

PREVIEW QUESTION BANK

Module Name : GAT - B 2023-ENG
Exam Date : 13-May-2023 Batch : 09:00-12:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	11001	<p>What type of modulation is used in television transmission?</p> <ol style="list-style-type: none">1. amplitude modulation2. frequency modulation3. both amplitude and frequency modulation4. no modulation is required <p>A1 : 1</p> <p>A2 : 2</p> <p>A3 : 3</p> <p>A4 : 4</p>		
Objective Question				
2	11002	<p>The potential energy $U(r)$ of two point charges at a distance of r is proportional to</p> <ol style="list-style-type: none">1. $-1/r$2. $1/r^2$3. $1/r^3$4. $1/r$ <p>A1 : 1</p> <p>A2 : 2</p> <p>A3 : 3</p> <p>A4 : 4</p>		
Objective Question				
3	11003	<p>Which one of the following is the working principle behind optical fibers?</p> <ol style="list-style-type: none">1. Reflection2. Refraction3. Diffraction4. Total internal reflection <p>A1 : 1</p> <p>A2 : 2</p> <p>A3 : 3</p>		

A4 : 4

Objective Question

4 11004

The mean square speed ($\langle v^2 \rangle$) of the molecules of a gas at absolute temperature T is proportional to

1. $1/T$
2. \sqrt{T}
3. T
4. T^2

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

5 11005

Two sources are called coherent if they produce waves

1. of equal wavelength
2. of equal velocity
3. having a constant phase difference
4. having same shape of wavefront

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

6 11006

The electric field due to a dipole along the line passing through its midpoint and perpendicular to its axis is proportional to

1. $1/r^2$
2. $1/r^3$
3. $1/r$
4. r

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

7 11007

A satellite is revolving around the Earth at some height (h). If R is the radius of orbit, then the time period of satellite is proportional to

1. $(R+h)^3$
2. $(R+h)^{3/2}$
3. $(R+h)^{5/2}$
4. $(R+h)^6$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

8 11008

The moment of inertia of a uniform hollow sphere about its diameter is

1. MR^2
2. $MR^2/2$
3. $2/3 MR^2$
4. $3/2 MR^2$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

9 11009

A pseudoplastic fluid is best characterized by

1. Increase in apparent viscosity as the sheer rate increases
2. Decrease in apparent viscosity as the sheer rate increases
3. The structure breaks down and apparent viscosity decreases with continuous shear stress
4. The structure builds up and apparent viscosity decreases with continuous shear stress

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

10 11010

A wedge of 60° representing one sixth portion of a circular disc of mass M and radius R is cut. It is rotated about a line perpendicular to its plane and passing through the centre of the original disc. Its momentum of inertia about the axis of rotation is:

1. $\frac{1}{2} MR^2$
2. $\frac{1}{8} MR^2$
3. $\sqrt{2} MR^2$
4. $\frac{1}{12} MR^2$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

11 11011

Half-life ($T_{\frac{1}{2}}$) of a radioisotope is related to decay constant (λ):

1. $T_{\frac{1}{2}} = 0.693 / \lambda$
2. $T_{\frac{1}{2}} = e^{-\lambda}$
3. $T_{\frac{1}{2}} = -\lambda N dt$
4. $T_{\frac{1}{2}} = -\lambda e^{-\lambda}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

12 11012

Which of the following are not electromagnetic waves?

1. Cosmic ray
2. X-ray
3. β -ray
4. α -ray

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

- 13 11013 The gravitational force exerted by earth on a particle as it travels from the earth's surface towards the core
1. increases
 2. is zero
 3. decreases
 4. remains same

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

- 14 11014 The S.I. unit of Luminous Intensity.
1. Joule
 2. Watt
 3. Mole
 4. Candela

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

- 15 11015 To obtain p-type Si semiconductor, we need to dope pure Si with
1. Oxygen
 2. Aluminium
 3. Phosphorous
 4. Germanium

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

16 11016

Blister copper is given its name because of the evolution of

1. H_2
2. CO_2
3. SO_2
4. Cl_2

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

17 11017

Which of the following alloys do NOT have copper as one of the constituent metal?

1. Brass
2. German Silver
3. Bronze
4. Solder

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

18 11018

Which of the following is a component of smoke screens?

1. Phosphine
2. Calcium carbide
3. Copper phosphide
4. Calcium phosphate

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

19 11019

Match List - I with List - II.

List - I	List - II
A. $\text{Na}_6\text{P}_6\text{O}_{18}$	I. Cellobiose
B. $\text{C}_{17}\text{H}_{35}\text{COONa}$	II. Cryolite
C. $\text{C}_{12}\text{H}_{22}\text{O}_{11}$	III. Calgon
D. Na_3AlF_6	IV. Soap

Choose the most appropriate match from the options given below:

1. A-III, B-II, C-I, D-IV
2. A-III, B-IV, C-I, D-II
3. A-III, B-II, C-IV, D-I
4. A-II, B-I, C-IV, D-III

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

20 11020

The reaction between sodium hydroxide and ester of fatty acid is

1. Esterification
2. Pyrophosphorolysis
3. Saponification
4. Neutralization reaction

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

21 11021

The deficiency of which vitamin in the body causes Pernicious Anaemia?

