



# VEDEMY

आपके शिक्षा का सारथी, जो आपको सफलता तक ले जाए

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**Virendra Singh**  
Founder, Vedemy ( Ph. D , IIT BHU )



बडा लालपूर,चांदमारी, सिंधोरा रोड, वाराणसी

1. Car B is ahead of Car A by 100m. Car A is moving with constant speed of 10 m/s and car B starts from rest accelerating with an acceleration of  $2 \text{ m/s}^2$ . Find the minimum distance between both the cars:  
(a) 100 m  
(b) 50 m  
(c) 75 m  
(d) 0 m
2. Going 40m to South of her house, Mehar turns left and goes another 20 m. Then, turning to the North, she goes 20m, and then starts walking to her house. In which direction, is she walking now?  
(a) North-West  
(b) North  
(c) South-East  
(d) East
3. Which two months in a year have the same calendar?  
(a) September-December  
(b) April- November  
(c) May- August  
(d) June- September
4. At a railway station a 24-hour watch loses 3 minutes in 4 hours. If it is set correctly on Sunday noon, when will the watch show the CORRECT time?  
(a) 6pm after 40 days.  
(b) 12 noon after 75 days.  
(c) 12 pm after 100 days.  
(d) 12 noon after 80 days.
5. How many primary or deciduous teeth does a normal human have?  
(a) 32  
(b) 20  
(c) 16  
(d) 22
6. Find the day of the week on 16th January, 1969?  
(a) Monday  
(b) Thursday  
(c) Wednesday  
(d) Tuesday
7. The theme of World Immunization Week 2021 is:  
(a) Vaccines bring us closer.  
(b) Vaccinate daughter, screen mothers.  
(c) Vaccines work for all.  
(d) Protect your world-get vaccinated.
8. One yard is equal to how many inches?  
(a) 36  
(b) 3  
(c) 91.44  
(d) 12
9. Which of the following variant is known as the Delta variant of SARS-CoV-2?  
(a) Lineage B.1.617.2

- (b) Lineage B.1.1.7
- (c) Lineage B.1.351
- (d) Lineage P.1

10. COVID-19 mRNA vaccines give instructions to body's cells to make the "spike protein." Which of the following is an m-RNA vaccine for COVID-19?

- (a) Pfizer-BioTech vaccine.
- (b) Oxford-Astra Zeneca vaccine.
- (c) Bharat Biotech vaccine.
- (d) Russia's Sputnik vaccine.

11. Harvey J Alter, Charles M Rice and Michael Houghton won the Nobel Prize in Medicine in 2020 for:



- (a) Identification of Hepatitis C virus.
- (b) Work on black holes.
- (c) Developing the CRISPR-Cas9 gene-editing tools.
- (d) For discoveries about how cells sense and adapt to oxygen availability.

12. The instrument that records the intensity of earthquakes is:

- (a) Barometer
- (b) Seismograph
- (c) Dosimeter
- (d) Gyroscope

13. Which city is known as 'Gold capital of the world'?

- (a) Johannesburg
- (b) Paris
- (c) Dubai
- (d) London

14. The difference in the duration of day and night increases as one moves from:

- (a) Equator to poles.
- (b) West to East.
- (c) East and west of the prime meridian.
- (d) Poles to equator.

15. The World Health Organization (WHO) has certified which country as Malaria free in 2021?

- (a) Pakistan
- (b) China
- (c) Brazil
- (d) Canada

16. Which of the following is **NOT** an anti-virus software?

- (a) Avira
- (b) Bitdefender

- (c) Oracle  
(d) Panda
17. Gases usually used for filling an electric bulb are:  
(a) Argon and nitrogen.  
(b) Argon and carbon dioxide.  
(c) Nitrogen and carbon dioxide.  
(d) Nitrogen and oxygen.
18. A pea when soaked in water, gains about 40% by weight and 20% by volume. By what factor does the density increase?  
(a) 2.15  
(b) 2. 1.16  
(c) 3. 1.25  
(d) 4. 1.1
19. GPS is an abbreviation for?  
(a) Global Poles System.  
(b) Global Positioning Store.  
(c) Global Positioning System.  
(d) Global Positioning Satellite.
20. One light year is equal to:  
(a)  $9.5 \times 10^6$  km  
(b)  $9.5 \times 10^{12}$  km  
(c)  $9.5 \times 10^9$  km  
(d)  $9.5 \times 10^{18}$  km
21. The scientific study of dreams is called:  
(a) Arachnology  
(b) Pomology  
(c) Speleology  
(d) Oncirology
22. Nosophobia is:  
(a) Fear of not having a working mobile phone.  
(b) Fear of developing a disease.  
(c) Fear of nausea or vomiting.  
(d) Fear of smells.
23. The colour of the onion is pink due to the presence of:  
(a) Carotene  
(b) Anthocyanin  
(c) Xanthophyll  
(d) Lycopene
24. The gas used for artificial ripening of fruits is:  
(a) Ethylene  
(b) Ethane  
(c) Carbon dioxide  
(d) Acetylene
25. The pH of human blood is about:  
(a) 7.4  
(b) 6.5



