Question Paper Preview

Subject Name: Biotechnology

Display Number Panel: Yes
Group All Questions: No

Question Number : 1 Question Id : 7621614081 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{bmatrix} 5 & 2 \\ 0 & k \end{bmatrix}$ and $f(x) = x^2 - 7x + 10$. Then the value of k for which A is a root the polynomial f(x) is

Options :

1. 1
2. -1
3. 2
4. -2

Question Number : 2 Question Id : 7621614082 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\lim_{x \to \infty} \frac{3|x|+x}{7|x|-5x} = P$, then P =

Options :

1. 2
2. $\frac{1}{2}$
3. 1
4. ∞

Question Number : 3 Question Id : 7621614083 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Eigen values of the matrix $A = \begin{bmatrix} 6 & \sqrt{3} \\ \sqrt{3} & 4 \end{bmatrix}$ are

Options :

1. 4 and 6
2. 3 and 7

3. 2 and 6

4. 1 and 3

Question Number : 4 Question Id : 7621614084 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $u = x^2y + y^2z + z^2x$ then, $\frac{\partial z}{\partial x} + \frac{\partial z}{\partial y} + \frac{\partial z}{\partial x} =$

Options :

1. $x + y + z$

2. $\frac{2}{x+y+z}$

3. $2(x + y + z)$

4. $(x + y + z)^2$

Question Number : 5 Question Id : 7621614085 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation $\frac{dy}{dx} + \frac{y}{x} = x^3$ is (c = constant of integration)

Options :

1. $y = \frac{x^5}{5} + c$

2. $xy = \frac{x^5}{5} + c$

3. $y = 5x^4 + c$

4. $x = y^4 + c$

Question Number : 6 Question Id : 7621614086 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of the equation $(D^2 - 3D + 2)y = e^{5x}$ is

Options :

1. $\frac{e^{5x}}{5}$

2. $\frac{e^{5x}}{15}$

3. $\frac{e^{5x}}{10}$

4. $\frac{e^{5x}}{12}$

Question Number : 7 Question Id : 7621614087 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the partial differential equation $p = e^q$ is (where $\frac{\partial z}{\partial x} = p$ & $\frac{\partial z}{\partial y} = q$)

Options :

1. $z = \log\ x + c$
2. $z = ax + \log y + c$
3. $z = ax^q + c$
4. $z = ax + (\log a)\, y + c$

Question Number : 8 Question Id : 7621614088 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation $\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$ is called

Options :

1. One - dimensional wave equation
2. One - dimensional heat equation
3. Two - dimensional heat equation
4. Laplace Equation

Question Number : 9 Question Id : 7621614089 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If L[f(t)] denotes the Laplace transform of f(t) then $L[e^{-2t} \sin 4t] =$

Options :

1. $\frac{4}{s^2+4s+20}$
2. $\frac{s}{s^2+4}$
3. $\frac{2}{s^2+4s+20}$
4. $\frac{s}{s^2-4}$

Question Number : 10 Question Id : 7621614090 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If in a binomial distribution , the mean and variance are 4 and $\frac{4}{3}$ respectively , then the number of trials (n) is

Options :

1. 16
2. 12
3. 9
4. 6

Question Number : 11 Question Id : 7621614091 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An example of a structural protein which is also an enzyme is

Options :

1. trypsin
2. keratin
3. actin
4. myosin

Question Number : 12 Question Id : 7621614092 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The forces that maintain the three dimensional structure of a protein is mainly

Options :

1. covalent only
2. non-covalent
3. coordinate only
4. covalent and coordinate

Question Number : 13 Question Id : 7621614093 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Hydrogen bonds in α-helices are

Options :

1. roughly parallel to the helix axis
2. analogous to the steps in a spiral staircase
3. not present at phenylalanine residues
4. more numerous than van der Waals interactions

Question Number : 14 Question Id : 7621614094 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following are correct statements except

Options :

1. selenocysteine is derived from cysteine
2. among standard amino acids, tryptophan has highest molecular weight
3. histidine contains three ionizable groups
4. at isoelectric point, protein has minimum solubility

Question Number : 15 Question Id : 7621614095 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The peptide bond in protein is

Options :

1. planar, but rotates to three preferred dihedral angles
2. nonpolar, but rotates to three preferred dihedral angles