1. Vitamin B₆
2. Vitamin B₁
3. Vitamin B₁₂
4. Vitamin B₂

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

22 11022

In areas with low air pollution, rain water generally has a pH of ~5-6 because of

1. H_2SO_4
2. H_2CO_3
3. HNO_3
4. HNO_2

A1 : 1

A2 : 2

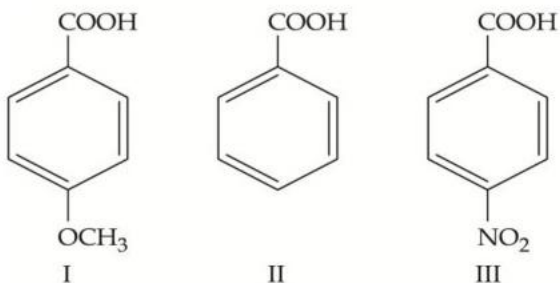
A3 : 3

A4 : 4

Objective Question

23 11023

What will be the order of acidity of the following acids, starting with the highest?



1. I > II > III
2. II > I > III
3. I = III > II
4. III > II > I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

24 11024

Which of the following is not isoelectronic with Na^+ ?

1. O_2^-
2. Mg^{+2}
3. Al^{+3}
4. F^-

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

25 11025

Calculate the molality of 3.0 g acetic acid in 100 g of benzene.

1. 0.05 mol kg^{-1}
2. 0.5 mol kg^{-1}
3. 2.0 mol kg^{-1}
4. 0.2 mol kg^{-1}

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

26 11026

You are supplied with a pain-relieving drug (MW 300) formulation at 5mg/ml. A patient with a plasma volume of 2.5 L needs an initial dose of $20\mu\text{M}$ for immediate relief. How much solution do you need to inject to the patient?

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

27 11027

The reactive functional group in coenzyme Q is

1. ester
2. carboxylic acid
3. ketone
4. thioester

A1 : 1

A2 : 2

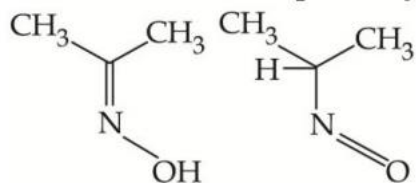
A3 : 3

A4 : 4

Objective Question

28 11028

Consider the two compounds given below:



Which of the following best describes the relationship between them?

1. Resonance structures
2. Positional isomers
3. Functional isomers
4. Tautomers

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

29 11029

The conversion of FAD to FADH₂ is a

1. One-step process with radical intermediates
2. Two-step process with ionic intermediates
3. Two-step process with radical intermediates
4. One-step process with ionic intermediates

A1 : 1

A2 : 2

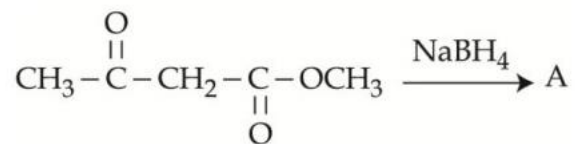
A3 : 3

A4 : 4

Objective Question

30 11030

Identify A in the following reaction:



1.
$$\text{CH}_3 - \overset{\text{OH}}{\text{CH}} - \text{CH}_2 - \underset{\text{O}}{\parallel} \text{C} - \text{OCH}_3$$
2.
$$\text{CH}_3 - \underset{\text{OH}}{\text{CH}} - \text{CH}_2 - \underset{\text{OH}}{\text{CH}} - \text{OCH}_3$$
3.
$$\text{CH}_3 - \underset{\text{OH}}{\text{CH}} - \text{CH}_2 - \underset{\text{O}}{\parallel} \text{C} - \text{OCH}_3$$
4.
$$\text{CH}_3 - \underset{\text{OH}}{\text{CH}} - \text{CH}_2 - \text{COOH}$$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

31 11031

Match **List - I** with **List - II**.

List - I	List - II
A. Amylose	I. 2 units of α -D-glucose
B. Glycogen	II. α -D-glucose + β -D-fructose
C. Maltose	III. Animal starch
D. Sucrose	IV. Plant starch

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

1. A-IV, B-III, C-I, D-II
2. A-IV, B-I, C-II, D-III
3. A-III, B-II, C-I, D-IV
4. A-III, B-I, C-II, D-IV

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

32 11032

What is Totipotency?

1. The capacity to generate a whole seed from any cell or explant.
2. The capacity to generate plants with higher levels of vitamins and healthier fats.
3. The capacity to generate somatic hybrids from the naked protoplasts of two different cells.
4. The capacity to generate a whole plant from any cell or explant.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

33 11033

Match List - I with List - II.

List - I	List - II
A. Restriction Enzymes	I. Recombinant protein
B. Microinjection	II. Molecular scissors
C. Biolistics	III. Animal cell
D. Heterologous host	IV. Gene gun

Choose the most appropriate match from the options given below:

1. A-II, B-III, C-IV, D-I
2. A-I, B-II, C-IV, D-III
3. A-IV, B-III, C-I, D-II
4. A-II, B-I, C-III, D-IV

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

34 11034

Match List - I with List - II.

List - I	List - II
A. Euchromatin	I. Densely packed DNA
B. Heterochromatin	II. RNA degradation
C. RNA	III. Transcriptionally active
D. RNase	IV. Poliovirus Genome

Choose the most appropriate match from the options given below:

1. A-III, B-I, C-IV, D-II
2. A-I, B-II, C-IV, D-III
3. A-III, B-I, C-II, D-IV
4. A-IV, B-I, C-II, D-III

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

35 11035

Match List - I with List - II.

