C. Enlarge breast D. None of these

Q.107 Proliferative phase is also called:
A. Menstrual phase B. Secondary phase
C. Secretory phase D. None of these

Q.108 In human only one ovum is usually discharged from the ovary at one time this phenomenon is called?
A. Ovulation B. Menstruation
C. Oestrous D. All of these

Q.109 In which week of pregnancy organogenesis starts:
A. 12^{th} B. 8^{th}
C. 14^{th} D. 16^{th}

Q.110 During menstruation, which of the following sheds off?
A. Epimetrium B. Endometrium
C. Both D. Myometrium

Sexually transmitted diseases

Q.111 During birth central nervous system of infants can be damaged by:
A. Syphilis B. Genital herpes
C. Gonorrhoea D. HPV

Q.112 The sexually transmitted disease caused by *Treponema pallidum* is:
Syphilis B. Gonorrhoea
C. Genital Herpes D. AIDS

Q.113 Gonorrhoea is caused by_____.
A. Gram positive bacteria B. *Neisseria gonorrhoea*
C. Both A and B D. None

Out of Syllabus

Q.114 Which of the following is an ovoviviparous organism?
A. Reptiles B. Mammals
C. Frog D. Duckbill platypus

Q.115 The animals which involves development of embryo inside female body are called:
A. Internal fertilization B. Viviparous
C. Oviparous D. Both A & B

Q.116 Asexual reproduction requires only a single parental organism which gives rise to offspring by?
A. Meiotic cell division B. Mitotic cell division
C. Both A and B D. None of these

Q.117 Cryptorchidism is a condition where?
A. One of both testes are not developed
One or both testes fail to descend into the scrotum
C. One or both testes are not formed
D. None of these

Q.118 In viviparous animals:
A. External fertilization leads to embryo formation
B. Internal fertilization leads to embryo formation
C. External development leads to embryo formation
D. None of the above

Q.119 Off springs produced as a result of asexual reproduction are:
A. Similar to parents
B. Identical to parents
C. Different to parents
D. None of these

Q.120 Parthenocarpy is induced by:
A. Gibberellins
B. Auxins
C. Cytokinins
D. Abscisic acid

Q.121 Which is a viviparous?
A. Duck
B. Goat
C. Frog
D. Lizard

Q.122 In cloning , nucleus is implanted in:
A. Zygote
B. Egg cell
C. Sperm
D. Somatic cell

Q.123 Sperms have origin?
A. Ectodermal
B. Mesodermal
C. Endodermal
D. None of these

Q.124 Development of an egg into zygote without fertilization is called?
Parthenocarpy
B. Apomixes
C. Parthenogenesis
D. All of these

Q.125 In sexual reproduction, plants have diplohaplontic life cycle with alternating?
A. Haploid sporophyte and diploid gametophyte generations
B. Diploid sporophyte and diploid gametophyte generations
C. Haploid sporophyte and haploid gametophyte generations
D. Diploid sporophyte and haploid gametophyte generations

Q.126 A woman receives her X chromosome from:
A. Her mother only
B. Both her mother and her father
C. Her father only
D. Extra nuclear DNA in her mother's egg

Q.127 To overcome infertility, which technique is used:
In vitro fertilization
B. In vivo fertilization
C. Both A and B
D. None of these

Q.128 Which lytic enzyme is released by the sperm?
A. Trypsin
B. Helicase
C. Testosterone
D. Hyaluronidase

Q.129 The animals in which there are separate male and female individuals are called?
Unisexual
B. Bisexual
C. Asexual
D. Hermaphrodite

Q.130 Which method is of asexual reproduction?
A. Sporulation
B. Apomixes
C. Fission
D. All of these

Q.131 What is an example of an oviparous mammal?
A. Penguin
B. Spiny anteater
C. Shark
D. Elephant

Q.132 Which characteristic is not of identical twins?
A. Produced by separation of two blastomeres
B. Produced asexually
C. Produced when embryo is at two cell stage
D. Have different genetic makeup

Q.133 Viviparous animals are those in which?
A. Internal fertilization with external development in eggs
B. Internal fertilization and internal development followed by hatching of egg
C. External fertilization with external development
Internal fertilization with internal development inside female body

Q.134 In asexual reproduction offspring are genetically?
Identical to the parents
B. Identical if mutations do not occur.
C. Non identical to the parents
D. Both A and B

ANSWER KEY

REPRODUCTION

1	D	21	D	41	C	61	D	81	A	101	D	121	B
2	D	22	D	42	D	62	B	82	B	102	B	122	B
3	D	23	D	43	B	63	C	83	A	103	C	123	D
4	A	24	A	44	A	64	D	84	C	104	C	124	A
5	B	25	C	45	B	65	B	85	B	105	B	125	D
6	D	26	D	46	C	66	D	86	C	106	B	126	B
7	A	27	B	47	B	67	B	87	B	107	D	127	A
8	D	28	C	48	A	68	B	88	B	108	A	128	D
9	A	29	B	9	C	69	C	89	B	109	B	129	A
10	B	30	D	50	C	70	D	90	C	110	B	130	D
11	A	31	D	51	C	71	A	91	B	111	A	131	D
12	C	32	D	52	D	72	C	92	C	112	A	132	D
13	B	33	D	53	A	73	D	93	B	113	C	133	D
14	D	34	A	54	A	74	B	94	B	114	D	134	A
15	D	35	D	55	A	75	A	95	D	115	D		
16	B	36	B	56	B	76	A	96	B	116	B		
17	D	37	A	57	D	77	C	97	D	117	B		
18	B	38	A	58	B	78	C	98	B	118	B		
19	D	39	B	59	D	79	C	99	D	119	B		
20	D	40	D	60	B	80	B	100	a	120	B		

SUPPORT AND MOVEMENT

Cartilage

Q.1 Cartilage is a form of:
A. Cardiac tissue
B. Connective tissue
C. Epithelial tissue
D. Nervous tissue

Q.2 Which type of cartilage is the most abundant in human body?
Hyaline cartilage
B. Elastic cartilage
C. Fibrocartilage
D. None of these