3. nonpolar and fixed in a trans conformation

4. planar and usually found in a trans configuration

Question Number : 16 Question Id : 7621614096 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cellulose is indigestible by humans because we lack the enzyme that hydrolyzes

Options :

1. α-1, 4 glycosidic bonds

2. α-1, 6 glycosidic bonds

3. β-1, 4 glycosidic bonds

4. long chain polysaccharides

Question Number : 17 Question Id : 7621614097 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Starting from a glucose residue in glycogen, how many net ATP molecules will be formed in the glycolysis of the residues to pyruvate

Options :

1. one

2. two

3. three

4. four

Question Number : 18 Question Id : 7621614098 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Alkaline hydrolysis of a triglyceride is

Options :

1. saponification

2. hydrogenation

3. dehydration

4. esterification

Question Number : 19 Question Id : 7621614099 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Bonding energy released in enzyme-substrate complex formation causes the

Options :

1. decrease in the free energy of product

2. decrease in the free energy of substrate

3. decrease in the activation energy

4. increase in the activation energy

Question Number : 20 Question Id : 7621614100 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the substrate concentration in an enzyme catalyzed reaction is equal to 1/2 K_m, the initial reaction velocity will be

Options :

1. 0.25 V_{max}
2. 0.33 V_{max}
3. 0.50 V_{max}
4. 0.67 V_{max}

Question Number : 21 Question Id : 7621614101 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of following statement is true about regulatory enzymes?

Options :

1. produce a sigmoidal curve
2. produce hyperbolic curve
3. always show allosteric property
4. generally reflects no cooperativity

Question Number : 22 Question Id : 7621614102 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Vitamin D is derived from which of the following precursors by the action of UV light ?

Options :

1. lanosterol
2. cholesterol
3. 7-dehyrocholesterol
4. Glycholate

Question Number : 23 Question Id : 7621614103 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The aerobic metabolism of each glucose molecule totally yields -------- ATPs

Options :

1. 30
2. 34
3. 36
4. 38

Question Number : 24 Question Id : 7621614104 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Anabolic reaction means

Options :

1. Formation of small molecules
2. Break down of large molecules
3. Formation of digestive juices
4. Formation of large molecules

Question Number : 25 Question Id : 7621614105 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In order for cells to utilize fatty acids for their energy content, the fatty acids are broken down and converted into molecules of

Options :

1. Quinine and ribulose phosphate
2. Acetyl Co-A
3. Various amino acids
4. DHAP

Question Number : 26 Question Id : 7621614106 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A membrane transport protein is said to be a carrier protein if

Options :

1. it forms a open pore through which a molecule can diffuse
2. an electrochemical gradient is necessary for transport to occur
3. it only allows transport down a concentration gradient
4. it binds to the molecule and changes shape during transport

Question Number : 27 Question Id : 7621614107 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following is a correct statement for Na-K ATPase?

Options :

1. it gives out 3 Na-ions and takes in 2 K-ions
2. it gives out 2 Na-ions and takes in 3 K-ions
3. it gives out 3 Ca-ions and takes in 2 K-ions
4. it gives out 3 Na-ions and takes in 2 Ca-ions

Question Number : 28 Question Id : 7621614108 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the correct order in which the extra-cellular signals are transmitted?

Options :

1. adenylate cyclase-cAMP-protein kinase A

2. protein kinase A-adenylate cyclase-cAMP

3. protein kinase A -cAMP-adenylate cyclase

4. cAMP-adenylate cyclase-protein kinase A

Question Number : 29 Question Id : 7621614109 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The normal cellular counterparts of oncogenes are important for the following functions except

Options :

1. promotion of cell cycle progression

2. inhibition of apoptosis

3. promotion of DNA repair

4. promotion of nuclear transcription

Question Number : 30 Question Id : 7621614110 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cell cycle progression from G2 to M phase is mainly controlled by

Options :

1. glycosyl transferases

2. cyclins

3. cell adhesion molecules

4. cyclic AMP

Question Number : 31 Question Id : 7621614111 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

All of the enzymes of the TCA cycle are located in the mitochondrial matrix except

Options :

1. citrate synthetase

2. α–ketogltarate dehydrogenase

3. Succinate dehydrogenase

4. fumerase

Question Number : 32 Question Id : 7621614112 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Reverse transcriptases are encoded by retroviruses. The only enzyme from the mammalian cells with reverse transcriptase like activity is

Options :

1. telomerase

2. ribonuclease

3. ribozyme

4. caspase

Question Number : 33 Question Id : 7621614113 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Mitochondrial DNA is replicated from

Options :

1. a single *ori* site bidirectionally

2. two different *ori* sites in the same direction

3. two different *ori* sites at different times in opposite directions

4. many sites bidirectionally, like nuclear chromosomes

Question Number : 34 Question Id : 7621614114 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the role of the promoter region of a gene?