List - I	List - II
A. Thalassemia	I. 44 +XXY chromosomes
B. Turner's Syndrome	II. 45 + XX chromosomes
C. Klinefelter's Syndrome	III. 44 +XO chromosomes
D. Down's Syndrome	IV. Autosomal recessive

Choose the most appropriate match from the options given below:

1. A-IV, B-III, C-I, D-II
2. A-I, B-III, C-II, D-I
3. A-II, B-IV, C-II, D-I
4. A-IV, B-II, C-III, D-I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

36 11036

Which one of the following is an autosomal dominant disorder?

1. Myotonic dystrophy
2. Phenylketonuria
3. Hemophilia
4. Thalassemia

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

37 11037

Identify the correct statement with respect to linkage and recombination frequency.

1. If the genes are loosely linked they show low recombination frequency
2. Two genes with 1.3 percent recombination frequency are loosely linked
3. If the genes are tightly linked they show high recombination frequency
4. If the genes are tightly linked they show low recombination frequency

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

38 11038

Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A): Morgan observed that the Drosophila genes for yellow body and white eye showed 1.3 percent recombination frequency.

Reason (R): Sturtevant used the frequency of recombination between gene pairs on the same chromosome as a measure of the distance between genes.

In the light of the above statements, choose the **most appropriate** answer from the options given below:

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is not the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

39 11039

Which is the site of attachment of spindle fibres to chromosomes during metaphase of mitosis?

1. Kinetoplast of chromosomes
2. Kinetoplast and chromatid arms
3. Sister chromatids of chromosomes
4. Kinetochores of chromosomes

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

40 11040

The separation and purification of the biological product after completion of the biosynthetic stage in a bioprocess is known as

1. Downstream processing
2. Upstream processing
3. Quality control testing
4. Sample processing

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

41 11041

How are healthy plants recovered from diseased plants using plant tissue culture?

1. By growing floral buds of diseased plants *in vitro*
2. By growing leaf epidermis of diseased plants *in vitro*
3. By growing apical and axillary meristem of diseased plant *in vitro*
4. By growing phloem parenchyma cells of diseased plant *in vitro*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

42 11042

Plants which are genetically identical to the original plant from which they are grown are called as

1. Somatic hybrids
2. Somaclones
3. Single cell explants
4. Homozygous twins

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

43 11043

Drosophila melanogaster is suitable for genetic studies because

- A. male and female flies are easily distinguishable
- B. the life cycle is completed in about three weeks
- C. a single mating produces large progeny
- D. phenotypic variations can be seen with low magnification microscope

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

- 1. A and B only
- 2. C and D only
- 3. A, C and D only
- 4. B, C and D only

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

44 11044

Find the least number which when divided by 16, 18, 20 and 25 leaves 4 as remainder in each case but when divided by 7 leaves no remainder.

- 1. 8004
- 2. 13004
- 3. 18004
- 4. 18014

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

45 11045

Which of the following is NOT a secondary lymphoid organ?

- 1. Lymph nodes
- 2. Spleen
- 3. Peyer's patches
- 4. Bone Marrow

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

46 11046

Which two gases together contribute maximally to global warming?

1. $\text{CO}_2 + \text{N}_2\text{O}$
2. $\text{CH}_4 + \text{CFCs}$
3. $\text{CO}_2 + \text{CFCs}$
4. $\text{CO}_2 + \text{CH}_4$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

47 11047

The ratio of the incomes of two persons is 9:7 and the ratio of their expenditure is 4:3. If each of them manages to save Rs. 2000/- per month, find their monthly income.

1. 9,000/- & 7,000/-
2. 10,500/- & 13,500/-
3. 10,800/- & 8,400/-
4. 18,000/- & 14,000/-

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

48 11048

The perimeter of the top of a rectangular table is 28 m, whereas its area is 48 m^2 . What is the length of its diagonal?

1. 5 m
2. 10 m
3. 12 m
4. 12.5 m

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

49 11049

Triangle ABC is a right angled triangle, right angled at B. If lengths of AB and BC are 60 cm and 80 cm respectively, and BD is an altitude of triangle ABC, then find the length of AD in cm.

1. 34
2. 36
3. 40
4. 42

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

50 11050

Ramesh has four friends. In how many ways can he invite one or more of them for dinner?

1. 15
2. 11
3. 16
4. 20

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51 11051

Robin could get equal number of Rs. 55, Rs. 85 and Rs. 105 category tickets for a movie. He spent Rs. 2940 for all the tickets. How many tickets of each category did he buy?

1. 12
2. 14
3. 16
4. 11

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52 11052

Pipe A can fill a tank three times faster than Pipe B. If together the two pipes can fill the tank in 36 minutes, then Pipe B alone will be able to fill the tank in

1. 81 minutes
2. 108 minutes
3. 144 minutes
4. 192 minutes

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

53 11053

Rohit has some hens and some goats. If the total number of animals is 90 and the total number of animal feet is 248. What is the total number of goats Rohit has?

1. 32
2. 36
3. 34
4. 30

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

54 11054

Which two operation signs need to be interchanged to make the following equation correct?

$$73 - 13 \times 42 \div 14 + 56 = 56$$

1. + and \times
2. \times and \div
3. - and +
4. - and \times

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

55 11055

A man spends 75% of his income. If his income increases by 20% and his expenditure increases by 10%, then the percentage of increase in his saving would be

1. 40%
2. 30%
3. 50%
4. 25%

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

56 11056

A basket contains 4 red, 5 blue and 3 green marbles. If 3 marbles are picked at random, what is the probability that either all are green or all are red?

