aglasem.com

FOR JNUEE EXAM PREPARATION

JNUEE 2022 Question Paper · Ph.D Biotechnology

EXAM	YEAR	TYPE	SUBJECT
JNUEE	2022	Question Paper	Ph.D Biotechnology

राष्ट्रीय परीक्षा एजेंसी
National Testing Agency
Excellence in Assessment

Test Date : 08 Dec 2022 **Test Slot : Slot 2**

Subject : SBTH-Biotechnology

Sl. No.1
QBID:9042001

Which is not an epigenetic process
1. miRNA regulation of gene expression
2. CpG DNA methylation
3. Histone modifications
4. A point mutation in a gene

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11201]
2[Option ID=11202]
3[Option ID=11203]
4[Option ID=11204]

Sl. No.2
QBID:9042002

Which method does not use antibodies
1. Next generation sequencing
2. ChiP-sequencing
3. Immunohistochemistry
4. Western blotting

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11205]
2[Option ID=11206]
3[Option ID=11207]
4[Option ID=11208]

Sl. No.3
QBID:9042003

Microscopic analysis of stained chromosomes is related to
1. radiation hybrid mapping
2. sequence mapping
3. RFLP mapping
4. Cytogenetic mapping

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11209]
2[Option ID=11210]
3[Option ID=11211]
4[Option ID=11212]

Sl. No.4
QBID:9042004

Loss of heterozygosity of the tumor suppressor genes by gene conversion mediated through

1. RNA polymerase
2. DNA polymerase
3. Histone deacetylases
4. Histone acetylases

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11213]
2[Option ID=11214]
3[Option ID=11215]
4[Option ID=11216]

Sl. No.5
QBID:9042005

Reverse brainstorming is a group method for obtaining new ideas focusing on the

1. Negatives
2. Positives
3. Balancing
4. Discussion

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11217]
2[Option ID=11218]
3[Option ID=11219]
4[Option ID=11220]

Sl. No.6
QBID:9042006

Limited partners are partner in an agreement that usually supplies money and has

1. More responsibilities
2. Few responsibilities
3. Joint responsibilities
4. No responsibilities

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11221]
2[Option ID=11222]
3[Option ID=11223]
4[Option ID=11224]

Sl. No.7
QBID:9042007

Micromarketing is tailoring product and marketing program to the needs and want of

1. Specific individual and local customer segment
2. Total market
3. Self
4. Specific shop

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11225]
2[Option ID=11226]
3[Option ID=11227]
4[Option ID=11228]

Sl. No.8
QBID:9042008

What is proteomics?

1. The study of how a single gene activates many proteins
2. The study of the full protein set in a genome or sample
3. The totality of functional possibilities of a single protein
4. The study of how a amino acids are ordered in a protein

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11229]
2[Option ID=11230]
3[Option ID=11231]
4[Option ID=11232]

Sl. No.9
QBID:9042009

Phylogenetic tree is based on the .....observed within a single homologous gene

1. Convergence
2. Divergence
3. Domains
4. Number of characters

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11233]
2[Option ID=11234]
3[Option ID=11235]
4[Option ID=11236]

Sl. No.10
QBID:9042010

Protooncogenes can be converted to oncogene by
1. Point mutation in gene
2. Gene amplification
3. Both 1 and 2 are correct
4. Gene deletion

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11237]
2[Option ID=11238]
3[Option ID=11239]
4[Option ID=11240]

Sl. No.11
QBID:9042011

Initial Human Genome Project completed in 2003 used which method of DNA sequencing
1. Next Generation DNA sequencing
2. Pyro-sequencing
3. Sanger DNA sequencing
4. Pyro and Sangar sequencing both

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11241]
2[Option ID=11242]
3[Option ID=11243]
4[Option ID=11244]

Sl. No.12
QBID:9042012

One of the empirical methods of determining mode is
1. Mode = 2 Median – 3 Mean
2. Mode = 2 Median + 3 Mean
3. Mode = 3 Median – 2 Mean
4. Mode = 3 Median + 2 Mean

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11245]
2[Option ID=11246]
3[Option ID=11247]
4[Option ID=11248]

Sl. No.13
QBID:9042013

In a symmetrical distribution

1. Mean = Median ≠ Mode
2. Mean ≠ Median = Mode
3. Mean = Median = Mode
4. Mean ≠ Median ≠ Mode

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11249]
2[Option ID=11250]
3[Option ID=11251]
4[Option ID=11252]

Sl. No.14
QBID:9042014

Much of the development in the theory of the probability is associated with the name of

1. Fischer
2. Bayes
3. Karl Pearson
4. Gosset

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11253]
2[Option ID=11254]
3[Option ID=11255]
4[Option ID=11256]

Sl. No.15
QBID:9042015

99% fiducial limits of population mean are

1. $\bar{x} \pm 2.58\, S.E.$
2. $\bar{x} \pm 1.96\, S.E.$
3. $\bar{x} \pm 2\, S.E.$
4. $\bar{x} \pm 3\, S.E.$

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11257]
2[Option ID=11258]
3[Option ID=11259]
4[Option ID=11260]

Sl. No.16
QBID:9042016

Type II errors are made when we accept a null hypothesis which is .....

