Question Paper Preview

Question Paper Name: Bio Technology 11th May 2017 Shift 1
Subject Name: Bio Technology
Duration: 120

Bio Technology

Display Number Panel: Yes
Group All Questions: No

Question Number : 1 Question Id : 871112121 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Let $A = \begin{pmatrix} 8 & -4 \\ 2 & 2 \end{pmatrix}$. The sum of the eigen values of A is

Options :

1. 10
2. 8
3. −28
4. 2

Question Number : 2 Question Id : 871112122 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\lambda = a + ib$ is an eigenvalue of an unitary matrix, then

Options :

1. $b = 0$
2. $a = 0$
3. $|a + ib| = 1$
4. $ab \neq 0$

Question Number : 3 Question Id : 871112123 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The series $1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \ldots$. converges

Options :

1. if $|x| < 1$

2. if $|x| > 1$

3. if $|x| = 1$

4. for all real x

Question Number : 4 Question Id : 871112124 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = |\sin x|$ on $(-\pi, \pi)$, then its Fourier coefficient $a_0 =$

Options :

1. $\frac{2}{\pi}$

2. 2π

3. $\frac{4}{\pi}$

4. 4π

Question Number : 5 Question Id : 871112125 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The orthogonal trajectories of the family of parabolas $y^2 = 4a\,(x+a)$ is

Options :

1. $x^2 = 4ay$

2. Self orthogonal

3. $x^2 + y^2 = a^2$

4. $2x^2 + y^2 = c$

Question Number : 6 Question Id : 871112126 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\frac{1}{D-\alpha} X =$

Options :

1. $e^{\alpha x} \int X e^{-\alpha x} dx$

2. $e^{-\alpha x} \int X e^{\alpha x} dx$

3. $e^{-\alpha x} \int X e^{-\alpha x} dx$

4. $e^{\alpha x} \int X e^{\alpha x} dx$

Question Number : 7 Question Id : 871112127 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If X is a Poisson variable such that $P(X=2)=9P(X=4)+90P(X=6)$ then the value of mean is

Options :

1. 0
2. 1
3. 2
4. 3

Question Number : 8 Question Id : 871112128 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the mean of a Poisson variate X is 1, then P(X = 1) is

Options :

1. e^{-2}
2. e^{-1}
3. e^{2}
4. 1

Question Number : 9 Question Id : 871112129 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

By Euler method the approximate solution for the differential equation $\frac{dy}{dx}=x+y^2, y(0)=1$ at the point $x=0.1$ is

Options :

1. 1.1
2. 1.11
3. 0.11
4. 2.1

Question Number : 10 Question Id : 871112130 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following methods is slow in convergence?

Options :

1. Newton-Raphson
2. Bisection
3. Iteration

4. Regula falsi

Question Number : 11 Question Id : 871112131 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The structure that determines to a bacteria as gram positive or gram negative is

Options :

1. Centriole

2. Cytoplasm

3. Plasmid

4. Cell wall

Question Number : 12 Question Id : 871112132 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What type secretion apparatus is involved in conjugative DNA transfer in gram negative bacteria?

Options :

1. Type I

2. Type IV

3. Type III

4. Type II

Question Number : 13 Question Id : 871112133 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the passive diffusion, solute molecules cross the cell membrane as a result of

Options :

1. Concentration difference

2. Pressure difference

3. Ionic difference

4. Temperature difference

Question Number : 14 Question Id : 871112134 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum resolving power of compound light microscope is

Options :

1. 0.2 micron

2. 0.2 cm

3. 0.2 Angstrom

4. 0.2 nm

Question Number : 15 Question Id : 871112135 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cosmid is a plasmid which contains

Options :

1. a minimum of 250 bp of λ DNA that includes cos sites

2. a minimum of 250 bp M13 DNA that includes cos sites

3. a minimum of 100 bp T4 phage DNA that includes cos sites

4. a minimum of 500 bp M13 DNA that includes cos sites

Question Number : 16 Question Id : 871112136 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Colchicine is a mitotic inhibitor, which will

Options :

1. prevent microtubule polymerization

2. prevent microtubule de-polymerisation

3. stop the functioning of centriole

4. prevent attachment of spindle fibre with kinetochore

Question Number : 17 Question Id : 871112137 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A process by which the genetic information of organism is changed:

Options :

1. Mutation

2. DNA replication

3. Mutagenesis

4. Gene resistance

Question Number : 18 Question Id : 871112138 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is MOST likely to be due to bacterial conjunction?