1. $\frac{7}{44}$
2. $\frac{7}{12}$
3. $\frac{5}{12}$
4. $\frac{1}{44}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

57 11057

Which of the following represents the equation of a straight line passing through origin?

1. $2x-3y=0$
2. $5x-4=0$
3. $2y-13=0$
4. $x+2y+9=0$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

58 11058

A fraction becomes $\frac{9}{11}$ if 2 is added to both the numerator & the denominator. If 3 is added to both the numerator and denominator, the fraction becomes $\frac{5}{6}$. Find the fraction.

1. $\frac{7}{9}$
2. $\frac{2}{3}$
3. $\frac{7}{11}$
4. $\frac{8}{9}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

59 11059

A 10m long ladder reaches a window 8 m above the ground. Find the distance of the ladder from the base of the wall.

1. 7 m
2. 6 m
3. 10 m
4. 5 m

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

60 11060

Two fair cubical dice with faces numbered from 1 to 6 are rolled. What is the probability that the sum of the numbers on the two faces that appear on the top is 8, given that each of the two faces that appear on the top shows an odd number?

1. $\frac{1}{18}$
2. $\frac{2}{9}$
3. $\frac{5}{36}$
4. $\frac{1}{9}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

61 11061 Which of the following bacterium is generally used in plant genetic engineering?

1. *Thermus aquaticus*
2. *Pseudomonas syringae*
3. *Agrobacterium tumifaciens*
4. *Escherichia coli*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

62 11062 Which of the following is NOT a preparative purification method for recovering protein product after fermentation?

1. Gel filtration chromatography
2. Ion exchange chromatography
3. Thin Layer chromatography
4. Affinity chromatography

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

63 11063 Sterilization of fermentation media with steam is performed at

1. 100 °C for 30 minutes
2. 150°C for 5 minutes
3. 121 °C for 10 minutes
4. 121°C for 20 minutes

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

64 11064

Which of the following is a bacteria known for high yield of ethanol production?

1. *Saccharomyces cerevisiae*
2. *Pseudomonas aeruginosa*
3. *Zymomonas mobilis*
4. *Acetobacter aceti*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

65 11065

In a typical bacterial growth curve, the phase in which cells adapt to growth condition and are metabolically active but not able to divide is:

1. Stationary phase
2. Lag phase
3. Exponential phase
4. Death phase

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

66 11066

Which of the following is generally NOT a primary metabolite?

1. Amino acids
2. Polysaccharides
3. Antibiotics
4. Vitamins

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

67 11067

Vaccination in the last century had resulted in 100% reduction in active cases across the globe for

1. small pox
2. hepatitis B
3. tetanus
4. tuberculosis

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

68 11068

Charles Richet was awarded Nobel Prize in Physiology or Medicine for his seminal discovery of

1. immunoglobulins
2. hypersensitivity
3. mRNA vaccines
4. malaria vaccine

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

69 11069

Match List I with List II

List I	List II
A. IgM	I. Monomer; Mast Cell activation
B. IgA	II. Naïve B cell antigen receptor
C. IgD	III. Monomer/Dimer/Trimer; Mucosal Immunity
D. IgE	IV. Pentamer; Complement Activation

Choose the correct answer from the options given below:

1. A- III, B- I, C- II, D-IV
2. A- IV, B- II, C- III, D- I
3. A- II, B- III, C- IV, D- I
4. A- IV, B- III, C- II, D- I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

70 11070

Which of the following is a multinucleated cell present in the bones of human body?

1. Cartilage
2. Osteoclasts
3. Osteoblast
4. Osteocyte

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

71 11071

Neurotransmitters can be either excitatory or inhibitory, depending on where they are released, what receptors they bind to, and the ionic conditions that they encounter. Which of the following is a group of excitatory neurotransmitters?

1. Glycine and Glutamate
2. γ -aminobutyric acid (GABA) and Glycine
3. Glutamate, Acetylcholine and Serotonin
4. γ -aminobutyric acid (GABA) and Serotonin

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

72 11072

Match List I with List II

Retrotransposons category	Examples
A. LTR, autonomous	I. <i>Dasheng</i>
B. Non-LTR, autonomous	II. <i>Alu</i>
C. LTR, non-autonomous	III. <i>copia</i>
D. Non-LTR, non-autonomous	IV. <i>I</i> factor

Choose the correct answer from the options given below:

1. A-II, B-III, C-IV, D-I
2. A-III, B-IV, C-I, D-II
3. A-IV, B-I, C-II, D-III
4. A-III, B-II, C-I, D-IV

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

73 11073

Which of the following statement is NOT true about the seed culture of Orchids?

1. They grow on salt poor medium as mineral requirement is low
2. Protocorm like structure is formed from the embryo
3. Seeds are very small and contain little or no food reserve
4. *In vitro* germination and development is very slow in Orchids

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

74 11074

Which of the following is a dominant genetic trait in humans?

1. Alkaptonuria
2. Sickle cell anemia
3. Huntington's disease
4. Phenylketonuria

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

75 11075

The structural gene *lac A* in the Lac operon is responsible for

1. prevent entry of glucose into the bacterial cell
2. conversion of disaccharide sugar into their monosaccharides
3. conversion of lactose to allolactose
4. removal of toxic byproducts of lactose digestion

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

76 11076

Which one of the following is **incorrect** about DNA microarray?

