

BIOLOGY

TEST NO.1

1. Use of living organism system or processes in manufacturing and service industries in known as:

- (A) Biotechnology (B) Social Biology
(C) Human Biology (D) Parasitology

Explanatory Answer: (A)

The branch of biology that deals with the use of living organisms, systems or processes in manufacturing and service industries is called biotechnology.

2. Six commonest bioelements account for what % age of the total mass in human body.

- (A) 10% (B) 90%
(C) 99% (D) 9%

Explanatory Answer: (C)

In the human body only six bioelements Oxygen, carbon, hydrogen nitrogen calcium and phosphorus, account for 99% of the total mass.

3. All of the following are double membrane-bounded organelles except.

- (A) Mitochondria (B) Chloroplast
(C) Vacuole (D) Nucleus

Explanatory Answer: (C)

A single unit membrane called tonoplast bounds the vacuole.

4. Second most abundant bioelement.

- (A) Hydrogen (B) Carbon
(C) Magnesium (D) Oxygen

Explanatory Answer: (B)

Carbon (18%) is the second most abundant bioelement.

5. Which organ of plant is involved in producing next generation sexually?

- (A) Root (B) Leaf
(C) Stem (D) Flower

Explanatory Answer: (D)

Flower are sexually reproducing organs in plants. Other plant organs such as root, leaf and stem also take part in reproduction and this type of reproduction is called vegetative propagation.

6. Which one of the following elements is not found in traces in living bodies?

- (A) Zinc (B) Copper
(C) Calcium (D) Manganese

Explanatory Answer: (B)

The chemical elements required by living organisms in minute quantities are called trace elements. These include copper, manganese, Zinc and iodine. Calcium is macroelement and is 2% of the living bodies.

7. The distributions of organisms can be studied through.

- (A) Ecosystems (B) Biosphere
(C) Biomes (D) All these

Explanatory Answer: (C)

A biome is a large regional community primarily determined by climate. The biomes are named after the type of major plant in them since the major kind of plant determines the other kinds of plants and animals. The distribution of organisms can be studied through biomes. reduce pollution of heavy metal by bio absorption.

8. A series of hypotheses supported by result of many tests is called.

- (A) Deduction (B) Theory
(C) Scientific law (D) All these

Explanatory Answer: (B)

Any hypothesis that may be tested again and again without ever being falsified is considered well supported and is generally accepted. this may be used as the basis of formulating further hypotheses. So, there is soon a series of hypotheses supported by the results of many tests, which is then called a theory.

9. One of the followings is regarded as "dynamic collection of organisms".

- (A) Species (B) Populations
(C) Community (D) Biosphere

Explanatory Answer: (C)

Populations of different species (plants and animals) living in the same habitat form a community. The communities are regarded as dynamic collection of organisms. In which one population may increase and others may decrease due to fluctuations in abiotic factors.

10. A hypothesis is a result of deductive reasoning or it can be the consequence of.

- (A) Inductive reasoning (B) Intuition
(C) Esthetic Preference (D) All these

Explanatory Answer: (D)

Sometimes scientists use other ways to form a hypothesis apart from deductive and inductive reasoning. These include intuition or imagination, esthetic preference, religious or philosophical ideas, comparison and analogy with other processes, and discover of one thing while looking for some other thing.

11. Genes of disease resistance and other desirable characters are introduced into plants by using the techniques of

- (A) Biotechnology (B) Cloning
(C) Genetic engineering (D) Hydroponic

Explanatory Answer: (A)

Genetic engineering techniques are used to introduce genes of disease resistance and other desirable characters into plants and animals.

12. Degradation of toxic materials by living organisms is known as.

- (A) Bioabsorption (B) Bioremediation
(C) Cloning (D) Chemotherapy

Explanatory Answer: (B)

Removal or degradation of environmental pollutants or toxic materials by living organisms is called bioremediation, for example algae have been found to reduce pollution of heavy metal by bio absorption.