1. True
2. Not true
3. Unknown
4. Small

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11261]
2[Option ID=11262]
3[Option ID=11263]
4[Option ID=11264]

Sl. No.17
QBID:9042017

Which of the followings statement is true:

1. Nucleoid is the place where the transcription and replication of DNA occur
2. Nucleoid is the place where the transcription occurs but replication of DNA does not occur
3. Nucleoid is the place where replication of DNA occurs but transcription does not occur
4. Nucleoid is the place where replication of DNA and transcription do not occur

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11265]
2[Option ID=11266]
3[Option ID=11267]
4[Option ID=11268]

Sl. No.18
QBID:9042018

What is correct about Gram's staining?

1. Use of crystal violet and methylene blue
2. Relate to thickness of the bacterial cell wall
3. Use of saffranine and methylene blue
4. Don't relate to thickness of the cell wall

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11269]
2[Option ID=11270]
3[Option ID=11271]
4[Option ID=11272]

Sl. No.19
QBID:9042019

Which one of these is not present on bacterial surface

1. Mesosome
2. Flagella
3. Pili
4. Nucleosome

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11273]
2[Option ID=11274]
3[Option ID=11275]
4[Option ID=11276]

Sl. No.20
QBID:9042020

Which one of the following statements is true:

1. Bacterial topoisomerase II links covalently to the 3'-end of DNA
2. Bacterial topoisomerase I links covalently to the 3'-end of DNA
3. Bacterial topoisomerase I links covalently to the 5'-end of DNA
4. Bacterial topoisomerase II links covalently to the 3'-end of RNA

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11277]
2[Option ID=11278]
3[Option ID=11279]
4[Option ID=11280]

Sl. No.21
QBID:9042021

Quorum-sensing occurs:

1. Within only same species
2. Within diverse species
3. When bacterial communication is interrupted
4. When bacterial communication doesn't exist

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11281]
2[Option ID=11282]
3[Option ID=11283]
4[Option ID=11284]

Sl. No.22
QBID:9042022

The ozonosphere absorbs maximum amount of
1. Ultraviolet light, UVA
2. Ultraviolet light, UVB
3. Beta radiation
4. Cosmic radiation

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11285]
2[Option ID=11286]
3[Option ID=11287]
4[Option ID=11288]

Sl. No.23
QBID:9042023

The reason why Mendal was successful in driving the laws of inheritance, was mainly because, he used the core concept of
1. Biological variation
2. Co-dominance
3. Biological constants
4. Cross fertilization

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11289]
2[Option ID=11290]
3[Option ID=11291]
4[Option ID=11292]

Sl. No.24
QBID:9042024

The scientific approach to move organism to components, is called
1. Integration
2. Reductionism
3. Synthesis
4. Engineering

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11293]
2[Option ID=11294]
3[Option ID=11295]
4[Option ID=11296]

Sl. No.25
QBID:9042025

A certain compound slightly increases the V_{max} of an enzyme at low concentrations, but decrease the V_{max} at high concentrations. Which of the following statements is a correct explanation for this behavior?

1. The enzyme is allosteric with positive cooperativity and the inhibitor is competitive with the substrate
2. The enzyme is allosteric with negative cooperativity and the inhibitor is noncompetitive with the substrate
3. The enzyme follows Michaelis Menten kinetics, but inhibitor is showing mix competitive and non-competitive inhibition
4. The enzyme follows Michaelis Menten kinetics, but inhibitor is showing mix non competitive and un-competitive inhibition

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11297]
2[Option ID=11298]
3[Option ID=11299]
4[Option ID=11300]

Sl. No.26
QBID:9042026

Formation of acyl enzyme intermediate in serine proteases can be considered to be an example of which of the following types of enzyme catalysis?

1. Covalent catalysis
2. Proximity and orientation effects
3. Electrostatic catalysis
4. Bond Strain

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11301]
2[Option ID=11302]
3[Option ID=11303]
4[Option ID=11304]

Sl. No.27
QBID:9042027

Which of the following statements is true about enzyme catalysis?