1. It is used for transcriptome analysis
2. It is used to identify expression of microRNAs only
3. All the expressed genes of a sample can be analyzed simultaneously
4. It can qualitatively as well as quantitatively analyze the expression of particular mRNA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

77 11077

Xeroderma pigmentosum, an autosomal recessive disorder, is caused due to defects in

1. Nucleotide Excision Repair Pathway
2. Base Excision Repair Pathway
3. Double Strand Break Repair Pathway
4. Homologous Recombination Repair Pathway

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

78 11078

Which of the following is NOT correct about mutagenesis using a chemical mutagen?

1. Low frequency of mutations in the gene of interest
2. Inability to confirm the location of the causal mutation even after getting the desired phenotype
3. Creation of point mutations at a specific position in the gene of interest
4. Analysis of a large number of offspring is required to isolate the desired mutant

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

79 11079

Which of the following could be a recognition site of a Type II α restriction endonuclease?

1. 5'-TTAACCGGAA-3'
2. 5'-GCTAATAGC-3'
3. 5'-TTTAATTAAA-3'
4. 5'-CCCTATAGG-3'

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

80 11080

Which of the following is desirable in a primer for PCR?

1. Should always be more than 50 nucleotides in length
2. Secondary structures such as hairpins
3. Sequences with stretches of identical single nucleotides
4. Minimal complementarity between reverse and forward primers

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

81 11081

Which of the following is a heteropolysaccharide?

1. Chitin
2. Dextran
3. Agarose
4. Glycogen

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

82 11082

Match List I with List II

Antibiotic	Mode of Action
A. Ampicillin	I. Inhibits translation by binding to 50S ribosomal subunit
B. Kanamycin	II. Inhibits translation by binding to 30S ribosomal subunit
C. Hygromycin-B	III. Inhibits cell wall synthesis by disrupting peptidoglycan cross-linking
D. Chloramphenicol	IV. Inhibits translation by interfering with ribosomal translocation

Choose the correct answer from the options given below:

1. A-III, B-II, C-IV, D-I
2. A-IV, B-III, C-II, D-I
3. A-II, B-III, C-IV, D-I
4. A-III, B-IV, C-I, D-II

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

83 11083

Which of the following is NOT a PCR based method?

1. Selective Amplification of Microsatellite Polymorphic Loci (SAMPL)
2. Sequence Tagged Site (STS) Amplification
3. Random Amplification of Polymorphic DNA (RAPD)
4. Restriction Fragment Length Polymorphism (RFLP)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

84 11084

Which of the following statement is NOT correct with respect to Cybrids?

1. They are the resultants of spontaneous fusion of protoplasts obtained from common callus culture
2. They allow the direct transfer of cytoplasmic male sterility(CMS) from donor to recipient
3. The process can bypass up to 12 backcrosses required in development of alloplasmic lines
4. It is a fusion of protoplast of one parent and cytoplasm of the second.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

85 11085

Find the odd one out with respect to pleiotropic gene expression:

1. White eye gene in *Drosophila*
2. Flower color gene in *Pisum sativum*
3. Marfan's Syndrome
4. Plumage color in poultry

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

86 11086

In which stage of HIV infection does one usually show symptoms of AIDS:

1. Within 15 days of sexual contact with an infected person
2. When the infected retrovirus enters the host cell
3. When HIV damages a large number of helper T-Lymphocytes
4. When the viral DNA is produced by reverse transcriptase

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

87 11087

Given below are two statements:

Statement I: Orthologs are sequences from different organisms or genomes derived from speciation events while paralogs are sequences from the same organism or genome, which are derived from gene duplication events rather than speciation events.

Statement II: Both orthologs and paralogs are homologous sequences

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is correct but Statement II is false
4. Statement I is incorrect but Statement II is true

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

88 11088

The approximate length of the open reading frame coding for a 55 kDa bacterial protein will be

1. 5000 nucleotides
2. 5500 nucleotides
3. 1500 nucleotides
4. 3000 nucleotides

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

89 11089

Which of the following is NOT a multiple sequence alignment program?

1. CLUSTALX
2. AMBER
3. CLUSTALW
4. PILEUP

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

90 11090

Given below are two statements:

Statement I: Protein-ligand docking involves binding of a small molecule to the protein receptor.

Statement II: Both AUTODOCK and LUDI are protein-ligand docking programs

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is correct but Statement II is false
4. Statement I is incorrect but Statement II is true

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

91 11091

EST stands for

1. Eukaryotic Sequencing Technology
2. Expressed Sequence Tag
3. Eukaryotic Sequence Test
4. Eukaryotic Sequence Tag

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

92 11092

Which of the following is a structurally independent three-dimensional unit associated with a particular functional role?

1. Domain
2. Motif
3. Strand
4. Helix

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

93 11093

$\log P$ is a measure of drug-likeness in Lipinsky's Rule of Five. P denotes

1. partition coefficient
2. polymer concentration
3. plasma coefficient
4. pyrogen concentration

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

94 11094

A gene whose expression helps to identify transformed cell is known as

1. Regulatory gene
2. Housekeeping gene
3. Structural gene
4. Selectable marker

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

95 11095

Which of the following exhibits maximum mobility in an agarose gel?

1. Nicked Plasmid DNA
2. Supercoiled Plasmid DNA
3. Linear Plasmid DNA
4. Single stranded Plasmid DNA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

96 11096

The purity of a plasmid DNA preparation is determined by analyzing the ratio A_{260}/A_{280} . In a pure DNA preparation, the ratio will be

1. close to 2
2. close to 1
3. less than 1
4. equal to 1

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

97 11097

How much protein will you need to make 100 microlitres of 15 micromolar solution of a 95 kDa protein?