Options :

1. A strain of Corynebacterium diphtheria produces a toxin encoded by a prophage

2. A strain of Pseudomonas aeruginosa produces β - lactamase encoded by a plasmid similar to a plasmid of another gram-negative organism

3. A gene encoding resistance to gentamycin in the Escherichia coli chromosome appears in the genome of a bacteriophage that has infected E. coli

4. An encapsulated strain of Streptococcus pneumonia acquires the gene for capsule formation from an extract of DNA from another encapsulated strain

Question Number : 19 Question Id : 871112139 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Thirty two colonies grew in nutrient agar from 0.1 ml of sample withdrawn from a solution diluted to 10^{-3} in a standard plate count procedure. How many cells were in the original sample?

Options :

1. 320

2. 3,20,000

3. 3,200,000

4. 3,200

Question Number : 20 Question Id : 871112140 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

ABC Transporter has the protein motif that binds

Options :

1. ATP

2. ADP

3. GTP

4. GDP

Question Number : 21 Question Id : 871112141 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

FtsZ is required for

Options :

1. Cell division

2. Transcription activation

3. Bacterial growth

4. Cell structure

Question Number : 22 Question Id : 871112142 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The reactions leading to the formation of amino acids from the TCA cycle intermediates are

Options :

1. carboxylation
2. isomerization
3. transamination
4. decarboxylation

Question Number : 23 Question Id : 871112143 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How many CO_2 molecules are exhaled for each O_2 molecules utilized in cellular respiration?

Options :

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

Question Number : 24 Question Id : 871112144 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The method of Alkaline hydrolysis of a triglyceride is termed as

Options :

1. Saponification
2. Esterification
3. Hydrogenation
4. Dehydration

Question Number : 25 Question Id : 871112145 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____ is the order of the reaction for which rates are independent of substrate concentration.

Options :

1. Three
2. Two

3. One

4. Zero

Question Number : 26 Question Id : 871112146 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statements about the salvage pathway for the synthesis of purine nucleotides is correct?

Options :

1. The salvage pathway for the synthesis of purine nucleotides is not energetically advantageous.

2. The salvage pathway for the synthesis of purine nucleotides is energetically advantageous.

3. Salvaged purines used in the salvage pathway are mainly from the diet.

4. The nucleotides produced from the salvage pathway do not decrease the de novo pathway.

Question Number : 27 Question Id : 871112147 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The radioactive molecule used in the analysis of proteins is

Options :

1. P^{32} uracil

2. P^{32} Threonine

3. S^{35} Methionine

4. P^{32} ribose

Question Number : 28 Question Id : 871112148 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the first step of glycolysis, the enzyme hexokinase uses ATP to transfer a phosphate to glucose to form glucose -6-phosphate. The product continues to be oxidized forming pyruvate in glycolysis and is a precursor to acetyl-CoA for the citric acid cycle. Suppose that a cell has only glucose available for energy and that the activity of hexokinase is suddenly stopped in this cell. Which of the following conditions will occur?

Options :

1. The cell will continue to produce energy from mitochondrial electron transport

2. The cell will continue to produce ATP using the citric acid cycle.

3. The cell will ultimately be unable to produce ATP

4. The cell will be forced to switch to fermentation to produce ATP.

Question Number : 29 Question Id : 871112149 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Pick the odd one from the following

Options :

1. Deoxyribose

2. Rhamnose

3. Fucose

4. Altrose

Question Number : 30 Question Id : 871112150 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Taurine is the major constituent of bile, is derived from_____

Options :

1. Cysteine

2. Methionine

3. Tryptophan

4. Lysine

Question Number : 31 Question Id : 871112151 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When a single gene influences more than one trait, it is called

Options :

1. Epistasis

2. Pleiotropy

3. Pseudodominance

4. Additive effect

Question Number : 32 Question Id : 871112152 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the DNA content of a diploid cell in the G1 phase of the cell cycle is X, then the DNA content of the same cell at metaphase of meiosis I would be

Options :

1. X

2. 2X

3. 0.5X

4. 0.25X

Question Number : 33 Question Id : 871112153 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Complementary genes in sweet pea was first discovered by

