CHAPTER 20

1. Female Infertility Can Be Caused by Hormonal Problems, Blocked Fallopian Tubes, and:

- (a) A cold
- (b) Lack of appetite
- (c) Irregular menstrual cycles
- (d) STDs

Correct Answer: (c) Irregular menstrual cycles

2. The External Male Reproductive Organs Consist of the Penis, Testes, and:

- (a) Urethra
- (b) Prostate
- (c) Scrotum
- (d) Seminal vesicle

Correct Answer: (c) Scrotum

3. During the Menstrual Cycle, a Surge of Luteinizing Hormone Causes:

- (a) Menstruation
- (b) Corpus luteum to rupture
- (c) Ovulation
- (d) Ovaries to produce estrogen

Correct Answer: (c) Ovulation

4. During the Menstrual Cycle, Progesterone Levels Are at Their Highest During the:

- (a) Follicular phase

- (b) Menstruation
- (c) Ovulation
- (d) Luteal phase

Correct Answer: (d) Luteal phase

5. Which of the Following is Not a Phase of the Menstrual Cycle?

- (a) Proliferative phase
- (b) Menstrual phase
- (c) Secretory phase
- (d) Ovulatory phase

Correct Answer: (a) Prolife/rative phase

6. Testosterone is Produced by the:

- (a) Seminiferous tubules
- (b) Germinal epithelium
- (c) SRY cells
- (d) Sertoli cells

Correct Answer: (d) Sertoli cells

7. Which of the Following is True Regarding the Male Reproductive System?

- (a) Sperm are produced in the vas deferens
- (b) The bulk of the ejaculate is produced by the sex accessory glands
- (c) Sperm cells are diploid

- (d) The scrotum keeps the testes warmer, thus helping to promote sperm production

Correct Answer: (d) The scrotum keeps the testes warmer, thus helping to promote sperm production

8. The Duct That Transports the Sperm into the Urethra:

- (a) Vas deferens
- (b) Epididymal duct
- (c) Ureter
- (d) None of the above

Correct Answer: (d) None of the above

9. During the Production of Ova:

- (a) The oogonia divide mitotically
- (b) Oogonia divide to produce four eggs
- (c) The female germ cell undergoes two divisions producing an ovum and two polar bodies
- (d) The final meiotic division occurs just prior to fertilization

Correct Answer: (c) The female germ cell undergoes two divisions producing an ovum and two polar bodies

10. The Periodic Shedding of the Endometrium is Known As:

- (a) Ovulation
- (b) Oogenesis
- (c) The secretory phase
- (d) Menstruation

Correct Answer: (d) Menstruation

11. _____ is Caused by HIV:

- (a) AIDS
- (b) Syphilis
- (c) Gonorrhea
- (d) Genital herpes

Correct Answer: (a) AIDS

12. In Male Reproductive System, Testes are Enclosed in Extended Skin Called:

- (a) Epididymis
- (b) Scrotum
- (c) Penis
- (d) Vas deferens

Correct Answer: (b) Scrotum

13. The State of Having No Sperm:

- (a) Azoospermia
- (b) Oligospermia
- (c) Sperm deformities
- (d) Aspermia

Correct Answer: (a) Azoospermia

- **The cervix is the opening of:**
- (A) Ovary
- (B) Vagina
- (C) Fallopian tube

- (D) Uterus
- **Correct Answer:** (D) Uterus
- **Sperms are stored in:**
- (A) Epididymis
- (B) Urethra
- (C) Prostate gland
- (D) Vas deferens
- **Correct Answer:** (A) Epididymis
- **FSH is a hormone produced by:**
- (A) Pituitary gland
- (B) Adrenal gland
- (C) Ovary
- (D) Testes
- **Correct Answer:** (A) Pituitary gland
- **Uterus is a pear-shaped elastic about:**
- (A) 4cm long
- (B) 5cm long
- (C) 7.5cm long
- (D) 10.5 cm long
- **Correct Answer:** (C) 7.5cm long
- **The average menstrual cycle of an adult human female is about:**
- (A) 5 days
- (B) 8 days
- (C) 28 days
- (D) 14 days

- **Correct Answer:** (C) 28 days
- **Oligospermia is a condition in male in which:**
- (A) Abnormal sperms are produced
- (B) More sperms are produced
- (C) No sperms are produced
- (D) Less sperms are produced
- **Correct Answer:** (D) Less sperms are produced
- **The number of AIDS patients in world are in 2019:**
- (A) More than 1 billion
- (B) Over 38 million
- (C) Less than 3 million
- (D) Less than 2 million
- **Correct Answer:** (B) Over 38 million
- **Fertilization of the ovum normally occurs:**
- (A) In the upper third of the ovduct
- (B) In the uterus
- (C) In the lower third of the ovduct
- (D) Can take place successfully in vagina
- **Correct Answer:** (A) In the upper third of the ovduct
- **The human egg is swept through the ovduct toward the uterus by:**
- (A) Beating of the egg's cilia
- (B) Rhythmic contraction of the ovduct
- (C) Rhythmic contraction of the uterus
- (D) The beating of the cilia in the ovduct
- **Correct Answer:** (D) The beating of the cilia in the ovduct

- **Embryo implants in the _____ of the uterus.**
- (A) Perimetrium
- (B) Myometrium
- (C) Endometrium
- (D) Cervix
- **Correct Answer:** (C) Endometrium
- **The corpus luteum is formed at the site of:**
- (A) Fertilization
- (B) Ovulation
- (C) Menstruation
- (D) Implantation
- **Correct Answer:** (B) Ovulation
- **Within the ovary, progesterone is produced by:**
- (A) Corpus albicans
- (B) Corpus luteum
- (C) Tertiary follicles
- (D) Primary follicles
- **Correct Answer:** (B) Corpus luteum
- **The basic difference between spermatogenesis and oogenesis is that:**
- (A) During spermatogenesis two polar bodies are produced
- (B) The mature ovum is haploid while the sperm is 2n
- (C) Spermatogenesis involves mitosis and meiosis, but oogenesis involves meiosis only
- (D) In oogenesis, one mature ovum is produced, and in spermatogenesis four mature sperm are produced
- **Correct Answer:** (D) In oogenesis, one mature ovum is produced, and in spermatogenesis four mature sperm are produced