13. Control by living organisms that help eliminate toxicity causes due to fungicides and pesticides.

- (A) Mutagens (B) Cloning
(C) Interferons (D) Biological control

Explanatory Answer: (D)

The control by some living organisms is called biological control. Fungicides and pesticides used to control plant pathogenic fungi and crop pests pose toxicity problems for human beings as well as environmental pollutions. Some living organisms compete or even eat the pests, for example an aphid that attacks walnut tree is being controlled biologically by a wasp that parasitizes this aphid

14. All of the followings can treat cancer except.

- (A) Radiotherapy (B) Chemotherapy
(C) Gene therapy (D) Antibiotics

Explanatory Answer: (D)

Cancer is a genetic disorder therefore gene therapy can help treating cancer. Antibiotics are usually used to eliminate bacterial disease.

15. A technique used to repair the defective genes.

- (A) Gene therapy (B) Integrated disease management
(C) Biorremediation (D) Cloning

Explanatory Answer: (A)

Recently a new technique has been developed to repair the defective gene. This consists of isolation the normal gen and inserting it into the host through bone marrow cells. This is called gene therapy.

TEST NO.2

1. Cells producing new cells for growth and development.

- (A) Chlorenchymatous (B) Meristematic
(C) Parenchymatous (D) Sclerenchymatous

Explanatory Answer: (B)

Meristematic cells produce new cell for growth and development of the plant. Sclerenchymatous cells provide support; chlorenchymatous cells carry out photosynthesis; and parenchymatous cells store surplus food.

2. The ground substance of cytoplasm

- (A) Cytoskeleton (B) Cytosol
(C) Cell organelles (D) All these

Explanatory Answer: (B)

The soluble part of cytoplasm is cytosol. It forms the ground substance of the cytoplasm. Cytosol contains

cell organelles, insoluble wastes and storage products such as starch granules.

3. The concept that cell membrane is composed of lipid bilayer sandwiched between protein layers

- (A) Leaflet model (B) Unit membrane model
(C) Fluid-mosaic model (D) Selectively permeable membrane

Explanatory Answer: (B)

It was proposed earlier that cell membrane is composed of lipid bilayer sandwiched between inner and outer layers of protein. This basic structure is called unit membrane. Modern technology revealed that this concept is not true.

4. Active transport is due to

- (A) Thermal diffusion (B) Concentration
(C) Phagocytosis (D) ATPase pumps

Explanatory Answer: (D)

The movement of materials against concentration gradient (from area of low concentration to area of high concentration) by use of energy provided by ATP is called active transport

5. The entire cell wall of the prokaryotic cell is often regarded as a single huge molecule known as

- (A) Cellulose (B) Murein
(C) Nucleoprotein (D) Lipoprotein

Explanatory Answer: (B)

Most distinct feature of cell wall is its cell wall. It is composed of polysaccharide chains bonded covalently to shorter chains of amino acids forming peptidoglycans or murein. The entire cell wall of prokaryotic cell is often regarded as a single huge molecule.

6. One of the following is not a character of mitochondria.

- (A) Inner membrane forms infoldings called cristae. (B) Site of aerobic respiration and fatty acid metabolism
(C) Extract energy from food (D) Contain enzymes for Glycolysis

Explanatory Answer: (D)

Enzymes for glycolysis are present in the cytoplasm. Mitochondria are self-replicating organelle which extract energy from food and convert it in the form of ATP, therefore called powerhouse of the cell. An envelope formed of two membranes surrounds matrix. The matrix contains enzymes for aerobic respiration (Krebs cycle) and fatty acid metabolism. The inner membrane forms infoldings called cristae. A cristae contains different enzymes and F₁ particles.