1. 0.1425 mg
2. 1.425mg
3. 0.01425 mg
4. 14.25 mg

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

98 11098

Information about the isoelectric point will be useful in the purification of a protein by which of the following chromatography techniques?

1. Gel Filtration chromatography
2. Ion exchange chromatography
3. Reverse phase chromatography
4. Hydrophobic interaction chromatography

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

99 11099

To combat a severe viral infection, what kind of immune response should be elicited?

1. Innate immune response only
2. Humoral response only
3. Cell mediated immune response only
4. Both humoral and cell mediated immune response

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

100 11100

A monoclonal antibody was heterologously expressed in *E. coli* and Chinese hamster ovary (CHO) cell line, and the recombinant proteins obtained were purified to homogeneity and were found to be structurally identical. However, the protein expressed in *E. coli* was not functionally active. The reason could be

1. The protein needs glycosylation for its function
2. *E. coli* introduced phosphorylation which was detrimental for function
3. CHO cells generally phosphorylate the heterologously expressed protein
4. There may be an inactivating ubiquitination modification in *E. coli*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

PREVIEW QUESTION BANK

Module Name : GAT - B 2023-ENG
Exam Date : 13-May-2023 Batch : 09:00-12:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
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Objective Question

101	11101	<p>The genome of Hepatitis B, a DNA virus, is unlikely to code for</p> <ol style="list-style-type: none">1. DNA dependent DNA polymerase2. RNA dependent DNA polymerase3. DNA dependent RNA polymerase4. Envelope protein		
	A1 : 1			
	A2 : 2			
	A3 : 3			
	A4 : 4			

Objective Question

102	11102	<p>Which of the following is generally NOT a step in PCR?</p> <ol style="list-style-type: none">1. Denaturation2. Elongation3. Annealing4. Ligation		
	A1 : 1			
	A2 : 2			
	A3 : 3			
	A4 : 4			

Objective Question

103 11103

Which of the following is true for the free-energy change of a reaction (ΔG) catalyzed by an enzyme?

1. A reaction can take place spontaneously only if ΔG is negative.
2. In a system at equilibrium, there is a net change in the concentrations of the products and reactants and ΔG is positive.
3. The ΔG of a reaction is dependent of the path of the transformation.
4. The ΔG provides information about the rate of a reaction.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

104 11104

Which of the following is correct about the endoplasmic reticulum?

1. The smooth endoplasmic reticulum is involved in glycosylating the proteins
2. The rough endoplasmic reticulum is involved in synthesis of proteins that will either be inserted into cellular membranes or be secreted from the cell
3. The lumen of rough endoplasmic reticulum is highly reducing in nature
4. The smooth endoplasmic reticulum synthesizes globular proteins and rough endoplasmic reticulum synthesizes fibrillar proteins

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

105 11105

Which of the following DNA, in its double-stranded form, will have the highest T_m ?

1. ATGTTGGACCTTGAGTAATGCTA
2. AAAGGATTTCCCTTTGATCGTATG
3. ATTTACTAGATTACTAGTATTGATA
4. GCTTATGTATACCGGTTAGATCG

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

106 11106

Which one of the following amino acids contributes to the sulfur content in a protein?

1. Methionine
2. Proline
3. Leucine
4. Phenylalanine

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

107 11107

The equilibrium sedimentation experiments performed by Meselson and Stahl in 1957 demonstrated that

1. DNA replication takes place in a semiconservative fashion
2. DNA is double stranded
3. DNA chains are antiparallel
4. The nucleotides in DNA contain sugar

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

108 11108

Match list I with List II

List I	List II
A. Coenzyme A	I. Riboflavin
B. FAD	II. Pantothenic acid
C. Thiamine pyrophosphate	III. Niacin
D. NAD^+	IV. Vitamin B ₁

Choose the most appropriate match from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-II, B-I, C-IV, D-III
3. A-III, B-IV, C-I, D-II
4. A-IV, B-III, C-II, D-I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

109 11109

The degree of inhibition for an enzyme catalyzed reaction by an inhibitor is independent of substrate concentration. This is expected in case of

1. Competitive inhibition
2. Un-competitive inhibition
3. Non-competitive inhibition
4. Allosteric inhibition

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

110 11110

Which of the following bioprocess would yield maximum number of ATP per gram of the substrate consumed?

1. Anaerobic catabolism of amylose
2. Aerobic catabolism of glucose
3. Aerobic catabolism of methanol
4. Aerobic catabolism of acetate

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

111 11111

The theoretical RQ (respiratory quotient) for the complete oxidation of pyruvic acid will be

1. 1.2
2. 0.6
3. 0.8
4. 1.0

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

112 11112

Match list I with List II

List I (Enzymes)	List II (Application)
A. Alkalase	I. Animal feed
B. Lipase	II. Maltose rich syrup
C. β -amylase	III. Degreasing of leather hides
D. Phytase	IV. Bioactive peptides

Choose the most appropriate match from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-II, B-III, C-I, D-IV
3. A-IV, B-III, C-I, D-II
4. A-IV, B-III, C-II, D-I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

113 11113

The cell mass of *E.coli* can be chemically represented as $CH_{1.77} O_{0.49} N_{0.24}$. The degree of reduction for this biomass (based on available electrons) is

1. 6.50
2. 2.50
3. 3.47
4. 4.07

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

114 11114

A culture of *E.coli* cells (1 ml) was diluted 10^6 fold and 100 μ l of this was used for plating. After 24 hours incubation, the number of colony forming units (CFU) was found to be 180. The CFU count of the original culture is

1. 1.8×10^9 CFU/ml
2. 1.8×10^6 CFU/ml
3. 1.8×10^7 CFU/ml
4. 1.8×10^8 CFU/ml

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

115 11115

Which of the following biochemical techniques does not use antibody?

