

32 Veterinary Bio Chemistry ICAR SEPT 2022

Topic:- GEN KNOW COMMON PHD

1) Colour of the tag used on certified seed bags is[Question ID = 16958][Question Description = 101_221_GKD_SEP22_Q01]

1. Blue [Option ID = 37829]
2. Purple [Option ID = 37830]
3. White [Option ID = 37831]
4. Golden Yellow [Option ID = 37832]

2) Following are the statements regarding the Usar soil -

- A. It is reclaimed by adding lime.
- B. This soil has pH more than seven.
- C. Paddy crop can be grown in this soil.

Choose the *correct* answer from the options given below:

[Question ID = 16959][Question Description = 102_221_GKD_SEP22_Q02]

1. A and B only [Option ID = 37833]
2. B and C only [Option ID = 37834]
3. C only [Option ID = 37835]
4. A only [Option ID = 37836]

3) When total utility of a commodity increases, marginal utility will be

[Question ID = 16960][Question Description = 103_221_GKD_SEP22_Q03]

1. Negative but increasing
[Option ID = 37837]
2. Positive but decreasing
[Option ID = 37838]
3. Constant
[Option ID = 37839]
4. Either positive or negative
[Option ID = 37840]

4) Where is the headquarter of International Fund for Agriculture Development located?

[Question ID = 16961][Question Description = 104_221_GKD_SEP22_Q04]

1. Vienna, Austria
[Option ID = 37841]
2. Rome, Italy
[Option ID = 37842]
3. New York, USA
[Option ID = 37843]
4. Berlin, Germany
[Option ID = 37844]

5) Mid-Oceanic Ridges are one of the important divisions of the ocean floor. In this respect, point out the incorrect statement regarding the 'Mid-Oceanic Ridges'. [Question ID = 16962][Question Description = 105_221_GKD_SEP22_Q05]

1. It is the largest mountain chain on the surface of the earth [Option ID = 37845]
2. It is a series of interconnected chain within the ocean. [Option ID = 37846]
3. It is characterised by a central rift system [Option ID = 37847]
4. The rift system at the crest is the zone of very low volcanic activity. [Option ID = 37848]

6) Consider the following facts about the union territory of India and point out the one which is incorrect in relation to union territory. [Question ID = 16963][Question Description = 106_221_GKD_SEP22_Q06]

1. These are the areas under the direct control of central government. [Option ID = 37849]
2. Also known as the 'centrally administered territories. [Option ID = 37850]

3. These territories constitute a conspicuous departure from the unitary feature of India. [Option ID = 37851]
4. There is no uniformity in their administrative systems. [Option ID = 37852]

7) Variety of flora and fauna are found in the different types of forest in India. In this regard, species of trees like teak, *sal shisham*, *sandalwood*, etc. are found in which of the following type of forests in India?[Question ID = 16964][Question Description = 107_221_GKD_SEP22_Q07]

1. Tropical evergreen forests [Option ID = 37853]
2. Tropical thorn forests [Option ID = 37854]
3. Tropical deciduous forests [Option ID = 37855]
4. Montane forests [Option ID = 37856]

8) The Marginal Preference Theory of consumption behaviour was proposed by

[Question ID = 16965][Question Description = 108_221_GKD_SEP22_Q08]

1. Armstrong
[Option ID = 37857]
2. J.K.Hicks
[Option ID = 37858]
3. Neumann
[Option ID = 37859]
4. Edmund Cannon
[Option ID = 37860]

9) Point out the incorrect statements regarding the service sector in India.[Question ID = 16966][Question Description = 109_221_GKD_SEP22_Q09]

1. It is the highest contributor to GDP [Option ID = 37861]
2. It requires skilled labour [Option ID = 37862]
3. It is the fastest growing sector [Option ID = 37863]
4. It is restricted to very few sectors. [Option ID = 37864]

10) Consider the statements regarding the agriculture sector in India and point out the incorrect statement.[Question ID = 16967][Question Description = 110_221_GKD_SEP22_Q10]

1. Agriculture sector is the largest employer of workforce [Option ID = 37865]
2. It has contributed to the Gross Value Added (GVA) [Option ID = 37866]
3. Growth in allied sectors is the major drivers of overall growth in the sector. [Option ID = 37867]
4. Minimum Support Price (MSP) policy is used as to promote crop uniformity. [Option ID = 37868]

11) In case of related goods, the cross elasticity of demand is[Question ID = 16968][Question Description = 111_221_GKD_SEP22_Q11]

1. Low [Option ID = 37869]
2. High [Option ID = 37870]
3. Zero [Option ID = 37871]
4. Unity [Option ID = 37872]

12) With reference to organic farming in India, consider the following statements :

- A. The National Programme for Organic Production' (NPOP) is operated under the guidelines and directions of the Union Ministry of Rural Development.
- B. The Agricultural and Processed Food Products Export Development Authority' (APEDA) functions as the Secretariat for the implementation of NPOP.
- C. Sikkim has become India's first fully organic state.

Choose the *correct* answer from the options given below:

[Question ID = 16969][Question Description = 112_221_GKD_SEP22_Q12]

1. A and B only
[Option ID = 37873]
2. B and C only
[Option ID = 37874]
3. C only
[Option ID = 37875]
4. A, B and C

[Option ID = 37876]

13) With reference to the circumstances in Indian agriculture, the concept of "Conservation Agriculture" assumes significance. Which of the following falls under the Conservation Agriculture ?

- A. Avoiding the monoculture practices.
- B. Adopting minimum tillage.
- C. Avoiding the cultivation of plantation crops.
- D. Using crop residues to cover soil surface.
- E. Adopting spatial and temporal crop sequencing/ crop rotations.

