Andhra Pradesh State Council of Higher Education

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Bio Technology 28th Sep 2021 Shift1
Duration :	120
Total Marks :	120
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console? (SA type of questions will be always auto saved) :	Yes
Is this Group for Examiner? :	No

ZOLLEGE.in

Bio Technology

ZOLLEGE.in

Section Id :	5875876
Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	120
Section Marks :	120
Enable Mark as Answered Mark for Review and Clear Response :	Yes

Question Number : 1 Question Id : 587587601 Display Question Number : Yes Is Question Mandatory : No

During post transcriptional modification in eukaryotes the enzyme involved in adding Guanosine triphosphate to the 5' end of m-RNA is

Options :

1. ✖ Guanine-7-methyl transferase

2. ✔ Guanylyl transferase

3. ✖ Guanosine transferase

4. ✖ Guanine transferase

Question Number : 2 Question Id : 587587602 Display Question Number : Yes Is Question Mandatory : No

Rifampicin is an antibiotic which inhibits the following process in prokaryotes

Options :

1. ✔ Transcription

2. ✖ Translation

ZOLLEGE.in

3. ✖ Replication

4. ✖ Transduction

Question Number : 3 Question Id : 587587603 Display Question Number : Yes Is Question

Mandatory : No

Trisomy of chromosome number 13

Options :

1. ✖ Turner syndrome

2. ✖ Downs syndrome

3. ✔ Patau syndrome

4. ✖ Edward syndrome

Question Number : 4 Question Id : 587587604 Display Question Number : Yes Is Question

Mandatory : No

Blood grouping is the classical example for

Options :

1. ✖ Mendelian Inheritance

2. ✖ Epistasis

3. ✖ Incomplete dominance

4. ✔ Co-dominance

ZOLLEGE.in

Question Number : 5 Question Id : 587587605 Display Question Number : Yes Is Question Mandatory : No

During recombination process the resolution of branch is mediated by

Options :

1. ✖ Rec-A

2. ✖ Ruv-A

3. ✔ Ruv-C

4. ✖ Ruv-B

Question Number : 6 Question Id : 587587606 Display Question Number : Yes Is Question Mandatory : No

In X-linked dominant disorder if both the parents are carrier of mutated gene. How many of the male and female children will be affected and normal.

Options :

1. ✖ 50% of Son will be affected

2. ✖ 50% of Son will be normal

3. ✖ 50% of Daughter will be affected

4. ✔ Both option 1 and option 2

Question Number : 7 Question Id : 587587607 Display Question Number : Yes Is Question Mandatory : No

ZOLLEGE.in

A cross between two genes A and B has resulted in 198 non recombinant progeny and 2 recombinant progenies. Calculate the recombination frequency between the two genes.

Options :

1. ✖ 10 cM

2. ✖ 100 cM

3. ✔ 1 cM

4. ✖ 0.1 cM

Question Number : 8 Question Id : 587587608 Display Question Number : Yes Is Question Mandatory : No

Which RNA polymerase act as precursor to 5S rRNA and t-RNA

Options :

1. ✖ RNA Polymerase II

2. ✖ RNA Polymerase I

3. ✔ RNA Polymerase III

4. ✖ RNA Polymerase IV

Question Number : 9 Question Id : 587587609 Display Question Number : Yes Is Question Mandatory : No

How does the core enzyme differs from holo enzyme in prokaryotic RNA polymerase

Options :

1. ✔ Core enzyme has 2 α and 2 β subunits

ZOLLEGE.in

2. ✖ Core enzyme has 1 α and 2 β subunits

3. ✖ Core enzyme has 2 α, 2 β and σ subunits

4. ✖ Core enzyme has 2 α and 1 β subunits

Question Number : 10 Question Id : 587587610 Display Question Number : Yes Is Question Mandatory : No

Shine-Dalgarno sequence is present in m-RNA which has complementarity with

Options :

1. ✖ 50 S rRNA

2. ✖ 60 S rRNA

3. ✔ 16 S rRNA

4. ✖ 40 S rRNA

Question Number : 11 Question Id : 587587611 Display Question Number : Yes Is Question Mandatory : No

Name the initiation factor which helps in carrying the aminoacyl t-RNA to P site of ribosome

Options :

1. ✔ IF 2

2. ✖ IF 1

ZOLLEGE.in

3. ✖ IF 3

4. ✖ IF 4

Question Number : 12 Question Id : 587587612 Display Question Number : Yes Is Question Mandatory : No

Which of the following is a termination codon

Options :

1. ✔ UAA

2. ✖ UAC

3. ✖ AUG

4. ✖ GAA

Question Number : 13 Question Id : 587587613 Display Question Number : Yes Is Question Mandatory : No

Which DNA Polymerase is involved leading strand synthesis in prokaryotes

Options :

1. ✖ DNA Polymerase I

2. ✖ DNA Polymerase II

3. ✔ DNA Polymerase III

4. ✖ DNA Polymerase IV

ZOLLEGE.in

Question Number : 14 Question Id : 587587614 Display Question Number : Yes Is Question Mandatory : No

Role of FEN I proteins in eukaryotic DNA replication

Options :

1. ✖ Removes DNA sequence

2. ✖ Adds RNA sequence

3. ✔ Removes RNA sequence

4. ✖ Adds DNA sequence

Question Number : 15 Question Id : 587587615 Display Question Number : Yes Is Question Mandatory : No