Options :

1. Mendel and Morgan

2. Bateson and Correns

3. Bateson and Punnet

4. Hugo de Vries and Punnet

Question Number : 34 Question Id : 871112154 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the inheritance of the disease is only possible through the female to the next generation, the possible inheritance is

Options :

1. Organellar

2. Sex –linked

3. Autosomal

4. Mendalian

Question Number : 35 Question Id : 871112155 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two diseases Prader-Willi syndrome (PWS) and Angelman Syndrome (AS) are caused by deletion of 15q11- q13. But PWS is always paternally inherited and AS is always maternally inherited. This phenomenon of non mendelian inheritance is termed as

Options :

1. Maternal inheritance

2. Paternal inheritance

3. Extrachromosomal inheritance

4. Genomic imprinting

Question Number : 36 Question Id : 871112156 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Peptidyl trasferase involved in peptide bond formation occur in

Options :

1. 3’ end of the rRNA

2. Small submit of the ribosome

3. Large submit of the ribosome

4. 3’ end of the tRNA

Question Number : 37 Question Id : 871112157 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

No of mitotic divisions required to produce 256 cells from a single cell is

Options :

1. 8

2. 128

3. 64

4. 256

Question Number : 38 Question Id : 871112158 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cyclin dependent kinases which control progression through cell cycle checkpoints are fully activated by which of the following

Options :

1. Binding to cyclins

2. Phosphorylation by Cdk activating protein kinase

3. Binding to cyclin, plus phosphorylation by a Cdk activating protein kinase

4. Phosphorylation by a tyrosine kinase

Question Number : 39 Question Id : 871112159 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If, circular and open circular DNAs were analyzed in a single agarose gel electrophoresis then

Options :

1. Both DNAs migrates at same speed

2. Circular DNA migrates faster

3. Open circular DNA migrates faster

4. Open circular DNA gets supercoiled and migrate faster

Question Number : 40 Question Id : 871112160 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The part of tRNA that binds to the mRNA is

Options :

1. Anticodon
2. 5' end of tRNA
3. 3' end of tRNA
4. rRNA

Question Number : 41 Question Id : 871112161 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The principle of Chromatography is based on the

Options :

1. Different rate of movement of the solute in a column
2. Separation of one solute from other constituents by being captured on the adsorbent
3. Different rate of movement of the solvent in the column
4. Density of the particles

Question Number : 42 Question Id : 871112162 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Population doubling time, t_d can be expressed as (where μ is the specific growth rate.)

Options :

1. $\log 2/\mu$
2. $\ln 2/\mu$
3. $\ln 2/ D$
4. $\mu/\log 2$

Question Number : 43 Question Id : 871112163 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following items could be sterilized by dry heat sterilization?

Options :

1. Glass pipets
2. Rubber gloves
3. Plastic petri dishes
4. Plastic I V bags

Question Number : 44 Question Id : 871112164 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____ microbe can be selected for Citric acid production.

Options :

1. Trichoderma
2. Aspergillus
3. Yeast
4. Clostridium

Question Number : 45 Question Id : 871112165 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An example for antifoaming agent is

Options :

1. Sodium lauryl sulphate
2. Sodium glutamate
3. Silicon oil
4. Sodium bicarbonate

Question Number : 46 Question Id : 871112166 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For scaling-up of bioreactors, which of the following parameters is assumed constant?

Options :

1. Air flow
2. Diameter of the impeller
3. Speed of the agitator
4. Volumetric mass transfer coefficient

Question Number : 47 Question Id : 871112167 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Power number is expressed as

Options :

1. $\frac{P}{N^3 D_i^5 \rho}$
2. $\frac{P}{N^2 D_i^2 \rho}$

3. $\frac{P}{N^3 D_i^3 \rho}$

4. $\frac{P}{N^2 D_i^3 \rho}$

Question Number : 48 Question Id : 871112168 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Dilatant fluids are otherwise called as

Options :

1. Shear thinning fluids

2. Shear thickening fluids

3. Bingham plastics

4. Newtonian fluids

Question Number : 49 Question Id : 871112169 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____ columns are used for liquid dispersion in a continuous gas phase.

Options :

1. Fluidized

2. Packed

3. Pulsed

4. Bubble cap

Question Number : 50 Question Id : 871112170 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not the physical method for cell rupture?

