

# DU MSc Biochemistry

Topic:- BIOCHEM MSC S2

1) What would be the effect on the net reaction catalyzed by glyceraldehyde 3-phosphate dehydrogenase if phosphate was replaced by arsenate?

[Question ID = 2609]

1. Rate of reaction will increase [Option ID = 10430]
2. Rate will be decreased [Option ID = 10431]
3. No effect on reaction rate [Option ID = 10432]
4. Uncoupling of phosphorylation [Option ID = 10433]

Correct Answer :-

- Uncoupling of phosphorylation [Option ID = 10433]

2) Cellular membranes are self sealing in nature- if they are punctured or disrupted mechanically they quickly and automatically reseal. What properties of such sealing are responsible for this feature?

[Question ID = 2610]

1. hydrophobic effect of membrane lipids [Option ID = 10434]
2. hydrophilic effect of membrane lipids [Option ID = 10435]
3. charge-charge interaction among lipids [Option ID = 10436]
4. protein-lipid interactions [Option ID = 10437]

Correct Answer :-

- hydrophobic effect of membrane lipids [Option ID = 10434]

3) What type of chemical reaction is involved in conversion of isocitrate to  $\alpha$ -ketoglutarate ?

[Question ID = 2611]

1. Carboxylation [Option ID = 10438]
2. Oxidative decarboxylation [Option ID = 10439]
3. Reducing decarboxylation [Option ID = 10440]
4. Oxido-reduction [Option ID = 10441]

Correct Answer :-

- Oxidative decarboxylation [Option ID = 10439]

4) Individuals can have relatively high levels of pyruvate in their blood due to:

[Question ID = 2612]

1. Vitamin B deficiency [Option ID = 10442]
2. Vitamin D deficiency [Option ID = 10443]
3. Thiamine deficiency [Option ID = 10444]
4. Alcohol intake [Option ID = 10445]

Correct Answer :-

- Thiamine deficiency [Option ID = 10444]

5) Mammalian liver can carry out gluconeogenesis using starting material known as:

[Question ID = 2613]

1. Oxaloacetate [Option ID = 10446]
2. Acetyl-CoA [Option ID = 10447]
3. Citric acid [Option ID = 10448]
4. Aspartate [Option ID = 10449]

Correct Answer :-

- Oxaloacetate [Option ID = 10446]

6) Maple syrup urine disease is due to a metabolic defect in the pathway of degradation of :

[Question ID = 2614]

1. Branched chain fatty acids [Option ID = 10450]
2. Cholesterol [Option ID = 10451]
3. Nucleotide [Option ID = 10452]
4. Branched chain amino acids [Option ID = 10453]

Correct Answer :-

- Branched chain amino acids [Option ID = 10453]

7) The specificity or stringency of a PCR reaction can be controlled by altering the reaction

[Question ID = 2615]

1. volume [Option ID = 10454]
2. target sequence [Option ID = 10455]

- temperature and salt concentration [Option ID = 10456]
- template copies [Option ID = 10457]

**Correct Answer :-**

- temperature and salt concentration [Option ID = 10456]

**8) Principle regulation point in the biosynthesis of fatty acids is:**

**[Question ID = 2616]**

- Acetyl-CoA carboxylase [Option ID = 10458]
- B - Ketoacyl-ACP synthase [Option ID = 10459]
- Citrate dehydrogenase [Option ID = 10460]
- B - Lactamase [Option ID = 10461]

**Correct Answer :-**

- Acetyl-CoA carboxylase [Option ID = 10458]

**9) Denaturation of a protein or nucleic acid can be studied by:**

**[Question ID = 2617]**

- SDS-PAGE [Option ID = 10462]
- Isoelectric focusing [Option ID = 10463]
- Spectrophotometry [Option ID = 10464]
- Gel filtration [Option ID = 10465]

**Correct Answer :-**

- Spectrophotometry [Option ID = 10464]

**10) Folding of a protein is primarily governed by:**

**[Question ID = 2618]**

- Ionic strength of solution [Option ID = 10466]
- Presence of branched chain amino acids [Option ID = 10467]
- Primary structure of a protein [Option ID = 10468]
- Presence of hydrophobic amino acids [Option ID = 10469]

**Correct Answer :-**

- Primary structure of a protein [Option ID = 10468]

**11) The biochemical products obtained after hydrolysis of glycolipids are:**

**[Question ID = 2619]**

- Sugar, fatty acids, phosphoric acid [Option ID = 10470]
- Sugar, fatty acids, nitrogen base [Option ID = 10471]
- Sugar, fatty acid, glycerol [Option ID = 10472]
- Sugar, fatty acid, sphingosine [Option ID = 10473]

**Correct Answer :-**

- Sugar, fatty acid, glycerol [Option ID = 10472]

**12) D- glucose and D-mannose are:**

**[Question ID = 2620]**

- Anomers [Option ID = 10474]
- Epimers [Option ID = 10475]
- Optical isomers [Option ID = 10476]
- Diastereomers [Option ID = 10477]

**Correct Answer :-**

- Epimers [Option ID = 10475]

**13) Collagen is rich in:**

**[Question ID = 2621]**

- Glutamic acid and glycine [Option ID = 10478]
- Glycine and glutamine [Option ID = 10479]
- Glycine and proline [Option ID = 10480]
- Glycine and alanine [Option ID = 10481]

