DU MSc Bio Physics

Topic:- BIOPHY MSC S2

1) Which of the following phenomenon has been observed to occur in certain cellular systems but is not defined by the Central Dogma of molecular biology?
[Question ID = 4931]
1. Transcription [Option ID = 19718]
2. Reverse transcription [Option ID = 19719]
3. Translation [Option ID = 19720]
4. Reverse translation [Option ID = 19721]

Correct Answer :-
- Reverse transcription [Option ID = 19719]

2) Which of the following is the odd one out in terms of structural classification:
[Question ID = 4932]
1. Zinc fingers [Option ID = 19722]
2. Leucine zippers [Option ID = 19723]
3. Helix-turn-helix [Option ID = 19724]
4. Beta turns [Option ID = 19725]

Correct Answer :-
- Beta turns [Option ID = 19725]

3) The process of Glycolysis involves
[Question ID = 4933]
1. Turning glucose into pyruvate [Option ID = 19726]
2. Synthesis of glucose from non-carbohydrate sources [Option ID = 19727]
3. Changing glucose to pentoses [Option ID = 19728]
4. Turning glycogen to glucose [Option ID = 19729]

Correct Answer :-
- Turning glucose into pyruvate [Option ID = 19726]

4) Which of the following is an INCORRECT example of the EC (Enzyme commission numbers) for classification of enzymes:
[Question ID = 4934]
1. 2.7.1.1 [Option ID = 19730]
2. 11.4.2.2 [Option ID = 19731]
3. 1.2.4.2 [Option ID = 19732]
4. 1.1.1.42 [Option ID = 19733]

Correct Answer :-
- 11.4.2.2 [Option ID = 19731]

5) The cell organelles involved in the protein synthesis are:-
[Question ID = 4935]
1. Ribosomes [Option ID = 19734]
2. Golgi apparatus [Option ID = 19735]
3. Mitochondria [Option ID = 19736]
4. tRNA [Option ID = 19737]

Correct Answer :-
- Ribosomes [Option ID = 19734]

6) A variety of RNA molecules are now known to be found in cells, and often named according to their function. Which of the following is named according to their size:-
[Question ID = 4936]
1. miRNA [Option ID = 19738]
2. piRNA [Option ID = 19739]
3. tasiRNA [Option ID = 19740]
4. eRNA [Option ID = 19741]

Correct Answer :-
- miRNA [Option ID = 19738]

7) Prokaryotes are organisms that do not have a well defined nucleus, as opposed to eukaryotes. Which of the following is not a eukaryote:-
[Question ID = 4937]
1. Algae [Option ID = 19742]

2. Fungi [Option ID = 19743]
3. Archaea [Option ID = 19744]
4. Amoeba [Option ID = 19745]

Correct Answer :-

- Archaea [Option ID = 19744]

8) You have a 2 M solution of NaCl, which needs to be diluted to 0.5 M concentration. How much water do we add to 50 ml of such solution to make it correct molarity?

[Question ID = 4938]

1. 150 ml [Option ID = 19746]
2. 200 ml [Option ID = 19747]
3. 50 ml [Option ID = 19748]
4. 100 ml [Option ID = 19749]

Correct Answer :-

- 150 ml [Option ID = 19746]

9) The expected molecular weight of a protein of 200 amino acids is:-

[Question ID = 4939]

1. 2200 daltons [Option ID = 19750]
2. 2400 daltons [Option ID = 19751]
3. 200 daltons [Option ID = 19752]
4. 2000 daltons [Option ID = 19753]

Correct Answer :-

- 2200 daltons [Option ID = 19750]

10) In an enzyme catalyzed reaction, which of the following statements is expected to be TRUE:-

[Question ID = 4940]

1. The substrate and product will both have same affinity for the enzyme [Option ID = 19754]
2. The affinity of the substrate for the enzyme will be higher than that of the product [Option ID = 19755]
3. The affinity of the product for the enzyme will be higher than that of the substrate [Option ID = 19756]
4. Either substrate or product may have higher affinity for the enzyme [Option ID = 19757]

Correct Answer :-

- The affinity of the substrate for the enzyme will be higher than that of the product [Option ID = 19755]

11) The most commonly accepted theory of protein folding suggests that:-

[Question ID = 4941]

1. The hydrophobic residues are buried in the core and the hydrophilic aminoacids are on the surface

   [Option ID = 19758]
2. The hydrophylic residues are buried in the core and the hydrophobic aminoacids are on the surface

   [Option ID = 19759]
3. The hydrophylic and hydrophobic residues are distributed equally on the surface and the interior

   [Option ID = 19760]
4. Only the hydrophilic aminoacids are responsible for the protein folding

   [Option ID = 19761]

Correct Answer :-

- The hydrophobic residues are buried in the core and the hydrophilic aminoacids are on the surface

  [Option ID = 19758]

12) Collagen is an example of which type of macromolecule:-

[Question ID = 4942]

1. Proteins [Option ID = 19762]
2. Lipids [Option ID = 19763]
3. Carbohydrates [Option ID = 19764]
4. Nucleotides [Option ID = 19765]