Telomerase is

Options :

1. ✔ RNA dependent DNA Polymerase

2. ✖ DNA dependent RNA Polymerase

3. ✖ DNA dependent DNA Polymerase

4. ✖ RNA dependent RNA Polymerase

Question Number : 16 Question Id : 587587616 Display Question Number : Yes Is Question Mandatory : No

Callus formation takes place if the concentration of auxin to cytokinin is

ZOLLEGE.in

Options :

1. ✖ 1:2

2. ✔ 1:1

3. ✖ 2:1

4. ✖ 1:4

Question Number : 17 Question Id : 587587617 Display Question Number : Yes Is Question Mandatory : No

Phytohormone responsible for breaking seed dormancy and parthenocarpy

Options :

1. ✖ Auxin

2. ✖ Cytokinins

3. ✖ Ethylene

4. ✔ Gibberillins

Question Number : 18 Question Id : 587587618 Display Question Number : Yes Is Question Mandatory : No

In plant tissue culture cell synchronization can be achieved by

Options :

1. ✖ 2-Ethyl-deoxy uridne

ZOLLEGE.in

2. ✖ 5-Chloro deoxy uridine

3. ✖ 5-Fluro deoxy uridine

4. ✔ Both option 2 and option 3

Question Number : 19 Question Id : 587587619 Display Question Number : Yes Is Question Mandatory : No

Name the secondary metabolite produced by *Catharantus roseus* plant

Options :

1. ✖ . Menthol

2. ✖ Paclitaxel

3. ✖ Vanillin

4. ✔ Vinbalstin

Question Number : 20 Question Id : 587587620 Display Question Number : Yes Is Question Mandatory : No

Cell culture technique used for the production of secondary metabolites

Options :

1. ✖ Somatic embryogenesis

2. ✖ Micropropagation

3. ✔ Hairy root culture

ZOLLEGE.in

4. ✖ Organogenesis

Question Number : 21 Question Id : 587587621 Display Question Number : Yes Is Question Mandatory : No

Most commonly used bioreactor for producing Hairy root culture

Options :

1. ✖ Stirred tank bioreactor

2. ✖ Bubble column bioreactor

3. ✖ Batch bioreactor

4. ✔ Both option 1 and option 2

Question Number : 22 Question Id : 587587622 Display Question Number : Yes Is Question Mandatory : No

Secondary metabolite used for the treatment of Malaria

Options :

1. ✖ Shikonin

2. ✖ Berberine

3. ✔ Quinine

4. ✖ Anthraquinone

ZOLLEGE.in

Question Number : 23 Question Id : 587587623 Display Question Number : Yes Is Question Mandatory : No

Cytoplasm of two parents and nuclear genome of one parent

Options :

1. ✔ Cybrid

2. ✖ Hybrid

3. ✖ Symmetric hybrid

4. ✖ Asymmetric hybrid

Question Number : 24 Question Id : 587587624 Display Question Number : Yes Is Question Mandatory : No

If we delete the following gene *Agrobacterium tumifaecians* species cannot infect the plant cell

Options :

1. ✖ Vir B

2. ✔ Vir A

3. ✖ Vir D

4. ✖ Vir E

Question Number : 25 Question Id : 587587625 Display Question Number : Yes Is Question Mandatory : No

ZOLLEGE.in

Plant cell differs from animal cell as they are

Options :

1. ✖ Unipotent

2. ✖ Multipotent

3. ✔ Totipotent

4. ✖ Pluripotent

Question Number : 26 Question Id : 587587626 Display Question Number : Yes Is Question Mandatory : No

The experiment conducted on mice using live non capsulated *Pneumococci* (R) and heat killed capsulated *Pneumococci* (S) is an example for

Options :

1. ✔ Transformation

2. ✖ Conjugation

3. ✖ Transduction

4. ✖ Translation

Question Number : 27 Question Id : 587587627 Display Question Number : Yes Is Question Mandatory : No

If the flagella in bacteria is present at both the ends then it is called as

Options :

ZOLLEGE.in

1. ✔ Amphitrichous

2. ✖ Lophotrichous

3. ✖ Peritrichous

4. ✖ Monotrichous

Question Number : 28 Question Id : 587587628 Display Question Number : Yes Is Question Mandatory : No

How does Gram positive bacteria differ from Gram negative

Options :

1. ✖ Gram positive bacteria has less peptidoglycan layer

2. ✖ Gram positive bacteria has high lipid layer

3. ✔ Gram positive bacteria has high amount of peptidoglycan layer

4. ✖ Both option 1 and option 2

Question Number : 29 Question Id : 587587629 Display Question Number : Yes Is Question Mandatory : No

Packaging of proteins takes place in which cell organelle

Options :

1. ✖ Ribosomes

2. ✖ Endoplasmic reticulum

ZOLLEGE.in

3. ✔ Golgi bodies

4. ✖ Mitochondria

Question Number : 30 Question Id : 587587630 Display Question Number : Yes Is Question Mandatory : No

Balance the given equation $6\ CO_2 + \mathbf{X}\ H_2O + \text{Light energy} \longrightarrow C_6H_{12}O_6 + \mathbf{X}\ O_2$

Options :