1. An antibody that binds to a transition state analogue can sometimes function like an enzyme
2. Any antibody capable of binding with a transition state analogue can never acquire the property of converting substrate to product because antibodies are not enzymes
3. Only IgM antibodies that bind to transition state analogues can sometime function like enzyme, IgG antibodies cannot do this
4. An antibody that binds to the electronically exited state of the substrate can sometimes function like an enzyme

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11305]
2[Option ID=11306]
3[Option ID=11307]
4[Option ID=11308]

Sl. No.28
QBID:9042028

If the k_{cat} of an enzyme following Michaelis Menten kinetics is small enough to be considered negligible, which of the following statement is true?

1. The product and enzyme-substrate complex can be considered to be in equilibrium
2. The enzyme, substrate and enzyme-substrate complex can be considered to be in equilibrium
3. The conversion of substrate to the enzyme-substrate complex follows first order kinetics regardless of enzyme concentration
4. The enzyme-substate complex does not exist in this case, the substrate is directly converted to the product

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11309]
2[Option ID=11310]
3[Option ID=11311]
4[Option ID=11312]

Sl. No.29
QBID:9042029

Which of the following is the correct description of katal as a unit of enzyme activity?

1. One katal is enzyme activity that convert one micromole of substrate per second under specified assay conditions
2. One katal is enzyme activity that convert one mole of substrate per minute under specified assay conditions
3. One katal is enzyme activity that convert one mole of substrate per hour under specified assay conditions
4. One katal is enzyme activity that convert one mole of substrate per second under specified assay conditions

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11313]
2[Option ID=11314]
3[Option ID=11315]
4[Option ID=11316]

Sl. No.30
QBID:9042030

The amount of H_2O produced by the combustion of 1.7 gm of ammonia is

(1) 3600 mg
(2) 36 gm
(3) 36 mg
(4) 360 mg

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11317]
2[Option ID=11318]
3[Option ID=11319]
4[Option ID=11320]

Sl. No.31
QBID:9042031

Which of the following statement is wrong with respect to photoelectric effect of metals

(1) Photoelectric effect is observed above the threshold frequency
(2) Photoelectric effect is observed below the threshold frequency
(3) The number of electrons ejected is directly proportional to the brightness of the light
(4) There is no time lag between light striking the metal and ejection of electrons from the metal

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11321]
2[Option ID=11322]
3[Option ID=11323]
4[Option ID=11324]

Sl. No.32
QBID:9042032

Valence bond theory fails to explain the paramagnetic property of which of the following molecule
(1) Nitrogen (N_2)
(2) Hydrogen (H_2)
(3) Oxygen (O_2)
(4) Carbon (C_2)

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11325]
2[Option ID=11326]
3[Option ID=11327]
4[Option ID=11328]

Sl. No.33
QBID:9042033

Which of the following is not an allotropic modification of carbon
(1) Diamond
(2) Methane
(3) Graphite
(4) Fullerene

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11329]
2[Option ID=11330]
3[Option ID=11331]
4[Option ID=11332]

Sl. No.34
QBID:9042034

Which of the following compound shows three center-two electron bonds (banana bonds)
(1) $Na_2B_4O_7$
(2) $B(OH)_3$
(3) B_2H_6
(4) $NaBH_4$

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11333]
2[Option ID=11334]
3[Option ID=11335]
4[Option ID=11336]

Sl. No.35
QBID:9042035

A peptide bond exists between the following atoms

1. C and O
2. C and N
3. N and O
4. O and H

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11337]
2[Option ID=11338]
3[Option ID=11339]
4[Option ID=11340]

Sl. No.36
QBID:9042036

Intrinsic fluorescence of a protein mainly originates from

1. Tryptophan
2. Histidine
3. Phenylalanine
4. Proline

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11341]
2[Option ID=11342]
3[Option ID=11343]
4[Option ID=11344]

Sl. No.37
QBID:9042037

In MALDI-TOF mass spectrometry, protein spectra predominantly consist of the following species

1. Single charged
2. Partially charged
3. Multiple charged
4. Uncharged

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11345]
2[Option ID=11346]
3[Option ID=11347]
4[Option ID=11348]

Sl. No.38
QBID:9042038

A concentrated protein solution was diluted 100 times with a buffer at pH 7.0 and the resulting solution gave an absorbance of 0.362 in a UV spectrophotometer at 280 nm using a 1 cm path length quartz cuvette. Given the extinction coefficient of the protein 5189 M^{-1} cm^{-1}. The concentration of the undiluted protein solution in millimolar units would be

1. 0.69
2. 0.0069
3. 1.0
4. 6.9

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11349]
2[Option ID=11350]
3[Option ID=11351]
4[Option ID=11352]

Sl. No.39
QBID:9042039

Among the following, the strongest protein denaturing agent is

1. GdmCl
2. Urea
3. GdmSCN
4. pH

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11353]
2[Option ID=11354]
3[Option ID=11355]
4[Option ID=11356]

Sl. No.40
QBID:9042040

The neuromuscular movement in response to neurotransmitter is associated with calcium release. What is the downstream effect of this calcium binding?