Correct Answer :-

- Proteins [Option ID = 19762]

13) Biological membranes are typically largely composed of which type of macromolecule:-

[Question ID = 4943]

1. Lipids [Option ID = 19766]
2. Carbohydrates [Option ID = 19767]
3. Proteins [Option ID = 19768]
4. Proteins with special carbohydrates attached to them [Option ID = 19769]

Correct Answer :-

- Lipids [Option ID = 19766]

14) Partial double bond character is the unique feature of which bond:-
[Question ID = 4944]
1. Peptide bond [Option ID = 19770]
2. Nitrile bond [Option ID = 19771]
3. Amide bond [Option ID = 19772]
4. Carboxyl bond [Option ID = 19773]

Correct Answer :-
- Peptide bond [Option ID = 19770]

15) The amino acid methionine is typically coded for by the codon:-
[Question ID = 4945]
1. UAG [Option ID = 19774]
2. UAA [Option ID = 19775]
3. AUG [Option ID = 19776]
4. UGA [Option ID = 19777]

Correct Answer :-
- AUG [Option ID = 19776]

16) The most commonly used model system for "genetic studies" is:-
[Question ID = 4946]
1. Drosophila melanogaster [Option ID = 19778]
2. Arabidopsis [Option ID = 19779]
3. Mus musculus [Option ID = 19780]
4. Hydra [Option ID = 19781]

Correct Answer :-
- Drosophila melanogaster [Option ID = 19778]

17) Which peculiar form of chromosome is found in salivary gland of Drosophila
[Question ID = 4947]
1. Lampbrush chromosomes [Option ID = 19782]
2. Z chromosome [Option ID = 19783]
3. B chromosome [Option ID = 19784]
4. X chromosome [Option ID = 19785]

Correct Answer :-
- Lampbrush chromosomes [Option ID = 19782]

18) Which of the following statements about plasmid is NOT correct?
[Question ID = 4948]
1. It provides functional benefits to the host such as resistance to antibiotics, degradative functions, and/or virulence [Option ID = 19786]
2. It help bacteria to survive in adverse conditions because they replicate independently from the host chromosomal DNA [Option ID = 19787]
3. They may carry genes that give their host a selective advantage [Option ID = 19788]
4. The origin of replication of main chromosome and plasmid is same [Option ID = 19789]

Correct Answer :-
- The origin of replication of main chromosome and plasmid is same [Option ID = 19789]

19) Most of the O_2 is transported in blood as:-
[Question ID = 4949]
1. In carbonic acid [Option ID = 19790]
2. Dissolved in the plasma [Option ID = 19791]
3. Bound to hemoglobin [Option ID = 19792]
4. In bicarbonate ion [Option ID = 19793]

Correct Answer :-
- Bound to hemoglobin [Option ID = 19792]

20) Gram Negative bacteria
[Question ID = 4950]
1. Have a thick peptidoglycan layer [Option ID = 19794]
2. Have no outer lipid membrane [Option ID = 19795]
3. Appear purple crystal violet stain when Gram staining process is applied [Option ID = 19796]
4. Appear pale reddish color when observed under a light microscope following Gram staining [Option ID = 19797]

Correct Answer :-
- Appear pale reddish color when observed under a light microscope following Gram staining [Option ID = 19797]

21) Crystal violet is NOT used
[Question ID = 4951]

1. To dye silk and wool [Option ID = 19798]
2. As an pH indicator [Option ID = 19799]
3. In Gram staining [Option ID = 19800]
4. As a desiccator [Option ID = 19801]

Correct Answer :-

- As a desiccator [Option ID = 19801]

22) Which of the following are/is a type of non-covalent interactions in proteins?

[Question ID = 4952]

1. Van der Waal interactions

   [Option ID = 19802]
2. H-bonding

   [Option ID = 19803]
3. Both Van der Waal interactions and H-bonding

   [Option ID = 19804]
4. Di-sulphide bonds

   [Option ID = 19805]

Correct Answer :-

- Both Van der Waal interactions and H-bonding

  [Option ID = 19804]

23) Which is correct about a human RBC:

[Question ID = 4953]

1. It's genome is tetraploid [Option ID = 19806]
2. Has a life period of 180 days [Option ID = 19807]
3. Doesn't have a nucleus [Option ID = 19808]
4. Contain a large amount of Mg to transport oxygen [Option ID = 19809]

Correct Answer :-

- Doesn't have a nucleus [Option ID = 19808]

24) Sanger method is used to determine the sequence of:-

[Question ID = 4954]

1. DNA [Option ID = 19810]
2. RNA [Option ID = 19811]
3. Protein [Option ID = 19812]
4. Lipid [Option ID = 19813]

Correct Answer :-

- DNA [Option ID = 19810]

25) What would happen to red blood cells if the haem group were removed from haemoglobin?