**Correct Answer :-**

- Glycine and proline [Option ID = 10480]

**14) The following amino acid is least likely to be found in a  $\alpha$ -helix structure:**

**[Question ID = 2622]**

- Alanine [Option ID = 10482]
- Cystine [Option ID = 10483]
- Histidine [Option ID = 10484]
- Proline [Option ID = 10485]

**Correct Answer :-**

- Proline [Option ID = 10485]

15) Determine the pH of a 0.01N NaOH solution:

[Question ID = 2623]

1. 3.0 [Option ID = 10486]
2. 11.0 [Option ID = 10487]
3. 10.0 [Option ID = 10488]
4. 12.0 [Option ID = 10489]

Correct Answer :-

- 12.0 [Option ID = 10489]

16) A HCl solution of 1 mM was diluted to  $10^6$ . What would be the pH of the resulting solution?

[Question ID = 2624]

1. 5.0 [Option ID = 10490]
2. 7.0 [Option ID = 10491]
3. 6.0 [Option ID = 10492]
4. 2.0 [Option ID = 10493]

Correct Answer :-

- 7.0 [Option ID = 10491]

17) The ligand used for affinity chromatography of RNA containing poly(A) sequence is:

[Question ID = 2625]

1. Avidin [Option ID = 10494]
2. 5' AMP [Option ID = 10495]
3. Oligo dT [Option ID = 10496]
4. Lysine [Option ID = 10497]

Correct Answer :-

- Oligo dT [Option ID = 10496]

18) Signal hypothesis for protein trafficking was proposed by:

[Question ID = 2626]

1. Tom Rapoport [Option ID = 10498]
2. Paul Nurse [Option ID = 10499]
3. Timothy Hunt [Option ID = 10500]
4. Gunter Blobel [Option ID = 10501]

Correct Answer :-

- Gunter Blobel [Option ID = 10501]

19) In SDS-PAGE, the migration of protein is effected by\_\_\_\_\_.

[Question ID = 2627]

1. Charge of the protein  
[Option ID = 10502]
2. Size of the protein  
[Option ID = 10503]
3. Both charge and size of the protein  
[Option ID = 10504]
4. Number of cysteine residues in protein  
[Option ID = 10505]

Correct Answer :-

- Size of the protein  
[Option ID = 10503]

20) Glycerol is added to protein samples before loading them on the PAGE. What is the role of glycerol-

[Question ID = 2628]

1. Provide stability to protein [Option ID = 10506]
2. Helps to bind SDS to the protein [Option ID = 10507]
3. Provide density to the protein sample [Option ID = 10508]
4. Helps in denaturing the disulphide bonds [Option ID = 10509]

Correct Answer :-

- Provide density to the protein sample [Option ID = 10508]

21) What is the effect of urea and formamide on DNA

[Question ID = 2629]

1. Decrease the  $T_m$  of the DNA [Option ID = 10510]
2. Increase the  $T_m$  of the DNA [Option ID = 10511]
3. Helps in reannealing of the DNA [Option ID = 10512]

4. Stabilized DNA structure [Option ID = 10513]

Correct Answer :-

- Decrease the  $T_m$  of the DNA [Option ID = 10510]

22) A low auxin:cytokinin ratio leads to -

[Question ID = 2630]

1. Shoot formation [Option ID = 10514]
2. Root formation [Option ID = 10515]
3. Fruit formation [Option ID = 10516]
4. Increased cell division [Option ID = 10517]

Correct Answer :-

- Shoot formation [Option ID = 10514]

23) Megaloblastic anemia is caused due to deficiency of \_\_\_\_\_.

[Question ID = 2631]

1. Cobalamin [Option ID = 10518]
2. Pyridoxine [Option ID = 10519]
3. Folic acid [Option ID = 10520]
4. Niacin [Option ID = 10521]

Correct Answer :-

- Folic acid [Option ID = 10520]

24) Lineweaver-Burk plot is also known as \_\_\_\_\_

[Question ID = 2632]

1. Hanes-Woolf plot [Option ID = 10522]
2. Double reciprocal plot [Option ID = 10523]
3. Eadie-Hofstee plot [Option ID = 10524]
4. Steady-state equation [Option ID = 10525]

Correct Answer :-

- Double reciprocal plot [Option ID = 10523]

25) Which of the following can be used to construct a linkage map of the Hfr chromosome?

[Question ID = 2633]

1. frequency of recombination [Option ID = 10526]
2. time of entry [Option ID = 10527]
3. locus of mutation [Option ID = 10528]
4. transfer of F factor [Option ID = 10529]

Correct Answer :-

- time of entry [Option ID = 10527]

26) Which of the following conditions decreases the level of denitrification?

[Question ID = 2634]

1. Abundance of organic matter [Option ID = 10530]
2. Elevated temperatures [Option ID = 10531]
3. Availability of oxygen [Option ID = 10532]
4. Acidic pH [Option ID = 10533]

Correct Answer :-

- Acidic pH [Option ID = 10533]

27) Name the class of immunoglobulin which takes part in hypersensitivity reaction?