Options :

1. Milling

2. Homogenisation

3. Ultrasonication

4. Enzymatic digestion

Question Number : 51 Question Id : 871112171 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to Surface renewal theory, mass transfer coefficient is

Options :

1. directly proportional to the square root of the molecular diffusivity

2. inversely proportional to the square root of the molecular diffusivity

3. directly proportional the cube root of the molecular diffusivity

4. inversely proportional to the cube root of the molecular diffusivity

Question Number : 52 Question Id : 871112172 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The diameters of a large and a small vessel are 1.62 m and 16.2 cm respectively. The vessels are geometrically similar and operated under similar volumetric agitated power input. The mixing time in the small vessel was 15 seconds. The mixing time (in seconds) in the large vessel is

Options :

1. 15

2. 61

3. 30

4. 122

Question Number : 53 Question Id : 871112173 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is the major component of biogas?

Options :

1. Oxygen

2. Carbon dioxide

3. Hydrogen sulphide

4. Methane

Question Number : 54 Question Id : 871112174 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

β-carotene is also known as

Options :

1. Vitamin A

2. Vitamin B

3. Vitamin C

4. Provitamin A

Question Number : 55 Question Id : 871112175 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which method is suitable for recovery of an industrial enzyme secreted into the growth media by the bacteria?

Options :

1. Ultrafiltration
2. Sonication
3. French Press
4. Lysozyme treatment

Question Number : 56 Question Id : 871112176 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Number of ATP molecules produced from each glucose molecule in an alcoholic fermentation is

Options :

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

Question Number : 57 Question Id : 871112177 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Citric acid is used as

Options :

1. an acidulant
2. a pickling agent
3. a preservative
4. an antioxidant

Question Number : 58 Question Id : 871112178 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During which phase, growth rate is independent of nutrient concentration?

Options :

1. Lag phase
2. Log phase
3. Stationary Phase

4. Death phase

Question Number : 59 Question Id : 871112179 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The deviation from ideal plug flow due to axial mixing can be described by the

Options :

1. Dispersion model

2. Langmuir model

3. Friedlander model

4. Pasceri model

Question Number : 60 Question Id : 871112180 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Mass transfer rate between two fluid phases does not necessarily depend on the _____ of the two phases

Options :

1. Chemical properties

2. Interfacial area

3. Degree of turbulence

4. Physical properties

Question Number : 61 Question Id : 871112181 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Mobile phase in chromatography can be

Options :

1. gas or liquid

2. solid or liquid

3. only solid

4. only gas

Question Number : 62 Question Id : 871112182 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a continuous reactor, the medium contains 40 $g.L^{-1}$ of maltose and the medium flow rate is 10 litres per hour and the effluent contains 20 $g.L^{-1}$ of lactate. What is the productivity of lactate production from this reactor?

Options :

1. 50 g maltose.L^{-1}

2. 50 g lactate.L^{-1}

3. 200 g maltose.L^{-1}

4. 200 g lactate.L^{-1}

Question Number : 63 Question Id : 871112183 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Immobilized invertase enzyme finds use in the commercial production of

Options :

1. Lactose free milk

2. Glucose from starch

3. Glucose from cellulose

4. High fructose syrups

Question Number : 64 Question Id : 871112184 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A chemostat is operated at a dilution rate of 0.6 h^{-1}. At steady state, the biomass concentration in the exit stream was found to be 30 g L^{-1}. The biomass productivity (g $L^{-1}h^{-1}$) after 3 hours of steady state operation will be

Options :

1. 1.8

2. 18

3. 3.36

4. 4.180

Question Number : 65 Question Id : 871112185 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is used to calculate mass of substrate in the reactor?

Options :

1. Flow rate × substrate concentration in the reactor

2. Volume of reactor × substrate concentration in reactor

3. Flow rate × mass of reactor

4. Volume of reactor × Flow rate

Question Number : 66 Question Id : 871112186 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The process of extracting metals from ores is called

Options :

1. Bioleacing
2. Biofiltration
3. Bioextraction
4. Microbial extraction

Question Number : 67 Question Id : 871112187 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A batch bioreactor is to be scaled up from 10 to 10,000 liters. The diameter of the large bioreactor is 10 times that of the small bioreactor. The agitator speed in the small bioreactor is 450 rpm. Determine the agitator speed (rpm) of the large bioreactor with same impeller tip speed as that of the small bioreactor.