[Question ID = 4955]

1. White blood cells would not be able to multiply [Option ID = 19814]
2. Red blood cells would not be able to multiply [Option ID = 19815]
3. Blood clot formation would be inhibited [Option ID = 19816]
4. Red blood cells would not be able to transport oxygen [Option ID = 19817]

Correct Answer :-

- Red blood cells would not be able to transport oxygen [Option ID = 19817]

26) Which of the following is a polar amino acid?

[Question ID = 4956]

1. Threonine [Option ID = 19818]
2. Alanine [Option ID = 19819]
3. Proline [Option ID = 19820]
4. Methionine [Option ID = 19821]

Correct Answer :-

- Threonine [Option ID = 19818]

27) Prof. Har Gobind Khorana was awarded Nobel Prize for:-

[Question ID = 4957]

1. Proposing wobble hypothesis [Option ID = 19822]
2. Interpretation of genetic code [Option ID = 19823]
3. Mechanism of protein synthesis [Option ID = 19824]
4. Genome synthesis [Option ID = 19825]

Correct Answer :-

- Interpretation of genetic code [Option ID = 19823]

28) Scientist(s) who proved that DNA and not protein as the genetic material:-
[Question ID = 4958]
1. Pasteur [Option ID = 19826]
2. Jenner [Option ID = 19827]
3. Hershey and Chase [Option ID = 19828]
4. Beadle and Tatum [Option ID = 19829]

Correct Answer :-
- Hershey and Chase [Option ID = 19828]

29) Which of the following reagents are not a part of a typical polymerase chain reaction?
[Question ID = 4959]
1. Forward and reverse primers [Option ID = 19830]
2. DNA polymerase [Option ID = 19831]
3. dNTP [Option ID = 19832]
4. Nucleotide triphosphates [Option ID = 19833]

Correct Answer :-
- Nucleotide triphosphates [Option ID = 19833]

30) Restriction Enzymes are:-
[Question ID = 4960]
1. Endonuclease [Option ID = 19834]
2. Exonuclease [Option ID = 19835]
3. Protease [Option ID = 19836]
4. Lipase [Option ID = 19837]

Correct Answer :-
- Endonuclease [Option ID = 19834]

31) Which vitamin helps in clotting of the blood?
[Question ID = 4961]
1. Vitamin C [Option ID = 19838]
2. Vitamin K [Option ID = 19839]
3. Vitamin A [Option ID = 19840]
4. Vitamin E [Option ID = 19841]

Correct Answer :-
- Vitamin K [Option ID = 19839]

32) Urea is the main nitrogenous waste in:-
[Question ID = 4962]
1. Humans [Option ID = 19842]
2. Birds [Option ID = 19843]
3. Insects [Option ID = 19844]
4. Fish [Option ID = 19845]

Correct Answer :-
- Humans [Option ID = 19842]

33) The main site of action of Penicillin is:
[Question ID = 4963]
1. Ribosome [Option ID = 19846]
2. Plasma membrane [Option ID = 19847]
3. Cell wall [Option ID = 19848]
4. DNA [Option ID = 19849]

Correct Answer :-
- Cell wall [Option ID = 19848]

34) Fructose and glucose is constituent of
[Question ID = 4964]
1. Maltose [Option ID = 19850]
2. Galactose [Option ID = 19851]
3. Mannose [Option ID = 19852]
4. Sucrose [Option ID = 19853]

Correct Answer :-
- Sucrose [Option ID = 19853]

35) The disease commonly called ‘Leprosy” is caused by:-
[Question ID = 4965]

1. Clostridium leprea [Option ID = 19854]
2. Mycobacterium leprea [Option ID = 19855]
3. Treponema leprea [Option ID = 19856]
4. Bacillus leprea [Option ID = 19857]

Correct Answer :-

- Mycobacterium leprea [Option ID = 19855]

36) The value of ionic product of water is:-

[Question ID = 4966]

1. 1×10^{-7} at 25°C

   [Option ID = 19858]
2. 1×10^{14} at 27°C

   [Option ID = 19859]
3. 1×10^{-14} at 25°C

   [Option ID = 19860]
4. 1×10^{7} at 27°C

   [Option ID = 19861]

Correct Answer :-

- 1×10^{-14} at 25°C

  [Option ID = 19860]

37) 104.5° is the bond angle between?

[Question ID = 4967]

1. H-O-H in ethyl alcohol [Option ID = 19862]
2. H-O-H in methyl alcohol [Option ID = 19863]
3. H-O-H in water molecule [Option ID = 19864]
4. H-O-H in glycerol molecule [Option ID = 19865]

Correct Answer :-

- H-O-H in water molecule [Option ID = 19864]

38) Which antibody is in highest concentration of immunoglobulin in the blood of a newly born human child?