1. ✖ $6\ H_2O;\ 3O_2$

2. ✔ $6\ H_2O;\ 6O_2$

3. ✖ $3\ H_2O;\ 6O_2$

4. ✖ $3H_2O;\ 3O_2$

Question Number : 31 Question Id : 587587631 Display Question Number : Yes Is Question Mandatory : No

Which of the following is true for aerobic respiration

Options :

1. ✔ Occurs in presence of O_2; ATP production more

2. ✖ Occurs in the absence of O_2; ATP production less

3. ✖ Occurs in the absence of O_2; ATP production more

ZOLLEGE.in

4. ✖ Occurs in presence of O_2; ATP production less

Question Number : 32 Question Id : 587587632 Display Question Number : Yes Is Question Mandatory : No

Thymine dimer formation occurs due to which mutation

Options :

1. ✖ Deamination

2. ✖ Oxidation

3. ✔ UV light

4. ✖ Depurination

Question Number : 33 Question Id : 587587633 Display Question Number : Yes Is Question Mandatory : No

The genetic material of Corona Virus is

Options :

1. ✔ Single strand (+) RNA

2. ✖ Single strand (+) DNA

3. ✖ Double strand (+) DNA

4. ✖ Double strand (+) RNA

Question Number : 34 Question Id : 587587634 Display Question Nu

ZOLLEGE.in

Mandatory : No

During Lytic cycle the host DNA is cleaved by nuclease produced by the following viral genes

Options :

1. ✔ Immediate early genes

2. ✖ Delayed early genes

3. ✖ Late genes

4. ✖ Delayed genes

Question Number : 35 Question Id : 587587635 Display Question Number : Yes Is Question Mandatory : No

Name the bacteria which is involved in symbiotic nitrogen fixation in the root nodules of legume plants

Options :

1. ✖ Azotobacter

2. ✖ Clostridium

3. ✔ Rhizobium

4. ✖ Pseudomonas

Question Number : 36 Question Id : 587587636 Display Question Number : Yes Is Question Mandatory : No

The total energy yield from one glucose molecule during cellular respiration is

ZOLLEGE.in

Options :

1. ✖ 32

2. ✖ 30

3. ✔ 36

4. ✖ 34

Question Number : 37 Question Id : 587587637 Display Question Number : Yes Is Question Mandatory : No

If the signaling molecule and the receptor are present on same cell then it is called as

Options :

1. ✖ Contact dependent signaling

2. ✖ Synaptic signaling

3. ✔ Autocrine signaling

4. ✖ Endocrine signaling

Question Number : 38 Question Id : 587587638 Display Question Number : Yes Is Question Mandatory : No

During which phase of cell cycle doubling of DNA takes place

Options :

1. ✖ G1 Phase

2. ✔ S Phase

ZOLLEGE.in

3. ✖ G2 Phase

4. ✖ M Phase

Question Number : 39 Question Id : 587587639 Display Question Number : Yes Is Question Mandatory : No

Name the cell organelle which produces Cytochrome c during apoptosis process

Options :

1. ✖ Endoplasmic reticulum

2. ✖ Golgi apparatus

3. ✖ Ribosomes

4. ✔ Mitochondria

Question Number : 40 Question Id : 587587640 Display Question Number : Yes Is Question Mandatory : No

Insulin is the best example for protein with

Options :

1. ✔ Primary structure

2. ✖ Secondary structure

3. ✖ Tertiary structure

ZOLLEGE.in

4. ✖ Quaternary structure

Question Number : 41 Question Id : 587587641 Display Question Number : Yes Is Question Mandatory : No

Enzymatic reaction involving an un competitive inhibitor

Options :

1. ✖ Km increase; Vmax constant

2. ✖ Km decrease; Vmax increase

3. ✖ Km constant; Vmax decrease

4. ✔ Km increase; Vmax decreases

Question Number : 42 Question Id : 587587642 Display Question Number : Yes Is Question Mandatory : No

Allosteric enzymes differ from Michaelis Menten enzyme by

Options :

1. ✖ Catalyze reversible reactions; generate Sigmoidal curve

2. ✖ Catalyze irreversible reaction; generate Hyperbolic curve

3. ✖ Catalyze reversible reactions; generate Hyperbolic curve

4. ✔ Catalyze irreversible reaction; generate Sigmoidal curve

ZOLLEGE.in

Question Number : 43 Question Id : 587587643 Display Question Number : Yes Is Question Mandatory : No

Pertussis toxin increases the levels of which secondary messenger

Options :

1. ✔ cAMP

2. ✖ cGMP

3. ✖ Calcium

4. ✖ Inositol triphosphate (IP3)

Question Number : 44 Question Id : 587587644 Display Question Number : Yes Is Question Mandatory : No

In active G protein coupled receptor is a heterotrimeric protein complex. But when activated

Options :

1. ✔ G α subunit gets separated from β, γ complex

2. ✖ G β subunit gets separated from σ, γ complex

3. ✖ G γ subunit gets separated from α, β complex

4. ✖ G σ subunit gets separated from β, γ complex

Question Number : 45 Question Id : 587587645 Display Question Number : Yes Is Question Mandatory : No

Movement of molecules across the cell by symporter mechanism comes u

ZOLLEGE.in

Options :

1. ✖ Passive transport

2. ✖ Bulk transport

3. ✖ Osmosis

4. ✔ Active transport

Question Number : 46 Question Id : 587587646 Display Question Number : Yes Is Question Mandatory : No