- (c) 3.7
- (d) 9.2

26. The flower shown in the image is the source of which of the following anticancer drugs?



- (a) Vincristine
  - (b) Cyclosporine
  - (c) Oxaliplatin
  - (d) 5-Flourouracil
27. Which of the following is the best conductor of electricity?
- (a) Sea water
  - (b) Rain water
  - (c) Boiled water
  - (d) Distilled water
28. Anosmia and ageusia is loss of and, respectively:
- (a) Smell, Taste
  - (b) Taste, Smell
  - (c) Smell, Sight
  - (d) Sight, Taste
29. According to Indian law, what is the minimum age of a person for employment in a factory?
- (a) 12 years
  - (b) 14 years
  - (c) 18 years
  - (d) 21 years
30. A trader mixes 26 kg of rice priced at Rs. 20 per kg with 30 kg of rice of other variety priced at Rs. 36 per kg and sells the mixture at Rs. 30 per kg. His profit percent is:
- (a) No profit, no loss
  - (b) 5%
  - (c) 10%
  - (d) 8%
31. What is chemical symbol for Tungsten?
- (a) W
  - (b) 1
  - (c) G
  - (d) Tn
32. What type of study is best suited for the initial evaluation of rare diseases?
- (a) Intervention studies.
  - (b) Case control studies.
  - (c) Randomized controlled studies.
  - (d) Cohort studies.



# Team of IITians & Doctors



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33. Which of the following phases of clinical trial evaluates safety and tolerability of a drug in healthy volunteers?  
(a) Phase 1  
(b) Phase IIA  
(c) Phase III  
(d) Phase 11B
34. If a diagnostic test is 90% sensitive, what will be the percentage of **FALSE** negative results?  
(a) Cannot be estimated from the information provided.  
(b) 9%.  
(c) 19%.  
(d) 10%.
35. Fertilisation of an ovum by a sperm commonly occurs in which part of the female reproductive system?  
(a) Uterine body  
(b) Ovary  
(c) Vagina  
(d) Fallopian tube
36. Which one of the following is the basis of the modern periodic table?  
(a) Atomic volume  
(b) Atomic size  
(c) Atomic number  
(d) Atomic mass
37. Carbon, diamond and graphite are together called:  
(a) Isomers  
(b) Isotopes  
(c) Isomorphs  
(d) Allotrope
38. Ethyl mercaptan added to the otherwise odourless LPG cooking gas for imparting a detectable smell to the gas is a compound of:  
(a) Bromine  
(b) Oxygen  
(c) Sulphur  
(d) Nitrogen
39. Vertical "Operation Flood" is a movement related with the product:  
(a) Milk  
(b) Fresh Water  
(c) Rice  
(d) Rain
40. Indian Standard Time (IST) refers to the local time of which city?  
(a) Banaras  
(b) Gurugram near Delhi  
(c) Mirzapur near Allahabad  
(d) Kolkata
41. A bag contains 7 green and 8 white balls. If two balls are drawn simultaneously, the probability that both are of the same colour is:  
(a)  $\frac{8}{15}$   
(b)  $\frac{2}{15}$



- (c) 3/15
- (d) 7/15

42. Mode can be determined by applying the formula:

- (a) Mode = 2 Median - 3 Mean.
- (b) Mode = 3 Median - 2 Mean.
- (c) Mode = 3 Mean - 2 median.
- (d) Mode = 2 Mean - 3 Median.

43. When an investigator uses the data, which has already been collected by others, such data is called:

- (a) Primary data
- (b) Processed data
- (c) Collected data
- (d) Secondary data

44. Sum of the deviation of the variable values 3, 4, 6, 8, 14 from their mean is:

- (a) 0
- (b) 1
- (c) 5
- (d) 7

45. The mean of 5 observations is 4.4 and their variance is 8.24. If three of the observations are 1, 2 and 6. The other two observations are:

- (a) 5 and 6
- (b) 4 and 9
- (c) 7 and 8
- (d) 5 and 8

46. Marital status of a group of people represents which variable:

- (a) Discrete
- (b) Continuous
- (c) Nominal
- (d) Ordinal

47. If a test statistic rejects the null hypothesis when it is TRUE, then which type of error is made:

- (a) Type-I error.
- (b) Type-II error.
- (c) Both Type-I and Type-II errors.
- (d) None of Type-I and Type-II errors.

48. Which one of the following is **NOT** a non-parametric test?

- (a) One-way ANOVA
- (b) Mann-Whitney test
- (c) Friedman test
- (d) Kruskal-Wallis test

49. If a constant 20 is subtracted from each of the value of X and Y, the regression coefficient of Y on X is:

- (a)  $1/20^{\text{th}}$  of the original regression coefficient.
- (b) reduces by 20.
- (c) not changed.
- (d) increases by 20.