Choose the *correct* answer from the options given below:

[Question ID = 16970][Question Description = 113_221_GKD_SEP22_Q13]

- 1. A, C and D only [Option ID = 37877]
- 2. B, C, D and E only [Option ID = 37878]
- 3. B, D and E only [Option ID = 37879]
- 4. A, B, C and E only [Option ID = 37880]

14) Consumers are likely to get a variety of goods in which kind of market competition[Question ID = 16971][Question Description = 114_221_GKD_SEP22_Q14]

- 1. Monopoly [Option ID = 37881]
- 2. Duopoly [Option ID = 37882]
- 3. Oligopoly [Option ID = 37883]
- 4. Monopolistic [Option ID = 37884]

15) What is the correct chronological order of the following laws enacted for the conservation and protection of environment ?

- A. Environment (Protection) Act.
- B. Water (Prevention & Control of Pollution) Act.
- C. Air (Prevention & Control of pollution) Act.
- D. National Green Tribunal Act.

Choose the *correct* answer from the options given below:

[Question ID = 16972][Question Description = 115_221_GKD_SEP22_Q15]

- 1. B, C, A, D [Option ID = 37885]
- 2. A, B, C, D [Option ID = 37886]
- 3. C, B, A, D [Option ID = 37887]
- 4. D, C, B, A [Option ID = 37888]

16) The scientific study of soil is[Question ID = 16973][Question Description = 116_221_GKD_SEP22_Q16]

- 1. Earth Study [Option ID = 37889]
- 2. Soil Science [Option ID = 37890]
- 3. Pedology [Option ID = 37891]
- 4. Soil Chemistry [Option ID = 37892]

17) *Triticum aestivum*, the common bread wheat is -

[Question ID = 16974][Question Description = 117_221_GKD_SEP22_Q17]

- 1. Tetraploid

[Option ID = 37893]

- 2. Hexaploid

[Option ID = 37894]

- 3. Haploid

[Option ID = 37895]

- 4. Diploid

[Option ID = 37896]

18) Sectoral inflation refers to[Question ID = 16975][Question Description = 118_221_GKD_SEP22_Q18]

- 1. Running inflation [Option ID = 37897]

2. Comprehensive inflation [Option ID = 37898]
3. Sporadic inflation [Option ID = 37899]
4. Creeping inflation [Option ID = 37900]

19) Keynes Liquidity trap refers to[Question ID = 16976][Question Description = 119_221_GKD_SEP22_Q19]

1. Speculative demand for money [Option ID = 37901]
2. Transactions motive of money is inelastic [Option ID = 37902]
3. Precautionary motive of money is inelastic [Option ID = 37903]
4. Transactions motive of money is constant [Option ID = 37904]

20) A business is solvent if[Question ID = 16977][Question Description = 120_221_GKD_SEP22_Q20]

1. Total receipts exceed total expenditures [Option ID = 37905]
2. Total debt exceeds total equity [Option ID = 37906]
3. Total sales exceed total cash expense [Option ID = 37907]
4. Total assets exceed total liabilities [Option ID = 37908]

Topic:- Veterinary and Animal Sciences 4_PHD

1) The immediate source of water loss from the body is

[Question ID = 4251][Question Description = 101_123_BVS_SEP22_Q01]

1. Intracellular fluid
[Option ID = 17001]
2. Intercellular fluid
[Option ID = 17002]
3. Extracellular fluid
[Option ID = 17003]
4. Cerebro-spinal fluid
[Option ID = 17004]

2) Which cardiac valves close with the first heart sound?

[Question ID = 4252][Question Description = 102_123_BVS_SEP22_Q02]

1. Atrioventricular valves
[Option ID = 17005]
2. Semilunar valves
[Option ID = 17006]
3. Both atrioventricular and Semilunar valves
[Option ID = 17007]
4. Neither, both valves open with the first heart sound
[Option ID = 17008]

3) The life span of WBC is approximately[Question ID = 4253][Question Description = 103_123_BVS_SEP22_Q03]

1. less than 10 days [Option ID = 17009]
2. between 20-30 days [Option ID = 17010]
3. between 2-3 months [Option ID = 17011]
4. more than three months [Option ID = 17012]

4) The darker purple color of venous blood is due to:[Question ID = 4254][Question Description = 104_123_BVS_SEP22_Q04]

1. Decreased concentration of Carbon dioxide [Option ID = 17013]
2. Increased concentration of Carbon dioxide [Option ID = 17014]
3. Decreased concentration of Oxygen [Option ID = 17015]
4. Increased concentration of Oxygen [Option ID = 17016]

5) Which of the following is not a true statement about pulmonary surfactant;

[Question ID = 4255][Question Description = 105_123_BVS_SEP22_Q05]

1. It can be deficient in premature newborns
[Option ID = 17017]
2. It is produced in type II alveolar cells
[Option ID = 17018]

3. It is in part composed of dipalmitoyl phosphatidylcholine

[Option ID = 17019]

4. It is produced by pulmonary endothelial cells

[Option ID = 17020]

6) Uric acid precipitates in the renal tubules in order to:[Question ID = 4256][Question Description = 106_123_BVS_SEP22_Q06]

1. Avoid ammonia toxicity [Option ID = 17021]

2. Avoid obligation of water excretion [Option ID = 17022]

3. Lubricate the renal tubules [Option ID = 17023]

4. Have a better mix with feces [Option ID = 17024]

7) Vomiting center is present in[Question ID = 4257][Question Description = 107_123_BVS_SEP22_Q07]

1. Hypothalamus [Option ID = 17025]

2. Medulla [Option ID = 17026]

3. Pons [Option ID = 17027]

4. Hippocampus [Option ID = 17028]

8) Which one of the avian digestive tract structures secretes HCl and pepsinogen?[Question ID = 4258][Question Description = 108_123_BVS_SEP22_Q08]