7. Which one of the following is not a function of smooth endoplasmic reticulum?

- (A) Metabolism of drugs and toxins in liver (B) Synthesis of proteins
(C) Conduction of impulses in muscle (D) Synthesis of steroids

Explanatory Answer: (B)

There are two morphological forms of ER: smooth endoplasmic reticulum (SER) and rough endoplasmic reticulum (RER). The SER helps in metabolism of lipids (steroids), to detoxify harmful drugs, and in some cells (nerve cells and muscle cells) transmission of nerve impulse. In addition to these, the SER transports materials from one part of the cell to the other.

8. A group of ribosomes attached to the same mRNA stretch

- (A) Polysome (B) Lysosome
(C) Glyoxysome (D) Peroxisome

Explanatory Answer: (A)

The ribosomes are attached to mRNA through smaller ribosomal subunit. A group of ribosomes attached to same mRNA stretch is called polysome.

9. Cisternae together with associated vesicles is known

- (A) Lysosomes (B) Golgi apparatus
(C) Endoplasmic reticulum (D) Peroxisomes

Explanatory Answer: (B)

A stack of flattened, membrane-bound sacs called cisternae, and associated vesicles is called Golgi apparatus

10. One of the following substances is used by Golgi apparatus to modify the others.

- (A) Proteins (B) Carbohydrates
(C) Lipids (D) DNA

Explanatory Answer: (B)

Most important function of Golgi apparatus is to modify the proteins and lipids by adding carbohydrates and converting them into glycoproteins or glycolipids.

11. The organelle involved in eating process of a cell.

- (A) Polysomes (B) Lysosomes
(C) Glyoxysomes (D) Peroxisomes

Explanatory Answer: (B)

Lysosomes are cell organelle bounded by a single membrane, rich in acid phosphatases and other hydrolytic enzymes. They are found in most eukaryotic cells involved in phagocytosis. These engulf and divide it into digestible particle any foreign object that enters a cell.

12. Which of the following can be termed secondary lysosome?

- (A) Contractile vacuoles (B) Digestive vacuole
(C) Central vacuole (D) All these

Explanatory Answer: (B)

Lysosomes fuse with any foreign particle, for example food particle taken into the cell by phagocytosis to make a food vacuole. The enzymes in lysosomes digest the food particle. The food vacuoles are autophagosomes, also called secondary lysosomes (a lysosome fused with food vacuole).

13. Disease related to lysosome.

- (A) Tay-sach's (B) Glycogenesis type II
(C) Both a & b (D) None of these

Explanatory Answer: (C)

In glycogenesis type II disease, the liver and muscle appear filled with glycogen within membrane-bound organelle. The enzyme that degrades glycogen to glucose is absent. Tay-Sach's disease is because of absence of an enzyme involved in catabolism of lipids. Accumulation of lipids in brain cells lead to mental retardation and even death.

14. The organelle specifically involved in formation and decomposition of hydrogen peroxide in the cell.

- (A) Lysosomes (B) Peroxisomes
(C) Glyoxysomes (D) All these

Explanatory Answer: (B)

Peroxisomes are single membrane-bound cytoplasmic organelle found both in animal and plant cells. These contain oxidative enzymes such as peroxidase, catalase and glycolic acid oxidase. The organelle is specifically involved in the formation and decomposition of hydrogen peroxide in the cell.

15. One of the following terms includes rest of the others.

- (A) Chloroplast (B) Leucoplast
(C) Plastids (D) Chromoplast

Explanatory Answer: (C)

Plastid are membrane-bound, mostly pigment containing bodies present in plant cells, These may be chloroplasts, chromoplasts or leucoplasts

16. One of the following is not a character of mitochondria.

- (A) Inner membrane forms infoldings called cristae. (B) Site of aerobic respiration and fatty acid metabolism
(C) Extract energy from organic food (D) Contain enzymes for Glycolysis

Explanatory Answer: (D)

Enzymes for glycolysis are present in the cytoplasm. Mitochondria are self-replicating organelle which extract energy from food and convert it in the form of ATP, therefore called powerhouse of the cell. An envelope formed of two membrane surrounds matrix. The matrix contains enzymes for aerobic respiration (Krebs cycle) and fatty acid metabolism. The inner membrane form infoldings called cristae. A crista contains different enzymes and F1 particles.