Herd immunity is part of

Options :

1. ✔ Innate Immunity

2. ✖ Acquired Immunity

3. ✖ Cell mediated Immunity

4. ✖ Humoral Immunity

Question Number : 47 Question Id : 587587647 Display Question Number : Yes Is Question Mandatory : No

Ele Metchnikoff is the scientist who proved

Options :

1. ✖ Innate Immunity

ZOLLEGE.in

2. ✖ Acquired Immunity

3. ✔ Cell mediated Immunity

4. ✖ Humoral Immunity

Question Number : 48 Question Id : 587587648 Display Question Number : Yes Is Question Mandatory : No

During allergic reactions the population of following cells will increase

Options :

1. ✖ Basophils

2. ✖ Mast cells

3. ✖ Neutrophils

4. ✔ Eosinophils

Question Number : 49 Question Id : 587587649 Display Question Number : Yes Is Question Mandatory : No

Major histocompatibility complex II is present on cell surface of

Options :

1. ✖ Macrophages

2. ✖ Dendritic cells

3. ✖ T-cytotoxic cells

ZOLLEGE.in

4. ✔ Both option 1 and option 2

Question Number : 50 Question Id : 587587650 Display Question Number : Yes Is Question Mandatory : No

Hassall's corpuscles are found in following organs

Options :

1. ✖ Bone marrow

2. ✖ Spleen

3. ✖ Lymph node

4. ✔ Thymus

Question Number : 51 Question Id : 587587651 Display Question Number : Yes Is Question Mandatory : No

Forssman antigen is an example for

Options :

1. ✔ Heterospecific antigen

2. ✖ Auto specific antigen

3. ✖ Iso specific antigen

4. ✖ Organ specific antigen

ZOLLEGE.in

Question Number : 52 Question Id : 587587652 Display Question Number : Yes Is Question Mandatory : No

For synthesis of monoclonal antibodies mutated forms of B-cells and Myloma cells are used which are

Options :

1. ✔ TK^- and $HGPRT^+$; TK^+ and $HGPRT^-$

2. ✖ TK^+ and $HGPRT^-$; TK^- and $HGPRT^+$

3. ✖ TK^- and $HGPRT^-$; TK^+ and $HGPRT^+$

4. ✖ TK^+ and $HGPRT^+$; TK^- and $HGPRT^+$

Question Number : 53 Question Id : 587587653 Display Question Number : Yes Is Question Mandatory : No

Antibody produced by infant after birth with antiviral activity

Options :

1. ✖ Ig A

2. ✖ Ig G

3. ✖ Ig D

4. ✔ Ig M

Question Number : 54 Question Id : 587587654 Display Question Number : Yes Is Question Mandatory : No

ZOLLEGE.in

Widal test is the best example for which type of antigen antibody reaction

Options :

1. ✖ Co-agglutination

2. ✖ Passive agglutination

3. ✖ Haemagglutination

4. ✔ Bacterial agglutination

Question Number : 55 Question Id : 587587655 Display Question Number : Yes Is Question Mandatory : No

Immune complex mediated hyper sensitivity is observed in

Options :

1. ✔ Serum sickness

2. ✖ Drug-induced systemic lupus erythematosus

3. ✖ Rh in compatibility

4. ✖ Contact dermatitis

Question Number : 56 Question Id : 587587656 Display Question Number : Yes Is Question Mandatory : No

Which class of restriction enzyme cuts the DNA sequence near the target site

Options :

1. ✖ Restriction enzyme I

ZOLLEGE.in

2. ✔ Restriction enzyme II

3. ✖ Restriction enzyme III

4. ✖ Restriction enzyme IV

Question Number : 57 Question Id : 587587657 Display Question Number : Yes Is Question Mandatory : No

Name the disease which was treated for the first-time using gene therapy is

Options :

1. ✔ Severe combined immuno deficiency

2. ✖ Haemophilia

3. ✖ Thalassemia

4. ✖ Cystic fibrosis

Question Number : 58 Question Id : 587587658 Display Question Number : Yes Is Question Mandatory : No

In Cosmid we can clone DNA sequence up to

Options :

1. ✖ 100 kb

2. ✖ 200 kb

ZOLLEGE.in

3. ✔ 45 kb

4. ✖ 500 kb

Question Number : 59 Question Id : 587587659 Display Question Number : Yes Is Question Mandatory : No

During southern blotting the membrane is treated with HRP-conjugated streptavidin followed by incubation with tetramethylbenzidine and H_2O_2 as a result

Options :

1. ✖ DNA probe gives Green color

2. ✖ DNA probe gives Red color

3. ✔ DNA probe gives Blue color

4. ✖ DNA probe gives Yellow color

Question Number : 60 Question Id : 587587660 Display Question Number : Yes Is Question Mandatory : No

Technique used to search the position of a gene on the chromosome

Options :

1. ✖ Southern blotting

2. ✔ Chromosome walking

3. ✖ Genomic DNA Library

4. ✖ RAPD

ZOLLEGE.in

Question Number : 61 Question Id : 587587661 Display Question Number : Yes Is Question Mandatory : No

Which vector is used to create genomic libraries for human genome

Options :

1. ✔ Bacterial artificial chromosome

2. ✖ Cosmid

3. ✖ Phagemid

4. ✖ Plasmid

Question Number : 62 Question Id : 587587662 Display Question Number : Yes Is Question Mandatory : No