1. Crop [Option ID = 17029]

2. Proventriculus [Option ID = 17030]

3. Gizzard [Option ID = 17031]

4. Ceca [Option ID = 17032]

9) Rigor mortis is due to

[Question ID = 4259][Question Description = 109_123_BVS_SEP22_Q09]

1. Damage to actin and myosin

[Option ID = 17033]

2. Rapid sequestration of Calcium in endoplasmic reticulum

[Option ID = 17034]

3. Increased myosin ATPase

[Option ID = 17035]

4. ATP depletion

[Option ID = 17036]

10) The neurotransmitter at the sympathetic postganglionic-to-target organ synapse is[Question ID = 4260][Question Description = 110_123_BVS_SEP22_Q10]

1. Nor epinephrine [Option ID = 17037]

2. Epinephrine [Option ID = 17038]

3. Acetylcholine [Option ID = 17039]

4. Dopamine [Option ID = 17040]

11) Neuroglia that is part of the choroid plexus comprises:[Question ID = 4261][Question Description = 111_123_BVS_SEP22_Q11]

1. Astrocytes [Option ID = 17041]

2. Ependymal cells [Option ID = 17042]

3. Microglia [Option ID = 17043]

4. Oligodendrocytes [Option ID = 17044]

12) Which one of the following hormones promotes the tubular reabsorption of Na⁺ and the tubular secretion of K⁺? [Question ID = 4262][Question Description = 112_123_BVS_SEP22_Q12]

1. Antidiuretic hormone [Option ID = 17045]

2. Secretin [Option ID = 17046]

3. Aldosterone [Option ID = 17047]

4. Vasopressin [Option ID = 17048]

13) Which species is considered suitable for the production of human organ for transplantation?

[Question ID = 4263][Question Description = 113_123_BVS_SEP22_Q13]

1. Cattle [Option ID = 17049]

2. Buffalo [Option ID = 17050]

3. Pig [Option ID = 17051]
4. Mare [Option ID = 17052]

14) Noori is the clone of[Question ID = 4264][Question Description = 114_123_BVS_SEP22_Q14]

1. Sheep [Option ID = 17053]
2. Goat [Option ID = 17054]
3. Pig [Option ID = 17055]
4. Buffalo [Option ID = 17056]

15) Short term day-to-day fluctuation of the meteorological variables, is known as:

[Question ID = 4265][Question Description = 115_123_BVS_SEP22_Q15]

1. Climate [Option ID = 17057]
2. Weather [Option ID = 17058]
3. Microclimate [Option ID = 17059]
4. Macro Climate [Option ID = 17060]

16) The Henderson-Hasselbalch equation for determining the pH of a buffer is given as[Question ID = 4266][Question Description = 116_123_BVS_SEP22_Q16]

1. $\text{pH}=\text{pKa}+\log[\text{salt}]/[\text{acid}]$ [Option ID = 17061]
2. $\text{pH}=\text{pKa}+\log[\text{acid}]/[\text{salt}]$ [Option ID = 17062]
3. $\text{pH}=\text{pKa}-\log[\text{salt}]/[\text{acid}]$ [Option ID = 17063]
4. $\text{pH}=\text{pKa}-\log[\text{acid}]/[\text{salt}]$ [Option ID = 17064]

17) The skin fibroblasts contain[Question ID = 4267][Question Description = 117_123_BVS_SEP22_Q17]

1. Hyaluronic acid [Option ID = 17065]
2. Chondroitin sulfate [Option ID = 17066]
3. Dermatan sulfate [Option ID = 17067]
4. Heparan sulfate [Option ID = 17068]

18) The following is an inhibitor of cytochrome oxidase in electron transport chain

[Question ID = 4268][Question Description = 118_123_BVS_SEP22_Q18]

1. BAL [Option ID = 17069]
2. Rotenone [Option ID = 17070]
3. Sodium azide [Option ID = 17071]
4. CO_2 [Option ID = 17072]

19) Thyroxine is a[Question ID = 4269][Question Description = 119_123_BVS_SEP22_Q19]

1. Steroid hormone [Option ID = 17073]
2. Peptide hormone [Option ID = 17074]
3. Vitamin [Option ID = 17075]
4. Neurotransmitter [Option ID = 17076]

20) Prokaryotic mRNA is[Question ID = 4270][Question Description = 120_123_BVS_SEP22_Q20]

1. Monocistronic [Option ID = 17077]
2. Polycistronic [Option ID = 17078]
3. Contain a Poly A tail [Option ID = 17079]
4. Contain introns [Option ID = 17080]

21) Chemiosmotic hypothesis is associated with[Question ID = 4271][Question Description = 121_123_BVS_SEP22_Q21]

1. ATP synthesis [Option ID = 17081]
2. Protein synthesis [Option ID = 17082]
3. Protein transport [Option ID = 17083]
4. Signal transduction [Option ID = 17084]

22) Enzymes having slightly different molecular structures but performing identical activity are

[Question ID = 4272][Question Description = 122_123_BVS_SEP22_Q22]

1. Holoenzymes [Option ID = 17085]
2. Apoenzymes [Option ID = 17086]
3. Isoenzymes [Option ID = 17087]
4. Coenzymes [Option ID = 17088]

23) The following statement(s) about Ribulose is true.