Options :

1. it is the site where the ribosomes binds to the mRNA

2. it is the site where the RNA polymerase binds to the DNA

3. it is the site where the DNA polymerase binds to the DNA

4. it is the site where Shine-Dalgarno sequence present

Question Number : 35 Question Id : 7621614115 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In eukaryotes, the ribosomal RNA genes are transcribed by

Options :

1. reverse transcriptase

2. RNA dependent RNA polymerase

3. RNA polymerase I

4. RNA polymerase III

Question Number : 36 Question Id : 7621614116 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a post-transcriptional modification?

Options :

1. splicing

2. 5' capping

3. 3' polyadenylation

4. glycosylation

Question Number : 37 Question Id : 7621614117 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following genes is not transcribed from the promoter for β-galactosidase?

Options :

1. *lac Z*
2. *lac I*
3. *lac Y*
4. *lac A*

Question Number : 38 Question Id : 7621614118 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Zinc finger protein and helix-turn-helix proteins are

Options :

1. types of DNA binding proteins
2. involved in the control of translation
3. subunits of RNA polymerases
4. members of metal binding proteins

Question Number : 39 Question Id : 7621614119 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

GUG codes for valine in both prokaryotes and eukaryotes. But when GUG is initiation codon, this codes for

Options :

1. methionine
2. valine
3. leucine
4. tryptophan

Question Number : 40 Question Id : 7621614120 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

'Kozak' is associated with

Options :

1. transcription
2. DNA replication
3. translation
4. DNA repair

Question Number : 41 Question Id : 7621614121 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

5-bromouracil can cause a transitional mutation in the base sequence of DNA because it

Options :

1. bonds irreversibly with A
2. may resemble C and bond with G
3. is analog of T and pairs with A
4. resembles U and would not be incorporated into DNA

Question Number : 42 Question Id : 7621614122 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

With respect to wild type strain, a silent mutant will have

Options :

1. same genotype and phenotype
2. same genotype but different phenotype
3. different genotype but same phenotype
4. different genotype and different phenotype

Question Number : 43 Question Id : 7621614123 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Thymidine dimer formation during replication of DNA is caused due to

Options :

1. gamma radiation
2. UV radiation
3. X-rays
4. IR radiation

Question Number : 44 Question Id : 7621614124 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The overall process of converting extracellular signals into a cellular responses is termed as

Options :

1. signaling
2. modification of cellular metabolism
3. modification of gene expression
4. signal transduction

Question Number : 45 Question Id : 7621614125 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The usage of phenyl acetic acid in penicillin G production medium as a

Options :

1. nutrient
2. inducer
3. precursor
4. inhibitor

Question Number : 46 Question Id : 7621614126 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Restriction endonucleases hydrolyses polynucleotide from

Options :

1. only the 5' end
2. either terminal
3. an internal phosphodiester bond
4. a phosphodiester bond within a specific sequence

Question Number : 47 Question Id : 7621614127 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

DNA of a bacterium is not cleaved by its own restriction enzymes because the recognition DNA sequences are

Options :

1. methylated
2. deleted
3. not accessible to restriction enzymes
4. bound by inhibitory proteins

Question Number : 48 Question Id : 7621614128 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

pBR322 which is frequently used as a vector for cloning gene in *E.coli* is

Options :

1. an original bacterial plasmid
2. a modified bacterial plasmid
3. a viral genome
4. a transposon

Question Number : 49 Question Id : 7621614129 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

To be a cloning vector, a plasmid does not require

Options :

1. an origin of replication
2. an antibiotic resistance marker

3. a restriction site

4. to have a high copy number

Question Number : 50 Question Id : 7621614130 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For a plasmid to be a cloning vector, the minimum numbers of elements required are

Options :