17. A fluid which surrounds the thylakoids.

- (A) Inter-granum (B) Matrix
(C) Stroma (D) All these

Explanatory Answer: (C)

A fluid that surrounds the thylakoids is called stroma contains proteins, some ribosomes and small circular DNA. The CO₂ fixation takes place in stroma.

18. The site for synthesis and storage of rRNA

- (A) Nucleus (B) Nucleolus
(C) Nucleoplasm (D) Ribosomes

Explanatory Answer: (B)

Nucleolus is a darkly stained body within the nucleus not bounded by any membrane it is composed of precursors of ribosomal subunits and

central fibrillar area consisting of RNA and rDNA. Nucleolus is the site for synthesis and storage of rRNA. The ribosomes are assembled in nucleolus and exported to the cytoplasm.

19. Exact replica of chromosome refers to.

- (A) Chromatid (B) Centromere
(C) Kinetochore (D) Arms

Explanatory Answer: (A)

A Chromatid is exact replica of chromosome. Under compound microscope each chromosome appears to be made of arms and centromere, a place where spindle fibres are attached to the chromosome during cell division. At the beginning of cell division, each chromosome consists of two identical chromatids held together at centromere.

20. The chromosomes are composed of DNA and.

- (A) RNA (B) Genes
(C) Proteins (D) Lipids

Explanatory Answer: (C)

Chromosomes are rod-like structures that become visible during cell division. A chromosome is composed of DNA and proteins. All the information necessary to control the activities of the cell is located on the chromosomes in the form of genes.

21. Which statement about the nuclear envelope is not true?

- (A) It has pores (B) It is a double membrane structure
(C) Its inner membrane bears ribosomes (D) RNA and some proteins pass through it

Explanatory Answer: (C)

A double membrane envelope surrounds the nucleus. The outer membrane is continuous with endoplasmic reticulum and inner membrane encloses nucleoplasm. The nuclear envelope contains nuclear pores that allow the exchange of materials between the nucleus and cytoplasm.

TEST NO.3

1. The basic element of organic compounds.

- (A) Carbon (B) Hydrogen
(C) Oxygen (D) Nitrogen

Explanatory Answer: (A)

The basic element of organic compounds is carbon. It occupies the central position in the skeleton of life due to its unique properties.

2. Part of our body having 85% water

- (A) Bones (B) Brain
(C) Muscles (D) Skin

Explanatory Answer: (B)

Water is the medium of life. It is the most abundant compound in all organisms. It varies from 65 to 89 percent in different organisms. Human tissues contain about 20 percent water in bone cells and 85 percent in brain cells.

3. Chemical bond that provides stability to complex carbohydrate molecules.

- (A) Carbon-Hydrogen bond (B) Carbon-Oxygen bond
(C) Carbon-Nitrogen bond (D) Nitrogen-Hydrogen bond

Explanatory Answer: (A)

Carbon and oxygen (C-O) association in glycoside linkages provides stability to the complex carbohydrate molecules. Carbon and hydrogen bond (C-H bond) is the potential source of chemical energy for cellular activities. Carbon combines with nitrogen (C-N bond) in amino acid linkages to form peptide bonds and forms proteins.

4. Evaporation of only two ml of water out of one liter lowers the temperature of remaining water by.

- (A) 10°C (B) 1°C
(C) 2°C (D) 5°C

Explanatory Answer: (B)

Heat energy absorbed for changing liquid to gas is termed heat of vaporization. It is expressed as calories absorbed per gram vaporized. The specific heat of vaporization of water is 574 Kcal/kg. Evaporation of only two ml of water out of one liter lowers the temperature of remaining water by 1°C.