50. In a regression model, a situation in which the error term is same or constant across all values of the independent variables is known as:
- Multicollinearity
  - Homoscedasticity
  - Autocorrelation
  - Skewed Distribution

51. The culture media shown in the image is:



- Lowenstein-Jensen medium.
  - MacConkey (lactose) Agar medium.
  - Dubos Medium.
  - Mueller Hinton Agar media.
52. Staphylococcal food poisoning manifests within how much time after ingestion of contaminated food:
- 2-6 hours
  - 10-12 hours
  - 12-24 hours
  - 24-48 hours
53. A patient diagnosed to be having malaria was successfully treated with an anti-malarial drug extracted from a plant 'sweet wormwood'. The compound had been discovered by Nobel Laureate Tu Youyou in 1972. Which compound are we talking about here?
- Chloroquine
  - Hydroxychloroquine
  - Artemisinin
  - Quinine
54. An organism isolated from a female patient having urinary tract infection producing mucoid colonies, oxidase negative, Voges Proskauer test positive, urease positive could be?
- Escherichia coli
  - Proteus mirabilis
  - Klebsiella pneumoniae
  - Salmonella paratyphi A
55. During an outbreak of a viral infection, all health care workers are advised to wear personal protective equipment. For the purpose, N95 respirators were also provided. What does N95 stands for?
- Non-oil proof, blocks 95% of very small (0.3 micron) test particles.
  - Non-oil proof, blocks 98% of very small (0.03 micron) test particles.
  - Non-oil proof, blocks 95% of very small (0.003 micron) test particles.
  - Non-oil proof, blocks 98% of very small (0.3 micron) test particles.

56. Which of the following is a Selective Estrogen Receptor Modulator used in the treatment of estrogen- dependent breast cancer?
- Anastrozole
  - Exemestane
  - Letrozole
  - Tamoxifen
57. Aldosterone causes:
- Increase in urinary sodium excretion.
  - Decrease in urinary chloride excretion.
  - Decrease in body weight.
  - Increase in potassium excretion.
58. Oxytocin is useful for:
- Induction of labour
  - Menorrhagia
  - Hyperprolactinemia
  - Infertility
59. The Langendorff apparatus shown below is characterized by which of the following statements?



- It is an isolated heart perfusion technique.
  - This is used for studying the effects of drugs on trachea.
  - Perfusion of small intestine done in this apparatus helps to study physiology of the gut.
  - It is very useful to study multiple organs in large animals.
60. Which of the following antidote - poison combination is **INCORRECT**?
- Glucagon - Beta blockers.
  - Hydroxocobalamin - Cyanide.
  - Glucose - Ethylene glycol.
  - Calcium chloride - Fluoride.
61. Which of the following is **CORRECT** regarding surfactants of the lungs?
- Produced by the type II pneumocytes.
  - Surfactant deficiency protects against neonatal respiratory distress syndrome.
  - Surfactant deficiency at childhood protects from repeated episodes of pneumonia.
  - Nearly 90% of the surfactant is composed of proteins.


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62. Which of the following is a muscle involved in normal inspiration?
- (a) External intercostal muscle.
  - (b) Internal intercostal muscle.
  - (c) Scalene.
  - (d) Sternocleidomastoid.
63. Which of the following region of eye has the greatest concentration of cones?
- (a) Optic disc
  - (b) Fovea
  - (c) Parafoveal region
  - (d) Peripheral region
64. Which of the following diseases is **NOT** caused by fungi?
- (a) Histoplasmosis
  - (b) Pneumocystis pneumonia
  - (c) Rhinosporidiosis
  - (d) Melioidosis
65. A high school athlete with a past medical history of structural heart problems presents to the cardiology clinic for a periodical check-up. On examination, his heart rate was 96 beats/ min and BP was 140/86 mm Hg. What would be the mean arterial pressure (MAP) in this patient?
- (a) 98 mm Hg
  - (b) 100 mm Hg
  - (c) 102 mm Hg
  - (d) 104 mm Hg
66. Histones pack the DNA into a repeating array of DNA-protein particles called:
- (a) Nucleosomes
  - (b) Centromere
  - (c) Telomere
  - (d) Chromatin
67. Which one of the following is used to study the structural details of biological tissues using freeze-fracture technique?
- (a) Scanning electron microscopy.
  - (b) Transmission electron microscopy.
  - (c) Atomic force microscopy.
  - (d) Phase contrast microscopy.
68. Pericentric inversion is a type of chromosome mutation in which:
- (a) Inversion of a chromosome segment that does not includes centromere.
  - (b) Inversion of a chromosome segment that includes centromere.
  - (c) Inversion of a chromosome segment that includes telomere but not centromere.
  - (d) Inversion of a chromosome segment that neither includes telomere nor centromere.
69. Fluorescence recovery after photobleaching (FRAP) is a technique to study:
- (a) Membrane proteins
  - (b) Transporting ions
  - (c) Cholesterol patches
  - (d) Nuclear proteins
70. To study the living cells without staining, which of the following microscopes can be used?
- (a) Scanning Electron microscope.
  - (b) Transmission electron microscope.
  - (c) Phase contrast microscope.