- **The uterine layer which is shed with each monthly cycle is:**
- (A) Endometrium
- (B) Perimetrium
- (C) Tunica albuginea
- (D) Myometrium
- **Correct Answer:** (A) Endometrium

CHAPTER 21

1. The Morphogenetic Movement Changes the Hollow Spherical Blastula Into A:

- (a) Embryonic disc
- (b) Gastrula
- (c) Morula
- (d) Neurula

Correct Answer: (b) Gastrula

2. The Fusion of 2 Haploid Sex Cells to Produce a Diploid Zygote Is:

- (a) Capacitance
- (b) Fertilization

- (c) Development
- (d) Differentiation

Correct Answer: (b) Fertilization

3. The Series of Mitotic Divisions That Transforms the Zygote into a Blastocyst is Called:

- (a) Cleavage
- (b) Implantation
- (c) Cytotrophoblast
- (d) Embryogenesis

Correct Answer: (a) Cleavage

4. Gastrulation Begins with the Formation of:

- (a) Primitive streak
- (b) Hypoblast layer
- (c) Cytotrophoblast
- (d) Endoderm layer

Correct Answer: (d) Endoderm layer

5. Chromosomal Abnormal Sex Cells, Abnormal Cell Division of Fetus Are the Cause Of:

- (a) Abnormal pregnancy
- (b) Spontaneous abortion
- (c) Premature birth
- (d) All of these

Correct Answer: (b) Spontaneous abortion

6. The Inductive Process That Transforms a Flat Layer of Ectodermal Cells into a Hollow Nervous System Tube is Called:

- (a) Invagination
- (b) Neurulation
- (c) Notochord formation
- (d) Gastrulation

Correct Answer: (b) Neurulation

7. Sex Organs Begin to Develop During Weeks of Embryogenesis:

- (a) 1-8
- (b) 9-12
- (c) 13-16
- (d) 17-20

Correct Answer: (c) 13-16

8. Which of the Following Consists of Both Fetal & Maternal Tissues:

- (a) Embryo
- (b) Placenta
- (c) Amnion
- (d) Allantois

Correct Answer: (b) Placenta

9. Identical Twins Result from the Fertilization Of:

- (a) 1 ovum by 1 sperm
- (b) 1 ovum by 2 sperms

- (c) 2 ova by 2 sperms
- (d) 2 ova by 1 sperm

Correct Answer: (a) 1 ovum by 1 sperm

10. Microcephaly, Cleft Palate and Down's Syndrome Is an Example of:

- (a) Regeneration
- (b) Aging
- (c) Abnormal development
- (d) Nutritional problems

Correct Answer: (c) Abnormal development

11. The Hormone Responsible for Let-Down Reflex in Breast Feeding Is:

- (a) TSH
- (b) Prolactin
- (c) Oxytocin
- (d) Insulin

Correct Answer: (c) Oxytocin

12. Fetal Surgery Is Required For:

- (a) Premature birth
- (b) Developmental problems
- (c) Birth defects spontaneous abortions
- (d) Growth problems

Correct Answer: (b) Developmental problems

13. Dorsal Lip area is:

- (a) Primary inducer
- (b) Secondary inducer
- (c) Organizer
- (d) Induction

Correct Answer: (a) Primary inducer

- **The umbilical cord in human contains:**
- (A) One artery, two vein
- (B) Two arteries one vein
- (C) Only one vein
- (D) Only two vein
- **Correct Answer:** (B) Two arteries one vein
- **Study of ageing is called:**
- (A) Teratology
- (B) Paleozoology
- (C) Gerontology
- (D) Biotechnology
- **Correct Answer:** (C) Gerontology
- **Neurula tube is formed from:**
- (A) Ectoderm
- (B) Endoderm
- (C) Mesoderm
- (D) Hypoblast
- **Correct Answer:** (A) Ectoderm
- **Average gestation period in human female is:**
- (A) 280 days

- (B) 250 days
- (C) 320 days
- (D) 350 days
- **Correct Answer:** (A) 280 days
- **The fluid which surrounds embryo is called:**
- (A) Amniotic fluid
- (B) Chorionic fluid
- (C) Yolk
- (D) Uterus fluid
- **Correct Answer:** (A) Amniotic fluid
- **Prolactin prepare the mammary glands for the production of:**
- (A) Sweat
- (B) Sebum
- (C) Milk
- (D) Mucus
- **Correct Answer:** (C) Milk
- **The protective coat which surrounds the embryo is known as:**
- (A) Amnion
- (B) Chorion
- (C) Allantosis
- (D) Chorio allantoic
- **Correct Answer:** (A) Amnion
- **The outer layer of the blastocyst, which later attaches to the uterus, is the:**
- (A) Deciduas
- (B) Trophoblast

- (C) Amnion
- (D) Inner cell mass
- **Correct Answer:** (B) Trophoblast
- **Identical twins results from the fertilization of:**
- (A) One ovum by one sperm
- (B) One ovum by two sperms
- (C) Two ova by two sperms
- (D) Two ova by one sperm
- **Correct Answer:** (A) One ovum by one sperm
- **The most important hormone in initiating and maintaining lactation after birth is:**
- (A) Estrogen
- (B) FSH
- (C) Prolactin
- (D) Oxytocin
- **Correct Answer:** (C) Prolactin

CHAPTER 22

1. The Physical Appearance of an Organism for a Given Trait is Termed:

- (a) Genetics
- (b) Dominance
- (c) Synapsis
- (d) Phenotype

Correct Answer: (d) Phenotype

2. The Alternative Forms of a Gene that Govern the Same Feature, Such as Eye Color, and Occupy Corresponding Positions on Homologous Chromosomes:

- (a) Alleles
- (b) Loci
- (c) Homozygotes
- (d) Coupled traits

Correct Answer: (a) Alleles

3. The Physical Location of a Particular Gene on a Chromosome is Called:

- (a) An allele
- (b) A locus
- (c) A trait
- (d) A chromatid

Correct Answer: (b) A locus

4. The Genotype for a Pea Plant That Is Homozygous Recessive for Both Height and Pea Color Would Be:

- (a) tt
- (b) YY
- (c) TTY
- (d) ttyy

Correct Answer: (d) ttyy

5. A Cross Between Two Pure Individuals, Differing in At Least One Set of Characters, Is Called:

- (a) Monohybrid
- (b) Polyploid
- (c) Mutant
- (d) Variant

Correct Answer: (c) Mutant

6. ABO Blood Grouping is Based on:

- (a) Codominance
- (b) Incomplete dominance
- (c) Epistasis
- (d) Multiple allelism

Correct Answer: (d) Multiple allelism

7. Genotype of Blood Group 'A' Will Be:

- (a) IA IA
- (b) IB IB
- (c) IA I B

- (d) IA I ai

Correct Answer: (a) IA IA

8. The Traits Mendel Studied in Garden Peas Showed:

- (a) Complete dominance
- (b) Incomplete dominance
- (c) Epistasis
- (d) Pleiotropy

Correct Answer: (a) Complete dominance

9. In Which Kind of Cross Would You Expect to Find a Ratio of 9:3:3:1 Among the F2 Offspring?

- (a) Monohybrid cross
- (b) Dihybrid cross
- (c) Testcross
- (d) Multiple allele cross

Correct Answer: (d) Multiple allele cross

10. Skin Color in Humans, Caused by Several Genes at Several Loci, Is an Example of:

- (a) Multiple alleles at one locus
- (b) Incomplete dominance
- (c) Pleiotropy
- (d) Polygenic inheritance

Correct Answer: (b) Incomplete dominance

11. In Humans, X-linked Diseases Include All of the Following EXCEPT:

- (a) Color blindness
- (b) Hemophilia
- (c) Sickle-cell trait
- (d) Fragile X syndrome

Correct Answer: (c) Sickle-cell trait

12. Which is Associated with the Inability to Produce Factor VIII in the Blood?

- (a) Williams syndrome
- (b) Trisomy 21
- (c) Color-blindness
- (d) Hemophilia

Correct Answer: (d) Hemophilia

13. Male Pattern Baldness is a _____ Trait:

- (a) Sex linked
- (b) Sex influenced
- (c) Sex limited
- (d) Y-linked

Correct Answer: (b) Sex influenced

14. Beard Growth in Humans is an Example of a _____ Trait:

- (a) Sex linked
- (b) Sex influenced
- (c) Sex limited

- (d) Y linked

Correct Answer: (c) Sex limited

15. In Sex Linked Color Blindness, the Son of a Heterozygote Woman and a Normal Man What Chance of Being Color Blind?

- (a) 0%
- (b) 50%
- (c) 100%
- (d) 25%

Correct Answer: (d) 25%

16. Any Chromosome That Is Not a Sex Chromosome in Human Is:

- (a) An autosome
- (b) A chromatid
- (c) Sex influenced
- (d) Asexual chromosome

Correct Answer: (a) An autosome

- **All chromosomes other than sex chromosomes are called:**
- (A) Polysome
- (B) Autosomes
- (C) Mesosome
- (D) Acrosome
- **Correct Answer:** (B) Autosomes
- **If a gene is found on X-chromosome only then it is said:**
- (A) X-Linked
- (B) Y-Linked
- (C) Sex linked traits

- (D) XY linked
- **Correct Answer:** (A) X-Linked
- **The pattern of sex determination found in Drosophila is:**
- (A) WZ-ZZ type
- (B) XY-XX
- (C) XO-XX
- (D) Diploid, haploid type
- **Correct Answer:** (B) XY-XX
- **The phenomenon of sex linkage was discovered by:**
- (A) Carl Correns
- (B) Nilsson Ehle
- (C) T.H. Morgan
- (D) Calvin Bridge
- **Correct Answer:** (C) T.H. Morgan
- **A woman with normal colour vision, whose father was red-green colour blind, married a red-green colour blind man. What is the probability of her first-born child being red-green colour blind?**
- (A) 1.0
- (B) 0.75
- (C) 0.50
- (D) 0.025
- **Correct Answer:** (C) 0.50
- **Two parents, each of blood groups A, have a daughter of blood group O. What is the probability that their next child will have blood group O?**
- (A) 0.125
- (B) 0.25

- (C) 0.50
- (D) 0.75
- **Correct Answer:** (B) 0.25
- **What are the phenotypes of the parent of a colour-blind son and non-carrier daughter with normal colour vision?**
- Father
- (A) Carrier
- (B) Colour-blind
- (C) Normal
- (D) Normal
- Mother
- (A) Normal
- (B) Carrier
- (C) Carrier
- (D) Colour-blind
- **Correct Answer:** Father(C) Normal Mother: (B) Carrier
- **When expression of a biological character is observed in variable intensity it is due to the affect of:**
- (A) Multiple alleles
- (B) Codominance
- (C) Epistasis
- (D) Polygenic inheritance
- **Correct Answer:** (D) Polygenic inheritance
- **Inheritance of skin colour in man is controlled by eight pairs of genes, which are:**
- (A) Linked
- (B) Codominant

- (C) Multiple alleles
- (D) Polygenic inheritance
- **Correct Answer:** (D) Polygenic inheritance

CHAPTER 23

1. A Chromosome with Its Centromere in the Terminal End Is:

- (a) Submetacentric chromosome
- (b) Acrocentric chromosome
- (c) Metacentric chromosome
- (d) Telocentric chromosome