Options :

1. 4.5
2. 45
3. 3.450
4. 4.90

Question Number : 68 Question Id : 871112188 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The difference between osmosis and reverse osmosis process is

Options :

1. reverse osmosis used for desalination
2. pressure is applied in reverse osmosis
3. water will migrate from the weaker solution to the stronger solution
4. semipermeable membrane is used in reverse osmosis

Question Number : 69 Question Id : 871112189 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A batch bioreactor is characterized by

Options :

1. constant residence time.
2. variation in extent of reaction and properties of the reaction mixture with time.
3. variation in reactor volume.

4. very low conversion.

Question Number : 70 Question Id : 871112190 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following provides maximum contact surface for a liquid-vapour system?

Options :

1. Packed tower

2. Sieve plate column

3. Wetted wall column

4. Bubble-cap plate column

Question Number : 71 Question Id : 871112191 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An anchorage dependent culture having 3×10^6 cervical cancer cells was distributed into three identical flasks. The doubling time for these cells is 24 h. After 24 h, the cells from all the three flasks were pooled and dispensed equally into each well of three 6 well plates. The number of cells in each well will be

Options :

1. 33.3×10^4

2. 600×10^4

3. 20×10^4

4. 5×10^4

Question Number : 72 Question Id : 871112192 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first monoclonal antibody approved for therapy is used for which of the following?

Options :

1. Breast cancer

2. Allograft rejection

3. Colon cancer

4. Rheumatoid arthritis

Question Number : 73 Question Id : 871112193 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Match the following

A. CHO cell lines	i.	can grow in suspension culture
B. HeLa cells	ii.	have a limited live span
C. Lymphocytes	iii.	have an infinite life span
D. Primary cells	iv.	need attachment factors

Options :

1. A-ii, B-iii, C-iv, D-i
2. A-iv, B-iii, C-i, D-ii
3. A-ii, B-i, C-iv, D-iii
4. A-i, B-ii, C-iii, D-iv

Question Number : 74 Question Id : 871112194 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

CRISPR-Cas system is used for

Options :

1. Antibody Engineering
2. Protein engineering
3. Site directed mutagenesis
4. Gene Editing

Question Number : 75 Question Id : 871112195 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Antibody labelled with Horseradish peroxidase is used for

Options :

1. colorimetric detection
2. fluorescence detection
3. detection under UV
4. luminescence detection

Question Number : 76 Question Id : 871112196 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What could be used to increase the stability and purification of eukaryotic protein from bacterial cell?

Options :

1. A peptide tag

2. A protein fusion

3. A protease site

4. A signal sequence

Question Number : 77 Question Id : 871112197 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is the mammalian expression vector?

Options :

1. pET-22b

2. pET-28a

3. pCI-neo

4. pCyPet-His

Question Number : 78 Question Id : 871112198 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Chemical used for gene transfer methods includes

Options :

1. poly ethylene glycol

2. SDS

3. ATP

4. H_2O

Question Number : 79 Question Id : 871112199 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following chemical enhances vir gene expression?

Options :

1. cyaniding

2. acetosyringone

3. glutenin

4. dextran

Question Number : 80 Question Id : 871112200 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which organelle is responsible for production of lipids, membrane phospholipids, and calcium concentration regulation?

Options :

1. Golgi complex
2. Smooth endoplasmic reticulum
3. Rough endoplasmic reticulum
4. Nucleus

Question Number : 81 Question Id : 871112201 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____is the preferred medium for anther culture.

Options :

1. MS medium
2. Nitsch's medium
3. Agar medium
4. KS medium

Question Number : 82 Question Id : 871112202 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The method widely used for transforming invitroanimal cell cultures that uses lipid vescicles or liposomes

Options :

1. lipotransformation
2. lipofection
3. liposome mediated transformation
4. lipid mediated DNA transfer

Question Number : 83 Question Id : 871112203 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In animal cell cultures, the addition of serum to media is essential for providing

Options :

1. Growth factors
2. Nucleotide for DNA synthesis
3. Amino acid for proteins
4. ATP synthesis

Question Number : 84 Question Id : 871112204 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Embryonic stem cells are collected from _____.