Q.3 Which of the following is not an important function of bone?
A. Regulation of ion concentration
B. Muscular contraction
C. Organ and nerve protection
D. Regulation of pH through hydration

Q.4 Which of the following cells secrete flexible, elastic, non-living matrix collagen?
A. Osteocytes
B. Osteoclasts
D. Chondrocytes
D. Osteoblasts

Q.5 Cartilage has living cells that are called:
A. Osteocytes
B. Osteoblasts
C. Osteoclasts
D. Chondrocytes

Q.6 What is not true about cartilage?
There are many blood vessels in the cartilage
B. It is a form of connective tissue
C. It covers ends of the bone at the joint
D. Both A and B

Q.7 What are osteocytes?
A. White blood cell
B. Bone cell
C. Brain cell
D. None of these

Q.8 Hyaline cartilage forms joint between:
Growing bone
B. Mature bones
C. Lamellar bone
D. Secondary bone

Q.9 Accumulation of crystals in cartilage is called:
A. Osteoarthritis
B. Gout
C. Pseudogout
D. None

Q.10 The fibrous connective tissue which attaches bone to bone is called:
A. Tendon
B. Ligament
C. Reticular tissue
C. Cartilage

Types of muscles

Q.11 Which one of the following is not a character of cardiac muscles?
A. Striated and branched
B. Multinucleated
C. Self-excitatory
D. None of these

Q.12 Muscles are composed of:
A. Silica
B. Polyester threads
C. Group of cell fibers
D. Calcium and phosphorus

Q.13 Skeletal muscles are made up of:
A. Actin
B. Myosin
C. Both A & B
D. Actin, myosin and tropomyosin

Q.14 Cardiac muscles differ from skeletal muscles by which of the following property?
A. Structure
B. Involuntary control
C. Calcium binding protein
D. Sarcotubular system

Q.15 Vertebrates have which of the following?
A. Cardiac muscles
B. Skeletal muscles
C. Smooth muscles
D. ALL A, B, C

Q.16 It is a property of cardiac myocytes:
A. Voluntary control
B. Unstripped
C. Fatigue resistance
D. Spindle shaped cell

Q.17 Why skeletal muscles are called striated muscles?
A. Appear darker than smooth muscles by naked eye
B. Alternating dark and light bands appear on their surface when visualized by naked eye
C. Alternating dark and light bands appear on their surface when visualized via a microscope
D. All of these

Q.18 Smooth muscles, cardiac muscles and organs are regulated by which of the following?
A. Central nervous system
B. Parasympathetic nervous system
C. Sympathetic nervous
D. Autonomic system

Q.19 Striated skeletal muscle cells are under:
Voluntary control
B. Involuntary control
C. Both A and B
D. None of these

Q.20 Which of the following muscle fiber contains single nucleus?
Smooth muscle
B. Cardiac muscle
C. Both A and B
D. Skeletal muscle

Q.21 Which of the following grouping is incorrect?
A. Skeletal, striated, voluntary
B. Cardiac, striated, involuntary
C. Cardiac, striated, voluntary
D. Both B and C

Q.22 An entire skeletal muscle is surrounded by:
A. Sarcolemma
B. Microtubules
C. Both A and B
D. Epimysium

Q.23 The fibrous connective tissue which attaches muscle to bone is called:
Tendon
B. Ligament
C. Reticular tissue
D. Cartilage

Q.24 What is true about skeletal muscle cell?
It has light and dark band
B. It has only one muscle
C. It is under involuntary control
D. None of these

Q.25 It is present in cardiac muscles but absent in smooth muscles:
A. Tropomyosin
B. Actin
C. Troponin
D. Myosin

Q.26 Which of the following muscles is involuntary and non-striated?
A. Skeletal muscle
B. Smooth muscle
C. Cardiac muscle
D. None

Q.27 Which is not true for cardiac muscle?
No distinct nucleus
B. Branched
C. Involuntary
D. Intercalated disc

Q.28 Unique feature of cardiac muscle cell is:
Intercalated disc
B. Involuntary
C. Striation
D. All

Q.29 Skeletal muscle associated with skeleton form:
A. Body movement
B. ATP
C. Skeletal system
D. Heat

Q.30 Cardiac muscles are found in:
A. Gut
B. Heart
C. Bladder
D. Limbs

Structure of skeletal muscles

Q.31 What structure marks the separation between two sarcomeres?
A. I band
B. H zone
C. A band
D. Z disc

Q.32 Skeletal muscle is composed of?
A. Muscle fibrin
B. Muscle fibers
C. Sarcomere
D. None of these

Q.33 Sarcoplasm of the muscle fiber is similar to
Cytoplasm of other cell
B. Nucleoplasm
C. Mitochondria
D. Cell membrane

Q.34 Sarcomere attach end to end to form:
Myofibril
B. Muscles
C. Muscle fiber
D. None of these

Q.35 Line at center of A band is:
A. Z line
B. M line
C. H zone
D. I band

Q.36 Which of the following is anisotropic?
A band
B. I band
C. M line
D. Z line

Q.37 Region between two successive Z lines is:
Sarcomere
B. H zone
C. M line
D. A band

Q.38 Cross bridges are found on:
A. Actin
B. Myosin
C. Troponin
D. Tropomyosin

Q.39 The main unit of thick filament is:
A. Myofibril
B. Actin
C. Myosin
D. Z-line

Q.40 Myosin filaments are how many times thick as compared to actin filament?
3 times
B. 6 times
C. 4 times
D. 8 times

Q.41 Which of the following is not true about muscle fibers?
A. Better developed for slow sustained activities
For energy, they depend on anaerobic procedures
C. Myoglobin content is high
D. Possess mitochondria in huge numbers

Q.42 A smallest contractile unit of muscle contraction called sarcomere is the area between two?
A. H zone
B. M line
C. Z line
D. Z zone

Q.43 Which of the following is true about sarcomeres?
Actin filaments are only found in the I band
B. The sarcomeres contribute to the striated appearance of smooth muscle cells
C. Sarcomeres are functional units of skeletal and smooth muscle cells
D. A band contains both actin and myosin filaments