1. origin of replication, multiple cloning site, selection marker

2. origin of replication, multiple cloning site, selection marker, promoter

3. origin of replication, multiple cloning site, selection marker, translation start site

4. origin of replication, multiple cloning site, promoter

Question Number : 51 Question Id : 7621614131 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A reporter gene

Options :

1. acts as repressor

2. allows gene expression to be readily measured

3. enhances mRNA stability

4. interacts with RNA polymerase

Question Number : 52 Question Id : 7621614132 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A gene cannot be isolated from a human genomic DNA library by functional complementation in *E. coli* because of

Options :

1. non functional promoter

2. the absence of splicing machinery

3. coupled transcription and translation

4. codon bias

Question Number : 53 Question Id : 7621614133 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Genetically engineered male sterile crop plants may be produced by inserting

Options :

1. BT toxin gene

2. barnase gene

3. lectin gene

4. chitinase gene

Question Number : 54 Question Id : 7621614134 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Agrobacterium tumefaciens is an effective vector for use with

Options :

1. corn
2. rice
3. wheat
4. soyabean

Question Number : 55 Question Id : 7621614135 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following is not useful to introduce genes into crop plants

Options :

1. Ti plasmid
2. particle gun
3. breeding
4. auxin

Question Number : 56 Question Id : 7621614136 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following methods would give you the most precise and accurate information about where and when a given gene is expressed?

Options :

1. *in situ* hybridization
2. protein microarray
3. DNA microarray
4. Reporte gene fusion including introns

Question Number : 57 Question Id : 7621614137 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the analysis of chromosomal DNA, using Southern blot technique, the following is five major sequential steps

Options :

1. autoradiography, blotting, cleavage, electrophoresis, hybridization
2. autoradiography, cleavage, blotting, electrophoresis, hybridization
3. cleavage, hybridization, blotting, electrophoresis, autoradiography
4. cleavage, electrophoresis, blotting, hybridization, autoradiography

Question Number : 58 Question Id : 7621614138 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

AISI grade 316 steel contains

Options :

1. 18% chromium, 10% nickel and 2.5% molybdenum
2. 3% chromium, 2% nickel and 2.5% molybdenum
3. 10% nickel and 2% molybdenum
4. 2% chromium and 2% nickel

Question Number : 59 Question Id : 7621614139 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the human ABO blood stream, the alleles A and B are dominant to O. What will be the number of different possible genotype?

Options :

1. 4
2. 8
3. 6
4. 12

Question Number : 60 Question Id : 7621614140 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When a man with hypertrichosis marries a normal woman, what percentage of their sons would be expected to have hairy ears?

Options :

1. 100
2. 50
3. 25
4. 0

Question Number : 61 Question Id : 7621614141 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a trisomic individual, the number of chromosomes is

Options :

1. 2n-1
2. 2n+1
3. 2n+2
4. 2n+3

Question Number : 62 Question Id : 7621614142 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the Monod equation $\mu = \mu_{max}. s/ (K_s + s)$, low K_s value means

Options :

1. A very high affinity for the microorganism
2. A very low affinity for the limiting substrate
3. A very high as well as low affinity for the limiting substrate
4. A very high affinity for the limiting substrate

Question Number : 63 Question Id : 7621614143 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A nutrient-limited self balancing culture system is

Options :

1. turbidostat
2. chemostat
3. biostat
4. nutrient culture

Question Number : 64 Question Id : 7621614144 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Hardy-Weinberg law describes

Options :

1. genotype frequencies of a population when evolutionary forces are not acting
2. how sexual reproduction would change the relative gene frequencies in a population
3. how mutations occur and balance each other
4. genotype frequencies of a population when evolutionary forces are acting

Question Number : 65 Question Id : 7621614145 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Totipotency refers to the ability of plant cells

Options :

1. To perform all the functions of development
2. To form callus cultures
3. To form suspension cultures
4. To form hairy root cultures

Question Number : 66 Question Id : 7621614146 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The units for volumetric mass-transfer coefficient is

Options :

1. gm^{-1}

2. dm^{-3}

3. hr^{-1}

4. $mmoles.dm^{-3}.hr^{-1}.gm^{-1}$

Question Number : 67 Question Id : 7621614147 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following method is the most desirable one for determining $K_L.a$ of a fermenter?