Correct Answer: (d) Telocentric chromosome

2. The Base Thymine Is Always Paired With:

- (a) Adenine
- (b) Guanine
- (c) Cytosine
- (d) Thymine

Correct Answer: (a) Adenine

3. Highly Condensed and Transcriptionally Inactive DNA Form:

- (a) Heterochromatin
- (b) Euchromatin
- (c) Autochromatin
- (d) Isochromatin

Correct Answer: (c) Autochromatin

4. Chromosomes Play Central Role in Heredity; It Was First Suggested in 1900 by:

- (a) Karl Corens
- (b) McCarthy
- (c) Messelson

- (d) Joshua Ryan

Correct Answer: (a) Karl Corens

5. The Rungs of Ladder (DNA) Are the:

- (a) Deoxyribose Sugars
- (b) Phosphate Groups
- (c) Hydrogen-Bonded Bases
- (d) Ribose Sugars

Correct Answer: (c) Hydrogen-Bonded Bases

6. In Which of the Molecules You Find a Codon?

- (a) mRNA
- (b) tRNA
- (c) rRNA
- (d) All

Correct Answer: (a) mRNA

7. Transcription is Transfer of Genetic Information From:

- (a) DNA to RNA
- (b) RNA to mRNA
- (c) DNA to mRNA
- (d) mRNA to tRNA
- **Correct Answer:** (c) DNA to mRNA

8. Sigma Factor Is Component of:

- (a) DNA ligase
- (b) DNA polymerase
- (c) RNA polymerase
- (d) Endonuclease

Correct Answer: (c) RNA polymerase

9. Which of the Following Is Necessary for Transcription to Occur?

- (a) DNA molecules
- (b) DNA polymerase
- (c) RNA polymerase
- (d) Both DNA and RNA polymerase

Correct Answer: (c) RNA polymerase

10. What Are the Coding Segments of a Stretch of Eukaryotic DNA Called?

- (a) Introns
- (b) Exons
- (c) Codons
- (d) Replicons

Correct Answer: (b) Exons

11. Which Component Is Not Directly Involved in Translation?

- (a) mRNA
- (b) DNA
- (c) tRNA

- (d) Ribosomes

Correct Answer: (b) DNA

12. The Transcription of DNA to a Molecule of Messenger RNA Occurs:

- (a) On the ribosomes
- (b) In the cytosol
- (c) In the nucleus
- (d) Only during cell division

Correct Answer: (c) In the nucleus

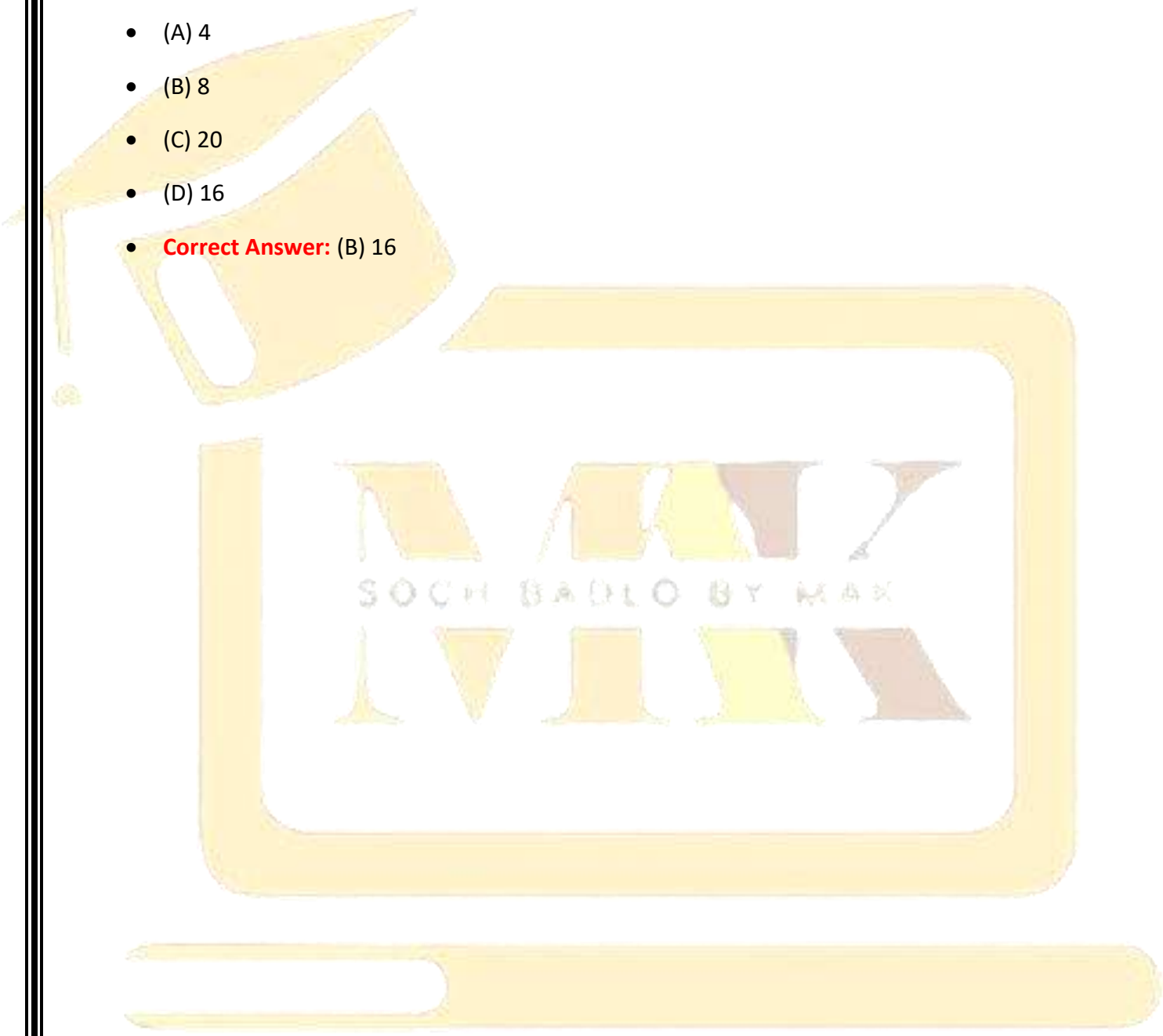
- **The number of tRNA in human are:**
- (A) 45
- (B) 60
- (C) 61
- (D) 35
- **Correct Answer:** (B) 61
- **Anticodones are present on:**
- (A) mRNA
- (B) tRNA
- (C) DNA
- (D) rRNA
- **Correct Answer:** (B) tRNA
- **The initiation codon is:**
- (A) UUA
- (B) ACC
- (C) AUG