5. A favorable element for the synthesis of complicated cellular structures.

- (A) Carbon (B) Hydrogen
(C) Oxygen (D) Nitrogen

Explanatory Answer: (A)

Carbon is tetravalent and can react with many other known elements forming covalent bonds. When a carbon atom combines with four atoms or radicals, the four bonds are arranged symmetrically in a tetrahedron and result in a stable configuration. This makes carbon a favorable element for the synthesis of complicated cellular structures.

6. When an electron pair is shared between two atoms, the resultant bond is.

- (A) Covalent bond (B) Ionic bond
(C) Peptide bond (D) None of these

Explanatory Answer: (A)

Covalent bond results when two or more atoms complete their electron shells by sharing electrons. When an electron pair is shared between two atoms, a single covalent bond results, for example the bond between two hydrogen atoms to form a hydrogen molecule. Covalent bond stores large amount of energy.

7. The molecule, which is unstable and is the immediate source of energy

- (A) Amino acids (B) Glucose
(C) Adenosine triphosphate (D) Fatty acid

Explanatory Answer: (C)

Some small molecules are so unstable that they are immediately broken down to release energy, for example ATP. Such substances serve as the immediate source of energy for cellular metabolism.

8. Basically carbohydrates are made up of.

- (A) C, H and S (B) H, C, H, N
(C) C, H, O (D) N, H, O

Explanatory Answer: (C)

The word carbohydrate literally means "hydrated carbon". They are composed of carbon, hydrogen and oxygen. The ratio of hydrogen and oxygen is the same as in water.

9. PGAL is a phosphorylated form of a monosaccharide sugar. It belongs to which group.

- (A) Trioses (B) Tetroses
(C) Pentoses (D) Hexose

Explanatory Answer: (A)

Phosphoglyceraldehyde (PGAL) is the aldehyde form of sugar. It is a 3-C sugar (triose) and an intermediate in photosynthesis and respiration.

10. A monosaccharide that forms five cornered ring in solution is called.

- (A) Furanose (B) Pyranose
(C) Triose (D) Tetrose

Explanatory Answer: (A)

Most of the monosaccharides form a ring structure when in solution. Ribose forms a five-cornered ring and called furanose. Whereas glucose will form six-cornered ring known as glucopyranose.

11. All of the following have unbranched chains of glucose except

- (A) Starch (B) Glycogen
(C) Cellulose (D) Chitin

Explanatory Answer: (A)

Starches are of two types. Amylose and amylopectin. Amylose starches have unbranched chains of glucose and are soluble in hot water. Amylopectin starches have branched chain and are insoluble in hot or cold water.

12. Animal obtain carbohydrates mainly from.

- (A) Glucose (B) Starch
(C) Sucrose (D) Glycogen

Explanatory Answer: (B)

Starch is the main source of carbohydrates for animals. It is found in fruits, grains, seeds and tubers.

13. The physical property of monosaccharide is that they are.

- (A) Less sweet and less soluble in water (B) Sweet and less soluble in water
(C) Sweet and easily soluble in water (D) Less sweet and insoluble in water

Explanatory Answer: (C)

Monosaccharides are simple sugars that are sweet in taste, are easily soluble in water and cannot be hydrolyzed into simpler sugars

14. Cane sugar is a/an.

- (A) Polysaccharide (B) Oligosaccharide
(C) Monosaccharide (D) None of these

Explanatory Answer: (B)

The carbohydrate that yield two to ten monosaccharides on hydrolysis are called oligosaccharides. Maltose, sucrose and lactose are physiologically important oligosaccharides. Most familiar disaccharide is sucrose or cane sugar which yields glucose and fructose molecules on hydrolysis.

15. ➤ One gram of glucose when burnt will release.

- (A) 717.6 Kcal (B) 71.76 Kcal
(C) 7176 Kcal (D) 7176 Kcal

Explanatory Answer: (A)

717.6 Kcal of solar energy is stored in glucose molecules as chemical energy and it becomes available in all organisms when it is oxidized in the body

16. ➤ Glycogen is chemically.