Options :

1. sulphite oxidation method

2. oxygen balance method

3. static method of gassing out

4. dynamic method of gassing out

Question Number : 68 Question Id : 7621614148 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cell walls of Gram positive bacteria contain two modified sugars, N-acetylglucosamine and N-acetylmuramic acid. They are covalently linked by

Options :

1. α-1, 4-glycosidic bond

2. β-1, 6-glycosidic bond

3. α-1, 6-glycosidic bond

4. β-1, 4-glycosidic bond

Question Number : 69 Question Id : 7621614149 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For using HAT medium as a selective agent for isolating hybrid cells, HGPRT deficient tumor cells are fused with the following mouse cells

Options :

1. TK deficient mouse cells ($TK^-$and, $HGPRT^+$)

2. TK^+ and $HGPRT^-$

3. TK^+ and $HGPRT^+$

4. red blood cells

Question Number : 70 Question Id : 7621614150 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following are true about capsules and slime layers except

Options :

1. they consist of secreted material lying outside of the bacterial cell wall

2. they can prevent desiccation of bacterial cell

3. they are required for bacteria to grow normally in the culture
4. they help bacteria resist phagocytosis by macrophages

Question Number : 71 Question Id : 7621614151 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A bacterial culture has an initial cell density of 0.5×10^3 cells/ml. Its generation time is 20 min. The cell density at the end of 100 min is

Options :

1. 1.5×10^3 cells/ml
2. 16×10^3 cells/ml
3. 1.6×10^3 cells/ml
4. 160×10^3 cells/ml

Question Number : 72 Question Id : 7621614152 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The group of bacteria that don't have cell wall is the

Options :

1. archaebacteria
2. mycobacteria
3. mycoplasma
4. actinobacteria

Question Number : 73 Question Id : 7621614153 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not true in relation to spirochetes?

Options :

1. they form spores
2. they do not easily stain in the laboratory
3. certain species cause human disease
4. they move freely even in viscous liquids also

Question Number : 74 Question Id : 7621614154 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Acquired immunity develops as a result of

Options :

1. Non specific response to an invading organism
2. Specific response to an invading organism
3. Exposure to toxins
4. Exposure to anti toxins

Question Number : 75 Question Id : 7621614155 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Naturally acquired passive immunity occurs

Options :

1. When antigens are transmitted from mother to child
2. When antibodies are transmitted from mother to child
3. When vaccines are injected
4. When toxoids are injected

Question Number : 76 Question Id : 7621614156 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Artificially acquired active immunity occurs

Options :

1. When a person suffers from an infectious disease
2. When a person is transfused with blood
3. When a person has been injected with a vaccine
4. When a person has been injected with antibodies

Question Number : 77 Question Id : 7621614157 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Actinomycetes

Options :

1. are Gram negative bacteria
2. bear spores
3. are intracellular obligatory parasites
4. lack peptidoglycan cell wall

Question Number : 78 Question Id : 7621614158 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following processes would not contribute to genetic variation within a bacterial population?

Options :

1. meiosis
2. transformation
3. transduction
4. mutation

Question Number : 79 Question Id : 7621614159 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an F^+ x F^- cross

Options :

1. the F^+ cell becomes an Hfr cell
2. the F^- cell becomes an Hfr cell
3. the F^+ cell becomes an F^- cell
4. the F^- cell becomes an F^+ cell

Question Number : 80 Question Id : 7621614160 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Interferons

Options :

1. activate B-cells to make virus specific antibodies
2. are Th2 cytokines
3. inhibit virus replication by infected cells
4. are virus proteins that interfere with activation of cytotoxic T-cells

Question Number : 81 Question Id : 7621614161 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The antigen processing cell in higher organisms is

Options :

1. T-cell
2. macrophage
3. megakaryocyte
4. eosinophil

Question Number : 82 Question Id : 7621614162 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following two organs are examples of secondary lymphoid organs

Options :

1. spleen and thymus
2. lymph nodes and thymus
3. bone marrow and GALT
4. spleen and GALT

Question Number : 83 Question Id : 7621614163 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statements is correct?