[Question ID = 4273][Question Description = 123_123_BVS_SEP22_Q23]

1. It is a tetrose sugar [Option ID = 17089]
2. It has an aldehyde group [Option ID = 17090]
3. It is a hexose sugar [Option ID = 17091]
4. It is a keto pentose [Option ID = 17092]

24) Negative regulator of pyruvate kinase is[Question ID = 4274][Question Description = 124_123_BVS_SEP22_Q24]

1. Acetyl coA [Option ID = 17093]
2. Alanine [Option ID = 17094]
3. Citrate [Option ID = 17095]
4. Fructose 1,6 Biphosphate [Option ID = 17096]

25) For all the common amino acid except glycine the carbon atom is bonded to different groups.

- A. An amino group
- B. An R-group
- C. A carboxyl group
- D. Hydrogen atom

Choose the *correct* answer from the options given below:

[Question ID = 4275][Question Description = 125_123_BVS_SEP22_Q25]

1. A and B only
[Option ID = 17097]
2. B and C only
[Option ID = 17098]
3. A, B and D only
[Option ID = 17099]
4. A, B, C and D
[Option ID = 17100]

26) Which of the amino acid is simplest in structure

[Question ID = 4276][Question Description = 126_123_BVS_SEP22_Q26]

1. Methionine [Option ID = 17101]
2. Glycine [Option ID = 17102]
3. Alanine [Option ID = 17103]
4. Valine [Option ID = 17104]

27) System of specifying configuration around a chiral center of amino acid is

[Question ID = 4277][Question Description = 127_123_BVS_SEP22_Q27]

1. D, L system only [Option ID = 17105]
2. RS system only [Option ID = 17106]
3. D, L & RS system both [Option ID = 17107]
4. Chimeric system [Option ID = 17108]

28) Given below are two statements

Statement I: Pure water is slightly ionized

Statement II: Water has slight tendency to reversible ionization yielding a hydrogen ion and hydroxylion

In light of the above statements, choose the *correct* answer from the options given below

[Question ID = 4278][Question Description = 128_123_BVS_SEP22_Q28]

1. Statement I and Statement II are correct and Statement II is the correct justification of Statement I [Option ID = 17109]
2. Statement I and Statement II both are correct but Statement II is NOT the correct justification of Statement I [Option ID = 17110]
3. Statement I is correct but Statement II is false [Option ID = 17111]
4. Statement I and Statement II both are incorrect [Option ID = 17112]

29) Two catabolic processes of glycogen are

[Question ID = 4279][Question Description = 129_123_BVS_SEP22_Q29]

1. Glycogenolysis and Glycogenesis
[Option ID = 17113]
2. Glycogenolysis and Gluconeogenesis

[Option ID = 17114]

3. Glycolysis and Glycogenolysis

[Option ID = 17115]

4. Glycolysis and Glycogenesis

[Option ID = 17116]

30) _____ is the immediate donor of glucose residue in the reaction catalyzed by glycogen synthase.

[Question ID = 4280][Question Description = 130_123_BVS_SEP22_Q30]

1. UMP-glucose

[Option ID = 17117]

2. UDP-glucose

[Option ID = 17118]

3. UTP-glucose

[Option ID = 17119]

4. Glucose-1-Phosphate

[Option ID = 17120]

31) Two sugars which differ only in the configuration around one carbon atom are called _____

[Question ID = 4281][Question Description = 131_123_BVS_SEP22_Q31]

1. Chimers [Option ID = 17121]

2. Chirals [Option ID = 17122]

3. Epimers [Option ID = 17123]

4. Isomers [Option ID = 17124]

32) two stereoisomers of glyceraldehyde can be represented by

A. Ball and stick models

B. Fisher projection formulas

C. Perspective formulas

Which of the following is *correct*

[Question ID = 4282][Question Description = 132_123_BVS_SEP22_Q32]

1. A only [Option ID = 17125]

2. B only [Option ID = 17126]

3. A and B only [Option ID = 17127]

4. A, B and C [Option ID = 17128]

33) Dextran are

[Question ID = 4283][Question Description = 133_123_BVS_SEP22_Q33]

1. Bacterial glucosen [Option ID = 17129]

2. Bacterial and yeast polysaccharides [Option ID = 17130]

3. Yeast starch [Option ID = 17131]

4. Bacterial and yeast branched chain amino acids [Option ID = 17132]

34) Inhibitors that bind covalently with or destroy a functional group on an enzyme that is essential for enzymatic activity is called

[Question ID = 4284][Question Description = 134_123_BVS_SEP22_Q34]

1. Suicidal inactivators [Option ID = 17133]

2. Mixed inhibitor [Option ID = 17134]

3. Uncompetitive inhibitor [Option ID = 17135]

4. Irreversible inhibitor [Option ID = 17136]

35) Pyruvate kinase is allosterically inhibited by _____

[Question ID = 4285][Question Description = 135_123_BVS_SEP22_Q35]

1. AMP [Option ID = 17137]

2. ATP [Option ID = 17138]

3. UTP [Option ID = 17139]

4. UDP [Option ID = 17140]

36) Handmade cloning is a method of?[Question ID = 4286][Question Description = 136_123_BVS_SEP22_Q36]

1. DNA cloning by manual methods [Option ID = 17141]
2. Somatic cell nuclear transfer [Option ID = 17142]
3. Replica plating of bacteria using a handmade wooden block [Option ID = 17143]
4. Blastomeric cloning [Option ID = 17144]

37) Sebelipase alfa, an FDA-approved protein for the treatment of lysosomal acid lipase deficiency, has been produced in transgenic[Question ID = 4287][Question Description = 137_123_BVS_SEP22_Q37]

1. Salmon [Option ID = 17145]
2. Rabbit [Option ID = 17146]
3. Chicken egg [Option ID = 17147]
4. Goat milk [Option ID = 17148]

38) Recombination of different types of cells to form more defined tissue or organ is known as ...[Question ID = 4288][Question Description = 138_123_BVS_SEP22_Q38]