Q.44 What is located at both sides of the A band?
A. Z-line
B. H zone
C. I band
D. Z zone

Q.45 Which of the following occurs during muscular contraction?
A. Actin slides over myosin
B. ATP supplies energy
C. Calcium ions are involved
D. All of these

Q.46 Which of the following is true about the organization of actin filaments and myosin in sarcomeres?
A. Myosin filaments appear thinner than actin filaments
B. Prior to contraction, there is no overlap between actin and myosin
The degree of overlap of actin and myosin affects the overall contraction
D. All of these

Q.47 Which of the following is the name of the modified endoplasmic reticulum found in muscle cells?
A. T-tubule
B. Sarcomere
C. Cytoplasmic reticulum
D. Sarcoplasmic reticulum

Q.48 Muscles are composed of?
A. Silica
B. Polyester threads
C. Groups of cell fibers
D. Calcium and phosphorous

Q.49 How many thin filaments are arrayed around each thick filament within a sarcomere?
A. 2 B. 4
C. 6 D. 8

Q.50 Dark bands of skeletal muscles are:
A. Z-band B. A band
C. I band D. H zone

Q.51 How much of the body heat is produced by muscle tissue?
A. 15% B. 55%
C. 30% D. 85%

Q.52 A disc-like protein that is centrally found in sarcomeres is:
A. H line B. I line
C. M line D. Z line

Q.53 The functional unit of contractile system in striated muscle is:
A. Myofibril B. Cross bridges
C. Z band D. Sarcomere

Q.54 The length of the following is reduced when muscle contracts:
A. H-zone B. I-band
C. Sarcomere D. Both A & B

Q.55 The contractile protein of skeletal muscle involving ATPase activity is:
A. Actin B. Myosin
C. Troponin D. Tropomyosin

Q.56 Many sarcomeres in series make up the length of a:
A. Microtubules B. Myofibril
C. Myosin filament D. M-line

Q.57 Which is most likely to extend the entire length of a muscle fiber?
A. Sarcomere B. Myofibril
C. Myosin filament D. M-line

Q.58 The A band further divides by:
A. Z-line B. A band
C. H zone D. Z zone

Q.59 A muscle of fascicle is a:
A. Bundle of connective tissue B. Bundle of myofibrils
C. Bundle of muscle fibres D. Muscle cells

Q.60 The space between two Z lines constitutes the:
A. Sarcolemma B. Sarcophagus
C. Sarcoplasm D. None of these

Q.61 Bright region in A band is:
A. M line B. Z line
C. H zone D. Sarcomere

Q.62 Myofilament is made of:
Protein B. Lipids
C. Carbohydrates D. All of these

Q.63 Major regulatory protein in muscle is:
A. Myosin B. Myosin-actin
C. Troponin-tropomyosin D. Troponin-tropomyosin-actin

Q.64 Sarcoplasm is different form cytoplasm:
A. It contains sarcoplasmic reticulum
B. It contains glycogen
C. It contains glycogen and oxygen binding protein, myoglobin
D. All of these

Mechanism of skeletal muscle contraction

Q.65 According to sliding filament theory of muscle contraction, which of the following are functions of ATP?
A. ATP does all of these things during muscle contraction

It allows the myosin head to detach from the actin filament
C. It moves tropomyosin off of actin binding sites
D. Both A and B

Q.66 What type of enzyme is myosin?
A. ATP synthase
B. ATP hydrolase
C. ADP hydrolase
D. ADP synthase

Q.67 Which of the following proteins does not play a fun force-tension curve of muscle contraction?
Titin
B. Myosin
C. Actin
C. All of these

Q.68 Calcium during muscle contraction binds with:
A. Tropomyosin
B. Troponin C
C. Troponin I
D. Troponin T

Q.69 When a muscle fiber shortens, the following shortens:
A. Actin filament
B. Sarcomere
C. Both A and B
D. Myosin

Q.70 Rigor mortis after death results due to which?
A. Decrease in body temperature after death.
B. B.
B. Accumulation of rigid proteins molecules in sarcoplasm
C. Death of tissue due to unavailability of 02.
Unavailability of ATP, which is necessary to break

Q.71 What is hydrolysed during muscle contraction?
A. ACP
B. ADP
C. NAD
D. ATP

Q.72 Actin and myosin are_____proteins.
A. Globular
B. Fibrous
C. Functional
D. Both A and B

Q.73 Skeletal muscles cause:
A. Constriction of blood vessels
B. Heart beat
C. Dilation of pupil
D. Eye movement

Q.74 Which of the following is true of troponin and tropomyosin?
A. Troponin binds to myosin and tropomyosin binds to actin
B. Tropomyosin binds to actin and prevents the myosin head from binding to actin
C. Both a and b
D. None of these

Q.75 How many ATP are required for one cycle of muscle contraction and relaxation?
1
B. 3
C. 2
D. 4

Q.76 The contraction of muscle by actin and myosin is described by which biological theory?
A. Endosymbiotic theory
B. Central Dogma theory
C. Cross-bridge theory
Sliding filament theory

Q.77 The muscle which moves a body part away from the midline of the body is:
A. Flexor muscles
B. Extensor muscles
C. Adductor muscles
D. Abductor muscles

Q.78 During a muscular contraction, which of the following elements maintains constant length?
A. I band
B. H zone
C. A band
D. Sarcomere

Q.79 Which of the following step occurs immediately after binding of Ca^{2+} with troponin molecule during muscle contraction?
A. Binding sites of actin get attached to the myosin head
B. Troponin uncovers the actin binding sites

C. Ca^{2+} goes back inside sarcoplasmic reticulum
Tropomyosin gets removed from the binding sites of actin filaments

Q.80 What occurs when the thin actin and thick myosin filaments slide past each other?
A. Muscle relaxation
B. Muscle contraction
C. Muscle twitch
D. None of these

Q.81 The muscle which moves a body part towards the midline of the body is:
A. Flexor muscles
B. Extensor muscles
C. Adductor muscles
D. Abductor muscles