[Question ID = 2635]

1. IgG [Option ID = 10534]
2. IgE [Option ID = 10535]
3. IgA [Option ID = 10536]
4. IgM [Option ID = 10537]

Correct Answer :-

- IgE [Option ID = 10535]

28) In Phase contrast microscopy, the rate at which light passes through objects is \_\_\_\_\_

[Question ID = 2636]

1. Inversely proportional to their refractive indices [Option ID = 10538]
2. Constant [Option ID = 10539]
3. Directly proportional to their refractive indices [Option ID = 10540]
4. Exponentially related to their refractive indices [Option ID = 10541]

Correct Answer :-

- Inversely proportional to their refractive indices [Option ID = 10538]

29) The biosynthesis of proline takes place from \_\_\_\_\_

[Question ID = 2637]

1. aspartic acid [Option ID = 10542]
2. glutamic acid [Option ID = 10543]
3. pyruvic acid [Option ID = 10544]
4. alpha-keto glutaric acid [Option ID = 10545]

Correct Answer :-

- glutamic acid [Option ID = 10543]

30) The density of a solution prepared by dissolving 120 g of urea (mol.mass = 60) in 1000 g of water is 1.15 g/mL. The molarity of this solution is:

[Question ID = 2638]

1. 1.02 M [Option ID = 10546]
2. 2.05 M [Option ID = 10547]
3. 0.50 M [Option ID = 10548]
4. 1.78 M [Option ID = 10549]

Correct Answer :-

- 2.05 M [Option ID = 10547]

31) The third strand of triple helix is paired in which scheme?

[Question ID = 2639]

1. Intermolecular base pair scheme [Option ID = 10550]
2. Hoogsteen base pair scheme [Option ID = 10551]
3. Intramolecular base pair scheme [Option ID = 10552]
4. G-quartet scheme [Option ID = 10553]

Correct Answer :-

- Hoogsteen base pair scheme [Option ID = 10551]

32) The first three bases of the 6-base recognition cleavage site of HindIII are AAG. What is the complete sequence of this 6 bp site?

[Question ID = 2640]

1. AAGAAG [Option ID = 10554]
2. AAGCTT [Option ID = 10555]
3. AAGGAA [Option ID = 10556]
4. AAGCUU [Option ID = 10557]

Correct Answer :-

- AAGCTT [Option ID = 10555]

33) What leads to the activation of protein kinase C?

[Question ID = 2641]

1. Release of intracellular  $Ca^{+2}$  + diacylglycerol [Option ID = 10558]
2. Release of intracellular  $Mg^{+2}$  + diacylglycerol [Option ID = 10559]
3. Release of intracellular  $Ca^{+2}$  + glycerol [Option ID = 10560]
4. Release of intracellular  $Ca^{+2}$  + triacylglycerol [Option ID = 10561]

Correct Answer :-

- Release of intracellular  $Ca^{+2}$  + diacylglycerol [Option ID = 10558]

34) Trans bilayer diffusion is also called

[Question ID = 2642]

1. Facilitated diffusion [Option ID = 10562]
2. Lateral diffusion [Option ID = 10563]
3. Flip flop [Option ID = 10564]
4. Simple diffusion [Option ID = 10565]

Correct Answer :-

- Flip flop [Option ID = 10564]

35) The first step in the payoff phase of glycolysis is

[Question ID = 2643]

1. Reduction of 1, 3-bisphosphoglycerate to glyceraldehyde 3-phosphate [Option ID = 10566]
2. Oxidation of glyceraldehyde 3-phosphate to 1, 3-bisphosphoglycerate [Option ID = 10567]
3. Reversible conversion of dihydroxyacetone phosphate to glyceraldehyde 3-phosphate [Option ID = 10568]
4. Irreversible conversion of dihydroxyacetone phosphate to glyceraldehyde 3-phosphate [Option ID = 10569]

Correct Answer :-

- Oxidation of glyceraldehyde 3-phosphate to 1, 3-bisphosphoglycerate [Option ID = 10567]

36) What region of antibody binds to proteinA during affinity purification?

[Question ID = 2644]

1. Heavy chain within the Fc region [Option ID = 10570]
2. Heavy chain within the variable region [Option ID = 10571]
3. Light chain within the Fab region [Option ID = 10572]
4. Light chain within the Fc region [Option ID = 10573]

**Correct Answer :-**

- Heavy chain within the Fc region [Option ID = 10570]

**37) If the oxidative phosphorylation was uncoupled in the mitochondria then there is a/an**  
**[Question ID = 2645]**

1. Decreased concentration of ADP in the mitochondria [Option ID = 10574]
2. Decreased oxidative rate [Option ID = 10575]
3. Increased inorganic phosphate in the mitochondria [Option ID = 10576]
4. Decreased production of heat [Option ID = 10577]

**Correct Answer :-**

- Increased inorganic phosphate in the mitochondria [Option ID = 10576]

**38) The enzyme responsible for the removal of supercoiling in replicating DNA ahead of the replication fork is**  
**[Question ID = 2646]**

1. Topoisomerase [Option ID = 10578]
2. Primase [Option ID = 10579]
3. DNA polymerase [Option ID = 10580]
4. Helicase [Option ID = 10581]

**Correct Answer :-**

- Topoisomerase [Option ID = 10578]

**39) Which of the following are not DNA viruses?**  
**[Question ID = 2647]**

1. Hepatitis B virus [Option ID = 10582]
2. Influenza A virus [Option ID = 10583]
3. CMV virus [Option ID = 10584]
4. Parvovirus [Option ID = 10585]