- (D) GCG
- **Correct Answer:** (C) AUG
- **Down's syndrome is autosomal non-dislunction of chromosome number:**
- (A) 21
- (B) 22
- (C) 13
- (D) 18
- **Correct Answer:** (A) 21
- **Which condition appears due to point mutation:**
- (A) Turner’s syndrome
- (B) Klinefelter’s syndrome
- (C) Sickle cell anemia
- (D) Down’s syndrome
- **Correct Answer:** (C) Sickle cell anemia
- **Which of the following act as stop codon?**
- (A) UGG
- (B) UGC
- (C) UAG
- (D) UGU
- **Correct Answer:** (C) UAG
- **In mitochondria UGA codon act as specify _____ instead stop codon:**
- (A) Argenine
- (B) Valine
- (C) Glutamic acid
- (D) Tryptophan

- **Correct Answer:** (D) Tryptophan

- **If the amount of adenine in DNA of a bacterial cell is 36% of the total nitrogenous bases, what will be the amount of guanine in the DNA of a cell in next generation:**
- (A) 14%
- (B) 28%
- (C) 36%
- (D) 64%
- **Correct Answer:** (B) 64%
- **If an mRNA is synthesized with all the different codons, what is the minimum number of amino acids in the protein that is formed by mRNA:**
- (A) 64 Amino acids
- (B) 62 Amino acids
- (C) 60 Amino acids
- (D) None of them
- **Correct Answer:** (C) 64 Amino acids
- **In eukaryotic mRNA molecule there are 90 nucleotide involved in translation process. What is the number of amino acid in the protein formed by this mRNA molecule?**
- (A) 29 amino acids
- (B) 30 amino acids
- (C) 45 amino acids
- (D) 90 amino acids
- **Correct Answer:** (B) 30 amino acids
- **In Griffith experiment mice developed pneumonia when they were injected with:**
- (A) R-type bacteria
- (B) heat killed R-type bases

- (C) heat killed S-type bacteria along with live R-type bacteria.
- **Correct Answer:** (C) heat killed S-type bacteria along with live R-type bacteria.
- **If the codon consisted of only two nucleotides, how many possible codons?**
- (A) 4
- (B) 8
- (C) 20
- (D) 16
- **Correct Answer:** (B) 16



CHAPTER 24

1. Wing of Pigeon, Bat and Mosquito Exhibit the Phenomenon Called:

- (a) Convergent evolution
- (b) Divergent evolution
- (c) Atavism
- (d) Parallel evolution

Correct Answer: (a) Convergent evolution

2. All of the Following Are Sources of Genetic Variation for Evolution, Except:

- (a) Mutation
- (b) Recombination
- (c) Genetic drift
- (d) Gene flow

Correct Answer: (c) Genetic drift

3. A Species Inhabiting Different Geographical Areas is Known As:

- (a) Sympatric
- (b) Allopatric
- (c) Sibling
- (d) Bio species

Correct Answer: (b) Allopatric

4. Genetic Drift is on Account of:

- (a) Variations
- (b) Mutations

- (c) Increase in population
- (d) Decrease in population

Correct Answer: (d) Decrease in population

5. Sympatric Speciation Develops Reproductive Isolation Without:

- (a) Geographical barrier
- (b) Barrier to mating
- (c) Barrier to gene flow
- (d) Genetic change

Correct Answer: (a) Geographical barrier

6. Quick Changes in Phenotypes in a Small Band of Colonies Is Called:

- (a) Founder effect
- (b) Bottle neck
- (c) Genetic drift
- (d) Gene flow

Correct Answer: (a) Founder effect

7. In Which Condition Gene Ratio Remains Constant in Species?

- (a) Gene flow
- (b) Mutation
- (c) Random mating
- (d) Sexual selection

Correct Answer: (c) Random mating

8. Lamarck Theory of Organic Evolution Is Usually Known As:

- (a) Natural selection
- (b) Inheritance of acquired characters
- (c) Continuity of protoplasm
- (d) Mutation

Correct Answer: (b) Inheritance of acquired characters

9. Which of the Following Features Are Raw Material in Evolution According to Darwin's Theory:

- (a) Intraspecific Character
- (b) Acquired Variation
- (c) Acquired Capabilities
- (d) Inherited Variation

Correct Answer: (d) Inherited Variation

10. Which of the Following Best Defines Evolution?

- (a) Is the Maintenance of Life under Changing Conditions
- (b) Survival of the Fittest
- (c) Is the Goal Directed Change
- (d) Evolution is Variation

Correct Answer: (a) Is the Maintenance of Life under Changing Conditions

11. The Ultimate Source of Organic Variation is:

- (a) Sexual Reproduction
- (b) Hormonal Action
- (c) Natural Selection
- (d) Mutation

Correct Answer: (d) Mutation

- **The armoured mammal that live only in America is:**
- (A) Echidna
- (B) Pangolin
- (C) Porcupine
- (D) Armadillo
- **Correct Answer:** (D) Armadillo
- **Analogous structure are:**
- (A) Anatomically similar and functioning similarly
- (B) Anatomically similar but functioning differently
- (C) Anatomically different but functioning similarly
- (D) Anatomically different and functionally differently
- **Correct Answer:** (B) Anatomically similar but functioning differently
- **Book "The origin of species" was written by:**
- (A) Linnaeus
- (B) Cuvier
- (C) Lyell
- (D) Darwin
- **Correct Answer:** (D) Darwin
- **Human appendix, coccyx and nictitating membrane of the eye are:**
- (A) Vestigial organs
- (B) Homologous organs
- (C) Analogous organs
- (D) Embryonic organs
- **Correct Answer:** (A) Vestigial organs