Q.82 Which of the following action is caused by skeletal muscle:
A. Constriction of blood vessel
B. Eye movements
C. Heartbeat
D. Dilation of pupil

Q.83 Which of the following molecules binds to troponin during muscle contraction, triggering tropomyosin to move away from the actin binding sites and allowing the myosin head to form a cross bridge?
A. ADP
B. Calcium
C. Sodium
D. ATP

Q.84 What is the purpose of calcium in the muscles?
A. It helps move the myosin head into a high-energy position
It allows tropomyosin to be pulled away from the actin filament
C. Both a and b
D. None of these

Q.85 Which of the following proteins directly interacts with the myosin-binding site on actin?
Tropomyosin
B. Troponin
C. both a and b
D. none of these

Q.86 Which of the following sections of a sarcomere does not shorten during contraction?
A. I band
B. H zone
C. A band
D. None of these

Q.87 Which of the following does not occur during skeletal muscle contraction?
A. ATP is hydrolysed
B. Calcium binds to myosin heads
C. Both A and B
D. None of these

Q.88 Which two proteins are the major components of myofibrils, allowing for muscle fibre contraction?
A. Myosin and cartilage
B. Actin and myosin
C. Lamellae and actin
D. Only myosin

Q.89 Tropomyosin binds to_____and prevents the myosin from sliding up the actin filament.
A. Myosin
B. Actin
C. Myosin filament
D. Both B and C

Q.90 Nerves that are innervating muscle fibers are called:
A. Sensory nerves
B. Motor neurons
C. Cranial nerves
D. Optic nerve

Q.91 Which disappears during muscles contractions?
A. M line
B. H zone
C. Z line
D. A band

Q.92 Role of sarcoplasmic reticulum prior to muscle contraction:
A. It actively pumps calcium ions into its lumen
B. It releases calcium ions by active transport
C. It creates the proteins needed to cover the actin filaments
D. It releases calcium once an actin potential reaches the sarcolemma

Types of joints

Q.93 Which of the following movements are possible in pivot joint?
A. Flexion and extension
B. Adduction and abduction
C. Rotation
D. Extension flexion and rotation

Q.94 Type of synovial joints:
A. Hinge joint
B. Ball and socket joint

C. Both A and B
D. Fibrous joint

Q.95 Humerus forms joints with:
Clavicle
B. Sternum
C. Hyoid
D. Tibia

Q.96 Which joint is present in neck, due to which it shows movement?
Pivot joint
B. Saddle joint
C. Hinge joint
D. Ball and socket joint

Q.97 The hinge joint and ball and socket joints are the types of:
Freely movable joints
B. Slightly movable joints
C. Immovable joints
D. None of these

Q.98 Fluid present in synovial joint is:
Synovial fluid
B. Pericardial fluid
C. Plural fluid
D. Interstitial fluid

Q.99 Metacarpal joint is an example of:
A. Condyloid joint
B. Saddle joint
C. Hinge joints
D. Ball and socket joint

Q.100 The connection between two bones is:
A. Joint
B. Tendon
C. Suture
D. Fissure

Q.101 Joints in which both muscle and bone are in same phase angle:
A. Ball and socket
B. Fibrous
C. Cartilaginous
D. Hinge joint

Q.102 Which of the following comes under structural classification?
A. Synchondroses
B. Sutures
C. Gomphosis
D. All of these

Q.103 Joints are classified on the basis of:
The amount of movement allowed by them
B. Nature of structure they have
C. Type of bones they join
D. Both B and C

Q.104 Cartilaginous joints have:
A. Slight movement
B. Free movement
C. No movement
D. Both A and B

Q.105 A type of joint found at the articulation between teeth and the sockets of the maxilla is:
A. Syndesmosis
B. Sutures
C. Gomphosis
D. None of these

Q.106 Humerus forms _____ joint with scapula.
A. Ball and socket
B. Hinge
C. Pivot
D. Fibrous

Q.107 Which the following is not the unique features of synovial joint?
A. Articular capsule
B. Synovial fluid
C. Articular cartilage
D. Fibrocartilage

Q.108 How many types of joints are present in body?
A. 3
B. 4
C. 5
D. 2

Q.109 In cartilaginous joint:
A. Joint cavity is absent
B. Joint cavity is present
C. Both A and B
D. None

Q.110 Syndesmosis is present between:
A. Short bones
B. Long bones
C. Short and long bone
D. Can be present any where

Q.111 Xiphisternal joint is present between:
A. Body of clavicle and xiphoid process
B. Body of sternum and xiphoid process
C. Body of clavicle and xiphoid process
D. Body of femur and xiphoid process

Gout and arthritis

Q.112 Inflammation of joint is known as:
A. Sciatica
B. Arthritis
C. Spondylosis
D. Disc-slip

Q.113 All of the following are inflammatory arthritis except:
A. Rheumatoid Arthritis
B. Osteoarthritis
C. Gouty arthritis
D. Osteomyelitis

Q.114 Chronic arthritis is:
A. Rheumatoid arthritis
B. Osteoarthritis
C. Gouty arthritis
D. None

Q.115 Most chronic and inflammatory type of arthritis is:
A. Osteoarthritis
B. Rheumatoid arthritis
C. Gout
D. None

Q.116 Acute form of arthritis results from:
A. Fungal attack
B. Bacterial attack
C. Viral attack
D. Protist attack

Q.117 Gout results due to defective metabolism of:
A. Xanthine dehydrogenase
B. Xanthine carboxylase
C. Xanthine hydrogenase
D. Xanthine oxidase

Q.118 Most common site for autoimmune disease:
A. Skin and joint
B. Muscles
C. A and D
D. None

Q.119 An example of degenerative disease:
A. Rheumatoid arthritis
B. Osteoarthritis
C. Gouty arthritis
D. Osteomalcia

Out of Syllabus

Q.120 Sperms of liverworts, mosses, ferns move towards archegonia, in response to nucleic acid released by the ovum. This is an example of?
A. Chemotropic movement
B. Chemonastic movement
C. Haptonastic movement
D. Chemotactic movement