1. Organotypic culture [Option ID = 17149]
2. Primary culture [Option ID = 17150]
3. Secondary culture [Option ID = 17151]
4. Cell line [Option ID = 17152]

39) Mung bean S1 nuclease could be used for...[Question ID = 4289][Question Description = 139_123_BVS_SEP22_Q39]

1. DNA synthesis [Option ID = 17153]
2. Nucleotide hydrolysis [Option ID = 17154]
3. Trimming single stranded regions in DNA [Option ID = 17155]
4. Removal of phosphate group from the ends of the DNA [Option ID = 17156]

40) Ligation reaction is generally performed at a temperature of[Question ID = 4290][Question Description = 140_123_BVS_SEP22_Q40]

1. 37°C [Option ID = 17157]
2. 40°C [Option ID = 17158]
3. 16°C [Option ID = 17159]
4. 25°C [Option ID = 17160]

41) Consider the following statements:

I. T4 DNA ligase can catalyze blunt end ligation more efficiently than E. coli DNA ligase

II. The ligation efficiency of T4 DNA ligase can be increased with PEG and Ficoll.

III. T4 ligase require ATP while E.coli DNA ligase require NAD⁺

[Question ID = 4291][Question Description = 141_123_BVS_SEP22_Q41]

1. Only I is true [Option ID = 17161]
2. Only II is true [Option ID = 17162]
3. Both I and III are true [Option ID = 17163]
4. All are true [Option ID = 17164]

42) Which second messenger signals the release of Ca⁺⁺ from the endoplasmic reticulum?[Question ID = 4292][Question Description = 142_123_BVS_SEP22_Q42]

1. Cyclic AMP [Option ID = 17165]
2. Cyclic GMP [Option ID = 17166]
3. 1,2 diacyl glycerol [Option ID = 17167]
4. Inositol triphosphate [Option ID = 17168]

43) The molecular mass of a protein is 22 kDa. The size of cDNA (excluding the UTR) that codes for this proteins is kb.[Question ID = 4293][Question Description = 143_123_BVS_SEP22_Q43]

1. 1.5 [Option ID = 17169]
2. 0.8 [Option ID = 17170]
3. 4.4 [Option ID = 17171]
4. 0.6 [Option ID = 17172]

44) The structure of an average eukaryotic gene includes...

[Question ID = 4294][Question Description = 144_123_BVS_SEP22_Q44]

1. UTR, CDS, Poly(A) [Option ID = 17173]
2. RBS, Exon, Intron [Option ID = 17174]
3. UAS, DAS, CDS [Option ID = 17175]
4. CDS, UAS, Poly(A) [Option ID = 17176]

45) Only percentage of total RNA is mRNA.[Question ID = 4295][Question Description = 145_123_BVS_SEP22_Q45]

1. 1-2% [Option ID = 17177]
2. 4-5% [Option ID = 17178]
3. 5-10% [Option ID = 17179]
4. 80-90% [Option ID = 17180]

46) How many chromosomes will be found per cell in trisomic cattle (*Bos taurus*)?[Question ID = 4296][Question Description = 146_123_BVS_SEP22_Q46]

1. 60 [Option ID = 17181]
2. 90 [Option ID = 17182]
3. 180 [Option ID = 17183]
4. 61 [Option ID = 17184]

47) The number of atoms held into a geometric plane by a peptide bond is:[Question ID = 4297][Question Description = 147_123_BVS_SEP22_Q47]

1. 2 [Option ID = 17185]
2. 3 [Option ID = 17186]
3. 4 [Option ID = 17187]
4. 6 [Option ID = 17188]

48) To isolate a gene coding for Insulin, the mRNA has to be isolated from...[Question ID = 4298][Question Description = 148_123_BVS_SEP22_Q48]

1. Intestine [Option ID = 17189]
2. Pancreas [Option ID = 17190]
3. Pituitary [Option ID = 17191]
4. Any tissue can be used [Option ID = 17192]

49) The C-value of laboratory mice is approximately[Question ID = 4299][Question Description = 149_123_BVS_SEP22_Q49]

1. 1.3 billion [Option ID = 17193]
2. 2.1 billion [Option ID = 17194]
3. 3.2 billion [Option ID = 17195]
4. 4.3 billion [Option ID = 17196]

50) The air-lift bioreactor is best suited for...[Question ID = 4300][Question Description = 150_123_BVS_SEP22_Q50]

1. Monolayers culture [Option ID = 17197]
2. Suspension culture [Option ID = 17198]
3. Culturing blood [Option ID = 17199]
4. Embryo culture [Option ID = 17200]

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1) Given that the pH of blood is 7.4, the ratio $\text{NaHCO}_3:\text{H}_2\text{CO}_3$ is[Question ID = 4351][Question Description = 101_219_VBAB_SEP22_Q01]

1. 26:1 [Option ID = 17401]
2. 1:26 [Option ID = 17402]
3. 20:1 [Option ID = 17403]
4. 1:20 [Option ID = 17404]

2) The purgative effect of MgSO_4 is due to[Question ID = 4352][Question Description = 102_219_VBAB_SEP22_Q02]

1. Absorption [Option ID = 17405]
2. Adsorption [Option ID = 17406]
3. Osmosis [Option ID = 17407]
4. Diffusion [Option ID = 17408]

3) Which among the following statements about collagen is FALSE?

- A. Triple helix structure is present in all collagen types
- B. Glycine, proline & hydroxyproline are among the major amino acids found in collagen
- C. Proline occurs at every 3rd position of collagen
- D. Hydroxyproline in collagen is formed by post-translational modification of proline

Choose the *correct* answer from the options given below:

[Question ID = 4353][Question Description = 103_219_VBAB_SEP22_Q03]

1. A, B and D only [Option ID = 17409]
2. B and D only [Option ID = 17410]
3. C only [Option ID = 17411]
4. D only [Option ID = 17412]

4) Which of the following collagen types form beaded filaments?