1. ELISA
2. Western blotting
3. Isoelectric focusing
4. Immuno-affinity chromatography

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

116 11116

Fermentation of fruit juice to vinegar involves the use of

1. Yeast only
2. Yeast with lactic acid bacteria
3. Yeast with butyric acid bacteria
4. Yeast with acetic acid bacteria

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

117 11117

Which of the following process involves the formation of nitrate from ammonia?

1. Ammonification
2. Denitrification
3. Nitrification
4. Nitrogen fixation

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

118 11118

The distance between each turn in the helical strand of DNA is

1. 20 Å
2. 34 Å
3. 28 Å
4. 42 Å

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

119 11119

Which of the following mineral elements play an important role in biological nitrogen fixation?

1. Copper
2. Magnesium
3. Molybdenum
4. Zinc

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

120 11120

Most bacteria require vitamins as

1. growth factors
2. energy source
3. carbon source
4. source of electron donors

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

121 11121

In a reaction, if P (product) is at a lower internal energy level than S (substrate), then the reaction is

1. Endothermic
2. Exothermic
3. Homothermic
4. Exomorphic

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

122 11122

The electron transport system is present in the

1. Inner mitochondrial membrane
2. Outer mitochondrial membrane
3. Outer chloroplast membrane
4. Mitochondrial matrix

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

123 11123

Which is the most abundant protein in the entire biosphere?

1. Collagen
2. Haemoglobin
3. Proteases
4. Ribulose bisphosphate Carboxylase-Oxygenase

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

124 11124

Trihydroxypropane is commonly known as

1. Glycine
2. Glyceride
3. Glycerol
4. Glycolide

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

125 11125

Intine, the inner wall of pollen grain is made up of

1. Cellulose and Pectin
2. Cellulose and Lignin
3. Pectin and Sporopollenin
4. Sporopollenin and Cellulose

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

126 11126

The “Microglial Cells” found in human brain, represent which of the following class of innate immune cells?

1. NK cells
2. Macrophages
3. Eosinophils
4. Neutrophils

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

127 11127

Which antibody is involved in Type I hypersensitivity reaction?

1. IgM
2. IgG
3. IgE
4. IgA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

128 11128

Which of the following antibody is used by immune complexes for complement activation?

1. IgA
2. IgM
3. IgE
4. IgD

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

129 11129

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Normally, the influenza virus changes its structure slightly for each passing year. Although, we are being exposed to these “modified” or slightly mutated and evolving influenza strains every year, we do not always come down with the flu-disease even if we have not received the yearly influenza vaccine. However, sometimes, we do get a really bad case of the flu, despite the fact that we have memory cells left from previous infections with the influenza virus.

Reason R: This is a concept of original antigenic sin, which suggests that we only mount a primary response once we have exhausted the potential to use our memory cells to eradicate the infection. Since most of our first encounters with influenza will vary, the years in which “all” of the key influenza epitopes are significantly “new” to each of us will also vary. It is only in these years that we experience a new primary response to influenza virus, and therefore symptoms of the flu are most severe.

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

1. Both **A** and **R** are true and **R** is the correct explanation of **A**
2. Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**
3. **A** is true but **R** is false
4. **A** is false but **R** is true

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

130 11130

A humanized murine antibody is one in which the

1. Heavy and light chain are from humans.
2. Heavy chain is from human and the light chain is from mouse
3. Light chain is from human and the heavy chain is from mouse
4. CDRs are from mouse and the other regions are from humans

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

131 11131

Symptoms of an allergy attack can be prevented by

1. Reducing the number of helper T cells in the body
2. Blocking the attachment of the IgE antibodies to the mast cells
3. Blocking the attachment of cytotoxic cells to dendritic cells.
4. Reducing the number of natural killer cells.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

132 11132

BCG vaccine is an example of

1. Live attenuated vaccine
2. Heat killed vaccine
3. Recombinant vaccine
4. Subunit vaccine

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

133 11133

Cytokine released in response to virus infection is termed as

1. Interleukin
2. Interferon
3. Monokine
4. Lymphokine

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

134 11134

Which of the following is the least abundant immunoglobulin class in a normal adult?

1. IgG
2. IgE
3. IgM
4. IgA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

135 11135

Which of the following is normally used to determine the frequency of interferon gamma producing cells in a blood sample?

1. ELISPOT
2. ELISA
3. Immunoprecipitation
4. Confocal microscopy

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

136 11136

Which is NOT a part of mandatory design considerations of a Rotating Biological Contactor (RBC) system?

1. Staging of the RBC units and Secondary clarifier design
2. Loading criteria
3. Effluent characteristics
4. Rotation speed

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

137 11137

Which of the following is NOT an example of bioremediation?

1. Cleaning of oil spills by *Pseudomonas putida*
2. Decomposition of DDT by *Acetobacter aerogenus*
3. Removal of metal pollutants by *Pseudomonas* species
4. Depletion of ozone by *Aspergillus niger*

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

138 11138

The study of various atmospheric parameters is called

1. Geology
2. Hydrology
3. Meteorology
4. Environmental Biology

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

139 11139

Which of the following statements are NOT true for photochemical smog?