Which of the following is true for Alkaline Phosphatase

Options :

1. ✖ Digest linear plasmid

2. ✖ Removes 5'-terminal phosphate

3. ✖ Removes 3'-terminal phosphate

4. ✔ Both option 1 and option 2

Question Number : 63 Question Id : 587587663 Display Question Number : Yes Is Question

ZOLLEGE.in

Mandatory : No

The melting temperature (T_m) of the forward and reverse primers used in PCR should be

Options :

1. ✖ $> 0.5\text{-}1°C$

2. ✔ $> 2°C$

3. ✖ Should be same

4. ✖ $< 0.5°C$

Question Number : 64 Question Id : 587587664 Display Question Number : Yes Is Question Mandatory : No

Shortgun sequencing method is used to identify

Options :

1. ✔ Overlapping sequence

2. ✖ Non overlapping sequence

3. ✖ Individual DNA sequence

4. ✖ Both option 1 and option 2

Question Number : 65 Question Id : 587587665 Display Question Number : Yes Is Question Mandatory : No

Which one the following is an example for vector less gene transfer method

Options :

ZOLLEGE.in

1. ✖ Microinjection

2. ✖ Agrobacterium mediated gene transfer

3. ✖ Electroporation

4. ✔ Both option 1 and option 3

Question Number : 66 Question Id : 587587666 Display Question Number : Yes Is Question Mandatory : No

Saccharomyces cerevisiae is used industrially for the production of

Options :

1. ✖ Citric acid

2. ✖ Lactic acid

3. ✔ Ethanol

4. ✖ Acetic acid

Question Number : 67 Question Id : 587587667 Display Question Number : Yes Is Question Mandatory : No

Secondary metabolites are produced during which phase of bacterial cell cycle

Options :

1. ✖ Lag phase

2. ✖ Log phase

ZOLLEGE.in

3. ✔ Stationary phase

4. ✖ Death phase

Question Number : 68 Question Id : 587587668 Display Question Number : Yes Is Question Mandatory : No

Which one of the following is not produced by animal cell culture technique

Options :

1. ✖ Antibodies

2. ✖ Hormones

3. ✔ Antibiotics

4. ✖ Vaccines

Question Number : 69 Question Id : 587587669 Display Question Number : Yes Is Question Mandatory : No

Among all the immobilization techniques which one is considered to be more stable

Options :

1. ✖ Adsorption

2. ✖ Entrapment

3. ✖ Encapsulation

4. ✔ Covalent

ZOLLEGE.in

Question Number : 70 Question Id : 587587670 Display Question Number : Yes Is Question Mandatory : No

Immobilized enzymes exhibit the following advantages except one

Options :

1. ✖ Reuse of catalyst

2. ✔ Low surface area for binding

3. ✖ Simple and economic

4. ✖ Limited loos of activity

Question Number : 71 Question Id : 587587671 Display Question Number : Yes Is Question Mandatory : No

Recombinant proteins expressed in bacteria and yeast are

Options :

1. ✖ Intracellular

2. ✖ Extracellular

3. ✖ Both intra and extracellular

4. ✔ Intracellular in bacteria; Yeast (intra and extracellular)

Question Number : 72 Question Id : 587587672 Display Question Number : Yes Is Question Mandatory : No

ZOLLEGE.in

In a thin layer chromatography experiment distance travelled by solute was 10 cm and the solvent was 17 cm. Calculate the Rf value of the given sample.

Options :

1. ✖ 0.7

2. ✖ 1

3. ✔ 0.58

4. ✖ 0.4

Question Number : 73 Question Id : 587587673 Display Question Number : Yes Is Question Mandatory : No

Which chromatographic technique is used for purification and quantification of sample

Options :

1. ✖ Size exclusion chromatography

2. ✖ Affinity chromatography

3. ✔ High performance liquid chromatography

4. ✖ Paper chromatography

Question Number : 74 Question Id : 587587674 Display Question Number : Yes Is Question Mandatory : No

Recombinant proteins are usually tagged with Histidine to ease their purification by

Options :

ZOLLEGE.in

1. ✔ Affinity chromatography

2. ✖ Gel filtration chromatography

3. ✖ Adsorption chromatography

4. ✖ Gas chromatography

Question Number : 75 Question Id : 587587675 Display Question Number : Yes Is Question Mandatory : No

Industrially important enzyme L-Asparaginases is used to treat

Options :

1. ✔ Leukemia

2. ✖ Breast Cancer

3. ✖ Colon Cancer

4. ✖ Prostate Cancer

Question Number : 76 Question Id : 587587676 Display Question Number : Yes Is Question Mandatory : No

Chlorination is performed during which stage of waste water treatment process

Options :

1. ✖ Primary

2. ✖ Secondary

ZOLLEGE.in

3. ✔ Tertiary

4. ✖ Both option 1 and option 2

Question Number : 77 Question Id : 587587677 Display Question Number : Yes Is Question Mandatory : No

The components involved in secondary treatment of waste water

Options :

1. ✖ Activated sludge process

2. ✖ Trickling filter process

3. ✖ Ozone treatment

4. ✔ Both option 1 and option 2

Question Number : 78 Question Id : 587587678 Display Question Number : Yes Is Question Mandatory : No

Which one of the following is not used in *In situ* bioremediation process

Options :