(d) Fluorescent microscope.

71. The material used as a bioplastic is:

- (a) Polystyrene
- (b) Polypropylene
- (c) Polyhydroxybutyrate
- (d) Dextran

72. What is PHRED score in a Next generation sequencing data?

- (a) Indicator of mutation load.
- (b) Read quality score.
- (c) Average depth/coverage calculation score.
- (d) Alignment score.

73. What does SNP stand for?

- (a) Single number polymorphism.
- (b) Same nucleotide polymorphism.
- (c) Sequence nucleotide polymorphism.
- (d) Single nucleotide polymorphism.

74. "Compensation" refers to which of the following processes in relation to flow cytometry?

- (a) Conversion of analog signals to digital signals.
- (b) Elimination of overlapping fluorescent signals from different fluorochromes.
- (c) Estimation of the level of cellular autofluorescence.
- (d) Categorizes different leucocyte populations.

75. Which one of the following crosses will produce two phenotypes in the next generation?

- (a) Outcross
- (b) Selfing of pure lines
- (c) Test cross
- (d) Incomplete dominance

76. The type of inheritance in which many traits of a character are spread across a gradient and the effect of each allele is additive, is:

- (a) Codominance
- (b) Monohybrid out cross
- (c) Polygenic inheritance
- (d) Dihybrid test cross

77. Both the alleles express themselves equally in  $F_1$  generation, EXCEPT:

- (a) Antirrhinum majus
- (b) Sickle cell anaemia
- (c) AB blood group
- (d) Roan cattle

78. In the cross  $AaBBcc \times aaBbCc$ , what is the probability of an offspring that is  $aaBbcc$ ?

- (a)  $1/2$
- (b)  $1/4$
- (c)  $1/16$
- (d)  $1/8$

79. Gene for starch synthesis in pea plant is functionally connected with:

- (a) Chlorophyll synthesis
- (b) Shape of seed
- (c) Shape of pod

(d) Flower colour

80. When a diploid female plant is crossed with a tetraploid male, the ploidy of endosperm cells in the resulting seed is:  
(a) Pentaploidy  
(b) Diploidy  
(c) Triploidy  
(d) Tetraploidy
81. Out of the seven contrasting pairs of characters studied by Mendel in pea plant, how many had colour-based contrasting traits?  
(a) One  
(b) Two  
(c) Three  
(d) Four
82. Which one of the following is called Sewall Wright Effect?  
(a) Gene Pool  
(b) Gene Flow  
(c) Genetic Drift  
(d) Isolation
83. Bone is connected to muscles with the help of:  
(a) Ligament  
(b) Cartilage  
(c) Tendon  
(d) Haversian canals
84. A 5-year-old female patient was brought to the OPD by her mother with the chief complaints of speech impairment, a small head size and problems in movement and balance (ataxia). She also finds baby's behaviour as unique in the form of frequent laughter, hyperactivity and short attention span. On genetic analysis, deletion in the maternal chromosome 15 was found. Which of the following can present with these symptoms?  
(a) Prader-Willi syndrome  
(b) Angelman syndrome  
(c) Hurler syndrome  
(d) Weaver syndrome
85. Burkitt's lymphoma occurs due to translocation of:  
(a) Chromosome 13  
(b) Chromosome 8  
(c) Chromosome 12  
(d) Chromosome 11
86. Which of the following is **NOT** a vestigial organ in man?  
(a) Nictitating membrane  
(b) Tail vertebrae  
(c) Vermiform appendix  
(d) Nails
87. A toxic substance responsible for the chills and high fever recurring every three to four days in malarial fever is:  
(a) Interferon  
(b) Haemozoin  
(c) Hirudin

(d) Colostrum

88. Multiload 375 is:

- (a) Cu releasing IUD.
- (b) Hormone releasing IUD.
- (c) Non-medicated IUD.
- (d) Oral pill containing steroids.

89. Which group's members have same chromosomal set and protoplasm?

- (a) Secondary Oocyte and polar body.
- (b) Primary Oocyte and secondary oocyte.
- (c) Ovum and second polar body.
- (d) Secondary Oocyte and ovum.

90. ZIFT refers to the transfer of embryo in fallopian tube up to:

- (a) Eight blastomeres stage.
- (b) 16 blastomeres stage.
- (c) More than 8 blastomeres stage.
- (d) 16-24 blastomeres stage.