1. It is called oxidizing smog
2. Its main component is SO₂
3. It occurs in warm and dry climate
4. It is formed due to burning of fossil fuels

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

140 11140

Harmful gases such as SO₂ can be removed from the industrial exhaust using

1. Catalytic convertor
2. Electrostatic precipitator
3. Earmuffs
4. Scrubber

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

141 11141

Which of the following is true for a water sample with BOD value of more than 50 ppm?

1. The DO content would be less than 6 ppm
2. The water is clean
3. The amount of organic matter is very less
4. The aquatic life will be thriving

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

142 11142

The issue of pesticide contamination of carbonated drinks was brought into limelight by which of the following NGO?

1. Centre for Science and Environment
2. Bombay Natural History Society
3. Green Peace
4. Kalpavriksh

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

143 11143

Anaerobic digestion proceeds in 4 steps. Which of the following represents the correct order of these four steps?

1. Hydrolysis --> Acetogenesis --> Acidogenesis --> Methanogenesis
2. Hydrolysis --> Acidogenesis --> Acetogenesis --> Methanogenesis
3. Methanogenesis --> Acidogenesis --> Acetogenesis --> Hydrolysis
4. Acidogenesis --> Hydrolysis --> Acetogenesis --> Methanogenesis

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

144 11144

Which of the following factors DO NOT affect the operation of a trickling filter?

1. organic loading
2. hydraulic flow rates
3. temperature of the water and air
4. linear flow velocity of the liquid

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

145 11145

The UN Conference on Environment and Development (UNCED) is popularly known as

1. Montreal protocol
2. Basel conference
3. Paris conference
4. Earth summit

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

146 11146

Which of the following is an RNA virus?

1. Dengue virus
2. Small pox virus
3. Human Papilloma virus
4. Hepatitis B Virus

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

147 11147

Which of these viruses make use of RNA-dependent DNA polymerase during replication?

1. HIV
2. Dengue virus
3. Polio virus
4. Hepatitis E virus

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

148 11148

Which of the following viruses is likely to have the highest genomics mutation rate?

1. Small pox virus
2. Polio virus
3. Hepatitis B Virus
4. Adenovirus

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

149 | 11149

Which of the following group of viruses generally infect plants?

1. Retroviruses
2. Riboviruses
3. Rheoviruses
4. Enteroviruses

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

150 | 11150

Which of the following is an enveloped virus?

1. Dengue virus
2. Polio virus
3. Foot and mouth disease virus
4. Adenovirus

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

151 | 11151

Which one of the following would, in general, NOT be a preferred choice for transgenic plants?

1. Transgenic plants with higher levels of transgene expression
2. Transgenic plants with single-copy insertion of the transgene
3. Transgenic plants without any pleiotropic effects of the transgene
4. Transgenic plants with integration of multiple copies of the transgene

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

152 11152

Given below are two statements:

Statement I: The T-DNA region of a naturally occurring (native) Ti plasmid of *Agrobacterium tumefaciens* contains genes for biosynthesis of plant hormones.

Statement II: The *virulence* genes of *Agrobacterium tumefaciens* are placed on a Helper Plasmid during development of a binary vector system for plant transformation.

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

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is correct but Statement II is false
4. Statement I is incorrect but Statement II is true

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

153 11153

Match List I with List II

List I	List II
A. Nitrogen	I. Carbon source
B. Sucrose	II. Macronutrient
C. Manganese	III. Organic supplement
D. Myoinositol	IV. Micronutrient

Choose the correct answer from the options given below that is the best possible match of various components of plant tissue culture media (List I) and their role (List II):

1. A-IV, B-III, C-II, D-I
2. A-II, B-I, C-IV, D-III
3. A-III, B-IV, C-I, D-II
4. A-III, B-I, C-II, D-IV

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

154 11154

The addition of silver nitrate in plant tissue culture media is useful for managing and minimizing detrimental effects of which of the following plant hormones?

1. NAA
2. ethylene
3. GA-34
4. kinetin

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

155 11155

Match List I with List II

List I	List II
A. <i>phytoene synthase</i>	I. DMH-11 mustard hybrid
B. <i>barnase-barstar</i> system	II. Bt cotton
C. <i>EPSPS</i>	III. Golden rice
D. <i>CryIA(c)</i>	IV. RoundUp Ready soybean

Choose the correct answer from the options given below:

1. A-IV, B-III, C-I, D-II
2. A-IV, B-II, C-I, D-III
3. A-III, B-I, C-IV, D-II
4. A-III, B-IV, C-I, D-II

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

156 11156

Which one of the following conditions would, in general, be more conducive for the production of roots from callus tissue of plants under *in vitro* conditions?

1. Higher cytokinin/auxin ratio
2. Higher auxin/cytokinin ratio
3. Lower auxin/cytokinin ratio
4. Removal of both auxin and cytokinin from the medium

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

157 11157

The pH indicator used for animal cell culture media is

1. CaCl_2
2. Phenol red
3. Fetal Bovine Serum
4. Phenolphthalein

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

158 11158

The first clinical use of gene therapy was done for treatment of

1. Peptide deaminase deficiency
2. Adenosine deaminase deficiency
3. Cytosine decarboxylate deficiency
4. Adenosine demethylase deficiency

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

159 11159

Which of the following is best suited to express large amount of glycosylated protein?

1. *E. coli*
2. *M. smegmatis*
3. Baculovirus
4. Lambda Phage

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

160 11160

Which of the following can be used for cell-line authentication?

1. Serotyping
2. Virus infection
3. PCR
4. Protein estimation

A1 : 1

A2 : 2

A3 : 3

A4 : 4