Q.121 Tibia is found in:
A. Skull
B. Lower leg
C. Face
D. Upper arm

Q.122 Biceps are:
A. Extensors
B. Flexors
C. Adductors
D. Abductors

Q.123 Roots of a plant show which of the following?
A. Positive phototropism and negative geotropism
B. Negative tactic movement and positive tropic movement
C. Positive geotropism of stem and roots
D. Negative phototropism and positive geotropism

Q.124 Rapid movement of leaves of mimosa on touching is an example of?
A. Tropic movements
B. Growth movement
C. Nastic movement
D. Turgor movement

Q.125 Triceps are:
A. Extensor muscles
B. Flexor muscles
C. Abductive muscles
D. Strongest muscles

Q.126 Cranium contains how many bones:
A. 2
B. 4
C. 8
D. 14

Q.127 How many bones humans have in the vertebral column?
A. 52
B. 25
C. 33
D. 34

Q.128 Human eye muscles contract in:

A. 0.01 sec
B. 0.08 sec
C. 0.05 sec
D. None of these

ANSWER KEY

SUPPORT AND MOVEMENT

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

VARIATION AND GENETICS/INHERITANCE

Mendel's law of inheritance

Q.1 How many pairs of homologous chromosomes are present are present in *Pisum sativum*?

A. 5 B. 6
C. 7 D. 8

Q.2 A certain type of plant is only tall when it has a heterozygous genotype. If two heterozygous plants are crossed, what is the probability of their offspring will also be tall?

A. 25% B. 1
C. 50% D. 75%

Q.3 A pure breeding tall pea plant was crossed to dwarf plant. What will be the frequency of dwarf plants in F_2?

A. 0.25 B. 0.5
C. 0 D. 1

Q.4 Phenotypic ratio of F_2 generation of monohybrid cross:

A. 3:1 B. 9:3:3:1
C. 1:2:1 D. 9:1

Q.5 What is the phenotypic ratio for a cross between a plant with blue flowers BB and a plant with white flowers bb?

A. 25% blue, 75% white B. 75% blue, 25% white
C. All white D. All blue

Q.6 Composite of an organism's observable characters or traits is called:

A. Genotype B. Phenotype
C. Recombination D. Replication

Q.7 In a dihybrid cross, what fraction of offspring will be homozygous for both traits?

A. l/2 B. 1/4
C. 1/8 D. 1/16

Q.8 Genotype ratio of Mendel's law of independent assortment is which of the following?

A. 3:1 B. 1:02:01
C. 9:3:3:1 D. None of these

Q.9 Your neighbour has a flower garden in which there are red flowers and white flowers. These flowers are diploid organisms, and flower colour is an autosomal trait. The gene for red flowers (R) is dominant, while the gene for white flowers (r) is recessive. Which of the following is the genotype of a white flower?

A. RR B. rr
C. Rr D. Rr

Q.10 Which of the following is heterozygote?

A. RR B. rr
C. Both A & B D. None of these

Q.11 Which of the following represents a phenotype?

A. X-linked recessive B. Aa
C. Autosomal dominant D. Brown hair

Q.12 Homozygous chromosomes include which of the following?

A. Diploid cells B. Polyploid cells
C. Both A and B D. None of these

Q.13 One plant is homozygous dominant for purple flowers, and the other is homozygous recessive for white flowers. What fraction of the F_2 population will have white flowers?

A. 1/4 B. 1/2
C. 1/8 D. 1/16

Q.14 A monohybrid cross yielded 3:1 in F_2. What could be mode of inheritance?

A. Segregation B. Independent assortment
C. Both A and B D. None of these

Q.15 In peas, the gene for yellow color (C) is dominant to the gene for green color (c). To determine the genotype of an unknown pea, what kind of kind of pea should you cross with it?

A. Another unknown green B. Any genotype
C. Homozygous dominant D. Homozygous recessive (cc)

Q.16 Your neighbor has a flower garden in which there are red flowers and white flowers. These flowers are diploid organisms, and flower color is an autosomal trait. The gene for red flowers (R) is dominant, while the gene for white flowers (r) is recessive. Which of the following could be the genotype of a red flower?

A. Rr
B. RR, Rr, or rr
C. rr
D. RR or Rr

Q.17 A scientist has discovered a new species of flower in which purple coloration is dominant to white. He wishes to know the genotype of a specific purple flower. Which of the following crosses would give him a definitive answer for the purple flower genotype?

A. Unknown purple x homozygous purple
B. Unknown purple x white
C. Unknown purple x unknown purple
D. None of these

Q.18 In nature, garden pea is which of the following?

A. Cross fertilized
B. Cross pollinated
C. Self-fertilized
D. None of These

Q.19 Which of the following characters of pea plant is dominant?

A. Yellow pods
B. White flowers
C. Wrinkled seeds
D. Axial flowers

Q.20 Which of the following is monohybrid cross?

A. TTYy x Ttyy
B. TT x tt
C. Both A and B
D. None of these

Q.21 During test cross, if all off springs are phenotypically dominant then parents are?

A. Heterozygous
B. One homozygous other heterozygous
C. Homozygous
D. None of these

Q.22 A pure breeding tall plant was crossed with dwarf plant. What would be probability of "Tt" genotype in F_2?

A. 0.25
B. 0.5
C. Both A & B
D. None of these

Q.23 Round shaped pea seed is crossed with wrinkled shaped seed. This refers to:

P_1 generation
B. F_1 generation
C. F_2 generation
D. F_3 generation

Q.24 Number of gametes produced by an organism having genotype of RrPp:

A. 2
B. 3
C. 4
D. 5

Q.25 What would be the color of flowers in F_1 generation when a 4'O clock plant having red colored flower is crossed with plant having white colored flower:

A. Half purple and half red
B. Half white and half red
C. All purple
D. All white

Q.26 Mendel's law of inheritance were presented in:

A. 1861
B. 1865
C. 1892
D. 1857

Q.27 Mendel studied seven pairs of traits of pea plant that were present on _____ chromosomes.