[Question ID = 4354][Question Description = 104_219_VBAB_SEP22_Q04]

1. Type I [Option ID = 17413]
2. Type VI [Option ID = 17414]
3. Type VII [Option ID = 17415]
4. Type X [Option ID = 17416]

5) The average percentage of water with respect to body weight is[Question ID = 4355][Question Description = 105_219_VBAB_SEP22_Q05]

1. 60-70 [Option ID = 17417]
2. 70-80 [Option ID = 17418]
3. 50-60 [Option ID = 17419]
4. 30-40 [Option ID = 17420]

6) The percentage of plasma in extracellular fluid is[Question ID = 4356][Question Description = 106_219_VBAB_SEP22_Q06]

1. 3.5 [Option ID = 17421]
2. 3.8 [Option ID = 17422]
3. 4.2 [Option ID = 17423]
4. 4.5 [Option ID = 17424]

7) The bond angle (H—O—H) in water is[Question ID = 4357][Question Description = 107_219_VBAB_SEP22_Q07]

1. 103.4° [Option ID = 17425]
2. 104.3° [Option ID = 17426]
3. 104.5° [Option ID = 17427]
4. 108.5° [Option ID = 17428]

8) Which among the following glycosaminoglycans is associated with formation of atherosclerotic lesions?[Question ID = 4358][Question Description = 108_219_VBAB_SEP22_Q08]

1. Hyaluronic acid [Option ID = 17429]
2. Chondroitin sulfate [Option ID = 17430]
3. Dermatan sulfate [Option ID = 17431]
4. Heparan sulfate [Option ID = 17432]

9) The amount of carbohydrate in a proteoglycan by weight may be upto[Question ID = 4359][Question Description = 109_219_VBAB_SEP22_Q09]

1. 5% [Option ID = 17433]
2. 20% [Option ID = 17434]
3. 50% [Option ID = 17435]
4. 95% [Option ID = 17436]

10) At 25°C the molar concentration of H₂O in pure water is[Question ID = 4360][Question Description = 110_219_VBAB_SEP22_Q10]

1. 50 M [Option ID = 17437]
2. 53.5 M [Option ID = 17438]
3. 55.5 M [Option ID = 17439]
4. 55 M [Option ID = 17440]

11) Which one of the following is not an aromatic amino acid ?

[Question ID = 4361][Question Description = 111_219_VBAB_SEP22_Q11]

1. Phenylalanine [Option ID = 17441]
2. Tyrosine [Option ID = 17442]
3. Tryptophan [Option ID = 17443]
4. Valine [Option ID = 17444]

12) A defect in the following protein is responsible for muscle degeneration in Duchenne muscular dystrophy.[Question ID = 4362][Question Description = 112_219_VBAB_SEP22_Q12]

1. Actin [Option ID = 17445]

2. Ankyrin [Option ID = 17446]
3. Spectrin [Option ID = 17447]
4. Dystrophin [Option ID = 17448]

13) During muscle contraction, the conformational change in myosin head is

- A. Dependent on ATP hydrolysis
- B. Dependent on Ca^{++} concentration
- C. Independent of free energy change
- D. Dependent on GTP hydrolysis

Choose the *correct* answer from the options given below:

[Question ID = 4363][Question Description = 113_219_VBAB_SEP22_Q13]

1. A only [Option ID = 17449]
2. A and B only [Option ID = 17450]
3. C only [Option ID = 17451]
4. C and D only [Option ID = 17452]

14) The potential differences across membranes of neurons are generated by[Question ID = 4364][Question Description = 114_219_VBAB_SEP22_Q14]

1. Ion gradients [Option ID = 17453]
2. pH gradients [Option ID = 17454]
3. Density gradients [Option ID = 17455]
4. Neurotransmitters [Option ID = 17456]

15) Which of the following is heteropolysaccharide ?

[Question ID = 4365][Question Description = 115_219_VBAB_SEP22_Q15]

1. Glycogen [Option ID = 17457]
2. Cellulose [Option ID = 17458]
3. Amylopectin [Option ID = 17459]
4. Agarose [Option ID = 17460]

16) Incomplete breakdown of sugars in anaerobic respiration results in the formation of[Question ID = 4366][Question Description = 116_219_VBAB_SEP22_Q16]

1. Fructose and water [Option ID = 17461]
2. Alcohol and CO_2 [Option ID = 17462]
3. CO_2 and water [Option ID = 17463]
4. Glucose and CO_2 [Option ID = 17464]

17) The appropriate reason for storing green apples at low temperature is[Question ID = 4367][Question Description = 117_219_VBAB_SEP22_Q17]

1. Rate of respiration is reduced [Option ID = 17465]
2. Rate of photosynthesis is reduced [Option ID = 17466]
3. Rate of transpiration is reduced [Option ID = 17467]
4. Rate of respiration and photosynthesis is completely inhibited [Option ID = 17468]

18) Which of the following is a membrane lipids

[Question ID = 4368][Question Description = 118_219_VBAB_SEP22_Q18]

1. Techoic acid
[Option ID = 17469]
2. Pectin
[Option ID = 17470]
3. Proteoglycans
[Option ID = 17471]
4. Glycolipids
[Option ID = 17472]

19) Which of the following inhibits translation in eukaryotes?