(1) Calcium binds to Troponin on F-actin and facilitates myosin bridge formation
(2) Calcium binds to myosin to form a bridge with actin filament
(3) Binding of calcium to tropomyosin affect the crossbridge formation with F-actin
(4) Calcium binds calmodulin to alter Z-disc contraction of muscle

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11357]
2[Option ID=11358]
3[Option ID=11359]
4[Option ID=11360]

Sl. No.41
QBID:9042041

The phenomenon of ABO blood grouping in human beings represent which of the Laws of Inheritance?

(1) Law of Independent Assortment
(2) Law of Dominance
(3) Law of Incomplete Dominance
(4) Law of Co-Dominance

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11361]
2[Option ID=11362]
3[Option ID=11363]
4[Option ID=11364]

Sl. No.42
QBID:9042042

The proton NMR spectrum of the compound CH_3CH_2OH would result in the following number of major resonance peaks

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

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11365]
2[Option ID=11366]
3[Option ID=11367]
4[Option ID=11368]

Sl. No.43
QBID:9042043

In peptides the values of the dihedral angle ψ (psi) is based on rotation around

1. N-C^{α} bond
2. C^{α}-C′ bond
3. C′-N bond
4. N-H bond

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11369]
2[Option ID=11370]
3[Option ID=11371]
4[Option ID=11372]

Sl. No.44
QBID:9042044

Disulphide bonds in proteins could be formed by cysteine by the use of

1. dithiothreitol
2. oxidized glutathione
3. reduced glutathione
4. β-mercaptoethanol

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11373]
2[Option ID=11374]
3[Option ID=11375]
4[Option ID=11376]

Sl. No.45
QBID:9042045

Concentration of a protein solution was determined using absorbance value in a UV spectrophotometer and its extinction coefficient taken from the literature. If the concentration thus calculated was 10 μM, what would be its concentration in mg/ml units given that its molecular weight is 100 kDa

1. 0.01 mg/ml
2. 0.1 mg/ml
3. 1 mg/ml
4. 10 mg/ml

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11377]
2[Option ID=11378]
3[Option ID=11379]
4[Option ID=11380]

Sl. No.46
QBID:9042046

Sodium dodecyl sulphate (SDS) is commonly used in polyacrylamide gel electrophoresis experiment (PAGE) to separate a mixture of proteins in the gel by rendering a uniform negative charge on them. SDS works effectively in this experiment by binding to the

1. Positively charged side chains
2. Negatively charged side chains
3. Hydrophobic side chains
4. Hydrophilic side chains

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11381]
2[Option ID=11382]
3[Option ID=11383]
4[Option ID=11384]

Sl. No.47
QBID:9042047

Who is considered to be founder of bioinformatics?

1. James Watson
2. Oswald Avery
3. Craig Venter
4. Margaret Dayhoff

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11385]
2[Option ID=11386]
3[Option ID=11387]
4[Option ID=11388]

Sl. No.48
QBID:9042048

A single piece of information in a database is called

1. Data
2. Information
3. String
4. Field

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11389]
2[Option ID=11390]
3[Option ID=11391]
4[Option ID=11392]

Sl. No.49
QBID:9042049

Which one is an example of homology and similarity tool?

1. RASMOL
2. BLAST
3. NCBI
4. BWA

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11393]
2[Option ID=11394]
3[Option ID=11395]
4[Option ID=11396]

Sl. No.50
QBID:9042050

Which of the following sequence is a palindrome?

1. 5′ GGATCC 3′
2. 5′ GGCCCTGA 3′
3. 5′ T T T T T T TA 3′
4. 5′AATAAAA 3′

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11397]
2[Option ID=11398]
3[Option ID=11399]
4[Option ID=11400]

Sl. No.51
QBID:9042051

In plant A, monoploid no. of chromosomes is one fourth of the total number of chromosomes in the egg cell whereas in another plant B it is equal to the number of the chromosomes in the male nuclei. The ploidy of plant A and B is ..... and ....., respectively.