4
B. 7
C. 8
D. 9

Q.28 True breeding variety is produced by which of the following?

A. Cross fertilization
B. Self-fertilization
C. Both A and B
D. None of the above

Q.29 A pea plant with yellow seed was crossed to a plant having green seeds. What will happen in F_1 if plants are true breeding?

A. Half seeds will be yellow
B. All seeds will be green
C. Both will be present in ration of 1:2:1
D. All seeds will be yellow

Q.30 How many gametes are produced from genes of diploid organism which is heterozygous for 4 loci?

A. 4
B. 8
C. 12
D. 32

Q.31 Mendel laid the foundation of:

Classical genetics
B. Modern genetics
C. Cell biology
D. Neo-Darwinism

Multiple alleles

Q.32 ABO system has different phenotype on the basis of specific_____on the surface of RBCs
A. Antibody
B. Antigen
C. Anti A-antigen
D. Anti O-antigen

Q.33 ABO blood group system was discovered in:
A. 1811
B. 1901
C. 1801
D. 1911

Q.34 A man with type A blood and a woman with type AB^+ blood have a child. Which blood type is impossible for that child to have?
A. A^-
B. B^-
C. AB^+
D. O^-

Q.35 ABO blood group system was first introduced by:
Landsteiner
B. Bernstein
C. Morgan
D. Fleming

Q.36 ABO has how many phenotypes?
A. 3
B. 4
C. 6
D. 8

Q.37 A man with type AB blood marries a woman with type A blood. Which of the following blood types might their sons inherit?
A. Type A only
B. Type B only
C. Type AH only
D. Type A, type B, or type AB

Q.38 Assume that blood type is not a sex-linked trait. A mother with genotype "A/O" and a father with genotype "A/B" could not have a child with which blood type?
A. A
B. B
C. AB
D. O

Q.39 Assuming that blood type is not a sex-linked trait, what is the probability that a mother with genotype "A/O" and a father with genotype "A/B" will have a child with type B blood?
A. 50%
B. 25%
C. 75%
D. None of these

Q.40 A man with blood group A marries a woman of blood group "B". Both are heterozygous. What is the offspring's having phenotype" O"
A. 10%
B. 25%
C. 50%
D. 75%

Q.41 Rh blood group system is:
Multiple allele
B. Polygenic
C. Both A and B
D. None

Q.42 If father have blood group A and mother have blood group B then children can have:
A. A only
B. AB only
C. B only
D. A, B, AB, O all

Gene linkages and crossing over

Q.43 The number of linkage groups in humans is?
A. 24
B. 23
C. 1/23
D. 1/24

Q.44 Genes of same chromosomes are:
Linked
B. Non-linked
C. Always assort independently
D. Both B and C

Q.45 Crossing over brings about:
A. Recombinant genes
B. New traits in species
C. Genetic recombination
D. New species

Sex linkages in *Drosophila*

Q.46 In Morgan's experiment when males and females of F_1 generation mate with each other and produce F_2 generation. The number of red eyed males were:
A. 2059
B. 2459
C. 782
D. 1101

Q.47 Colored eyes in male *Drosophila* is due to:
Hemizygous
B. Homozygous

C. Heterozygous D. None

Sex linkage in human (Genetics of hemophilia)

Q.48 A trait determines by a gene on the X chromosome is said to be:
A. Pseudoautosomal B. Sex linked
C. Both A & B D. None of the above

Q.49 Haemophilia B is due to abnormality of factor?
A.VIII B. X
C. IX D. XI

Q.50 Which of the following is not sex linked recessive trait?
A. Testicular feminization syndrome B. Color blindness
C. Haemophilia D. Hypophosphatemic rickets

Q.51 When a hemophilia carrier woman marries a normal man, who among her offspring may be affected?
A. All her children B. Half of her daughters
C. All her daughters D. Half of her sons

Q.52 Which traits cannot pass from father to all of his sons?
Sex-linked recessive B. Autosomal
C. Y linked D. None of theses

Q.53 It is a autosomal recessive allele:
A. Hemophilia a B. Hemophilia b
C. Hemophilia c D. Red monochromacy

Q.54 Hemophilia is:
Mendelian disorder B. Chromosomal disorder
C. Both A and B D. None of above

Q.55 Traits passed form maternal grandfather to grandson:
A. X-linked dominant B. Y-linked
C. Autosomal D. X-linked recessive

Q.56 Which of the following is inherited via an autosomal recessive allele?
A. Hemophilia B. Huntington's disease
C. Color-blindness D. Cystic fibrosis

Q.57 For a single gene trait, a number of genetic disorders are caused when an individual inherits?
A. Two dominant alleles B. One dominant allele
C. One recessive allele D. Two recessive alleles

Q.58 Which trait is passed directly from father to son?
Y linked B. X linked
C. X linked dominant D. X linked recessive

Q.59 Chances for a birth of male and female in humans:
A. 1:2 B. 1:1
C. 2:1 D. 2:2

Q.60 A gamete without sex gamete is called:
A. Male gamete B. Nullo gamete
C. Advanced gamete D. None

Q.61 Genes of baldness can express only in the presence of hormone:
A. Progesterone B. Estrogen
C. Aldosterone D. LH

Q.62 Defective genes are present on X chromosome. It will normally be transmitted in male off springs by:
A. Father B. Mother
C. Segregation D. Mutation

Q.63 A single ovum of human being contains:
X chromosome B. XX chromosome
C. Y chromosome D. May be all

Q.64 How many sex chromosomes are present in human?
2 B. 3
C. 1 D. 4

Out of Syllabus

Q.65 Which of the following is male determining gene in humans?