[Question ID = 4369][Question Description = 119_219_VBAB_SEP22_Q19]

1. Erythromycin [Option ID = 17473]

2. Streptomycin [Option ID = 17474]
3. Cycloheximide [Option ID = 17475]
4. Chloramphenicol [Option ID = 17476]

20) Rhodopsin is a[Question ID = 4370][Question Description = 120_219_VBAB_SEP22_Q20]

1. G-protein coupled receptor [Option ID = 17477]
2. G protein [Option ID = 17478]
3. Second messenger [Option ID = 17479]
4. Hormone [Option ID = 17480]

21) The substrate for NOS is[Question ID = 4371][Question Description = 121_219_VBAB_SEP22_Q21]

1. Asparagine [Option ID = 17481]
2. Aspartate [Option ID = 17482]
3. Arginine [Option ID = 17483]
4. Histidine [Option ID = 17484]

22) NF- κ B is a transcription factor that remains in latent form in unstimulated cells by

- A. Remaining in underphosphorylated state.
- B. Remaining bound to I κ B.
- C. Remaining in hyperphosphorylated state.
- D. Remaining in phosphorylated state.

Choose the *correct* answer from the options given below:

[Question ID = 4372][Question Description = 122_219_VBAB_SEP22_Q22]

1. A and B only [Option ID = 17485]
2. B only [Option ID = 17486]
3. B and C only [Option ID = 17487]
4. B and D only [Option ID = 17488]

23) Phospholipase C is a[Question ID = 4373][Question Description = 123_219_VBAB_SEP22_Q23]

1. Phosphorylating enzyme [Option ID = 17489]
2. Hydrolytic enzyme [Option ID = 17490]
3. Second messenger [Option ID = 17491]
4. G-coupled receptor [Option ID = 17492]

24) GPI anchors are added to a protein at[Question ID = 4374][Question Description = 124_219_VBAB_SEP22_Q24]

1. C-terminal end [Option ID = 17493]
2. N-terminal end [Option ID = 17494]
3. Anywhere inside the protein sequence [Option ID = 17495]
4. Signal sequence [Option ID = 17496]

25) ATP synthesis takes place in[Question ID = 4375][Question Description = 125_219_VBAB_SEP22_Q25]

1. Ribosomes [Option ID = 17497]
2. Nucleus [Option ID = 17498]
3. Lysosomes [Option ID = 17499]
4. Mitochondria [Option ID = 17500]

26) Proteins destined to be incorporated in the organelles are mostly synthesized on[Question ID = 4376][Question Description = 126_219_VBAB_SEP22_Q26]

1. Free ribosomes [Option ID = 17501]
2. Membrane bound ribosomes [Option ID = 17502]
3. SER [Option ID = 17503]
4. Cytoplasm [Option ID = 17504]

27) Amber, Opal, Ochre respectively are[Question ID = 4377][Question Description = 127_219_VBAB_SEP22_Q27]

1. UAG, UGA, UAA [Option ID = 17505]
2. UGA, UAA, UAG [Option ID = 17506]
3. UAA, UAG, UGA [Option ID = 17507]
4. UAG, UAA, UGA [Option ID = 17508]

28) 5',3' exonuclease activity is present in[Question ID = 4378][Question Description = 128_219_VBAB_SEP22_Q28]

1. DNA polymerase I [Option ID = 17509]
2. DNA polymerase III [Option ID = 17510]

3. RNA polymerase [Option ID = 17511]
4. Reverse transcriptase [Option ID = 17512]

29) Proof reading activity is absent in[Question ID = 4379][Question Description = 129_219_VBAB_SEP22_Q29]

1. *Pfu* polymerase [Option ID = 17513]
2. *Pfx* polymerase [Option ID = 17514]
3. *Tli* polymerase [Option ID = 17515]
4. *Taq* Polymerase [Option ID = 17516]

30) The ratio in which phenol: chloroform: isoamyl alcohol used in plasmid isolation is[Question ID = 4380][Question Description = 130_219_VBAB_SEP22_Q30]

1. 25: 24: 1 [Option ID = 17517]
2. 24: 23: 1 [Option ID = 17518]
3. 24: 1: 23 [Option ID = 17519]
4. 25: 1: 24 [Option ID = 17520]

31) The *His* tagged fusion protein can be eluted from NI-NTA column by

A. Acidic pH elution

B. Urea elution

C. IPTG elution

D. Guanidinium salt elution

Choose the *correct* answer from the options given below:

[Question ID = 4381][Question Description = 131_219_VBAB_SEP22_Q31]

1. A only [Option ID = 17521]
2. B, C and D only [Option ID = 17522]
3. A, B, C and D [Option ID = 17523]
4. D only [Option ID = 17524]

32) Which one of the following is an oncogene?

[Question ID = 4382][Question Description = 132_219_VBAB_SEP22_Q32]

1. PTEN [Option ID = 17525]
2. p53 [Option ID = 17526]
3. Bcl2 [Option ID = 17527]
4. Bax [Option ID = 17528]

33) Which of the following can be used for ligase independant cloning

[Question ID = 4383][Question Description = 133_219_VBAB_SEP22_Q33]

1. T₄ ligase
[Option ID = 17529]
2. Homopolymer tailing
[Option ID = 17530]
3. Polynucleotide Kinase
[Option ID = 17531]
4. Phosphodiesterase
[Option ID = 17532]

34) Some of the enzymes, which are associated in converting fats into carbohydrates, are present in[Question ID = 4384]

[Question Description = 134_219_VBAB_SEP22_Q34]

1. Liposomes [Option ID = 17533]
2. Golgi bodies [Option ID = 17534]
3. Glyoxysomes [Option ID = 17535]
4. Microsomes [Option ID = 17536]

35) Reaginic antibodies are[Question ID = 4385][Question Description = 135_219_VBAB_SEP22_Q35]

1. IgG [Option ID = 17537]
2. IgM [Option ID = 17538]
3. IgE [Option ID = 17539]
4. IgA [Option ID = 17540]

36) NMR phenomenon occurs in which region of EM spectrum?