1. Diploid and Hexaploid
2. Triploid and Octoploid
3. Octoploid and Diploid
4. Tetraploid and hexaploidy

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11401]
2[Option ID=11402]
3[Option ID=11403]
4[Option ID=11404]

Sl. No.52
QBID:9042052

Tolerance to Auxins is usually more in

1. Dicot plants
2. Monocot plants
3. Broadleaf plants
4. None of them are sensitive to auxins

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11405]
2[Option ID=11406]
3[Option ID=11407]
4[Option ID=11408]

Sl. No.53
QBID:9042053

I want to express an antibody (Ab) gene in the rice seeds only. Which of the following statement would be correct for restricting the expression of this gene only in rice seeds.

1. Seed specific targeting peptides can be used which will transport Ab to seeds.
2. Seed specific enhancers can be used to express the protein in seeds only.
3. Seed specific promoter would be helpful to restrict the expression of transgene in seeds.
4. Nucleotide sequence encoding for a small peptide from a seed specific protein can be fused with gene of interest.

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11409]
2[Option ID=11410]
3[Option ID=11411]
4[Option ID=11412]

Sl. No.54
QBID:9042054

Pollen grains are the reduced male gametophytes and do not have any reserve food for the growth of the pollen tube. Which of the following tissue support the growth of germinating pollen tube

1. Gametophytic tissue of the female gametophyte
2. Male vegetative cell
3. Female gametophyte
4. Saprophytic tissue

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11413]
2[Option ID=11414]
3[Option ID=11415]
4[Option ID=11416]

Sl. No.55
QBID:9042055

A group of hormones that are produced by the terpenoid pathway and regulate stem elongation are

1. Gibberellins
2. Auxins
3. Brassinosteroids
4. Abscisic Acid

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11417]
2[Option ID=11418]
3[Option ID=11419]
4[Option ID=11420]

Sl. No.56
QBID:9042056

Moving from bark to pith of the plant, which of the following you will encounter first

1. Cambium
2. Old Xylem
3. Young Phloem
4. Intrafacicular cambium

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11421]
2[Option ID=11422]
3[Option ID=11423]
4[Option ID=11424]

Sl. No.57
QBID:9042057

Which of the following pair of proteins of *Agrobacterium tumefaciens* work as two component system?

1. ChvG & ChvI
2. Vir B4 & Vir D4
3. Vir H1 and Vir H2
4. Vir E2 and Vir D2

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11425]
2[Option ID=11426]
3[Option ID=11427]
4[Option ID=11428]

Sl. No.58
QBID:9042058

In plant A, monoploid no. of chromosomes is equal to the haploid number of chromosomes. What will be the ploidy lever of plant A.

1. Diploid
2. Triploid
3. Haploid
4. Hexaploid

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11429]
2[Option ID=11430]
3[Option ID=11431]
4[Option ID=11432]

Sl. No.59
QBID:9042059

For the molecular characterization of the transgenic plants, T-DNA copy number can be effectively determined by

1. Quantitative-real time PCR using T-DNA border-specific primers
2. Amplification of T-DNA specific amplicon, following by sequencing, and alignment of sequencing data to T-DNA.
3. Random shearing of gDNA, followed by adaptor ligations and sequencing ends of the genomic fragments
4. Southern Hybridization

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11433]
2[Option ID=11434]
3[Option ID=11435]
4[Option ID=11436]

Sl. No.60
QBID:9042060

Which of the following appeared first in the evolution of angiosperms?

1. Double Fertilization
2. Herbaceous Nature
3. Loss of one cotyledon
4. All of them evolved together

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11437]
2[Option ID=11438]
3[Option ID=11439]
4[Option ID=11440]

Sl. No.61
QBID:9042061

In a eukaryotic cell, which of the following organelle pair would have similar type of membrane.

1. Mitochondria and Endoplasmic Reticulum
2. Mitochondria and Golgi apparatus
3. Chloroplast and Nucleus
4. Chloroplast and Mitochondria

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11441]
2[Option ID=11442]
3[Option ID=11443]
4[Option ID=11444]

Sl. No.62
QBID:9042062

Which of the following may be absent in a tree log having 33 annual rings?

1. Sclerenchyma Cell Walls
2. Primary Xylem
3. Interfacicular cambium
4. Primary phloem

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11445]
2[Option ID=11446]
3[Option ID=11447]
4[Option ID=11448]

Sl. No.63
QBID:9042063

What happens when Gram Negative bacterium is placed in distilled water and penicillin?

