**UNIT-2**

**THE MOLECULAR AND BIOCHEMICALS BASIS OF AN ORGANISM**

**2.1 BIODIVERSITY**

1. Conservation within the natural habitat is

**A. Insitu Conservation** B. Exsitu Conservation

C. Invivo Conservation D. Invitro Conservation

2. Which one of the following is not a renewable, exhaustible natural resource?

A. Aquatic animals B. Wild life

**C. Minerals**  D. Soil fertility

3. Global warming can be controlled by

A**. Reducing deforestation, cutting down use of fossil fuel**

B. Reducing reforestation, increasing the use of fossil fuel

C. Increasing deforestation, slowing down the growth of human population

D. Increasing deforestation, reducing efficiency of energy usage

4. The basic units of biological classification

A. Population **B. Species**

C. Genus D. Class

5. The genetic variability within species

A. Ecosystem diversity **B. Genetic diversity**

C. Exotic diversity D. Species diversity

6. The diversity within and between the ecological community

A. Ecosystem diversity B. Genetic diversity

C. Exotic diversity **D. Species diversity**

**2.2 CHEMISTRY OF LIFE**

7. A [substance](http://www.chemicool.com/definition/substance.html) consisting of atoms which all have the same atomic number

A. Compound  **B. Elements**

C. Atom D. Molecule

8. A substance consisting of atoms or ions of two or more different elements in definite proportions are called\_\_\_\_\_\_\_\_\_\_\_\_