1. ✖ Bio sparging

2. ✖ Bio augmentation

3. ✖ Bioventing

ZOLLEGE.in

4. ✔ Biopiles

Question Number : 79 Question Id : 587587679 Display Question Number : Yes Is Question Mandatory : No

Microorganisms used to clean a particular contaminant of soil or water is termed as

Options :

1. ✔ Bioaugmentation

2. ✖ Bio stimulation

3. ✖ Intrinsic Bioremediation

4. ✖ Bioleaching

Question Number : 80 Question Id : 587587680 Display Question Number : Yes Is Question Mandatory : No

Industrially invertase is produced by

Options :

1. ✖ *Asperigillus niger*

2. ✖ *Bacillus amyloliquefaciens*

3. ✔ *Saccharomyces cerevisiae*

4. ✖ *Pseudomonas species*

ZOLLEGE.in

Question Number : 81 Question Id : 587587681 Display Question Number : Yes Is Question Mandatory : No

A data base of current sequence map of the human genome is called as

Options :

1. ✖ OMIM

2. ✖ HGMD

3. ✖ Gene cards

4. ✔ Golden path

Question Number : 82 Question Id : 587587682 Display Question Number : Yes Is Question Mandatory : No

Which one of the following is an nucleotide sequence data base

Options :

1. ✔ EMBL

2. ✖ SWISS PROT

3. ✖ PROSITE

4. ✖ TREMBL

Question Number : 83 Question Id : 587587683 Display Question Number : Yes Is Question Mandatory : No

Clustal W is used for

Options :

ZOLLEGE.in

1. ✔ Multiple sequence alignment

2. ✖ Pairwise alignment

3. ✖ Phylogenetic analysis

4. ✖ Protein structure

Question Number : 84 Question Id : 587587684 Display Question Number : Yes Is Question Mandatory : No

A database which is used for determining the enzymatic pathways is

Options :

1. ✖ SCOP

2. ✔ KEGG

3. ✖ Pfam

4. ✖ DDBJ

Question Number : 85 Question Id : 587587685 Display Question Number : Yes Is Question Mandatory : No

"ORF finder" is used to search DNA sequences for prediction of

Options :

1. ✖ CpG regions

2. ✖ Restriction enzyme sites

ZOLLEGE.in

3. ✔ Protein encoding regions

4. ✖ Gene expression regulatory regions

Question Number : 86 Question Id : 587587686 Display Question Number : Yes Is Question Mandatory : No

Which one of the following is an example for Homology and similarity search tool

Options :

1. ✖ RasMol

2. ✖ EMBOSS

3. ✔ BLAST

4. ✖ PROSPECT

Question Number : 87 Question Id : 587587687 Display Question Number : Yes Is Question Mandatory : No

The computational methodology that finds best matching between two molecules (i.e) receptor, and ligand is called as

Options :

1. ✔ Molecular docking

2. ✖ Molecular fitting

3. ✖ Molecular matching

ZOLLEGE.in

4. ✖ Molecular affinity

Question Number : 88 Question Id : 587587688 Display Question Number : Yes Is Question Mandatory : No

Proteomics is the study related to

Options :

1. ✖ Set of proteins

2. ✖ Proteins in a specialized region of the cell

3. ✔ Total proteins expressed in the cell

4. ✖ Biomolecules

Question Number : 89 Question Id : 587587689 Display Question Number : Yes Is Question Mandatory : No

Phylogenetic relationship can be shown by

Options :

1. ✔ Dendrogram

2. ✖ Gene Bank

3. ✖ Data retrieving tool

4. ✖ Data search tool

ZOLLEGE.in

Question Number : 90 Question Id : 587587690 Display Question Number : Yes Is Question Mandatory : No

PRINTS are software used for

Options :

1. ✖ Detection of genes from genome sequence

2. ✖ Detection of tRNA genes

3. ✖ Prediction of function of a new gene

4. ✔ Identification of functional domains/motifs of proteins

Question Number : 91 Question Id : 587587691 Display Question Number : Yes Is Question Mandatory : No

The virus commonly used to infect cell cultures for the production of interferon is

Options :

1. ✖ Corona virus

2. ✔ Sendai virus

3. ✖ Polio virus

4. ✖ Small pox virus

Question Number : 92 Question Id : 587587692 Display Question Number : Yes Is Question Mandatory : No

Animal cell cultures are widely used for the production of

ZOLLEGE.in

Options :

1. ✖ Insulin

2. ✖ Somatostatin

3. ✔ Monoclonal antibodies

4. ✖ Thyroxine

Question Number : 93 Question Id : 587587693 Display Question Number : Yes Is Question Mandatory : No

Culture freshly prepared from isolated tissue is known as

Options :

1. ✖ Organ culture

2. ✔ Primary culture

3. ✖ Cell line

4. ✖ Histotypic culture

Question Number : 94 Question Id : 587587694 Display Question Number : Yes Is Question Mandatory : No

The advantage of animal tissue culture is

Options :

1. ✔ Cell lines can be stored for long time

ZOLLEGE.in

2. ✖ Maintenance of environmental conditions is easy

3. ✖ Cost effective

4. ✖ Mo skilled personal is required

Question Number : 95 Question Id : 587587695 Display Question Number : Yes Is Question Mandatory : No

In animal cell culture particularly mammalian cell culture transformation means

Options :