[Question ID = 4968]

1. IgA [Option ID = 19866]
2. IgG [Option ID = 19867]
3. IgM [Option ID = 19868]
4. IgE [Option ID = 19869]

Correct Answer :-

- IgG [Option ID = 19867]

39) Factor that play an important role in correct folding of other proteins are called:-

[Question ID = 4969]

1. Structron [Option ID = 19870]
2. Chaperon [Option ID = 19871]
3. Heat Shock Proteins [Option ID = 19872]
4. Foldon [Option ID = 19873]

Correct Answer :-

- Chaperon [Option ID = 19871]

40) Endocytosis and membrane fusion is the mechanism adopted by which viruses to enter into the host cells:-

[Question ID = 4970]

1. All viruses [Option ID = 19874]
2. Enveloped viruses [Option ID = 19875]
3. Coronavirus [Option ID = 19876]
4. SARS [Option ID = 19877]

Correct Answer :-

- Enveloped viruses [Option ID = 19875]

41) Which statement best defines an oncogene?

[Question ID = 4971]

1. An oncogene never codes for a cell cycle protein, which promotes cell proliferation [Option ID = 19878]
2. Oncogenes are always involved in inherited forms of cancer [Option ID = 19879]
3. An oncogene codes for a protein that prevents a cell from undergoing apoptosis [Option ID = 19880]
4. An oncogene is a dominantly expressed mutated gene that renders a cell advantageous towards survival [Option ID = 19881]

Correct Answer :-

- An oncogene is a dominantly expressed mutated gene that renders a cell advantageous towards survival [Option ID = 19881]

42) How do an enzyme increases the rate of catalysis?
[Question ID = 4972]
1. By decreasing the energy of the substrate [Option ID = 19882]
2. By decreasing product stability [Option ID = 19883]
3. By increasing the activation barrier of the reaction [Option ID = 19884]
4. By decreasing the activation energy of the reaction [Option ID = 19885]

Correct Answer :-
- By decreasing the activation energy of the reaction [Option ID = 19885]

43) The amino acids is a precursor of plant hormone
[Question ID = 4973]
1. Tryptophan [Option ID = 19886]
2. Histidine [Option ID = 19887]
3. Proline [Option ID = 19888]
4. Tyrosine [Option ID = 19889]

Correct Answer :-
- Tryptophan [Option ID = 19886]

44) Through which organelle the secretory proteins are processed?
[Question ID = 4974]
1. Mitochondria [Option ID = 19890]
2. Golgi apparatus [Option ID = 19891]
3. Peroxisomes [Option ID = 19892]
4. Nucleus [Option ID = 19893]

Correct Answer :-
- Golgi apparatus [Option ID = 19891]

45) Which amino acid can be considered as the simplest on the basis of side chain?
[Question ID = 4975]
1. Leucine [Option ID = 19894]
2. Valine [Option ID = 19895]
3. Glycine [Option ID = 19896]
4. Lysine [Option ID = 19897]

Correct Answer :-
- Glycine [Option ID = 19896]

46) Crown gall disease in plants is caused by?
[Question ID = 4976]
1. Agrobacterium tumefaciens [Option ID = 19898]
2. Xanthomonas campestris [Option ID = 19899]
3. Rhizobium etli [Option ID = 19900]
4. Erwinia stewartii [Option ID = 19901]

Correct Answer :-
- Agrobacterium tumefaciens [Option ID = 19898]

47) Which is not a part of genetic material division during human mitotic cell cycle?
[Question ID = 4977]
1. Prophase [Option ID = 19902]
2. Metaphase [Option ID = 19903]
3. Anaphase [Option ID = 19904]
4. Cytokinesis [Option ID = 19905]

Correct Answer :-
- Cytokinesis [Option ID = 19905]

48) Which antibody has multiple subtypes?
[Question ID = 4978]
1. IgM [Option ID = 19906]
2. IgG [Option ID = 19907]
3. IgD [Option ID = 19908]
4. IgE [Option ID = 19909]

Correct Answer :-
- IgG [Option ID = 19907]

49) ABO blood group antigens in humans are differentiated from each other on the basis of:-
[Question ID = 4979]

1. Sialic acid [Option ID = 19910]
2. Lipids [Option ID = 19911]
3. Spectrin [Option ID = 19912]
4. Glycoproteins [Option ID = 19913]

Correct Answer :-

- Glycoproteins [Option ID = 19913]

50) Among the following amino acids, which has the highest probability to be found in the inner core of a typical globular protein in aqueous environment?
[Question ID = 4980]

1. Ser [Option ID = 19914]
2. Arg [Option ID = 19915]
3. Val [Option ID = 19916]
4. Thr [Option ID = 19917]

Correct Answer :-

- Val [Option ID = 19916]

51) In a typical mitotic cell division cycle in eukaryotes, after G2 phase following occurs:-
[Question ID = 4981]

1. G0 phase [Option ID = 19918]
2. S phase [Option ID = 19919]
3. G1 phase [Option ID = 19920]
4. M phase [Option ID = 19921]

Correct Answer :-

- M phase [Option ID = 19921]

52) An allosteric inhibitor of an enzyme usually:-
[Question ID = 4982]

1. Binds to the active site [Option ID = 19922]
2. Participates in feedback regulation [Option ID = 19923]
3. Denatures the enzyme [Option ID = 19924]
4. Causes the enzyme to work faster [Option ID = 19925]

Correct Answer :-

- Participates in feedback regulation [Option ID = 19923]