91. All the following are components of a flow cytometer, EXCEPT:

- (a) Photomultiplier tube
- (b) Scintillation counter
- (c) Lasers
- (d) Flow chamber

92. Which of the following forms?

- (a) RNA
- (b) B-DNA
- (c) Z-DNA
- (d) A-DNA

93. Restriction endonucleases are very important enzymes used in Genetic engineering. They are used for:

- (a) Cutting RNA.
- (b) Cutting single stranded DNA.
- (c) Cutting double stranded DNA.
- (d) Joining double stranded DNA.

94. If a hemophilic man marries a carrier woman, then which of the following holds TRUE for his progenies?

- (a) 50% daughters are carrier and 50% are haemophilic.
- (b) All the daughters are hemophilic.
- (c) All sons are haemophilic and all daughters are normal.
- (d) All sons are normal and all daughters are carriers.

95. The expected phenotypic ratio of a dihybrid cross is:

- (a) 12:3:1
- (b) 9:3:3:1
- (c) 15:1
- (d) 9:7

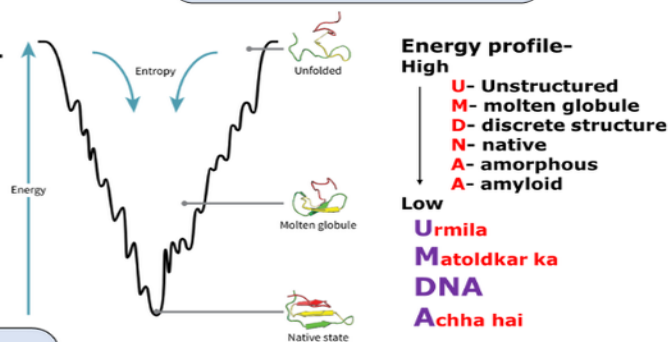
## VEDEMY'S CAPSULE ( VEDEMY'S SPECIAL NOTES)

### Amino acid Classes

Essential  
Semi-essential  
Non-Polar  
Polar Uncharged  
Negative charged  
Positive charged  
Gluco-ketogenic  
Ketogenic

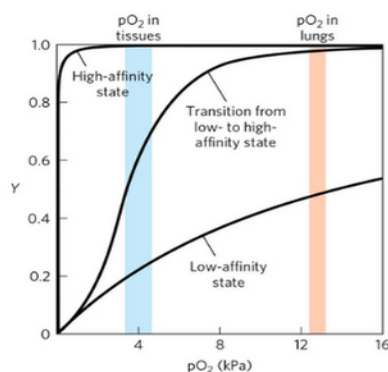
My Very Talented Friend Is Waiting For KajoL  
Rahul  
GAV के लोग PILW लेकर FM सुन रहे थे  
CN(कार्टून नेटवर्क) पे STY(सत्य) Ques पूछते हैं  
Ye DEKh  
RaHuL bola  
Itni Talented WYF (wife)  
KajoL

### Protein Folding Curve



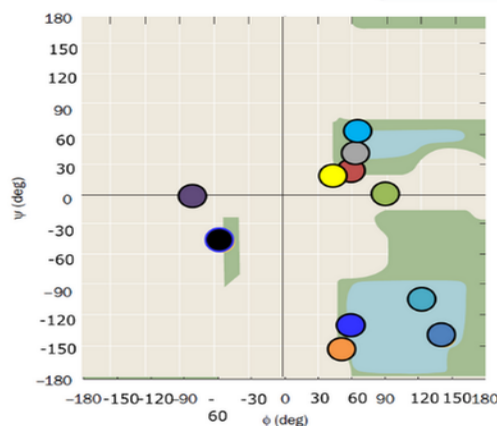
### Hemoglobin

State of Hb - **MOLD**  
Oxy Hb  
Less acidic (Tensed state)  
Deoxy Hb  
More acidic (Relaxed state)



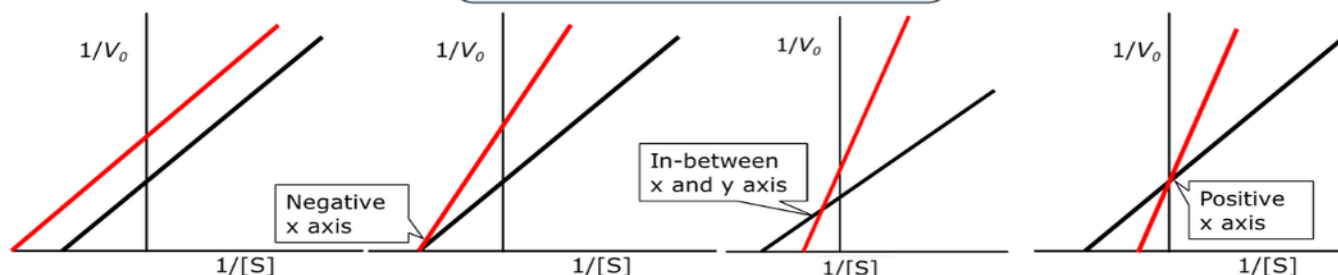
H<sup>+</sup>, Temp. BPG, CO<sub>2</sub> Increase  
Affinity of Curve - **DRIL**  
Left shift  
Decrease  
Right shift