1. No change is seen
2. Water will move into the cell
3. Water will move out of cell
4. The cell will undergo osmotic lysis

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11449]
2[Option ID=11450]
3[Option ID=11451]
4[Option ID=11452]

Sl. No.64
QBID:9042064

Microscopy that uses laser light to illuminate one plane of a specimen at a time to obtain two- or three-dimensional images of cells

1. Phase contrast microscopy
2. Fluorescent microscopy
3. Confocal microscopy
4. Dark field microscopy

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11453]
2[Option ID=11454]
3[Option ID=11455]
4[Option ID=11456]

Sl. No.65
QBID:9042065

Culture that produces most ATP

1. *E. coli* growing in glucose broth at 35°C with O_2 for few days
2. *E.coli* growing in glucose broth at 35°C without O_2 for few days
3. Both (1) and (2)
4. Neither (1) nor (2)

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11457]
2[Option ID=11458]
3[Option ID=11459]
4[Option ID=11460]

Sl. No.66
QBID:9042066

Sigma factor in prokaryotes assists

1. Small ribosome subunit to recognize mRNA
2. DNA polymerase to recognize the origin of replication
3. RNA polymerase to recognize promoters
4. DNA repair enzyme to recognize double stranded DNA breaks

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11461]
2[Option ID=11462]
3[Option ID=11463]
4[Option ID=11464]

Sl. No.67
QBID:9042067

Which of the following technique is best suited to find out molecular mass of a phosphorylated protein?

1. Mass spectrometry
2. SDS-PAGE
3. Size exclusion chromatography
4. Ultracentrifugation

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11465]
2[Option ID=11466]
3[Option ID=11467]
4[Option ID=11468]

Sl. No.68
QBID:9042068

Which of the following spectroscopic technique provides atomic resolution structure of proteins?

1. Nuclear Magnetic Resonance (NMR)
2. Raman
3. Circular dichroism (CD)
4. Fluorescence

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11469]
2[Option ID=11470]
3[Option ID=11471]
4[Option ID=11472]

Sl. No.69
QBID:9042069

During apoptosis conversion of pro-caspase to caspase activates the signaling response leading to DNA damage. By which of the following techniques, you can demonstrate caspase activation?

1. Flow cytometry
2. SDS-PAGE followed by immunoblotting
3. Fluorescence activated cell sorting
4. Mass spectroscopy

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11473]
2[Option ID=11474]
3[Option ID=11475]
4[Option ID=11476]

Sl. No.70
QBID:9042070

Protein aggregation phenomenon observed in various neurodegenerative diseases could occur due to

1. Improper cytoskeletal organization
2. Improper autophagy
3. Improper vesicular transport
4. Incomplete synapse formation

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11477]
2[Option ID=11478]
3[Option ID=11479]
4[Option ID=11480]

Sl. No.71
QBID:9042071

In order to study kinase activation in response to a given stimuli, the experimental design monitoring phosphorylation status should be determined within

1. Minutes as fast response
2. Hours (4-8 hrs)
3. Days (1-3 days)
4. Weeks (3-4 weeks)

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11481]
2[Option ID=11482]
3[Option ID=11483]
4[Option ID=11484]

Sl. No.72
QBID:9042072

How does a fertilized egg (e.g. starfish egg) prevents the entry of another sperm?

1. The glycoprotein on the cell surface modulate so that sperm cannot bind
2. The sialylation levels of cell surface proteins change so that overall charge of membrane protein changes
3. G proteins change their conformation so that sperm can no longer bind to the Receptor
4. Sudden rise in Ca^{2+} conc. changes the egg cell surface

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11485]
2[Option ID=11486]
3[Option ID=11487]
4[Option ID=11488]

Sl. No.73
QBID:9042073

Under what condition a second order reaction involving two reactants appear to be pseudo first order reaction?

1. Rate of reaction depends on the concentration of both reactants
2. Rate of reaction depend on concentration of one reactant
3. Rate of reaction is independent of reactant concentration
4. Rate of reaction depend on concentration of one reactant as other reactant is present in excess

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11489]
2[Option ID=11490]
3[Option ID=11491]
4[Option ID=11492]

Sl. No.74
QBID:9042074

Which is the most critical carbohydrate present on glycoproteins required for Virus-Host interaction?

1. Mannose
2. Galactose
3. Sialic Acid
4. Glucose

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11493]
2[Option ID=11494]
3[Option ID=11495]
4[Option ID=11496]

Sl. No.75
QBID:9042075

Which disease is characterized by the defects in neutrophil NADPH oxidase system?

1. Chronic granulomatous disease
2. Hashimoto's disease
3. Chediak-Higashi disease
4. Streptococcal infection

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11497]
2[Option ID=11498]
3[Option ID=11499]
4[Option ID=11500]

Sl. No.76
QBID:9042076

In T cell activation, the co-stimulation of CD4 T cell is known to occur when CD4T cells interact with B7-1 and B7-2 proteins present on the surface of antigen presenting cells(APC). Which of the following receptors on CD4 T cells is likely to interact with B7-1/B7-2 proteins on APC, leading to co-stimulation of CD4 T cells?