**Correct Answer :-**

- Influenza A virus [Option ID = 10583]

**40) Formation of one molecule of glucose from pyruvate requires**  
**[Question ID = 2648]**

1. 4 ATP, 2 GTP and 2 NADH [Option ID = 10586]
2. 3 ATP, 2 GTP and 2 NADH [Option ID = 10587]
3. 4 ATP, 1 GTP and 2 NADH [Option ID = 10588]
4. 2 ATP, 2 GTP and 2 NADH [Option ID = 10589]

**Correct Answer :-**

- 4 ATP, 2 GTP and 2 NADH [Option ID = 10586]

**41) Cyanogen bromide is used for cleavage of proteins. The target site for cleavage is:**  
**[Question ID = 2649]**

1. C-terminal end of Asparagine residue [Option ID = 10590]
2. C-terminal end of Methionine residue [Option ID = 10591]
3. C-terminal end of Glycine residue [Option ID = 10592]
4. C-terminal end of Proline residue [Option ID = 10593]

**Correct Answer :-**

- C-terminal end of Methionine residue [Option ID = 10591]

**42) Who won the Noble prize in medicine in 2018 for their discovery of cancer therapy by inhibition of negative immune regulation?**  
**[Question ID = 2650]**

1. James P. Allison, Tasuku Honjo [Option ID = 10594]
2. Michael W. Young, Michael Rosbash, Jeffrey C. Hall [Option ID = 10595]
3. William G. Kaelin, Gregg L. Semenza, Peter J. Ratcliffe [Option ID = 10596]
4. Shinya Yamanaka, John Gurdon [Option ID = 10597]

**Correct Answer :-**

- James P. Allison, Tasuku Honjo [Option ID = 10594]

**43) The biological role of restriction enzymes in bacteria is to:-**  
**[Question ID = 2651]**

1. repair DNA [Option ID = 10598]
2. induce DNA crossover [Option ID = 10599]
3. cleave foreign DNA [Option ID = 10600]
4. recombine DNA [Option ID = 10601]

Correct Answer :-

- cleave foreign DNA [Option ID = 10600]

44) Which of the following DNA sequences contains a 4–8 base palindromic site? (Note: Only one strand is shown.)

[Question ID = 2652]

1. CAGTCC [Option ID = 10602]
2. GCATATGC [Option ID = 10603]
3. CGATTAGC [Option ID = 10604]
4. GAGAGAGA [Option ID = 10605]

Correct Answer :-

- GCATATGC [Option ID = 10603]

45) Which of the following components is not a constituent of a typical A-tailing reaction?

[Question ID = 2653]

1. Klenow exo- [Option ID = 10606]
2. ATP [Option ID = 10607]
3. Taq DNA polymerase [Option ID = 10608]
4. Blunt end DNA [Option ID = 10609]

Correct Answer :-

- ATP [Option ID = 10607]

46) Presence of salt during gel filtration helps to

[Question ID = 2654]

1. Allow separation of proteins of same molecular weight [Option ID = 10610]
2. Allow separation of proteins on basis of pI along with molecular weight [Option ID = 10611]
3. Reduce non-specific interaction of proteins with gel matrix [Option ID = 10612]
4. Reduce the proteolytic degradation of proteins during purification [Option ID = 10613]

Correct Answer :-

- Reduce non-specific interaction of proteins with gel matrix [Option ID = 10612]

47) HAT medium used for hybridoma production contains

[Question ID = 2655]

1. Thymidylate synthase [Option ID = 10614]
2. Thymidine kinase [Option ID = 10615]
3. Thymidine [Option ID = 10616]
4. Thiamine [Option ID = 10617]

Correct Answer :-

- Thymidine [Option ID = 10616]

48) Which of the following class of antibodies are expected to be immuno-precipitated predominantly using anti-J chain antibodies ?

[Question ID = 2656]

1. IgG [Option ID = 10618]
2. IgM [Option ID = 10619]
3. IgD [Option ID = 10620]
4. IgE [Option ID = 10621]

Correct Answer :-

- IgM [Option ID = 10619]

49) Which of the following antibodies is most efficient in causing agglutination?

[Question ID = 2657]

1. IgM [Option ID = 10622]
2. IgD [Option ID = 10623]
3. IgG [Option ID = 10624]
4. IgE [Option ID = 10625]

Correct Answer :-

- IgM [Option ID = 10622]

50) An unknown bacteriophage has a base composition of 23 % A, 36 % T, 21 % G, and 20 % C. Its genome is likely to be:

[Question ID = 2658]

1. Single stranded RNA [Option ID = 10626]
2. Single stranded DNA [Option ID = 10627]
3. Double stranded RNA [Option ID = 10628]
4. Double stranded DNA [Option ID = 10629]

Correct Answer :-

- Single stranded DNA [Option ID = 10627]

51) During the growth of mammalian cells, the growth media was supplemented with radioactive amino acids. Which of the following molecules will be labelled?