[Question ID = 4386][Question Description = 136_219_VBAB_SEP22_Q36]

1. Gamma region
[Option ID = 17541]
2. Microwaves
[Option ID = 17542]
3. Radiowaves
[Option ID = 17543]
4. UV rays
[Option ID = 17544]

37) In a mixture of five proteins listed below, which protein elutes second in gel filtration chromatography?[Question ID = 4387][Question Description = 137_219_VBAB_SEP22_Q37]

1. RNase A (13700 kDa) [Option ID = 17545]
2. IgG (145000 kDa) [Option ID = 17546]
3. Cytochrome C (13000 kDa) [Option ID = 17547]
4. RNA polymerase (450000 kDa) [Option ID = 17548]

38) The crosslinking agent used for PAGE gel is[Question ID = 4388][Question Description = 138_219_VBAB_SEP22_Q38]

1. Acrylamide [Option ID = 17549]
2. TEMED [Option ID = 17550]
3. APS [Option ID = 17551]
4. N,N' methylene bisacrylamide [Option ID = 17552]

39) The subunits of oligomeric enzymes, are called

[Question ID = 4389][Question Description = 139_219_VBAB_SEP22_Q39]

1. Protomers [Option ID = 17553]
2. Promoters [Option ID = 17554]
3. Oligomers [Option ID = 17555]
4. Stereoisomers [Option ID = 17556]

40) Chitin is a polymer of

[Question ID = 4390][Question Description = 140_219_VBAB_SEP22_Q40]

1. N Acetyl glucose
[Option ID = 17557]
2. N Acetyl mannosamine
[Option ID = 17558]
3. N Acetyl glucosamine
[Option ID = 17559]
4. N Acetyl galactosamine
[Option ID = 17560]

41) The coenzyme involved for the production of malonyl COA is[Question ID = 4391][Question Description = 141_219_VBAB_SEP22_Q41]

1. Carnitine [Option ID = 17561]
2. Lipoic acid [Option ID = 17562]
3. Biotin [Option ID = 17563]
4. Pyridoxal phosphate [Option ID = 17564]

42) Verbacose is a[Question ID = 4392][Question Description = 142_219_VBAB_SEP22_Q42]

1. Trisachharide [Option ID = 17565]
2. Tetrasachharide [Option ID = 17566]
3. Pentasachharide [Option ID = 17567]
4. Polysachharide [Option ID = 17568]

43) Cis/forming face of Golgi apparatus is adjacent to[Question ID = 4393][Question Description = 143_219_VBAB_SEP22_Q43]

1. Nucleus [Option ID = 17569]
2. Plasma membrane [Option ID = 17570]
3. Lysosomes [Option ID = 17571]

4. Mitochondria [Option ID = 17572]

44) In non-human primates, glucose is converted to ascorbic acid by

[Question ID = 4394][Question Description = 144_219_VBAB_SEP22_Q44]

1. Pentose phosphate pathway [Option ID = 17573]
2. Fructose metabolism [Option ID = 17574]
3. Glycolysis [Option ID = 17575]
4. Uronic acid pathway [Option ID = 17576]

45) In fetal galactosemia, the following enzyme is defective[Question ID = 4395][Question Description = 145_219_VBAB_SEP22_Q45]

1. UDP-Galactose 4- epimerase [Option ID = 17577]
2. Galactose-1-Phosphate Uridyltransferase [Option ID = 17578]
3. Glucokinase [Option ID = 17579]
4. Galactokinase [Option ID = 17580]

46) Deficiency in the activity of lysyl hydroxylase leads to[Question ID = 4396][Question Description = 146_219_VBAB_SEP22_Q46]

1. Menke's disease [Option ID = 17581]
2. Osteogenesis imperfecta [Option ID = 17582]
3. Alport syndrome [Option ID = 17583]
4. Osteoporosis [Option ID = 17584]

47) Enzymes are highly effective catalyst, commonly enhancing reaction rates by a factor of _____

[Question ID = 4397][Question Description = 147_219_VBAB_SEP22_Q47]

1. $10^2 - 10^3$ [Option ID = 17585]
2. $10^5 - 10^{17}$ [Option ID = 17586]
3. $10^{20} - 10^{23}$ [Option ID = 17587]
4. $10^{25} - 10^{27}$ [Option ID = 17588]

48) Relative to extracellular fluid, the cytoplasm of neuron at rest is[Question ID = 4398][Question Description = 148_219_VBAB_SEP22_Q48]

1. Low in Na^+ & Cl^- and high in K^+ [Option ID = 17589]
2. Low in K^+ and high in Na^+ & Cl^- [Option ID = 17590]
3. Low in K^+ & Cl^- and high in Na^+ [Option ID = 17591]
4. Low in Na^+ and high in K^+ & Cl^- [Option ID = 17592]

49) Glycogen breakdown is catalyzed by

[Question ID = 4399][Question Description = 149_219_VBAB_SEP22_Q49]

1. Glycogen phosphorylase
[Option ID = 17593]
2. Glucose-6-phosphatase
[Option ID = 17594]
3. Glucose 1,6 - diphosphatase
[Option ID = 17595]
4. Glycoegen pyrophosphorylase
[Option ID = 17596]

50) Green fluorescent protein (GFP) is isolated from

[Question ID = 4400][Question Description = 150_219_VBAB_SEP22_Q50]

1. Vibrio fischeri-bacteria [Option ID = 17597]
2. Firefly [Option ID = 17598]
3. Aequorea victoria-jellyfish [Option ID = 17599]
4. Discosoma coral [Option ID = 17600]