### Ramachandran plot



Secondary Structure	Phi	Psi
AP β Sheet	+140°	-135°
P β Sheet	+120°	-115°
CTH	+50°	-150°
L-α-H	-60°	-50°
R-α-H	+60°	+50°
Type-I i+1	+60°	+30°
Type-I i+2	+90°	0°
Type-II i+1	+60°	-120°
Type-II i+2	-80°	0°

### Enzyme Inhibition Curve



#### Uncompetitive Inhibition

Decrease  $K_m$  = increased  $1/K_m$   
Decreased  $V_{max}$  = increased  $1/V_{max}$

#### Noncompetitive Inhibition

Decreased  $V_{max}$  = increased  $1/V_{max}$

#### Mixed Inhibition

$K_m$  increase  
 $V_{max}$  decrease

#### Competitive Inhibition

Increase  $K_m$  = decreased  $1/K_m$

Parallel  
Uncompetitive  
UP ke NaNa patekar  
Negative x axis  
Non-competitive  
In-between x and y axis  
Mixed  
MI ka PC lekar aaye  
Positive x axis  
Competitive

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96. ABO blood grouping in human beings cites the example of:
- (a) Incomplete dominance.
  - (b) Co-dominance.
  - (c) Multiple allelism.
  - (d) Both co-dominance and multiple allelism.
97. Bt Cotton is a:
- (a) Cloned plant
  - (b) Transgenic plant
  - (c) Hybrid plant
  - (d) Mutated plant
98. In an area where DDT had been used extensively, the population of birds declined significantly because:
- (a) Cobras were feeding exclusively on birds.
  - (b) Many of the birds' eggs laid, did not hatch.
  - (c) Birds stopped laying eggs.
  - (d) Earthworms in the area got eradicated.
99. If a mutation converts a triplet codon 'UGC' to 'UGA', it is called:
- (a) Missense mutation
  - (b) Deletion mutation
  - (c) Frameshift mutation
  - (d) Non-sense mutation
100. **FALSE** about TATA box is that it:
- (a) Has TATAAA sequence.
  - (b) Lies 10 bp upstream to the start point.
  - (c) Aligns RNA polymerase at proper site.
  - (d) Has mostly 7-8 base pair sequences.
101. During complete metabolism of glucose, the number of ATP formed is:
- (a) Two
  - (b) Twelve
  - (c) Thirty-six
  - (d) Forty-four
102. Vitamin B12 deficiency can be diagnosed by urinary excretion of:
- (a) Pyruvate
  - (b) Methylmalonate
  - (c) Malate
  - (d) Lactate
103. Which of the following enzyme participates in both the citric acid cycle and the electron transport chain?
- (a) NADH dehydrogenase
  - (b) Malate dehydrogenase
  - (c) Succinate dehydrogenase
  - (d) Isocitrate dehydrogenase
104. Bilirubin in serum can be measured by:
- (a) Van den Bergh reaction
  - (b) Ehrlich's reaction
  - (c) Hay sulphase test
  - (d) Fouchet's reaction