53) Name the type of the pathway which is involved in the synthesis of compounds?
[Question ID = 4983]

1. Anabolic pathways [Option ID = 19926]
2. Catabolic pathways [Option ID = 19927]
3. Amphibolic pathway [Option ID = 19928]
4. Anapleurotic pathway [Option ID = 19929]

Correct Answer :-

- Anabolic pathways [Option ID = 19926]

54) Which bond between phospholipids is primarily responsible to stabilize a biological membrane
[Question ID = 4984]

1. Hydrogen bonds and covalent interactions [Option ID = 19930]
2. Van der Waal and ionic interactions [Option ID = 19931]
3. Hydrophobic interactions and hydrogen bonding [Option ID = 19932]
4. Covalent and hydrophobic interactions [Option ID = 19933]

Correct Answer :-

- Hydrophobic interactions and hydrogen bonding [Option ID = 19932]

55) Which is the characteristics of only MHC class I molecules?

[Question ID = 4985]

1. They are expressed constitutively an all nucleated cells

   [Option ID = 19934]
2. They are glycosylated polypeptides with domain structure

   [Option ID = 19935]
3. They are involved in presentation of antigen fragments to cells

   [Option ID = 19936]
4. They are expressed on surface membrane of B cells

   [Option ID = 19937]

Correct Answer :-

- They are expressed constitutively an all nucleated cells

[Option ID = 19934]

56) During osmosis:-
[Question ID = 4986]
1. Solvent enters through a semi permeable membrane from low to high concentration of solute [Option ID = 19938]
2. Solvent enters through a semi permeable membrane from higher to lower concentration of solute [Option ID = 19939]
3. Solute enters through a semi permeable membrane from low to high concentration of solute [Option ID = 19940]
4. Solute enters through a semi permeable membrane from higher to lower concentration solute [Option ID = 19941]

Correct Answer :-
- Solvent enters through a semi permeable membrane from low to high concentration of solute [Option ID = 19938]

57) Which statement is NOT correct about prion disease?

[Question ID = 4987]
1. It is an exception of Koch's postulates

   [Option ID = 19942]
2. It has RNA as genetic material

   [Option ID = 19943]
3. It is protein only infectious agent

   [Option ID = 19944]
4. It cause misfolding of proteins

   [Option ID = 19945]

Correct Answer :-
- It has RNA as genetic material

  [Option ID = 19943]

58) Liver cells are called as
[Question ID = 4988]
1. Neuron [Option ID = 19946]
2. Reticulocytes [Option ID = 19947]
3. Nephron [Option ID = 19948]
4. Hepatocytes [Option ID = 19949]

Correct Answer :-
- Hepatocytes [Option ID = 19949]

59) Insulin is secreted by

[Question ID = 4989]
1. α-cells of islets of langerhans

   [Option ID = 19950]
2. ß-cells of islets of Langerhans

   [Option ID = 19951]
3. Chief cells

   [Option ID = 19952]
4. Pancreatic cells

   [Option ID = 19953]

Correct Answer :-
- ß-cells of islets of Langerhans

  [Option ID = 19951]

60) Mass spectroscopy is based on
[Question ID = 4990]
1. Charge / mass ratio [Option ID = 19954]
2. Mass / charge ratio [Option ID = 19955]
3. Mass alone [Option ID = 19956]
4. Charge alone [Option ID = 19957]

Correct Answer :-
- Mass / charge ratio [Option ID = 19955]

61) Rising of dough is due to:
[Question ID = 4991]
1. Multiplication of yeast [Option ID = 19958]

2. Production of CO_2 [Option ID = 19959]
3. Emulsification [Option ID = 19960]
4. Hydrolysis of wheat flour starch into sugars [Option ID = 19961]

Correct Answer :-

- Production of CO_2 [Option ID = 19959]

62) The transfer of genetic material from one bacterium to another through the mediation of a vector like virus is termed as:

[Question ID = 4992]

1. Transduction [Option ID = 19962]
2. Conjugation [Option ID = 19963]
3. Transformation [Option ID = 19964]
4. Translation [Option ID = 19965]

Correct Answer :-

- Transduction [Option ID = 19962]

63) Which of the given statement is correct in the context of observing DNA separated by agarose gel electrophoresis?

[Question ID = 4993]

1. DNA can be seen in visible light [Option ID = 19966]
2. DNA can be seen without staining in visible light [Option ID = 19967]
3. Ethidium bromide stained DNA can be seen in visible light [Option ID = 19968]
4. Ethidium bromide stained DNA can be seen under exposure to UV light [Option ID = 19969]

Correct Answer :-

- Ethidium bromide stained DNA can be seen under exposure to UV light [Option ID = 19969]

64) An antibiotic resistance gene in a vector usually helps in the selection of:-

[Question ID = 4994]

1. Competent cells

   [Option ID = 19970]
2. Transformed cells

   [Option ID = 19971]
3. Recombinant cells

   [Option ID = 19972]
4. None of these

   [Option ID = 19973]

Correct Answer :-

- Transformed cells

  [Option ID = 19971]

65) Who among the following was awarded the Nobel Prize for the development of PCR technique?