- **The study of birds is:**
- (A) Ornithology
- (B) Ichthyology
- (C) Herpetology
- (D) Entomology
- **Correct Answer:** (A) Ornithology
- **Similarity in characteristics resulting from common ancestry is known as:**
- (A) Analogy
- (B) Homology
- (C) Evolutionary relationship
- (D) Phylogeny
- **Correct Answer:** (C) Evolutionary relationship
- **Which one of the following pairs represents analogous features?**
- (A) Elephant tusks & Human incisors
- (B) Insects wings & bat wings
- (C) Mammal fore limbs & bird wing
- (D) Reptilian heart & mammalian heart
- **Correct Answer:** (B) Insects wings & bat wings
- **Which of the following ideas was not part of Charles Darwin's theory of evolution by natural selection?**
- (A) Organisms produce more offspring than the environment can support
- (B) Variation between individuals arises by gene mutation
- (C) Only those individuals that are best adapted to the environment survive and reproduce
- (D) Individuals compete for space and resources
- **Correct Answer:** (B) Variation between individuals arises by gene mutation
- **Hardy-Weinberg theorem describes the frequencies of genotype of non-evolving:**

- (A) Family
- (B) Population
- (C) Species
- (D) Community
- **Correct Answer:** (B) Population
- **Emigration and Immigration of members of a population, cause disturbance in the:**
- (A) Genotype
- (B) Phenotype
- (C) Gene pool
- (D) Genetic drift
- **Correct Answer:** (C) Gene pool
- **Genetic drift is change of gene frequency in:**
- (A) Same generation
- (B) One generation to next
- (C) By change
- (D) Appearance of recessive allele
- **Correct Answer:** (C) By change
- **Species occurring in different geographical area are called as:**
- (A) Sympatric
- (B) Allopatric
- (C) Peripatric
- (D) Parapatric
- **Correct Answer:** (B) Allopatric
- **Which of the following is most important for speciation?**
- (A) Seasonal isolation

- (B) Reproductive isolation
- (C) Behavior isolation
- (D) Tropical isolation
- **Correct Answer:** (B) Reproductive isolation

CHAPTER 25

1. Nitrogen is essential for living organisms to make:

(a) Lipids
(b) Proteins
(c) Carbohydrates
(d) Sulfates
(e) Benzene rings

Answer: (b) Proteins

2. The step in the nitrogen cycle where bacteria convert ammonia (NH_3) to nitrate (NO_3^-) is:

(a) Nitrification
(b) Ammonification
(c) Assimilation
(d) Denitrification

Answer: (a) Nitrification

3. What is happening to the amount of CO_2 in atmosphere?

(a) Increasing
(b) Decreasing
(c) Holding steady
(d) Fluctuating

Answer: (a) Increasing

4. The accumulation of herbivore biomass in an ecosystem is an example of:

(a) Biochemical cycles
(b) Transpiration
(c) Net primary productivity
(d) Secondary productivity

Answer: (d) Secondary productivity

5. Which of the following is secondary consumer?

(a) A carnivore
(b) A herbivore
(c) Plant
(d) All

Answer: (a) A carnivore

6. The total amount of energy that is converted to organic compounds in a given area per unit of time is called the:

(a) Biomass
(b) Transpiration
(c) Net primary productivity
(d) Gross primary productivity

Answer: (d) Gross primary productivity

7. Carnivore represent what trophic level?

(a) Producer
(b) Primary consumer
(c) Secondary consumer
(d) Decomposers

Answer: (c) Secondary consumer

8. Acid rain is caused due to increase in concentration of:

(a) SO_2 & NO_2
(b) CO & CO_2
(c) CO & SO_3
(d) Ozone & dust

Answer: (a) SO_2 & NO_2

9. Ozone depletion is caused by:

(a) Co
(b) CFCs
(c) CO
(d) SO_2

Answer: (b) CFCs

10. Maximum threat to the world

(a) Global warming
(b) Ozone hole
(c) Water pollution
(d) Soil erosion

Answer: (b) Ozone hole

11. Which of the following is a prime health risk associated with greater UV radiation through the atmosphere due to depletion of stratospheric ozone?
a) Biological disorder of the immune system
b) Neurological disorder
c) Increased liver cancer
d) Increased skin cancer
Answer: d) Increased skin cancer

12. The scientific study of human populations is:
a) Ecology
b) Demography
c) Biogeography
d) Eugenics
Answer: b) Demography

- **Change in community structure of an ecosystem over a period of time:**
- (A) Niche
- (B) Unstable ecosystem
- (C) Succession

- (D) Pioneer
- **Correct Answer: (C) Succession**
- **The Herbaceous stage in xeroses is the:**
- (A) First stage
- (B) Third stage
- (C) Fourth stage
- (D) Last stage
- **Correct Answer:** (C) Fourth stage
- **The ozone layer has developed a hole over the:**
- (A) Arctic
- (B) Equator
- (C) Antarctica
- (D) Tropics
- **Correct Answer:** (B) Equator
- **As CFCs rise to the atmosphere, the ultraviolet rays release:**
- (A) Fluorine
- (B) Chlorine
- (C) Carbon
- (D) Nitrogen
- **Correct Answer: (B) Chlorine**
- **The group of organisms that fix atmospheric nitrogen are:**
- (A) Plants
- (B) Bacteria
- (C) Fungi
- (D) Insects

- **Correct Answer:** (C) Fungi
- **The producers of ecosystems are:**
- (A) Decomposers
- (B) Absorptive heterotrophs
- (C) Ingestive heterotrophs
- (D) Autotrophs
- **Correct Answer: (D) Autotrophs**
- **Ozone layer is found in:**
- (A) Troposphere
- (B) Stratosphere
- (C) Hydrosphere
- (D) Mesosphere
- **Correct Answer: (B) Stratosphere**
- **The cause of the greenhouse effect is:**
- (A) CO_2
- (B) Hydrogen
- (C) Nitrogen
- (D) Oxygen
- **Correct Answer: (A) CO_2**
- **The graphical representation of ecological data of an ecosystem is called:**
- (A) Succession
- (B) Niche
- (C) Habitat
- (D) Pyramid
- **Correct Answer:** (D) Pyramid