1. ✖ Uptake of new genetic material

2. ✔ Phenotypic modification of cells in culture

3. ✖ Both option 1 and option 2

4. ✖ Release of genetic information

Question Number : 96 Question Id : 587587696 Display Question Number : Yes Is Question Mandatory : No

The cell lines used for the production of polio vaccine is

Options :

1. ✔ Primary kidney cell line

2. ✖ CHO cell line

3. ✖ Mouse fibroblast cell line

ZOLLEGE.in

4. ✖ Dog kidney cell line

Question Number : 97 Question Id : 587587697 Display Question Number : Yes Is Question Mandatory : No

Which one of the following is not used for preservation of animal cell lines

Options :

1. ✔ Glycerol

2. ✖ Ethanol

3. ✖ DMSO

4. ✖ Ethylene glycol

Question Number : 98 Question Id : 587587698 Display Question Number : Yes Is Question Mandatory : No

Indicator used to check the pH change of animal cell culture media is

Options :

1. ✖ Saffranin

2. ✖ Crystal violet

3. ✖ Methylene blue

4. ✔ Phenol red

ZOLLEGE.in

Question Number : 99 Question Id : 587587699 Display Question Number : Yes Is Question Mandatory : No

Which of the following bioreactor is most commonly used for growing suspension cell culture

Options :

1. ✖ Air lift Bioreactor

2. ✔ Disposable bioreactor

3. ✖ Stirred tank Bioreactor

4. ✖ Continuous Bioreactor

Question Number : 100 Question Id : 587587700 Display Question Number : Yes Is Question Mandatory : No

Increase in lactate concertation during animal cell culture has resulted in poor growth due to

Options :

1. ✖ Excess lactate caused ethanol production

2. ✖ Excess lactate caused oxygen production

3. ✔ Excess lactate decreased oxygen production

4. ✖ Excess lactate inhibited Glycolysis

Question Number : 101 Question Id : 587587701 Display Question Number : Yes Is Question Mandatory : No

A continuous reactor has a dilution rate of 0.5 h^{-1}. Its residence time would be

Options :

ZOLLEGE.in

1. ✔ 2 h

2. ✖ 1 h

3. ✖ 0.5 h

4. ✖ 3 h

Question Number : 102 Question Id : 587587702 Display Question Number : Yes Is Question Mandatory : No

Heat transfer rates (per unit volume) will be lowest in

Options :

1. ✖ Stirred tank bioreactor with biomass recycle

2. ✖ Continuous air lift bioreactor

3. ✔ Continuous packed bed reactor

4. ✖ Continuous fluidized bed bioreactor

Question Number : 103 Question Id : 587587703 Display Question Number : Yes Is Question Mandatory : No

According to Monod model the specific growth rate

Options :

will increase with the concentration of the growth limiting substrate until it reaches a

1. ✔ maximum value

ZOLLEGE.in

2. ✖ will decrease with the concentration of the growth limiting substrate

3. ✖ will increase with the concentration of the growth limiting substrate

4. ✖ does not depend on growth limiting substrate

Question Number : 104 Question Id : 587587704 Display Question Number : Yes Is Question Mandatory : No

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

Options :

1. ✖ $\log 2/\mu$

2. ✔ $\ln 2/\mu$

3. ✖ $\mu/\ln 2$

4. ✖ $\mu/\log 2$

Question Number : 105 Question Id : 587587705 Display Question Number : Yes Is Question Mandatory : No

A higher Ks value of Monod's equation means

Options :

1. ✔ greater affinities to substrate

2. ✖ lower affinities to substrate

3. ✖ unaffected with the substrate bonding

ZOLLEGE.in

4. ✖ lower dissociation constant value

Question Number : 106 Question Id : 587587706 Display Question Number : Yes Is Question Mandatory : No

The specific growth rate (μ) is defined as

Options :

1. ✖ the concentration of biomass in the reactor

2. ✖ rate of increase of total biomass in a reactor

3. ✔ the rate of individual cells division or increase in their biomass

4. ✖ the rate of cell death

Question Number : 107 Question Id : 587587707 Display Question Number : Yes Is Question Mandatory : No

The specific death rate of an organism can be expressed as

Options :

1. ✔ ln 2/D

2. ✖ D/ln2

3. ✖ D.ln2

0.3/ln2

4. ✖

ZOLLEGE.in

Question Number : 108 Question Id : 587587708 Display Question Number : Yes Is Question Mandatory : No

During the enzymatic reaction of an immobilized enzyme, the rate of substrate transfer is

Options :

1. ✔ Equal to that of substrate consumption

2. ✖ More than that of substrate consumption

3. ✖ Lesser than that of substrate consumption

4. ✖ Independent of substrate consumption

Question Number : 109 Question Id : 587587709 Display Question Number : Yes Is Question Mandatory : No

A strain of *Escherichia coli* has a maximum specific growth rate of 0.8 h^{-1} on a glucose based medium. If this organism is being grown in a chemostat with a dilution rate of 1.2 h^{-1}, then at steady state the concentration of *E. coli* in the same medium will

Options :

1. ✖ Increase

2. ✔ Zero

3. ✖ Change randomly

4. ✖ Decrease

ZOLLEGE.in

Question Number : 110 Question Id : 587587710 Display Question Number : Yes Is Question Mandatory : No

Two continuous bioreactors containing the same organisms, fed with the same feed at the same dilution rate were compared. Reactor 1 started with an initial concentration of glucose of 10 $g.l^{-1}$, while reactor 2 contained 0.1 $g.l^{-1}$ of glucose at the start of the process then at steady state

Options :

1. ✖ Concentration of glucose in reactor 1 would be greater than that in reactor 2

2. ✔ Concentration of glucose in reactor 1 would be equal to reactor 2

3. ✖ Concentration of glucose in reactor 1 would always be zero.