A. Tfm
B. SRY
C. Both A and B
D. None of these

Q.66 Number of chromosomes in grass hopper is:
Male: 23, Female: 24
B. Male: 24, Female: 23
C. Male: 23, Female: 23
D. Male: 24, Female: 24

Q.67 Male is haploid in:
A. Humans
B. *Drosophila*
C. Birds
D. Grasshopper

Q.68 ZZ/ZW type of sex determination is found in:
A. Humans
B. Fruit fly
C. Moths
D. Grasshopper

Q.69 Number of autosomes in liver cells of humans:
A. 44
B. 23
C. 22
D. 46

Q.70 In males, the gene for colour blindness is located in_____.
X-chromosome
B. Y-chromosome
C. Both X and Y chromosomes
D. Either X or Y chromosome

Q.71 Which of the following is called the sex-linked disease?
A. Leukemia
B. Alzheimer's
C. Malignancy
D. Colour blindness

Q.72 How many sex chromosomes are present in a human being?
1 pair
B. 2 pairs
C. 3 pairs
D. 4 pairs

Q.73 Skin colour in man is controlled by how many pairs of genes:
A. 1
B. 2
C. 3
D.

Q.74 Inheritance in man is traced by which of the following?
A. Mathematical method
B. Statistical method
C. Genetic method
D. Pedigree method

Q.75 In which organisms males are haploid?
A. Aphids
B. Mosquito
C. Butterfly
D. Honey bee

Q.76 Visible genetic traits include which of the following?
A. Hair color
B. Eye color
C. Number of limbs
D. All of these

Q.77 All of the following are continuously varying traits except:
A. Kernel color in wheat
B. Skin color in humans
C. Height in humans
D. Tongue rolling in humans

Q.78 Gene for blue opsin is present on which chromosome?
A. 6
B. 7
C. 8
D. 11

Q.79 A woman is a carrier for a sex-linked disorder. She marries a man whose father had the disorder, and whose mother did not. The man is unaffected. If they have a child, what is the probability that the child is also a carrier?
A. 25%
B. 50%
C. 75%
D. 1%

Q.80 Red-green colorblindness is an X-linked recessive disorder. Jacob's paternal grandfather and father are both colorblind, but his mother has two normal alleles. What is the probability that Jacob is red-green colorblind?
A. 0%
B. 25%
C. 50%
D. 75%

Q.81 Bombay phenotype shows:
A. Dominance
B. Pleiotropy
C. Epistasis
D. Polygenic inheritance

Q.82 In males, gene for color blindness is present on:
A. Y chromosome
B. Autosome 11
C. X chromosome
D. Autosome 1

Q.83 The phenomenon in which the effect of one allele in heterozygous genotype completely masks the effect of other is called:
A. Codominance
B. Dominance
C. Incomplete dominance
D. Complete dominance

Q.84 Inbreeding increases:
A. Heterozygous
B. Genetic diversity
C. Genetic linkage
D. Homozygous

Q.85 Interaction between genes occupying different loci is known as?
A. Dominance
B. Pleiotropy
C. Epistasis
D. None of these

Q.86 Baldness is most frequent in which of the following?
Men
B. Women
C. Both A and B
D. Children

Q.87 Such inheritance in which traits vary quantitatively is:
Continuously varying trait
B. Incomplete dominance
C. Test cross
D. Test cross

Q.88 If a heterozygous individual shows the complete effect of both alleles, the type of inheritance would be?
A. Complete dominance
B. Non dominance
C. Incomplete dominance
D. Codominance

Q.89 A human cell from the ovary has 22 chromosomes and an X chromosome. It is which of the following?
Egg
B. Sperm
C. Somatic cell
D. Gamete

Q.90 The ordered list of loci known for a particular genome is called:
Gene map
B. Loci
C. Alleles
D. Chromosomes

Q.91 Characteristics feature of male *Drosophila* is:
A. Sex combs on back legs
B. Sex combs on front legs
C. Sex combs on middle legs
D. None of them

Q.92 Mutations in the sequence of genes are carried by only:
A. Locus
B. Population
C. Allele
D. Genetic sequence

Q.93 Most protein coding genes are found in:
A. Repetitive DNA
B. RNA
C. Single copy DNA
D. None of these

Q.94 A woman receives his X chromosome from:
A. His mother only
B. Both her mother and her father
C. His father only
D. Extra nuclear DNA in her mother's egg

Q.95 If replication was completely conservative then?
A. One heavy and one light strand would be seen
B. Both heavy strands would be seen
C. Both light strands would be seen
D. None of these

Q.96 All of the following are continuously varying traits except?
A. Kernel colour in wheat
B. Skin colour in humans
C. Height in human
D. Tongue rolling in humans

Q.97 Mating between relatives is called which of the following?
A. Ex breeding
B. Breeding
C. Inbreeding
D. Outbreeding

Q.98 Mating with non-relatives is known as?
A. Inbreeding
B. Breeding
C. Outbreeding
D. None of these

Q.99 The gene for muscular dystrophy is X-linked. A female carrier and an unaffected male have one daughter together that is homozygous. The daughter has a son with unaffected male. What is the probability that the son will not be affected?
A. 25%
B. 50%
C. 75%
D. 0

Q.100 Gametes consist of:

A. Two alleles
B. Only one allele of gene
C. No allele
D. None of these

Q.101 A male and female have 6 daughters. Chances of next daughter will be:
A. 10
B. 60
C. 50
D. 100

Q.102 Egg is determinant of offspring's gender in:
A. Man
B. *Drosophila*
C. Grasshopper
D. Butterfly

Basic Definition

Q.103 If both the alleles are same with respect to genes then they are called:
A. Heterozygous
B. Unicellular
C. Homozygous
D. None of these

Q.104 The process of determining the locus for particular biological traits includes:
A. Replication
B. Recombination
C. Gene Mapping
D. None

Q.105 The set of all genes in any population is termed as:
A. Population pool
B. Species pool
C. Gene pool
D. All of these

Q.106 A fully expressed allele is referred to as:
Dominant
B. Recessive
C. Homozygous
D. Heterozygous

Q.107 A group of interbreeding individuals belonging to a particular species and sharing a common geographic area is called:
A. Community
B. Population
C. Race
D. Family

Q.108 Filial is a Latin word. It means which of the following?
A. Spring
B. Issue
C. Progeny
D. None of these