[Question ID = 2659]

1. Proteins [Option ID = 10630]
2. DNA [Option ID = 10631]
3. RNA [Option ID = 10632]
4. Glycolipids [Option ID = 10633]

Correct Answer :-

- Proteins [Option ID = 10630]

52) An Indian student applied for post doctorate fellowship in Singapore and was asked to undergo test for Tuberculosis. He went to AIIMS, New Delhi for testing. The Tuberculin skin test (1<sup>st</sup> test) turned out to be positive, however, culture-based confirmation test (2<sup>nd</sup> test) revealed that he was negative for tuberculosis. What is the most likely reason for this observation?

[Question ID = 2660]

1. The student had autoimmune antibodies  
[Option ID = 10634]
2. The student was vaccinated with BCG  
[Option ID = 10635]
3. The 1<sup>st</sup> test was not performed correctly  
[Option ID = 10636]
4. The 2<sup>nd</sup> test was not performed correctly  
[Option ID = 10637]

Correct Answer :-

- The student was vaccinated with BCG  
[Option ID = 10635]

53) Why are Met and Trp often used to design DNA probes from amino acid sequences?

[Question ID = 2661]

1. They do not have degenerate codons [Option ID = 10638]
2. Met is the first amino acid in the protein chain [Option ID = 10639]
3. Both are used often in proteins [Option ID = 10640]
4. They are hydrophobic [Option ID = 10641]

Correct Answer :-

- They do not have degenerate codons [Option ID = 10638]

54) Malaria is caused by :

[Question ID = 2662]

1. *Staphylococcus aureus*  
[Option ID = 10642]
2. *H. Influenza*  
[Option ID = 10643]
3. *Plasmodium*  
[Option ID = 10644]
4. *HIV*  
[Option ID = 10645]

Correct Answer :-

- *Plasmodium*  
[Option ID = 10644]

55) The kind of covalent modification that occurs on both histones and DNA is :

[Question ID = 2663]

1. Phosphorylation [Option ID = 10646]
2. Methylation [Option ID = 10647]
3. Acetylation [Option ID = 10648]
4. Sumoylation [Option ID = 10649]

Correct Answer :-

- Methylation [Option ID = 10647]

56) A combination vaccine against three infectious diseases is:

[Question ID = 2664]



1. Rifampicin [Option ID = 10650]
2. BCG [Option ID = 10651]
3. DPT [Option ID = 10652]
4. Dukoral [Option ID = 10653]

Correct Answer :-

- DPT [Option ID = 10652]

57) Which of the following is a non-sulfated glycosaminoglycan?

[Question ID = 2665]

1. Hyaluronan [Option ID = 10654]
2. Vimentin [Option ID = 10655]
3. Collagen [Option ID = 10656]
4. Chondroitin S [Option ID = 10657]

Correct Answer :-

- Hyaluronan [Option ID = 10654]

58) Which of the following is the correct combination of marker enzymes used to identify different organelles during subcellular fractionation of eukaryotic tissue?

[Question ID = 2666]

1. Cytosol-Lactate Dehydrogenase; Mitochondria-Succinate Dehydrogenase; Lysosome-Acid phosphatase; Peroxisome-Catalase [Option ID = 10658]
2. Cytosol-Succinate Dehydrogenase; Mitochondria-Lactate Dehydrogenase; Lysosome-Acid phosphatase; Peroxisome-Catalase [Option ID = 10659]
3. Cytosol-Acid phosphatase; Mitochondria-Succinate Dehydrogenase; Lysosome-Lactate Dehydrogenase; Peroxisome-Catalase [Option ID = 10660]
4. Cytosol-Catalase; Mitochondria-Succinate Dehydrogenase; Lysosome-Acid phosphatase; Peroxisome-Lactate Dehydrogenase [Option ID = 10661]

Correct Answer :-

- Cytosol-Lactate Dehydrogenase; Mitochondria-Succinate Dehydrogenase; Lysosome-Acid phosphatase; Peroxisome-Catalase [Option ID = 10658]

59) A patient diagnosed with Urticaria will have elevated levels of:

[Question ID = 2667]

1. IgA [Option ID = 10662]
2. IgG [Option ID = 10663]
3. IgE [Option ID = 10664]
4. IgM [Option ID = 10665]

Correct Answer :-

- IgE [Option ID = 10664]

60) Dolly sheep was created by:

[Question ID = 2668]

1. Artificial insemination [Option ID = 10666]
2. Somatic cell nuclear transfer [Option ID = 10667]
3. Embryonic stem cell mediated gene transfer [Option ID = 10668]
4. Pronuclear microinjection [Option ID = 10669]

Correct Answer :-

- Somatic cell nuclear transfer [Option ID = 10667]

61) Which of the following organisms is exploited for transfer of genes in plants?

[Question ID = 2669]

1. *Agrobacterium tumefaciens*

[Option ID = 10670]

2. *Staphylococcus aureus*

[Option ID = 10671]

3. *Escherichia coli*

[Option ID = 10672]

4. *Clostridium perfringens*

[Option ID = 10673]

Correct Answer :-

- *Agrobacterium tumefaciens*

[Option ID = 10670]

62) Which of the following is an example of attenuated vaccine?