- **Which of these levels of ecological study involves both abiotic and biotic components:**
- (A) Organisms
- (B) Population
- (C) Ecosystem
- (D) Community
- **Correct Answer: (C) Ecosystem**
- **Which of the following is renewable resource?**
- (A) Oil and natural gas
- (B) Water and oil
- (C) Air and water
- (D) Oil and coal
- **Correct Answer: (C) Air and water**
- **About 95% of our daily energy requirements are fulfilled by:**
- (A) Atomic energy
- (B) Hydroelectric power
- (C) Fossil fuel
- (D) Wind energy
- **Correct Answer: (C) Fossil fuel**
- **The ozone molecule is made up of by building of three atoms of:**
- (A) Nitrogen
- (B) Hydrogen
- (C) Oxygen
- (D) Carbon
- **Correct Answer: (C) Oxygen**

CHAPTER 26

1. The undifferentiated & unorganized mass of cells in tissue cultures is called:
(a) Crown
(b) Callus
(c) Callose
(d) Tissue

Answer: (b) Callus

2. Gel electrophoresis is used for:
(a) Construction of rDNA by joining the cloning vector
(b) Isolation of molecules
(c) Cutting of DNA into fragments
(d) Separation of DNA Fragments according to their size & composition

Answer: (d) Separation of DNA Fragments according to their size & composition

3. The application of recombinant DNA technology to forensic cases requires all of the following except:
(a) Cloning of the DNA
(b) Establishment of DNA profiles
(c) DNA sequencing
(d) STR analysis

Answer: (c) DNA sequencing

4. Genetic engineering is the manipulation of:

(a) Genetic bacteria

(b) Genetic plant

(c) Genetic material

(d) Genetic animal

Answer: (c) Genetic material

5. _____ is defined as the "biological concept to science and engineering of living organisms for the welfare of mankind".

(a) Microbiology

(b) Human biology

(c) Biotechnology

(d) Zoology

Answer: (c) Biotechnology

6. A gene is inserted into a DNA molecule called:

(a) Vector

(b) Plasmids

(c) Gene of interest

(d) Probe

Answer: (a) Vector

7. _____ are small, extra circular DNAs molecules found in some bacteria.

(a) Vectors

(b) Plasmids

(c) Chromosomes

(d) Genetic engineered DNAs

Answer: (b) Plasmids

8. Plasmids are generally found in:

(a) Bacteria

(b) Vertebrates

(c) Fungi
(d) Bacteriophages

Answer: (a) Bacteria

9. The molecular scissors in the bacterial cell are:
(a) DNA ligase enzyme
(b) Vector
(c) Plasmid
(d) Restriction enzyme

Answer: (d) Restriction enzyme

10. _____ is a key enzyme that seals the restriction fragment with sticky ends of vector.
(a) DNA polymerase enzyme
(b) DNA ligase enzyme
(c) Restriction enzyme
(d) Helicase enzyme

Answer: (b) DNA ligase enzyme

11. _____ are may be taken as expression system in DNA recombinant technology.
(a) Bacterial cells
(b) Vectors
(c) Plasmids
(d) Bacteriophage

Answer: (a) Bacterial cells

12. In _____ technique entire organism can be grown from a single cell.
(a) Tissue culture
(b) Cloning
(c) Genetic engineering
(d) Transfusion

Answer: (b) Cloning

13. When the cell wall of a plant cell is removed it is called:

(a) Protoplast

(b) Plant cell

(c) Cytosol

(d) Protoplasm

Answer: (a) Protoplast

14. _____ is the fastest way of determining amino acid sequences.

(a) DNA fingerprinting

(b) Gene sequencing

(c) Genomic library

(d) PCR

Answer: (a) DNA fingerprinting

- **The PCR was developed by K. Mullis in:**
- (A) 1970
- (B) 1983
- (C) 1975
- (D) 1978
- **Correct Answer:** (B) 1983
- **Taq polymerase is an enzyme present in:**
- (A) Bacteria
- (B) Protozoans
- (C) Algae
- (D) Helminths
- **Correct Answer:** (A) Bacteria
- **A complete set of genes of an individual is called as:**
- (A) Gene pool

- (B) Genome
- (C) Gene library
- (D) Recombinant gene
- **Correct Answer:** (B) Genome
- **Those organisms which have had a foreign gene into them are called as:**
- (A) Transgenic
- (B) Transmuted
- (C) Hermaphrodites
- (D) Polygenesis
- **Correct Answer:** (A) Transgenic
- **The use of transgenic animals to produce pharmaceutical is termed as:**
- (A) Gene pharming
- (B) Antibiotic
- (C) Gene therapy
- (D) Antiviral
- **Correct Answer:** (A) Gene pharming
- **Transgenic soybeans are made to resist against:**
- (A) Herbicides
- (B) Fungicides
- (C) Insecticides
- (D) Pesticide
- **Correct Answer:** (A) Herbicides
- **Which of the following is the genetic marker that is used in DNA fingerprinting:**
- (A) Primer
- (B) Probe

- (C) RELP
- (D) Intron
- **Correct Answer:** (C) RELP
- **RFLP is a(an):**
- (A) Intron
- (B) Exon
- (C) Anticodon
- (D) Codon
- **Correct Answer:** (A) Intron
- **The type of gel most commonly used for short fragment DNA electrophoresis is:**
- (A) Agarose
- (B) DNA polymerase
- (C) Polyacrylamide
- (D) DNA ligase
- **Correct Answer:** (A) Agarose
- **Cell suspension culture of Cichona ledgeriana produce:**
- (A) Quinine
- (B) Digitoxin
- (C) Polludrin
- (D) Anti toxin
- **Correct Answer:** (A) Quinine
- **Dideoxy ribonucleoside triphosphates are used to terminate DNA synthesis at different sites. Which method involves this procedure?**
- (A) Maxam-Gilbert's method
- (B) Sanger's method
- (C) K.B. Mullis's method