1. CD3
2. CD40
3. CD20
4. CD28

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11501]
2[Option ID=11502]
3[Option ID=11503]
4[Option ID=11504]

Sl. No.77
QBID:9042077

An HIV infected person was found to be seroconverted for HIV but had undetectable HIV viral load and preserved CD4 T cell count even without any antiretroviral therapy (ART) during chronic phase and did not develop any symptom of immunodeficiency. Which of the following HLA type may be present in this patient?

1. HLA-B* 35
2. HLA-B* 57
3. HLA-A*02
4. HLA-Cw*07

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11505]
2[Option ID=11506]
3[Option ID=11507]
4[Option ID=11508]

Sl. No.78
QBID:9042078

Antibody-dependent enhancement is a well-known feature of dengue infection. It mainly occurs when

1. dengue virus stimulates B cells for affinity maturation and class switching leading to the excess production of antibody against dengue.
2. When all the serotypes of dengue viruses infect at a time leading to over production of antibody.
3. dengue virus infection is accompanied with malaria infection.
4. infection occurs while pre-existing antibodies present in the body from a primary (first) dengue virus (DENV) infection

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11509]
2[Option ID=11510]
3[Option ID=11511]
4[Option ID=11512]

Sl. No.79
QBID:9042079

Adaptive cellular process is involved in cancer eradication. However, some parts of immune response are not believed to be involved in anti-cancer activities. Which of the following parts of the immune system does not have an effective antitumor response?

1. CTLs
2. IFN-gamma
3. M2 macrophages
4. IL-12

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11513]
2[Option ID=11514]
3[Option ID=11515]
4[Option ID=11516]

Sl. No.80
QBID:9042080

COVAXIN®, India's indigenous COVID-19 vaccine by Bharat Biotech is developed in collaboration with the Indian Council of Medical Research (ICMR) - National Institute of Virology (NIV). Which of the following cell lines has been used for the production of this vaccine?

1. CHO cell line
2. HEK cell line
3. VERO cell line
4. Jurkat cell line

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11517]
2[Option ID=11518]
3[Option ID=11519]
4[Option ID=11520]

Sl. No.81
QBID:9042081

Balbiani rings in polytene chromosomes are the sites of

1. RNA and protein synthesis
2. Nucleotide synthesis
3. Lipid synthesis
4. They are non-functional

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11521]
2[Option ID=11522]
3[Option ID=11523]
4[Option ID=11524]

Sl. No.82
QBID:9042082

You are monitoring growth of animal cells in culture and observe that the cells are not looking very healthy and there is an access of lactic acid in the culture medium. In this condition, what could be the potential reason for the poor growth of the cells?

1. The cells are not getting enough oxygen
2. Glycolysis process is inhibited in cells
3. There is an excess of ethyl alcohol being produced
4. There is an excess of oxygen

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11525]
2[Option ID=11526]
3[Option ID=11527]
4[Option ID=11528]

Sl. No.83
QBID:9042083

Which of the following statements is likely to be WRONG

1. Adoptive transfer techniques involve transfection of siRNA into animal cells in vitro using lipofectamine
2. The Cre/lox recombinase system allows investigators to target altered genes into specific locations in the genome in an inducible manner
3. Knock-in and knockout gene technologies enable the introduction of altered or inactive forms of genes into specific locations in the genome
4. Congenic strains of mice have provided investigators with invaluable information about the contribution of particular genes to specific traits.

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11529]
2[Option ID=11530]
3[Option ID=11531]
4[Option ID=11532]

Sl. No.84
QBID:9042084

The biological clock of a mammalian system is mainly controlled by

1. Opsin
2. Cryptochrome
3. Photolyase
4. Cytochromes

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11533]
2[Option ID=11534]
3[Option ID=11535]
4[Option ID=11536]

Sl. No.85
QBID:9042085

The fitness photosynthesis of higher plant is governed by

1. Phototropin
2. Phototropin and rhodopsin
3. BLUF
4. Photoactive Yellow Protein

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11537]
2[Option ID=11538]
3[Option ID=11539]
4[Option ID=11540]

Sl. No.86
QBID:9042086

Viscometer is used to measure

1. Density of fermentation broth
2. Bouncy of microbes
3. Rheology of fermentation broth
4. Angular velocity

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11541]
2[Option ID=11542]
3[Option ID=11543]
4[Option ID=11544]

Sl. No.87
QBID:9042087

Which type of bioreactor is used to grow Blue Green Algae?