Options :

1. trophoblast
2. blastocoels
3. gastrocoel
4. inner cell mass

Question Number : 85 Question Id : 871112205 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following are produced by animal cell in culture and help the cells adhere to the culture dish except

Options :

1. Collagen
2. Glycoprotein
3. Hyaluronic acid
4. phospholipase A

Question Number : 86 Question Id : 871112206 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the effect of excess accumulation of metabolite products (lactate and ammonium) on cells?

Options :

1. They act as growth promoters
2. They act as growth inhibitors
3. They have no effect on cells
4. Lactate helps in the growth while ammonium inhibits the growth

Question Number : 87 Question Id : 871112207 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Aminopterin in HAT medium

Options :

1. Provides nutrients to hybridomas
2. Blocks salvage pathway
3. Blocks de novo pathway
4. Blocks both salvage and de novo pathways

Question Number : 88 Question Id : 871112208 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The finite cell lines normally undergo _____ doubling.

Options :

1. 20-100
2. 75-150
3. 100-175
4. 200-250

Question Number : 89 Question Id : 871112209 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is the best method to identify other human cells contaminated with HeLa cell line?

Options :

1. DMSO
2. Glycerol
3. PEG
4. Methanol

Question Number : 90 Question Id : 871112210 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In plant tissue culture, the callus tissues can be regenerated into complete plantlets primarily altering the concentration of

Options :

1. Hormones
2. Lipids
3. Vitamins
4. Sugars

Question Number : 91 Question Id : 871112211 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Proteasome is bound by which of the following LMP proteins, before processing the endogenous antigen?

Options :

1. LMP-1 & LMP-5 & LMP-9
2. LMP-2 & LMP-7 & LMP-10
3. LMP-3 & LMP-6 & LMP-9

4. LMP-4 & LMP-9 & LMP-10

Question Number : 92 Question Id : 871112212 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Penicillin allergy is an example of

Options :

1. Type-I hypersensitivity
2. Type-II hypersensitivity
3. Type-III hypersensitivity
4. Type-IV hypersensitivity

Question Number : 93 Question Id : 871112213 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following substance does not protect the body surfaces?

Options :

1. Skin
2. Mucus
3. Gastric acid
4. Salivary amylase

Question Number : 94 Question Id : 871112214 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

High titers of antinuclear antibodies are indicative of

Options :

1. Parasitic infections
2. Fungal diseases
3. Autoimmune diseases
4. Bacterial diseases

Question Number : 95 Question Id : 871112215 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a characteristic symptom of early stages of local inflammation?

Options :

1. Fever
2. Anaphylactic shock
3. Release of histamine

4. Attack by cytotoxic T cells

Question Number : 96 Question Id : 871112216 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Identify the commonly used tools from the following for multiple sequence alignment.

Options :

1. Clustal W
2. CATH
3. SCOP
4. NCBI

Question Number : 97 Question Id : 871112217 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The classical and alternative pathways meet at complement component _____

Options :

1. C3
2. C4
3. C4b
4. C5

Question Number : 98 Question Id : 871112218 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following does NOT participate in the formation of antigen-antibody complexes?

Options :

1. Hydrophobic bonds
2. Covalent bonds
3. Electrostatic interactions
4. Hydrogen Bonds

Question Number : 99 Question Id : 871112219 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Match the following

(a) Isotype switching	(i) Synthesis of chains with either VHI or VH
(b) MRNA splicing	(ii) Synthesis of serum IgG or serum IgA
(c) somatic hypermutation	(iii) Synthesis of membrane IgM or membrane IgD
(d) somatic recombination	(iv) Synthesis of serum IgG with higher affinity for Ag than previously

Options :

1. a-ii, b-iv, c-i, d-iii

2. a-iii, b-ii, c-iv, d-i

3. a-ii, b-iii, c-iv, d-i

4. a-iv, b-iii, c-ii, d-i

Question Number : 100 Question Id : 871112220 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The target organ for 'measles' is

Options :

1. Kidney

2. Liver

3. Lungs

4. Brain

Question Number : 101 Question Id : 871112221 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The DNA molecule that has the ability to replicate in an appropriate host cell, and to which the desired gene are integrated for cloning, is termed as

Options :

1. Plasmid

2. Linker

3. Vector

4. Adapter

Question Number : 102 Question Id : 871112222 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