[Question ID = 2670]

1. Yellow fever [Option ID = 10674]
2. Tetanus [Option ID = 10675]
3. Hepatitis B [Option ID = 10676]
4. Meningococcal [Option ID = 10677]

Correct Answer :-

- Yellow fever [Option ID = 10674]

**63) Which of the following methods is not employed for affinity maturation of antibodies**

**[Question ID = 2671]**

1. Hotspot mutagenesis [Option ID = 10678]
2. Error-prone PCR [Option ID = 10679]
3. High fidelity PCR [Option ID = 10680]
4. Chain shuffling [Option ID = 10681]

Correct Answer :-

- High fidelity PCR [Option ID = 10680]

**64) Intrinsic fluorescence of GFP is contributed by:**

**[Question ID = 2672]**

1. Cyclization and oxidation of residues: Ser-Tyr-Gly [Option ID = 10682]
2. Cyclization and oxidation of residues: Ser-Pro-Gly [Option ID = 10683]
3. Cyclization and oxidation of residues: Tyr-Gly-Pro [Option ID = 10684]
4. Cyclization and oxidation of residues: Ser-Tyr-Pro [Option ID = 10685]

Correct Answer :-

- Cyclization and oxidation of residues: Ser-Tyr-Gly [Option ID = 10682]

**65) Which of the following sequences are not palindromic?**

**[Question ID = 2673]**

1. AGCGAATTCGCT [Option ID = 10686]
2. TTAAGGATCCTTAA [Option ID = 10687]
3. GGCCAATTGGCCAA [Option ID = 10688]
4. ATGCATATGCAT [Option ID = 10689]

Correct Answer :-

- GGCCAATTGGCCAA [Option ID = 10688]

**66) In eukaryotic cells, a protein containing oligosaccharide linked to manose-6-phosphate is destined to which of the following organelle?**

**[Question ID = 2674]**

1. Lysosomes [Option ID = 10690]
2. Nucleus [Option ID = 10691]
3. Mitochondria [Option ID = 10692]
4. Peroxisomes [Option ID = 10693]

Correct Answer :-

- Lysosomes [Option ID = 10690]

**67) Which of the following describe the phenomenon of antigenic drift in case of influenza virus?**

**[Question ID = 2675]**

1. A series of spontaneous point mutations that occur gradually, resulting in minor changes in HA and NA [Option ID = 10694]
2. Sudden emergence of a new subtype of influenza whose HA and possibly also NA are considerably different from that of the virus present in a preceding epidemic [Option ID = 10695]
3. A series of mutations that result in loss of antigenic HA and NA [Option ID = 10696]
4. A series of mutations that result in emergence of new antigenic components other than HA and NA [Option ID = 10697]

Correct Answer :-

- A series of spontaneous point mutations that occur gradually, resulting in minor changes in HA and NA [Option ID = 10694]

**68) Passive administration of antibodies is employed as a mechanism for providing immediate protection against several toxins and pathogens. Which of the following is treated by passive immunization?**

**[Question ID = 2676]**

1. Tuberculosis [Option ID = 10698]
2. Tetanus [Option ID = 10699]
3. Typhoid [Option ID = 10700]
4. Leprosy [Option ID = 10701]

Correct Answer :-

- Tetanus [Option ID = 10699]

**69) TA cloning is one of the most commonly employed technique for cloning inserts in desired vectors. Which of the following enzymes can be employed for preparing inserts for TA cloning?**

**[Question ID = 2677]**

1. Pfu DNA polymerase [Option ID = 10702]
2. Vent DNA polymerase [Option ID = 10703]
3. Adenylate kinase [Option ID = 10704]
4. Klenow exo- [Option ID = 10705]

Correct Answer :-

- Klenow exo- [Option ID = 10705]

**70) The three-dimensional structure of tRNA is**

**[Question ID = 2678]**

1. L-shape [Option ID = 10706]
2. Cloverleaf [Option ID = 10707]
3. Twisted triple helix [Option ID = 10708]
4. Double helix [Option ID = 10709]

**Correct Answer :-**

- L-shape [Option ID = 10706]

**71) What is the direction of translation of m-RNA?**

**[Question ID = 2679]**

1. Bidirectional [Option ID = 10710]
2. 5' to 3' [Option ID = 10711]
3. 3' to 5' [Option ID = 10712]
4. C to N terminus [Option ID = 10713]

**Correct Answer :-**

- 5' to 3' [Option ID = 10711]

**72) The 'committed step' in the biosynthesis of cholesterol from acetyl CoA is**

**[Question ID = 2680]**

1. Formation of acetoacetyl CoA from acetyl CoA [Option ID = 10714]
2. Formation of mevalonate from HMG CoA [Option ID = 10715]
3. Formation of HMG CoA from acetyl CoA and acetoacetyl CoA [Option ID = 10716]
4. Formation of squalene by squalene synthetase [Option ID = 10717]

**Correct Answer :-**

- Formation of mevalonate from HMG CoA [Option ID = 10715]

**73) Riboflavin is a coenzyme in the reaction catalyzed by the enzyme :**

**[Question ID = 2681]**

1. Acyl CoA synthetase [Option ID = 10718]
2. Acyl CoA dehydrogenase [Option ID = 10719]
3. Beta-Hydroxy acyl CoA [Option ID = 10720]
4. Enoyl CoA dehydrogenase [Option ID = 10721]

**Correct Answer :-**

- Acyl CoA dehydrogenase [Option ID = 10719]