1. Trickle Bed Reactor
2. Packed Bed reactor
3. Air lift reactor
4. Membrane Bioreactor

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11545]
2[Option ID=11546]
3[Option ID=11547]
4[Option ID=11548]

Sl. No.88
QBID:9042088

The top-down method of nanoparticle synthesis is

1. Sol gel method
2. Plasma enhanced chemical vapor deposition
3. Laser ablation
4. Laser mediated photo lithography

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11549]
2[Option ID=11550]
3[Option ID=11551]
4[Option ID=11552]

Sl. No.89
QBID:9042089

The polymer that is used as drug delivery vehicle must be approved by which of the following agency prior to their use on human

1. FICCI (Federation of Indian Chambers of Commerce and Industry)
2. FDA (Food and Drug Administration)
3. ICMR (Indian Council for Medical Research)
4. WHO (World Health Organization)

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11553]
2[Option ID=11554]
3[Option ID=11555]
4[Option ID=11556]

Sl. No.90
QBID:9042090

The surface functionalization using nanomaterials has changed the hydrophilicity of the surface. The method by which we can measure the change quantitatively is

(1) Contact angle measurement
(2) Fluorescence Microscopy
(3) Atomic Force Microscopy
(4) X-Ray Diffraction

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11557]
2[Option ID=11558]
3[Option ID=11559]
4[Option ID=11560]

Sl. No.91
QBID:9042091

Electrochemical Biosensor is incapable of detecting the

1. Changes in current and voltage
2. Changes in charge
3. Changes in impedance
4. Changes in plasmonics

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11561]
2[Option ID=11562]
3[Option ID=11563]
4[Option ID=11564]

Sl. No.92
QBID:9042092

Biochemical function that is not mediated by retrovirus reverse transcriptase enzyme

1. Synthesis of DNA from RNA
2. Synthesis of DNA from DNA
3. Synthesis of RNA from DNA
4. Hydrolyses RNA strand from RNA: DNA hybrid

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11565]
2[Option ID=11566]
3[Option ID=11567]
4[Option ID=11568]

Sl. No.93
QBID:9042093

Mechanism by which an encapsulated *Streptococcus pneumoniae*, causative agent of pneumococcal pneumonia resists host defenses

1. Impairs phagocytosis
2. Produces endotoxins
3. Destroys the host tissue
4. Delays physiological processes

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11569]
2[Option ID=11570]
3[Option ID=11571]
4[Option ID=11572]

Sl. No.94
QBID:9042094

Transposable elements with genes unrelated to transposition bounded at each end by IS elements, which supply the transposase activity needed for transposition

1. Insertional elements
2. Integrative conjugative elements
3. Composite transposons
4. Unit transposons

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11573]
2[Option ID=11574]
3[Option ID=11575]
4[Option ID=11576]

Sl. No.95
QBID:9042095

Mutation in which gene is commonly used for risk assessment of breast cancer

1. MDM2
2. BRCA1 and BRCA2
3. CDH1
4. TERT

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11577]
2[Option ID=11578]
3[Option ID=11579]
4[Option ID=11580]

Sl. No.96
QBID:9042096

Mutations are

1. Sudden and heritable
2. Un-heritable
3. Both (1) and (2)
4. Happening only in human

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11581]
2[Option ID=11582]
3[Option ID=11583]
4[Option ID=11584]

Sl. No.97
QBID:9042097

Which of the following amino acid is not involved in phosphorylation?

1. Ser
2. Thr
3. Tyr
4. Pro

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11585]
2[Option ID=11586]
3[Option ID=11587]
4[Option ID=11588]

Sl. No.98
QBID:9042098

The overexpression of neurofilaments in mice result in neurodegenerative disease such as Amylotrophic Lateral Sclerosis. What could be the possible cause of the disease?

(1) Accumulation and abnormal assembly of intermediate filaments in motor neuron cell bodies
(2) Accumulation and abnormal assembly of microtubules in motor neuron cell bodies
(3) Increased release of neurotransmitter in the synaptic cleft
(4) Protein aggregation along the axon of the neuron

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11589]
2[Option ID=11590]
3[Option ID=11591]
4[Option ID=11592]

Sl. No.99
QBID:9042099

The proteosome mediated protein degradation pathway involves which of the following protein modification?

(1) Acetylation

(2) Phosphorylation

(3) Methylation

(4) Ubiquitination

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11593]
2[Option ID=11594]
3[Option ID=11595]
4[Option ID=11596]

Sl. No.100
QBID:9042100

Role of calcium as a second messenger involves which of the following enzyme activation?

(1) IP3 Receptor
(2) Protein Kinase C
(3) SERCA Receptor
(4) Phospholipase

(1) 1

(2) 2

(3) 3

(4) 4

1[Option ID=11597]
2[Option ID=11598]
3[Option ID=11599]
4[Option ID=11600]