RACE is used for

Options :

1. production of a cDNA copy of the RNA sequence

2. production of a RNA copy of the DNA sequence

3. production of a RNA copy of the cDNA sequence

4. production of a DNA copy of the cDNA sequence

Question Number : 103 Question Id : 871112223 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Enzyme S1 nuclease degrades

(i) RNA (ii) RNA-DNA hybrids (iii) dsDNA (iv) ssDNA

Options :

1. Only (iii)
2. (i) and (iv)
3. (i), (ii) and (iv)
4. (i) and (iii)

Question Number : 104 Question Id : 871112224 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If anyone want to express functional protein of a human gene, one should clone

Options :

1. cDNA
2. genomic DNA
3. RNA
4. RNA -DNA hybrid

Question Number : 105 Question Id : 871112225 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is the correct pair of primer sequence (5-nucleotides long) required to amplify the 5'-GATTACTAGACGTATGATTGCCG-3' DNA sequence by PCR?

Options :

1. 3'- GATTA-5' & 3'-TTGCC-5'
2. 5'- GATTA-3' & 5'-TTGCC-3'
3. 5'-GATTA-3' & 5'-CGGCA-3'
4. 5'-GATTA-3' & 3'-CGGCA-5'

Question Number : 106 Question Id : 871112226 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which enzyme is used to make a sticky end DNA molecule?

Options :

1. DNA ligase
2. Terminal deoxynucleotidy transferase
3. Poly nucleotide kinase
4. Alkaline

Question Number : 107 Question Id : 871112227 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Promoter can be identified by

Options :

1. PCR
2. Foot printing
3. Finger printing
4. DNA library screening

Question Number : 108 Question Id : 871112228 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one is the odd enzyme for a DNA library construction?

Options :

1. RNase H
2. RNase
3. Ligase
4. Reverse transcriptase

Question Number : 109 Question Id : 871112229 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The common gene delivery system for in vivo gene therapy is

Options :

1. adeno viral vectors
2. micro injection
3. lipofection
4. electroporation

Question Number : 110 Question Id : 871112230 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The disease that can be cured with gene therapy is

Options :

1. Diabetes
2. Jaundice
3. Cystic fibrosis
4. Hypertension

Question Number : 111 Question Id : 871112231 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to Human Genome Project, genetic similarity between all human population is

Options :

1. 90%
2. 95%
3. 99.9%
4. 99.5%

Question Number : 112 Question Id : 871112232 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A numerical value used to represent the important/significant node in a phylogenetic tree is called

Options :

1. Clade number
2. Bootstrap value
3. Branch length
4. Taxon number

Question Number : 113 Question Id : 871112233 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Principle of Parsimony method of phylogenetic tree is

Options :

1. Genetic distances between operational taxonomic units
2. Maximum number of informative sites
3. Similarity score
4. Minimum number of mutations expected to convert one sequence in to another

Question Number : 114 Question Id : 871112234 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

E value in Blast Database search refer to

Options :

1. Error value
2. Estimated value
3. Expect value
4. Entered value

Question Number : 115 Question Id : 871112235 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The comprehensive database used for the study of human genetics and molecular biology is

Options :

1. PDB
2. STAG
3. OMIM
4. PSD

Question Number : 116 Question Id : 871112236 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A phylogenetic tree, in which one of the nodes is stipulated to be the root is called

Options :

1. Rooted tree
2. Unrooted tree
3. Perfect tree
4. Cladistics tree

Question Number : 117 Question Id : 871112237 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Reverse complement of the sequence 5' ATGCATGC 3'

Options :

1. 5' CGTACGTA 3'
2. 5' CGUACGUA 3'
3. 5' GCATGCAT 3'
4. 5' GCAUGCAU 3'

Question Number : 118 Question Id : 871112238 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Watershed algorithm is used for

Options :

1. Gel image processing
2. Protein spot detection
3. Data analysis
4. Gel matching

Question Number : 119 Question Id : 871112239 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is data retrieving tool?

Options :

1. ENTREZ
2. EMBL
3. PHD
4. NCB

Question Number : 120 Question Id : 871112240 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Computational prediction of 3D structure of protein which has no comparable sequence similarity with available template is

Options :

1. Comparative protein modelling
2. Ab-initio modelling
3. Homology modelling
4. Fold recognition