**74) Which of the following pair of amino acids has more than one chiral center?**

**[Question ID = 2682]**

1. Lysine, Arginine [Option ID = 10722]
2. Aspartate, Glutamate [Option ID = 10723]
3. Serine, Tyrosine [Option ID = 10724]
4. Isoleucine, Threonine [Option ID = 10725]

**Correct Answer :-**

- Isoleucine, Threonine [Option ID = 10725]

**75) Glucose enters muscle cells mostly by which of the following mechanism ?**

**[Question ID = 2683]**

1. Simple diffusion [Option ID = 10726]
2. Facilitated diffusion using a specific glucose transporter [Option ID = 10727]
3. Co-transport with sodium [Option ID = 10728]
4. Co-transport with amino acids [Option ID = 10729]

**Correct Answer :-**

- Facilitated diffusion using a specific glucose transporter [Option ID = 10727]

**76) Isoenzymes are**

**[Question ID = 2684]**

1. Chemically, immunologically and electrophoretically different forms of an enzyme [Option ID = 10730]
2. Different forms of an enzyme similar in all properties [Option ID = 10731]
3. Able to catalyse different reactions [Option ID = 10732]
4. Biomolecules with different quaternary structures [Option ID = 10733]

**Correct Answer :-**

- Chemically, immunologically and electrophoretically different forms of an enzyme [Option ID = 10730]

**77) Genes cannot be inserted into eukaryotic cells by**

**[Question ID = 2685]**

1. Viruses [Option ID = 10734]
2. Chemical treatment [Option ID = 10735]
3. Microinjection [Option ID = 10736]
4. Splicing [Option ID = 10737]

**Correct Answer :-**

- Splicing [Option ID = 10737]

**78) Which of the following promotes glucose and amino acid uptake by muscle?**

**[Question ID = 2686]**

1. Adrenaline [Option ID = 10738]
2. Insulin [Option ID = 10739]
3. Glucagon [Option ID = 10740]
4. Cortisol [Option ID = 10741]

**Correct Answer :-**

- Insulin [Option ID = 10739]

**79) Angiotensin converting enzyme inhibitor are used to treat**

**[Question ID = 2687]**

1. Diabetes [Option ID = 10742]
2. Hypertension [Option ID = 10743]
3. Hyperthyroidism [Option ID = 10744]
4. Obesity [Option ID = 10745]

**Correct Answer :-**

- Hypertension [Option ID = 10743]

**80) The rate limiting step of urea cycle is mediated by**

**[Question ID = 2688]**

1. Ornithine transcarbamoylase [Option ID = 10746]
2. Carbamoyl phosphate synthetase I [Option ID = 10747]
3. Arginosuccinate synthetase [Option ID = 10748]
4. Arginase [Option ID = 10749]

**Correct Answer :-**

- Carbamoyl phosphate synthetase I [Option ID = 10747]

**81) The active site of chymotrypsin consisting of a catalytic triad is composed of which of the following amino acid residues?**

**[Question ID = 2689]**

1. Serine, histidine and aspartate [Option ID = 10750]
2. Serine, histidine and glutamate [Option ID = 10751]
3. Threonine, histidine and aspartate [Option ID = 10752]
4. Methionine, histidine and aspartate [Option ID = 10753]

**Correct Answer :-**

- Serine, histidine and aspartate [Option ID = 10750]

**82) Which of the following is a transition mutation?**

**[Question ID = 2690]**

1. A-T → G-C [Option ID = 10754]
2. A-T → C-G [Option ID = 10755]
3. A-T → T-A [Option ID = 10756]
4. G-C → C-G [Option ID = 10757]

**Correct Answer :-**

- A-T → G-C [Option ID = 10754]

**83) Outer and inner membrane of the bacteria can be separated by :**

**[Question ID = 2691]**

1. Electrophoresis [Option ID = 10758]
2. Sucrose density gradient centrifugation [Option ID = 10759]
3. Sonication [Option ID = 10760]
4. Gel filtration chromatography [Option ID = 10761]

**Correct Answer :-**

- Sucrose density gradient centrifugation [Option ID = 10759]

**84) Which of the following sequences is inversely palindromic?**

**[Question ID = 2692]**

1. 5' GCATGC 3' [Option ID = 10762]
2. 5' GCAACG 3' [Option ID = 10763]
3. 5' GCAT 3' [Option ID = 10764]
4. 5' GCAACGC 3' [Option ID = 10765]

Correct Answer :-

- 5' GCATGC 3' [Option ID = 10762]

85) Which of the following is not a dietary antioxidant?

[Question ID = 2693]

1. Vitamin E [Option ID = 10766]
2. Lipoic acid [Option ID = 10767]
3. Vitamin K [Option ID = 10768]
4. Beta-carotene [Option ID = 10769]

Correct Answer :-

- Vitamin K [Option ID = 10768]

86) The trigger to initiate the contractile process in skeletal muscle is:

[Question ID = 2694]

1. Potassium binding to myosin [Option ID = 10770]
2. Calcium binding to tropomyosin [Option ID = 10771]
3. ATP binding to the myosin cross bridges [Option ID = 10772]
4. Calcium binding to troponin [Option ID = 10773]

Correct Answer :-

- Calcium binding to troponin [Option ID = 10773]

87) NADPH:

[Question ID = 2695]

1. Accepts 2 electrons and 2 hydrogen ions [Option ID = 10774]
2. Accepts 2 electrons and 1 hydrogen ions [Option ID = 10775]
3. Accepts 1 electron and 1 hydrogen ion [Option ID = 10776]
4. Transfers electrons in reductive biosynthesis [Option ID = 10777]

Correct Answer :-

- Transfers electrons in reductive biosynthesis [Option ID = 10777]

88) Photolyase functions to

[Question ID = 2696]

1. Repair pyrimidine dimers [Option ID = 10778]
2. Remove damaged bases [Option ID = 10779]
3. Ligate single-strand breaks [Option ID = 10780]
4. Ligate double stranded breaks [Option ID = 10781]

Correct Answer :-

- Repair pyrimidine dimers [Option ID = 10778]

89) Which of the following is a vasodilator?