[Question ID = 4995]

1. Herbert Boyer [Option ID = 19974]
2. Hargovind Khurana [Option ID = 19975]
3. Kary Mullis [Option ID = 19976]
4. Arthur Kornberg [Option ID = 19977]

Correct Answer :-

- Kary Mullis [Option ID = 19976]

66) C-peptide of human insulin is:-

[Question ID = 4996]

1. A part of mature insulin molecule [Option ID = 19978]
2. Responsible for formation of disulphide bridges [Option ID = 19979]
3. Removed during maturation of pro-insulin to insulin [Option ID = 19980]
4. Responsible for its biological activity [Option ID = 19981]

Correct Answer :-

- Removed during maturation of pro-insulin to insulin [Option ID = 19980]

67) Choose the correct option regarding Retrovirus:-

[Question ID = 4997]

1. An RNA virus that can synthesise DNA [Option ID = 19982]
2. A DNA virus that can synthesise RNA [Option ID = 19983]
3. A ssDNA virus [Option ID = 19984]
4. A dsRNA virus [Option ID = 19985]

Correct Answer :-

- An RNA virus that can synthesise DNA [Option ID = 19982]

68) Silencing of a gene could be achieved through the use of:-

[Question ID = 4998]

1. RNAi

   [Option ID = 19986]
2. rRNA

   [Option ID = 19987]
3. tRNA

   [Option ID = 19988]
4. None of these

   [Option ID = 19989]

Correct Answer :-

- RNAi

  [Option ID = 19986]

69) A person with sickle cell anemia is

[Question ID = 4999]

1. More prone to malaria [Option ID = 19990]
2. More prone to typhoid [Option ID = 19991]
3. Less prone to malaria [Option ID = 19992]
4. Less prone to typhoid [Option ID = 19993]

Correct Answer :-

- Less prone to malaria [Option ID = 19992]

70) The chemical test that is used for diagnosis of typhoid is:

[Question ID = 5000]

1. ELISA-Test [Option ID = 19994]
2. ESR – Test [Option ID = 19995]
3. PCR – Test [Option ID = 19996]
4. Widal-Test [Option ID = 19997]

Correct Answer :-

- Widal-Test [Option ID = 19997]

71) The substance produced by a cell in viral infection that can protect other cells from further infection is:

[Question ID = 5001]

1. Serotonin [Option ID = 19998]
2. Colostrum [Option ID = 19999]
3. Interferon [Option ID = 20000]
4. Histamine [Option ID = 20001]

Correct Answer :-

- Interferon [Option ID = 20000]

72) Which of the following is an elongated fibrous protein?

[Question ID = 5002]

1. Myglobin

   [Option ID = 20002]
2. Keratin

   [Option ID = 20003]
3. Albumin

   [Option ID = 20004]
4. Calmodulin

   [Option ID = 20005]

Correct Answer :-

- Keratin

  [Option ID = 20003]

73) The mutation which is likely to cause least perturbation in the tertiary structure of protein:-

[Question ID = 5003]

1. Lysine to Aspartate

[Option ID = 20006]
2. Lysine to Valine

[Option ID = 20007]
3. Aspartate to Glutamate

[Option ID = 20008]
4. Aspartate to Isoleucine

[Option ID = 20009]

Correct Answer :-

- Aspartate to Glutamate

[Option ID = 20008]

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74) X-ray crystallography can be used to:-
[Question ID = 5004]

1. Determine atomic resolution structure of proteins [Option ID = 20010]
2. Identify protein-protien interaction [Option ID = 20011]
3. Secondary structure of proteins [Option ID = 20012]
4. Separation of protein [Option ID = 20013]

Correct Answer :-

- Determine atomic resolution structure of proteins [Option ID = 20010]

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75) Among the following single-stranded DNA sequences which has the lowest melting point (Tm)
[Question ID = 5005]

1. GAGATCTCGAGATCTC [Option ID = 20014]
2. GAGATATCGATATCTC [Option ID = 20015]
3. GAGATCTTGATATCTC [Option ID = 20016]
4. GAGATATCTATATCTC [Option ID = 20017]

Correct Answer :-

- GAGATATCTATATCTC [Option ID = 20017]

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76) A disulfide bridge is a unique type of _____ modification in which _____ bonds are formed between cysteine residues.
[Question ID = 5006]

1. Post translational, covalent [Option ID = 20018]
2. Translational, covalent [Option ID = 20019]
3. Translational, ionic [Option ID = 20020]
4. Post translational, ionic [Option ID = 20021]

Correct Answer :-

- Post translational, covalent [Option ID = 20018]

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77) Chloroplast localization signals are mostly located in which part of the protein?
[Question ID = 5007]

1. N-terminal [Option ID = 20022]
2. C-terminal [Option ID = 20023]
3. Mid of sequence [Option ID = 20024]
4. Promoter region [Option ID = 20025]

Correct Answer :-

- N-terminal [Option ID = 20022]

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78) Which of the following is WRONG about *ab-initio* prediction?