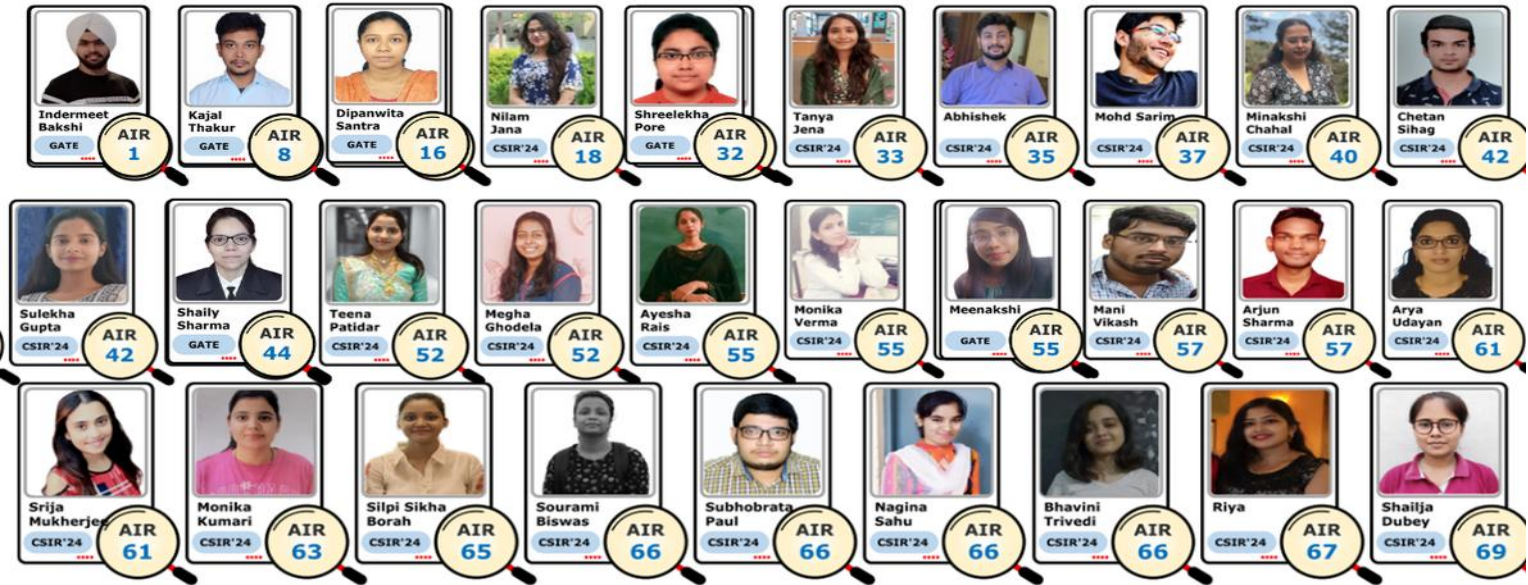
105. A positive Benedict's test is **NOT** given by:
- (a) Sucrose
  - (b) Lactose
  - (c) Glucose
  - (d) Maltos
106. Bordeaux mixture is:
- (a) Organochlorine
  - (b) Antibiotic
  - (c) Organophosphate
  - (d) Inorganic fungicid
107. Two-dimensional gels are used to:
- (a) Separate DNA from RNA.
  - (b) Separate DNA fragments.
  - (c) Separate RNA fragments.
  - (d) Separate different proteins.
108. Health adjusted life expectancy (HALE) refers to:
- (a) The equivalent number of years in full health that a new-born can expect to live based on current rates of ill-health and mortality.
  - (b) The equivalent number of years of healthy life lost due to all causes whether from premature mortality or chronic disability.
  - (c) Expectation of life years which could be free of disability.
  - (d) Loss of healthy life years resulting from chronic disability and total number of healthy years.
109. The weight of the baby becomes 5 times the birth weight by the age of:
- (a) Two years
  - (b) Three years
  - (c) Four years
  - (d) Five years
110. Which of the following laboratory values should a nurse expect to be elevated in a child who has pancreatitis?
- (a) Serum Amylase
  - (b) Glycosylated haemoglobin
  - (c) Blood urea nitrogen (BUN)
  - (d) Red blood cell count
111. An infant is to receive 28 mg of Phenobarbital (Luminal) orally per day divided into two equal doses for seizure control. The medication is dispensed as 20 mg per 5 ml. How many millilitres should the nurse administer for each dose?
- (a) 2.5
  - (b) 3.5
  - (c) 5.5
  - (d) 2
112. Exclusive breastfeeding is recommended for about:
- (a) 8 months
  - (b) 4 months
  - (c) 6 months
  - (d) 10 months

113. RNA interference (RNAi) or Post-Transcriptional Gene Silencing (PTGS) is a conserved biological response to:
- (a) Double-stranded RNA.
  - (b) DNA- RNA hybrid.
  - (c) Methylated double stranded DNA.
  - (d) Single stranded DNA.
114. Databases such as CATH and SCOP are used to identify:
- (a) The structural family to which a protein belongs.
  - (b) The genetic family to which a protein belongs.
  - (c) Homologous proteins.
  - (d) Analogous proteins.
115. Two sequences are said to be homologous if:
- (a) They have diverged from a common ancestor.
  - (b) Their alignments share 30% identity or more.
  - (c) They belong to the same fold family.
  - (d) They have converged to share similar functional properties.
116. What is the function of Chaperonins?
- (a) Conformation prediction.
  - (b) Protein folding.
  - (c) Complex & slow conformation stability.
  - (d) Stability analysis.
117. Colour of earthworm body is brown due to:
- (a) Haemoglobin
  - (b) Haemocyanin
  - (c) RBC
  - (d) Porphyrin
118. Which of the following amino acids **DOES NOT** have an aromatic ring?
- (a) Tryptophan
  - (b) Histidine
  - (c) Proline
  - (d) Tyrosine
119. The first clinical application of gene therapy over a 4-year-old girl was for:
- (a) Adenosine deaminase deficiency
  - (b) Adenosine deficiency
  - (c) Growth deficiency
  - (d) Adenine deficiency
120. The computational methodology that tries to find the best matching between two molecules, a receptor and ligand is called:
- (a) Molecular matching
  - (b) Molecular docking
  - (c) Molecular fitting
  - (d) Molecule affinity checking
121. The dual resistance vector is:
- (a)  $M_{13}$
  - (b) pUC18
  - (c) pUC19
  - (d) pBR 322