Q.109 Pink color in flower is:
Phenotype
B. Genome
C. Genotype
D. Trait

Q.110 Alternative form of a gene is called:
A. Genome
B. Gene pool
C. Allele
D. Genetics

Q.111 The position of a gene on chromosome is called:
Locus
B. Arm
C. Position
D. Location

Q.112 The gene which cannot be determined by observing the organism is?
A. Dominant
B. Allele
C. Phenotype
D. Recessive

Q.113 Which term means "same alleles"?
A. Heterozygous
B. Hybrid
C. Homozygous
D. None of them

Q.114 Chromosomes that have different alleles of a given gene at locus is called:
A. Homozygous
B. Specialization
C. Y chromosomes
D. Heterozygous

Q.115 To form a female zygote, the sperm cell must contribute which chromosome?
X
B. 2X
C. Y
D. XY

Q.116 Gene is the molecular unit of which of the following?
A. DNA
B. RNA
C. Heredity
D. Genotype

Q.117 Organisms that have one copy of each gene on each chromosome are:
Haploid
B. Diploid
C. Unicellular
D. None of these

Q.118 Population genetics focus on:
Inherited traits
B. Qualitative traits
C. Quantitative traits
D. All of these

ANSWER KEY

VARIATIONS AND GENETICS

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

MISCELLANEOUS QUESTIONS

Q.1 Which of the following statements is correct distinction between autotrophs and heterotrophs

A. Only heterotrophs require chemical compounds from the environment
B. Cellular respiration is unique to heterotrophs
C. Conly heterotrophs have mitochondria
D. Autotrophs but not heterotrophs can nourish themselves with nutrients that are entirely inorganic

Q.2 Growth and development of plant cells is the role of?

A. Parenchymatous cells B. Chlorenchymatous cells
C. Meristematic cell D. Sclerenchymatous cells

Q.3 Vascular cambium initially appears as actively dividing cells between?

A. Primary xylem and secondary xylem B. Primary xylem and secondary phloem
C. Secondary xylem and secondary phloem D. Primary xylem and primary phloem

Q.4 Biorhythms are also called?

A. Diurnal tempo B. Diurnal rhythms
C. Diurnal time D. All of these

Q.5 Platypus and panda are all representatives of which of the following?

A. Homoeothermic B. Poikilothermic
C. Hyperthermic D. None of these

Q.6 Which statement is incorrect about ethylene production?

A. Climacteric is burst of respiratory activity in fruit ripening
B. It is associated with ethane production
C. It helps in fruit ripening
D. It helps in fruit set

Q.7 What is the chemical characteristic of auxins?

A. Indole propionic acid B. Indole carboxylic acid
C. Indole acetaldehyde D. Indole acetic acid

Q.8 Gibberellins may be substituted for which color of light?

Red B. Blue
C. Green D. White

Q.9 Auxins are responsible for the promotion and growth of roots from?

A. Layering B. Calluses
C. Cutting D. Both B and C

Q.10 Cytokine's delay the aging of_____leaf crops such as cabbage and lettuce.

A. Attached B. Delayed
C. Fresh D. Open

Q.11 Move in response to chemical signals is termed as:

Chemotaxis B. Chemonlysis
C. Chemography D. Chemosynthesis

Q.12 Which one is not a day neutral plant?

A. Cotton B. Maize
C. Cucumber D. Tobacco

Q.13 Klinefelter's syndrome:

A. One X chromosome is missing
B. Sex chromosome fails to segregate
Additional sex chromosome is present
D. None of these

Q.14 Developing seeds are rich source of which of the following?

A. Auxins B. Gibberellins
B. Cytokinins D. All of these

Q.15 Resumption of normal growth by a dormant embryo is called?

A. Seed dormancy B. Fruit ripening
C. Germination D. All of these

Q.16 The clear fluid present in the anterior chamber of eye is?

A. Optic humor
B. Spot humor
C. Vitreous humor
D. Aqueous humor

Q.17 The place of attachment of leaf with the shoot is called?
A. Pith
B. Pit
C. Pulvinus
D. All of these

Q.18 Humans regulate their internal body temperature within a very narrow range. This is an example of?
Homeostasis
B. Evolution
C. Genetics
D. Metabolism

Q.19 Critical day length for cocklebur is which of the following?
8.5 hrs.
B. l0 hrs.
C. 14 hrs.
D. 15.5 hrs.

Q.20 Terrestrial animals can tolerate dehydration by:
Anhydrobiosis
B. Sweating
C. Thermoregulation
D. None

Q.21 It is correct about metaphase:
A. Chromosome is thickest and largest
B. Chromosome is thinnest and shortest
C. Chromosome is thinnest and largest
D. Chromosome is thickest and shortest

Q.22 Each chromosome of a bone marrow cell has how many chromatids during anaphase?
A. No chromatid
B. 2 chromatids
C. 1 chromatid
D. Several chromatids

Q.23 Which symbiont helps in uptake of phosphorus and sulphur?
A. Bacteria
B. Virus
C. Fungi
D. Protista

Q.24 Who proposed chromosomal theory of inheritance?
Sutton and Boveri
B. Margulis and Schwartz
C. Morgan and Mendel
D. Johannsen and Cuvier

Q.25 The idea that opposed the idea of abiogenesis was proposed by :
Rudolph Virchow
B. Robert Brown
C. Robert Hooke
D. Lorenz Oken

Q.26 Which of them excretes in form of uric acid?
Birds
B. Human
C. Frog
D. None of these

Q.27 What is the significance of endospores?
A. They allow fungi to survive in extreme climates
B. They allow gram-negative bacteria to reproduce
C. They allow fungi to store nutrients that can survive extreme conditions
They are produced by gram-positive bacteria which can survive extreme conditions

ANSWER KEY

MISCELLANEOUS QUESTIONS

1	D	21	D
2	C	22	C
3	D	23	C
4	B	24	A
5	D	25	A
6	C	26	A
7	D	27	D
8	A		
9	D		
10	C		
11	A		
12	D		
13	C		
14	D		
15	C		
16	D		
17	C		
18	A		
19	A		
20	A		