[Question ID = 5008]

1. The limited knowledge of protein folding forms the basis of *ab-initio* prediction

[Option ID = 20026]
2. The *ab-initio* prediction method attempts to produce all-atom protein models based on sequence information alone

[Option ID = 20027]
3. The *ab-initio* prediction method attempts to produce all-atom protein models based on known protein structures

[Option ID = 20028]
4. The perceived advantage of this method is that predictions are not restricted by known folds and that novel protein folds can be identified

[Option ID = 20029]

Correct Answer :-

- The *ab-initio* prediction method attempts to produce all-atom protein models based on sequence information alone

[Option ID = 20027]

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79) Rosetta is a web server that predicts:-
[Question ID = 5009]

1. Protein three-dimensional conformations [Option ID = 20030]
2. mRNA three-dimensional conformations [Option ID = 20031]
3. tRNA three-dimensional conformations [Option ID = 20032]
4. Post-translational modification [Option ID = 20033]

Correct Answer :-

- Protein three-dimensional conformations [Option ID = 20030]

80) The genome is diploid at the end of which phases of a human mitotic cell cycle?
[Question ID = 5010]

1. G2 & S [Option ID = 20034]
2. G1 & M [Option ID = 20035]
3. M & S [Option ID = 20036]
4. G1 & G2 [Option ID = 20037]

Correct Answer :-

- G2 & S [Option ID = 20034]

81) Which one of the following amino acids has the highest probability to be found on the surface of a typical globular protein in aqueous environment?
[Question ID = 5011]

1. Ala [Option ID = 20038]
2. Val [Option ID = 20039]
3. Arg [Option ID = 20040]
4. Ile [Option ID = 20041]

Correct Answer :-

- Arg [Option ID = 20040]

82) ATP biosynthesis takes place utilizing the H^+ gradient in mitochondria and chloroplasts. Identify the correct sites of H^+ gradient formation:-
[Question ID = 5012]

1. Across the outer membrane of mitochondria and across the inner membrane of chloroplast [Option ID = 20042]
2. Across the inner membrane of mitochondria and across the thylakoid membrane of chloroplast [Option ID = 20043]
3. Within the matrix of mitochondria and across the inner membrane of chloroplast [Option ID = 20044]
4. Within the matrix of mitochondria and within the stroma of chloroplast [Option ID = 20045]

Correct Answer :-

- Across the inner membrane of mitochondria and across the thylakoid membrane of chloroplast [Option ID = 20043]

83) Which of the following statements about triacylglycerols is correct?
[Question ID = 5013]

1. Triacylglycerols are carried in the blood bound to albumin [Option ID = 20046]
2. Triacylglycerols are stored in all cells [Option ID = 20047]
3. Triacylglycerols are oxidised to glycerol and fatty acids [Option ID = 20048]
4. Triacylglycerols are hydrolysed to glycerol and fatty acids [Option ID = 20049]

Correct Answer :-

- Triacylglycerols are hydrolysed to glycerol and fatty acids [Option ID = 20049]

84) Which of the following is NOT a secondary messenger?
[Question ID = 5014]

1. Cyclic GMP [Option ID = 20050]
2. Diacylglycerol [Option ID = 20051]
3. Inositol triphosphate [Option ID = 20052]
4. Phosphatidyl inositol [Option ID = 20053]

Correct Answer :-

- Phosphatidyl inositol [Option ID = 20053]

85) Which is NOT true for size exclusion chromatography?
[Question ID = 5015]

1. The salt will first elute from the column while the protein will be retained [Option ID = 20054]
2. Separation of different compounds occurs according to their size/ hydrodynamic volume [Option ID = 20055]
3. It is based on the principle how efficiently they penetrate the pores of the stationary phase [Option ID = 20056]
4. The protein will first elute from the column while the salt will be retained [Option ID = 20057]

Correct Answer :-

- The salt will first elute from the column while the protein will be retained [Option ID = 20054]

86) The number of hydrogen atoms (mentioned in parenthesis) in one molecule of each of the following is:
[Question ID = 5016]

1. Ethane (6), Propane (8), butane (10) [Option ID = 20058]
2. Ethane (5), Propane (6), butane (7) [Option ID = 20059]
3. Ethane (6), Propane (10), Butane (12) [Option ID = 20060]

4. Ethane (8), Propane (10), butane (14) [Option ID = 20061]

Correct Answer :-

- Ethane (6), Propane (10), Butane (12) [Option ID = 20060]

87) Prokaryotes are organisms that do not have a well defined nucleus. Which of the following are classified as prokaryotes:-
[Question ID = 5017]

1. Bacteria and algae [Option ID = 20062]
2. Bacteria and fungi [Option ID = 20063]
3. Bacteria and archaea [Option ID = 20064]
4. Only bacteria [Option ID = 20065]

Correct Answer :-

- Bacteria and archaea [Option ID = 20064]

88) You have a 4 M solution of NaCl, which needs to be diluted to 1 M concentration. How much water do we add to 100 ml of such solution to make it correct molarity?
[Question ID = 5018]