- (A) Monosaccharide (B) Disaccharide
(C) Oligosaccharide (D) Polysaccharide

Explanatory Answer: (D)

Glycogen, also called animal starch is the chief form of carbohydrate in animal body. It is a polysaccharide that is insoluble in water.

17. ➤ The most abundant carbohydrate stored in animal body is

- (A) Cellulose (B) Glycogen
(C) Starch (D) Chitin

Explanatory Answer: (A)

Polysaccharides, formed of many monosaccharide units by glycosidic bonds, are the most complex carbohydrates in nature. They are usually branched and tasteless. Cellulose is the most abundant carbohydrate in nature. It is the main constituent of cell walls in plants.

18. ➤ Which of the following gives red colour with iodine?

- (A) Starch (B) Glycogen
(C) Cellulose (D) Chitin

Explanatory Answer: (B)

Starch gives blue colour with iodine, while with glycogen (animal starch) iodine gives red colour.

19. ➤ All of the following are polysaccharides except.

- (A) Rubber (B) Cotton
(C) Wood (D) Paper

Explanatory Answer: (A)

Rubber is an example of terpenoids

20. ➤ When 1g water is heated from 15°C to 16°C, heat absorbed is

- (A) 10 Calories (B) 1 Calorie
(C) 2 Calories (D) 5 Calories

Explanatory Answer: (B)

The number of calories required to raise the temperature of 1g of water from 15°C to 16°C is 1.0. It is called specific heat capacity of water. This is because much energy is used to break hydrogen bonds. Water thus works as temperature stabilizer for organisms in the environment and hence protects living material against sudden thermal changes

21. ➤ All of the following functions are performed by lipids except.

- (A) Storage of energy (B) Insulating material
(C) Water absorbing material (D) Protection

Explanatory Answer: (C)

Lipids are a heterogeneous group of compounds related to fatty acids. They are insoluble in water but soluble in organic solvents. Lipids store double the amount of energy as compared to carbohydrates. Some lipids produce insulation against heat and cold and act as waterproof material. Waxes and cutin are additional protective layers.

The percentage of lipids in bacterial cell per total cell weight is 2.

22. ➤ Steroids are the members of.

- (A) Waxes (B) Acylglycerols
(C) Phospholipids (D) Terpenoids

Explanatory Answer: (D)

Terpenoids are a very large and important group of compounds made up of simple repeating units, isoprene units. This unit, by condensation, gives rise to compounds such as rubber, carotenoids, steroids, terpenes, etc.

23. ➤ Most abundant organic substance of living things.

- (A) Water (B) Carbohydrate
(C) Proteins (D) Lipids

Explanatory Answer: (C)

Proteins are the most abundant organic compounds found in all types and all parts of the cells. It comprises over 50% of their total dry weight.

24. ➤ Kind of amino acid, which constitute proteins.

- (A) 170 (B) 25
(C) 20 (D) Countless

Explanatory Answer: (B)

About 170 types of amino acids have been found to occur in cells and tissues. Of these about 25 are constituents of proteins. Most of the proteins in humans are made of 20 types of amino acids.

25. An amino acid has at least one amino (-NH₂) and one carboxyl (COOH) group bonded to a carbon atom called.

- (A) Alpha carbon (B) Beta carbon
(C) Secondary carbon (D) Tertiary carbon

Explanatory Answer: (A)

An amino acid comprises of an amino group (-NH₂) and a carboxyl group (-COOH) attached to the same carbon atom called alpha carbon.

26. Amino acid mainly differ due to.

- (A) Amino group (B) Carboxyl group
(C) Alpha carbon (D) Type or nature of R group

Explanatory Answer: (D)

An amino acid comprises of an amino group (-NH₂) and a carboxyl group (-COOH) attached to the same carbon atom called alpha carbon. The remainder of the molecule is called R group. R may be a hydrogen atom as in glycine, or CH₃ in alanine or any other group. Amino acids mainly differ due to the type or nature of R group.