Options :

1. T-lymphocytes are conditioned by the bone marrow
2. B-lymphocytes are conditioned by thymus

3. B cells produce plasma and memory cells

4. T cells do not produce cytokines

Question Number : 84 Question Id : 7621614164 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Immunoglobulin in the serum of a new born will be mostly

Options :

1. IgG of maternal origin

2. IgG of endogenous origin

3. IgM of maternal origin

4. IgM of endogenous origin

Question Number : 85 Question Id : 7621614165 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In order to separate the antibodies in an antibody mixture, the laboratory technologist may use a procedure called

Options :

1. transfusion

2. electrophoresis

3. complement fixation

4. gene amplification

Question Number : 86 Question Id : 7621614166 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statements is correct in relation to secondary immune response?

Options :

1. It is not faster than a primary response

2. It is not long lasting than a primary response

3. It is not more likely to result in increased adaptive immunity than a primary response

4. It is not preceded by a longer lag period than a primary response

Question Number : 87 Question Id : 7621614167 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

At conclusion of the ELISA test,

Options :

1. radioactivity is produced

2. a clumping reaction is seen

3. cells undergo lysis

4. a color change takes place

Question Number : 88 Question Id : 7621614168 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The T-cell receptor can bind to antigenic peptides

Options :

1. only in the free form
2. only when loaded on to MHC molecules
3. only when bound to happen
4. only when bound by antibody

Question Number : 89 Question Id : 7621614169 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Live vaccine is

Options :

1. low dose of the infectious bacteria administered as prophylactic
2. a dose of bacterial strain in a modified form which retains immunogenicity but it is not pathogenic
3. a low dose of toxin that is produced by the bacterium
4. a sample of cells from a patient who recently recovered from the disease

Question Number : 90 Question Id : 7621614170 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The tuberculin skin test is an example of

Options :

1. type IV delayed hypersensitivity
2. allergy reaction
3. serum sickness
4. precipitation reaction

Question Number : 91 Question Id : 7621614171 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A woman who is heterozygous for both phenylketonuria mutation and for X –linked hemophilia mutation has a child with a phenotypically normal man who is also heterozygous for a phenylketonuria mutation. What is the probability that the child will be affected by both?

Options :

1. 1/8
2. 1/4
3. 1/16
4. 3/8

Question Number : 92 Question Id : 7621614172 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A virion is a

Options :

1. naked, infectious piece of RNA
2. complete, infectious virus particle
3. nucleic acid without a capsid
4. a naked, infectious piece of DNA

Question Number : 93 Question Id : 7621614173 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a multiple sequence alignment tool?

Options :

1. Clustal W
2. Chime
3. Dismol
4. PDB

Question Number : 94 Question Id : 7621614174 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

All are nucleotide sequence databases except

Options :

1. SwissProt
2. EMBL
3. DDBJ
4. GenBank

Question Number : 95 Question Id : 7621614175 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A unique identifier given to a biological polymer sequence when it is submitted to sequence database is called

Options :

1. deposit number
2. accession number
3. serial number
4. secret code

Question Number : 96 Question Id : 7621614176 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first bioinformatics database was created by

Options :

1. Richard Durbin
2. Michael J.Dunn
3. Dayhoff
4. Pearson

Question Number : 97 Question Id : 7621614177 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During malting, barley and other grains are broken down by

Options :

1. heating to 95^0C
2. lagering
3. amylases
4. yeast

Question Number : 98 Question Id : 7621614178 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Milk fermentation to produce cheese is done initially by inoculating with

Options :

1. *Saccharomyces cervisiae*
2. *Streptococcus lactis and Lactobacillus spp*
3. *Acetobacter and Gluconobacter*
4. *Lactobacillus bulgaricus and Sterptococcus thermophilus*

Question Number : 99 Question Id : 7621614179 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Secondary metabolites are

Options :

1. essential to microbe function
2. byproducts of metabolism that are not important to microbe function
3. products that require additional processing before they can be packaged
4. harvested during the exponential phase of growth

Question Number : 100 Question Id : 7621614180 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The production of substances in industrial microbiology occur in the sequence of

Options :

1. fermentation, downstream process, removal of waste, inoculation
2. inoculation, downstream process, fermentation, removal of waste
3. inoculation, fermentation, downstream process, removal of waste

4. removal of waste, inoculation, fermentation, downstream process

Question Number : 101 Question Id : 7621614181 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Yield coefficient represents

Options :

1. total biomass or product produced
2. conversion rate of a substrate into biomass or product
3. production of biomass of product
4. conversion efficiency of a substrate into product

Question Number : 102 Question Id : 7621614182 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

To produce plants that are homozygous for traits, the best choice is

Options :

1. cell suspension culture
2. callus culture
3. anther/pollen culture
4. protoplast culture

Question Number : 103 Question Id : 7621614183 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Most plant tissue cultures are initiated from

Options :

1. calluses
2. explants
3. protoplasts
4. anthers

Question Number : 104 Question Id : 7621614184 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is mismatched?