1. 300 ml [Option ID = 20066]
2. 400 ml [Option ID = 20067]
3. 200 ml [Option ID = 20068]
4. 100 ml [Option ID = 20069]

Correct Answer :-

- 300 ml [Option ID = 20066]

89) A protein has a molecular weight of 3300 daltons. The expected length of this protein is:
[Question ID = 5019]

1. 300 amino acids [Option ID = 20070]
2. 30 amino acids [Option ID = 20071]
3. 3000 amino acids [Option ID = 20072]
4. Can't be determined from the information provided [Option ID = 20073]

Correct Answer :-

- 300 amino acids [Option ID = 20070]

90) In an enzyme catalyzed reaction, the affinity of the resulting product for the enzyme is expected to be :
[Question ID = 5020]

1. Lower than the affinity of the substrate for the enzyme [Option ID = 20074]
2. Higher than the affinity of the substrate for the enzyme [Option ID = 20075]
3. Zero [Option ID = 20076]
4. Cannot be determined from given information [Option ID = 20077]

Correct Answer :-

- Lower than the affinity of the substrate for the enzyme [Option ID = 20074]

91) Wuhan pneumonia is the common name of a respiratory disease caused by a virus named as:
[Question ID = 5021]

1. SARS-CoV [Option ID = 20078]
2. Novel Corona Virus -19 [Option ID = 20079]
3. MERS-CoV [Option ID = 20080]
4. H1N1 virus [Option ID = 20081]

Correct Answer :-

- Novel Corona Virus -19 [Option ID = 20079]

92) A circle is inscribed in a square of side 7m, where the circle touches all sides of the square. The circumference of such a circle will be?

[Question ID = 5022]

1. 2 π meters

   [Option ID = 20082]
2. 7 π meters

   [Option ID = 20083]
3. 14 π meters

   [Option ID = 20084]
4. 22/7 π meters

   [Option ID = 20085]

Correct Answer :-

- 14 π meters

[Option ID = 20084]

93) A bus travels 12 km north from a point S, then turns right and travels 12 km, again turns left and travels 12 km and again turns left and travels 12 km and stops at point P. What is the shortest distance between point S and point P ?
[Question ID = 5023]

1. 12 km [Option ID = 20086]
2. 24 Km [Option ID = 20087]
3. 36 Km [Option ID = 20088]
4. 48 Km [Option ID = 20089]

Correct Answer :-

- 24 Km [Option ID = 20087]

94) 22-carat gold is a mixture of:
[Question ID = 5024]

1. Au and Ag [Option ID = 20090]
2. Au and Cu [Option ID = 20091]
3. Au and Zn [Option ID = 20092]
4. Au and Fe [Option ID = 20093]

Correct Answer :-

- Au and Cu [Option ID = 20091]

95) Hydrogen isotope having NO (zero) Neutrons is
[Question ID = 5025]

1. Protium [Option ID = 20094]
2. Deuterium [Option ID = 20095]
3. Tritium [Option ID = 20096]
4. Hydrogen-4 [Option ID = 20097]

Correct Answer :-

- Protium [Option ID = 20094]

96) When a man lands on moon, which of the following is TRUE?

[Question ID = 5026]

1. Both his mass and weight will remain same as on earth

   [Option ID = 20098]
2. Both his mass and weight will change as compared to that on earth

   [Option ID = 20099]
3. Only mass will change as compared to that on earth

   [Option ID = 20100]
4. Only weight will change as compared to that on earth

   [Option ID = 20101]

Correct Answer :-

- Only weight will change as compared to that on earth

  [Option ID = 20101]

97) Sound travels fastest in
[Question ID = 5027]

1. Metals [Option ID = 20102]
2. Water [Option ID = 20103]
3. Air [Option ID = 20104]
4. Vacuum [Option ID = 20105]

Correct Answer :-

- Metals [Option ID = 20102]

98) Aqua fortis is the common name of which of the following:
[Question ID = 5028]

1. HCl [Option ID = 20106]
2. H_2SO_4 [Option ID = 20107]
3. HNO_3 [Option ID = 20108]
4. $HClO_3$ [Option ID = 20109]

Correct Answer :-

- HNO_3 [Option ID = 20108]

99) During chemical reactions, reagents undergo heterolysis to give nucleophiles or electrophilies. Electrophiles are:
[Question ID = 5029]

1. Electron rich [Option ID = 20110]
2. Electron deficient [Option ID = 20111]
3. Neutral in terms of electronic charge [Option ID = 20112]
4. Unrelated to number of electrons [Option ID = 20113]

Correct Answer :-

- Electron deficient [Option ID = 20111]

100) Integers are:-
[Question ID = 5030]

1. a subset of natural numbers [Option ID = 20114]
2. natural numbers including zero [Option ID = 20115]
3. natural numbers not including zero [Option ID = 20116]
4. natural numbers, their additive inverse, including zero [Option ID = 20117]

Correct Answer :-

- natural numbers, their additive inverse, including zero [Option ID = 20117]