27. Substance found in nucleoside.

- (A) Pentose Sugar (B) Organic base
(C) Phosphate (D) both a & b

Explanatory Answer: (D)

The compound formed by combination of a base and a pentose sugar is called nucleoside. A nucleoside and a phosphoric acid combine to form a nucleotide.

28. What is the number of amino acid in an insulin molecule?

- (A) 21 (B) 30
(C) 41 (D) 51

Explanatory Answer: (D)

Insulin is composed of 51 amino acids in two chains. One of the chains has 21 amino acids and the other had 30 amino acids. Both chains are held together by disulphide bridges

29. Hemoglobin is a protein composed of.

- (A) Three alpha and one beta chains (B) Three beta and one alpha chains
(C) Two alpha and two beta chains (D) Three alpha and two beta chains

Explanatory Answer: (C)

Haemoglobin is composed of four chains, two alpha and two beta chains. Each alpha chain contains 141 amino acid, while each beta chain contains 146 amino acids.

30. Quaternary structure is found in.

- (A) Hemoglobin (B) Insulin
(C) Keratin (D) Fibrin

Explanatory Answer: (A)

Haemoglobin exhibits quaternary structure. In this structure polypeptide tertiary chains are aggregated and are held together by hydrophobic interactions, hydrogen bonds and ionic bonds.

31. One of the common secondary structure of protein is.

- (A) Alpha helix (B) Triple helix
(C) Beta pleated sheet (D) None of these

Explanatory Answer: (A)

One of the common secondary structures of protein is alpha helix, which involves spiral formation of the basic polypeptide chain. The alpha helix is a very uniform geometric structure with 3-6 amino acid molecules in successive turns of the spiral. The helical structure is kept by formation of hydrogen bonds among amino acid molecules in successive turns of the spiral

32. Nucleic acids are in different forms in the nucleus of a cell. Which of the following forms of nucleic acids controls the synthesis of all these?

- (A) DNA (B) mRNA
(C) tRNA (D) rRNA

Explanatory Answer: (A)

There are three main types of RNAs, mRNA, tRNA and rRNA. All these are synthesized from DNA in the nucleus and then move out in the cytoplasm to perform their specific functions.

33. Nucleic acids have a special affinity for.

- (A) Acidic proteins (B) Basic proteins
(C) Salts (D) Acids

Explanatory Answer: (D)

Nucleic acids have special affinity for basic proteins. They are combined together to form nucleoproteins, e.g., nucleo-histones present in the chromosomes.

34. He provided data about the ratios of different bases present in DNA

- (A) Watson and Crick (B) F. Sanger
(C) Erwin Chargaff (D) Rosalind Franklin

Explanatory Answer: (C)

In 1951, Erwin Chargaff provided data about the ratios of different bases present in DNA. This data suggested that adenine and thymine are equal in ratio and so are guanine and cytosine.

35. The major portion of RNA in the cell is.

- (A) All are present equally (B) mRNA
(C) tRNA (D) eRNA

Explanatory Answer: (D)

Ribosomal RNA is the major portion of RNA in the cell, and may be up to 80% of the total RNA. It is strongly associated with ribosomal protein and acts as a machinery for the synthesis of proteins.

36. The amount of DNA is one half in.

- (A) Red blood cell (B) Sperm cell
(C) Liver cells (D) Kidney cells

Explanatory Answer: (B)

The amount of DNA is fixed for a particular species as it depends upon the number of chromosomes. The amount of DNA in germ cells (sperm and ova) is one half to that of somatic cells.

37. An example of dinucleotide is.

- (A) ATP (B) NAD
(C) mRNA (D) DNA

Explanatory Answer: (B)

Two nucleotides join to form dinucleotide. Nicotinamide adenine dinucleotide (NAD) is an example of dinucleotide. It is an important coenzyme in several oxidation-reduction reaction.