**A. Compound**  B. Elements

C. Atom D. Molecule

9. Which one of the following is not a form of chemical bonding?

A. covalent bonding  **B. hydrogen bonding**

C. Ionic bonding D. metallic bonding

10. Which one of the following pairs atoms is most likely to form an ionic bond?

**A. Na and Cl**  B. C and F

C. N and F D. O and F

11. A chemical bond that involves the sharing of electron pairs between atoms

**A. covalent bonding**  B. hydrogen bonding

C. Ionic bonding D. metallic bonding

12. Examples of covalent bond

A. Hydrogen B. Water

C. HCl **D. All of the above**

**2.3 BIOCHEMISTRY AND HUMAN BIOLOGY**

13. The study of chemical processes within and relating to living organisms

A. Biotechnology **B. Biochemistry**

C. Microbiology D. Bioinformatics

14. The general formula of carbohydrates is

**A. Cn(H2O)n**  B. C(H2O)n OH

C. C (H2O) D. C2(H2O)nCOOH

15. In carbohydrates, monosaccharides are joined by

A. Peptide bond **B. Glycosidic bond**

C. Covalent bond D. Hydrogen bond

16. Which of the following is not a polysaccharide?

**A. Glucose** B. Starch

C. Glycogen D. Cellulose

17. Liquid form triglycerides at ordinary room temperature is called

A. Fats **B. Oils**

C. Solids D. None of these

18. Steroids molecule contains\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ structure.

A. Tetrameric ring **B. Cyclo alkane ring**

C. Pyranose ring D. Furanose ring

19. Amino acids are joined by\_\_\_\_\_\_\_\_\_\_\_

**A. Peptide bond** B. Glycosidic bond

C. Covalent bond D. Hydrogen bond

20. The width of the DNA molecule is

A. 3.4A° B. 34A°

**C. 20 A°**  D. 2.0 A°

21. Chargaff’s rule states that the following concept.

**A. %A = %T & %G = %C**  B. %A> %T and %G > %C

C. %A <%T and %G < %C C. None of the above

**2.4 PROTEIN SYSTHESIS**

22. The experiment by \_\_\_\_\_ showed that DNA is the genetic material.

A. Mandel B. Rosland Franklin

**C. Frederick Griffth**  D. Watson and Crick

23. What term is used to describe the process by which DNA is copied to produce multiple DNA molecules?

A. Transcription B. Translation

**C. Replication**  D. Transformation

24. The coding region of mRNA is called\_\_\_\_\_\_\_\_\_\_\_\_

A. Intron **B. Exon**

C. Cap D. Poly AAA

25. Which one of the following is not a type of RNA?

**A. Nuclear RNA**  B. mRNA

C. rRNA D. tRNA

26. Transfer RNA's bind during translation by the\_\_\_\_\_\_\_\_\_

A. Codon **B. Anticodon**

C. Template D. Variable arm

27. What is Si RNA?

A. Small intron RNA **B. Small interface RNA**

C. Single RNA D. All of the above

28. The genetic code consists of groups of three nucleotides called

**A. Codon**  B. Antocodon

C. Reading frame d. Intron

29. Which codons to stop translation process

A. UAA B. UAG

C. UGA **D. All of the above**

30. Which amino acid to initiate eukaryotic translation

A. Methionine **B. N-formyl methionine**

C. Alanine D. Glycine

31. [Enzymatic](https://en.wikipedia.org/wiki/Enzyme) modification of [proteins](https://en.wikipedia.org/wiki/Protein) during or after [protein biosynthesis](https://en.wikipedia.org/wiki/Protein_biosynthesis) are called

A. Post transcriptional modification

**B. Post translational modification**

C. Pre translational modification

D. None of the above

32. In translation mechanism initiation complex contain two site\_\_\_\_\_\_\_\_

**A. P & A site**  B. A & T site

C. Codon and anticodon D. All of the above

33. Which of the following enzyme are used to cut the DNA?

**A. Endo nuclease** B. Ligase

C. Polymerase D. Primase

34. RNA required for protein synthesis

A. mRNA B. tRNA

C. rRNA **D. All of the above**

35. The process involved in the RNA formation on DNA template is

A. Translation **B. Transcription**

C. Replication D. Transformation

36. Translation occurs in the

A. Nucleus **B. cytoplasm**

C. Lysosomes D. Mitochondria

37. The amino acid are assembled into polypeptide chain on

**A. Ribosome**  B. mRNA

C. DNA template D. Nucleus

**2.5 STEM CELLS AND THEIR APPLICATIONS**

38. What cells produced by therapeutic cloning are used to culture new tissue?

A. Nerve cell **B. Inner mass cell**

C. Muscle cell D. Transplant cell

39. What does "pluripotent" mean?

1. Single cell to develop into an embryonic or adult stem cell.
2. **Single stem cell to develop into different type of cell**
3. Single stem cell to heal different types of diseases
4. Stem cell unable to convert into different type of cell

40. The formation of blood cellular components are called

A. Embryogenesis **B. Haematopoiesis**

C. Fertilization D. Self renewal

41. Which factor is responsible for chondrocyte development?

A. Interferon B. Cytokine

**C. TGF-β** D. TNF

42. The outer layer of a blastocyst\_\_\_\_\_\_\_\_

**A. Trophoblast** B. inner cell mass

C. Ectoderm D. Morula

43. A single cell to divide and produce all of the differentiated cells in an organism.

A. Pluripotent **B. Totipotent**

C. Unipotent D. All of the above

44. What does “SCNT” means?

**A. Somatic Cell Nuclear Transfer**  B. Small cell Nuclear Transfer

C. Single cell Nuclear Transfer D. None of the above

45. Gene therapy is\_\_\_\_\_\_\_\_\_\_\_\_

A. method aim to cure genetic disorder

B. Method to provide correct version of the defective gene

C. Method to replace a defective gene with a healthy gene

**D. All of the above**

46. [Degenerative](https://en.wikipedia.org/wiki/Neurodegeneration) disorder of the [central nervous syste](https://en.wikipedia.org/wiki/Central_nervous_system)m

A. Diabetes mellitus **B. Parkinson’s disease**

C. Polio D. muscular dystrophy

47. Which signaling molecule to promote new bone growth?

**A. BMP**  B. HGF

C. TGF D. TNF

48. In gene therapy, which one used as a gene delivery vehicles?

A. Bacteria **B. Virus**

C. Fungi D. Algae

49. Which is the most common form of diabetes?

A. Type I Diabetes **B. Type II Diabetes**

C. Diabetes insipidus D. Diabetic ketoacidosis

50. What is the capacity of unspecialized cell?

A. Differentiation **B. Self renewal**

C. Determination D. Proliferation