4. ✖ Concentration of glucose in reactor 1 would be less than that in reactor 2

Question Number : 111 Question Id : 587587711 Display Question Number : Yes Is Question Mandatory : No

The general solution of $\frac{xdx+ydy}{x^2+y^2}=0$ is

Options :

1. ✖ $\log(x+y)=c$

2. ✔ $\log\left(x^2+y^2\right)=c$

3. ✖ $\log(xy)=c$

4. ✖ $\log(x-y)=c$

ZOLLEGE.in

Question Number : 112 Question Id : 587587712 Display Question Number : Yes Is Question Mandatory : No

The particular integral of $\left(D^2+5D+6\right)y=e^x$ is

Options :

1. ✔ $\frac{e^x}{12}$

2. ✖ $\frac{e^x}{6}$

3. ✖ $\frac{e^x}{10}$

4. ✖ e^x

Question Number : 113 Question Id : 587587713 Display Question Number : Yes Is Question Mandatory : No

If $A=\begin{bmatrix}1 & a & a^2\\ 1 & b & b^2\\ 1 & c & c^2\end{bmatrix}$ then, det(A) =

Options :

1. ✔ $(a-b)(b-c)(c-a)$

2. ✖ abc

3. ✖

ZOLLEGE.in

$a+b+c$

$1+a+b+c$

4. ✖

Question Number : 114 Question Id : 587587714 Display Question Number : Yes Is Question Mandatory : No

If S is the surface of the sphere $x^2+y^2+z^2=1$, then

$$\int_S \left(ax\bar{i}+by\bar{j}+cz\bar{k}\right).\bar{N}\ ds=$$

Options :

1. ✔ $\frac{4\pi}{3}(a+b+c)$

2. ✖ $4\pi(a+b+c)$

3. ✖ $\frac{\pi}{3}(a+b+c)$

4. ✖ $\pi(a+b+c)$

Question Number : 115 Question Id : 587587715 Display Question Number : Yes Is Question Mandatory : No

Using second order Runge- Kutta method, compute $y(2.25)$ given $\frac{dy}{dx}=\frac{x+y}{x}$, $y(2)=2$ taking h= 0.25 (upto three decimals).

ZOLLEGE.in

Options :

1. ✖ 2.453

2. ✔ 2.514

3. ✖ 2.428

4. ✖ 2.412

Question Number : 116 Question Id : 587587716 Display Question Number : Yes Is Question Mandatory : No

If X is a Poisson variate such that $P(X=2)=P(X=3)$, then $P(X=0)=$

Options :

1. ✖ e^{2}

2. ✔ e^{-3}

3. ✖ e^{3}

4. ✖ e^{-2}

Question Number : 117 Question Id : 587587717 Display Question Number : Yes Is Question Mandatory : No

Given the probability density function $f(x)=\frac{k}{1+x^{2}}$ for $-\infty<x<\infty$. Then value of k is

Options :

1. ✖ π

ZOLLEGE.in

2. ✖ 2π

3. ✖ $\frac{\pi}{2}$

4. ✔ $\frac{1}{\pi}$

Question Number : 118 Question Id : 587587718 Display Question Number : Yes Is Question Mandatory : No

The rank of the matrix $\begin{bmatrix} 1 & 3 & 4 \\ 2 & 6 & 8 \end{bmatrix}$ is

Options :

1. ✔ 1

2. ✖ 2

3. ✖ 3

4. ✖ 0

Question Number : 119 Question Id : 587587719 Display Question Number : Yes Is Question Mandatory : No

If $A=\begin{bmatrix} \cosh\theta & \sinh\theta \\ \sinh\theta & \cosh\theta \end{bmatrix}$, then $A^{-1} =$

Options :

1. ✔ $\begin{bmatrix} \cosh\theta & -\sinh\theta \\ -\sinh\theta & \cosh\theta \end{bmatrix}$

ZOLLEGE.in

2. ✖ $\begin{bmatrix} -\cosh\theta & \sinh\theta \\ \sinh\theta & \cosh\theta \end{bmatrix}$

3. ✖ $\begin{bmatrix} \cosh\theta & -\sinh\theta \\ \sinh\theta & \cosh\theta \end{bmatrix}$

4. ✖ A

Question Number : 120 Question Id : 587587720 Display Question Number : Yes Is Question Mandatory : No

The Taylor's series expansion of $f(z)=\frac{1}{z}$ about $z=1$ is

Options :

1. ✖ $1+(z-1)+(z-1)^2+(z-1)^3+\text{---------}$ for $|z+1|<1$

2. ✔ $1-(z-1)+(z-1)^2-(z-1)^3+\text{---------}$ for $|z-1|<1$

3. ✖ $1-z+z^2-z^3+\text{---------}$ for $|z|<1$

4. ✖ $1+z+z^2+z^3+\text{---------}$ for $|z|<1$

ZOLLEGE.in