- (D) Gottlieb's method
- **Correct Answer:** (A) Maxam-Gilbert's method
- **The gene of interest is joined with the sticky ends produced after cutting the plasmid with the help of another special enzyme known as:**
- (A) DNA ligase
- (B) DNA polymerase
- (C) Restriction
- (D) Reverse transcriptase
- **Correct Answer:** (A) DNA ligase
- **The enzyme DNA polymerase can work only in:**
- (A) 3' ⊥ 5' direction
- (B) 5' ⊥ 3' direction
- (C) Both the directions
- (D) 5' ⊥ 5' direction
- **Correct Answer:** (B) 5' ⊥ 3' direction
- **A totipotent cell means:**
- (A) An undifferentiated cell capable of developing into a system or entire plant
- (B) An undifferentiated cell capable of developing into an organ
- (C) An undifferentiated cell capable of developing into complete embryo
- (D) Cell which lacks the capability to differentiate into an organ or system
- **Correct Answer:** (A) An undifferentiated cell capable of developing into a system or entire plant

- **Which disease can be controlled by vaccination?**
- (a) Measles
- (b) Cancer
- (c) Diabetes
- (d) Heart attack

Correct Answer: (a) Measles

- **Which of the following is a combined vaccine:**
- (a) BCG
- (b) OPV
- (c) DT
- (d) DPT

Correct Answer: (d) DPT

- **All of the following are true for potable water except:**
- (a) It is drinkable
- (b) It contains dissolved substance

- (c) It is void of microbes
- (d) It contains chemicals

Correct Answer: (d) It contains chemicals

- **During which stage of sewage treatment, most pathogenic bacteria are eliminated from sewage:**
- (a) Primary treatment
- (b) Secondary treatment
- (c) Tertiary treatment
- (d) During sedimentation

Correct Answer: **(b) Secondary treatment**

- **Water treatment typically requires 3 stages to make potable from sewage. Which is the secondary stage?**
- (a) Skimming
- (b) Settling
- (c) Biodegradation
- (d) Filtration

Correct Answer: (d) Filtration

- **Adjustment of plant to new climate & locality is called:**
- (a) Climrization
- (b) Acclimatization
- (c) Acclimation
- (d) Adaptation

Correct Answer: **(b) Acclimatization**

- **The cross of hybrid with one of its parent to achieve genetic identity is called:**

- (a) Cloning
- (b) Hybridization
- (c) Back crossing
- (d) Heterosis

Correct Answer: (c) Back crossing

- **The polio vaccine is:**
- (a) Live vaccine
- (b) Subunit vaccine
- (c) Conjugate vaccine
- (d) Toxoid vaccine

Correct Answer: (a) Live vaccine

- **_____ is made from a mixture of wheat & soya beans crushed with water:**
- (a) Vinegar
- (b) Yogurt
- (c) Soya sauce
- (d) Bread

Correct Answer: (c) Soya sauce

- **In _____ bacteria convert lactose to lactic acid:**
- (a) Cheese making
- (b) Bread making
- (c) Vinegar formation
- (d) Yogurt making

Correct Answer: (d) Yogurt making

- **Td-vaccination is the best way to prevent a tetanus infection:**
- (A) Morphology

- (B) Histology
- (C) Anatomy
- (D) Physiology

Correct Answer: (D) Physiology

- **Casein is?**
- (A) Milk protein
- (B) Starter culture
- (C) Toxin
- (D) Gyle

Correct Answer: (A) Milk protein

- **Integrated disease management aims to improve the quality of:**
- (A) Environment
- (B) Life
- (C) Food
- (D) Animals

Correct Answer: (B) Life

- **Tetanus is also called:**
- (A) Muscle cramp
- (B) Muscle fatigue
- (C) Lockjaw
- (D) Paralysis

Correct Answer: (C) Lockjaw

- **Animal husbandry is the branch of science deals with care of:**
- (A) Livestock
- (B) Fruits

- (C) Disease
- (D) Vaccination

Correct Answer: (A) Livestock

- **The best way to prevent polio is:**
- (A) Antibiotics
- (B) Cleanliness
- (C) Vaccination
- (D) Healthy food

Correct Answer: (C) Vaccination

- **Which of the following method is used for crop improvement?**
- (A) Selection
- (B) Fertilization
- (C) Vaccination
- (D) Watering

Correct Answer: (A) Selection

- **The main component of sewage is:**
- (A) Oil
- (B) Inorganic matter
- (C) Minerals
- (D) Organic matter

Correct Answer: (B) Inorganic matter

- **A back cross is made when a hybrid is crossed with its:**
- (A) Sibling
- (B) Offspring
- (C) Parents

- (D) Other species

Correct Answer: (C) Parents

- **Which of the following is not included in integrated disease management?**
- (A) Awareness through media
- (B) Vaccination and medication
- (C) Both a and b
- (D) None of them

Correct Answer: (D) None of them

- **BCG vaccine is a type of:**
- (A) Live attenuated vaccine
- (B) Killed vaccine
- (C) Subunit vaccine
- (D) Conjugated vaccine

Correct Answer: (A) Live attenuated vaccine

- **Study of proper utilization of economically important domestic animals, it is called:**
- (A) Animal Husbandry
- (B) Wild life management
- (C) Livestock management
- (D) None of them

Correct Answer: (A) Animal Husbandry

- **Holstein Friesian was imported from Holland. This is by far the best dairy breed among exotic cattle regarding milk yield. On average it gives:**
- (A) 10 liters of milk per day
- (B) 15 liters of milk per day
- (C) 20 liters of milk per day
- (D) 25 liters of milk per day

- **Correct Answer:** **(D) 25 liters of milk per day**