Options :

1. cell suspension culture – somatic cell embryogenesis
2. protoplast isolation - hybrids
3. homozygous plants – anther/pollen culture
4. callus culture – differentiated tissues regenerate

Question Number : 105 Question Id : 7621614185 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In energy based prediction of protein structure, the structure of the molecule under investigation is predicted by

Options :

1. The conformation with lowest potential energy
2. The conformation with highest potential energy
3. The conformation with lowest kinetic energy
4. The conformation with highest kinetic energy

Question Number : 106 Question Id : 7621614186 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the transfer of whole individual chromosomes, they are isolated from the cells at

Options :

1. metaphase
2. prophase
3. telophase
4. anaphase

Question Number : 107 Question Id : 7621614187 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of these established cell lines originate from a mouse embryo?

Options :

1. BHK
2. HeLa
3. BTK
4. 3T3

Question Number : 108 Question Id : 7621614188 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cos cell line is

Options :

1. cohesive end site of phage λ
2. cohesive initial site of phage λ
3. derivative of permissive CV-1 monkey cell line
4. derivative of non-permissive CV-1 monkey cell line

Question Number : 109 Question Id : 7621614189 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Retrovirus consists of

Options :

1. cDNA genome
2. single stranded RNA genome
3. double stranded DNA genome
4. single stranded DNA genome

Question Number : 110 Question Id : 7621614190 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

After performing Gram's staining, the culture observed as purple colored, rod shaped cells under microscope. What could be the probable chemical components present in the organism?

Options :

1. peptidoglycon and lipopolysaccharides
2. peptidoglycon and teichoic acid
3. peptidoglycon only
4. lipopolysaccharides only

Question Number : 111 Question Id : 7621614191 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following mutagen adds alkyl group to nitrogenous base leading to mutation?

Options :

1. nitrous acid
2. nitosoguanidine
3. 5-bromouracil
4. caffeine

Question Number : 112 Question Id : 7621614192 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Monoclonal antibodies have all of the following properties except

Options :

1. They can be combine toxins and used therapeutically to destroy cancer cells
2. They can be produced in large quantities
3. They consist of antibodies that react with any type antigen
4. They can be used to suppress the T-cell activity and prevent transplant rejection.

Question Number : 113 Question Id : 7621614193 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Obligate anaerobes means bacteria

Options :

1. killed in absence of oxygen
2. requires free oxygen for their respiration

3. killed by free CO_2

4. killed by free oxygen

Question Number : 114 Question Id : 7621614194 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Dual or multiple fermentation is involved in the production of the following product

Options :

1. Acetone

2. L - glutamic acid

3. L – lysine

4. alcohol

Question Number : 115 Question Id : 7621614195 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following properties is not considered in protein separation technique?

Options :

1. Viscosity

2. Solubility

3. Charge

4. Specific binding affinity

Question Number : 116 Question Id : 7621614196 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Commercial production of citric acid is carried out by the microbial culture of

Options :

1. *Rhizopus nigricans*

2. *Candida utilis*

3. *Fusarium moniliformi*

4. *Aspergillus niger*

Question Number : 117 Question Id : 7621614197 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of hydrogen bonds present between cytosine and guanine in a DNA molecule is

Options :

1. one

2. two

3. three

4. four

Question Number : 118 Question Id : 7621614198 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The most common microbiological contaminant of air is

Options :

1. spores from bacteria
2. fungal hyphae
3. gram positive bacteria
4. spores from molds

Question Number : 119 Question Id : 7621614199 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How many chromosomes are found in a typical bacterial cell

Options :

1. 1
2. 2
3. 16
4. 23

Question Number : 120 Question Id : 7621614200 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Catabolite repression is regulated by the concentration of

Options :

1. lactose
2. glucose
3. amino acids
4. active ribosomes