[Question ID = 2697]

1. Norepinephrine [Option ID = 10782]
2. Angiotensin II [Option ID = 10783]
3. Vasopressin [Option ID = 10784]
4. Bradykinin [Option ID = 10785]

Correct Answer :-

- Bradykinin [Option ID = 10785]

90) Tachycardia is a condition in which:

[Question ID = 2698]

1. Heart beats slower than normal [Option ID = 10786]
2. Heart beats faster than normal [Option ID = 10787]
3. Heart stops beating [Option ID = 10788]
4. Heart collapses [Option ID = 10789]

Correct Answer :-

- Heart beats faster than normal [Option ID = 10787]

91) When the resting membrane potential becomes less negative, the phenomenon is known as:

[Question ID = 2699]

1. Hyperpolarization of the membrane [Option ID = 10790]
2. Depolarization of the membrane [Option ID = 10791]
3. Semi-polarization of the membrane [Option ID = 10792]
4. Repolarization of the membrane [Option ID = 10793]

Correct Answer :-

- Depolarization of the membrane [Option ID = 10791]

92) Gastric inhibitory peptide (GIP) is secreted by:

**[Question ID = 2700]**

1. Pancreas [Option ID = 10794]
2. Gall bladder [Option ID = 10795]
3. Small intestine [Option ID = 10796]
4. Rectum [Option ID = 10797]

**Correct Answer :-**

- Small intestine [Option ID = 10796]

**93) A peptide which acts as potent smooth muscle hypotensive agent is :**

**[Question ID = 2701]**

1. Glutathione [Option ID = 10798]
2. Bradykinin [Option ID = 10799]
3. Tryocidine [Option ID = 10800]
4. Gramicidin-s [Option ID = 10801]

**Correct Answer :-**

- Bradykinin [Option ID = 10799]

**94) RNA polymerase I transcribes the genes for**

**[Question ID = 2702]**

1. mRNA precursors [Option ID = 10802]
2. 18S, 5.8 S, and 28S rRNA [Option ID = 10803]
3. most tRNA [Option ID = 10804]
4. repair enzymes [Option ID = 10805]

**Correct Answer :-**

- 18S, 5.8 S, and 28S rRNA [Option ID = 10803]

**95) Which of the following is a non reducing sugar**

**[Question ID = 2703]**

1. Maltose [Option ID = 10806]
2. Lactose [Option ID = 10807]
3. Trehalose [Option ID = 10808]
4. Cellobiose [Option ID = 10809]

**Correct Answer :-**

- Trehalose [Option ID = 10808]

**96) Caffeine**

**[Question ID = 2704]**

1. Decreases cAMP levels [Option ID = 10810]
2. Increases cAMP levels [Option ID = 10811]
3. Increase potassium ions [Option ID = 10812]
4. Decreases potassium ions [Option ID = 10813]

**Correct Answer :-**

- Increases cAMP levels [Option ID = 10811]

**97) What is Phenylketonuria (PKU)?**

**[Question ID = 2705]**

1. A rare metabolic disease that prevents the breakdown of phenylalanine [Option ID = 10814]
2. A rare metabolic disease that prevents the breakdown of all amino acids [Option ID = 10815]
3. A disorder of the skin that causes rashes and blistering [Option ID = 10816]
4. A disease that causes the body to make too much phenylalanine [Option ID = 10817]

**Correct Answer :-**

- A rare metabolic disease that prevents the breakdown of phenylalanine [Option ID = 10814]

**98) Which of the following is an example of C3 plants?**

**[Question ID = 2706]**

1. Sugarcane [Option ID = 10818]
2. Cactus [Option ID = 10819]
3. Wheat [Option ID = 10820]
4. Orchids [Option ID = 10821]

**Correct Answer :-**

- Wheat [Option ID = 10820]

**99) How many number of ATP molecules are produced by one glucose molecule in aerobic respiration?**

**[Question ID = 2707]**

1. 39 [Option ID = 10822]
2. 45 [Option ID = 10823]
3. 34 [Option ID = 10824]
4. 36 [Option ID = 10825]

Correct Answer :-

- 36 [Option ID = 10825]

**100) Down syndrome is a genetic disorder caused by the presence of all or part of a third copy of**

**[Question ID = 2708]**

1. Chromosome 21 [Option ID = 10826]
2. Chromosome 20 [Option ID = 10827]
3. Chromosome 18 [Option ID = 10828]
4. Chromosome 14 [Option ID = 10829]

Correct Answer :-

- Chromosome 21 [Option ID = 10826]