122. Radioactive decay of the nucleus emits which of the following electromagnetic radiations?  
(a) Ultraviolet rays  
(b) X-Rays  
(c) Infra-red  
(d) Gamma rays
123. Which of the following produce antibodies?  
(a) Monocytes  
(b) B-lymphocytes  
(c) Granulocytes  
(d) T-lymphocytes
124. Ferfarin lined porca in tartall are developed by:  
(a) Natural killer cells  
(b) Neutrophil  
(c) Macrophage  
(d) Mast cell
125. which type of immunity is developed after exposure to pathogena?  
(a) Natural active acquired immunity.  
(b) Artificial lived immunity.  
(c) Natural panic and immunity.  
(d) Artificial passive acquired immunity.
126. The infectious stage of Plasmodium that enters the human body is:  
(a) Trophozoites  
(b) Sporozoites  
(c) Female genetocytes  
(d) Male gametocytes
127. The vaccine against polio virus is an example of:  
(a) Auto immunization  
(b) Passive immunization  
(c) Active immunization  
(d) Simple immunization
128. The chemical test that is used for diagnosis of typhoid is:  
(a) Casoni test  
(b) Mantoux test  
(c) Galactomannan test  
(d) Widal test
129. Call mediated immunity involve all, EXCEPT:  
(a) Class I MHC molecules  
(b) T helper cells  
(c) 3. Processed antigen  
(d) 4. Secreted antibody
130. T lymphocytes in a lymph node are commented in which of the following anatomical location?  
(a) Medulla.  
(b) Paracortex adjacent to lymphoid follicle.  
(c) Germinal centre of lymphoid follicle.  
(d) Mantle one of lymphoid follicle.



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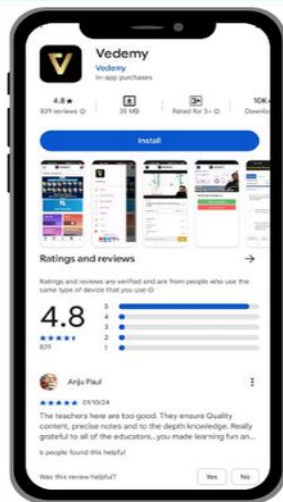
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131. Which of the following group is formed only of the hermaphrodite organisms?  
(a) Earthworm, Tapeworm, Housefly, Frog.  
(b) Earthworm, Tapeworm, Sea horse Housefly.  
(c) Earthworm, Leech, sponge, Roundworm.  
(d) Earthworm, Tapeworm, Leech, Sponge.
132. Which of the following products of apiculture is used in cosmetics and polishes?  
(a) Honey  
(b) Oil  
(c) Wax  
(d) Royal jelly
133. Holstein-Friesian, Brown Swiss and Jersey are all well-known:  
(a) Exotic breeds of cattle  
(b) Exotic breeds of goat  
(c) Exotic breed of poultry  
(d) Exotic breed of birds
134. Sabin-Feldman dye test is used in the diagnosis of:  
(a) Toxoplasmosis  
(b) Amoebiasis  
(c) Cryptosporidiosis  
(d) Trypanosomiasis
135. Aquatic larva of mosquito is known as:  
(a) Caterpillar  
(b) Tadpole  
(c) Maggot  
(d) Wiggler
136. While calculating Air Quality Index, the data for which of the following pollutant(s) is essential?  
(a)  $PM_{2.5}$  or  $PM_{10}$ .  
(b) Carbon dioxide and Carbon monoxide.  
(c)  $O_3$  and  $NH_3$ .  
(d)  $SO_2$  and  $NO_2$ .
137. Which among the following is a cold desert?  
(a) Kalahari  
(b) Sonoran  
(c) Thar  
(d) Patagonian
138. Which of the following is most commonly applied in automobile exhaust system?  
(a) Wet scrubber  
(b) Dry scrubber  
(c) Electrostatic precipitator  
(d) Catalytic converter
139. Which of the following is a secondary air pollutant?  
(a) Sulphur dioxide  
(b) Ozone  
(c) Carbon monoxide  
(d) Nitrogen Dioxide
140. Itai-Itai disease is associated with which metal poisoning?

- (a) Cd
- (b) Ag
- (c) Hg
- (d) Pd

141. The scientific name of the flower shown in the image is:

- (a) *Hibiscus rosa – sinensis*
- (b) *Tagetes erecta*
- (c) *Bougainvillea glabra*
- (d) *Dicentra spectabilis*

142. A host plant produces a toxin that is lethal to aphides feeding on its leaves. Over time, some of the aphides become immune to the toxin. In response, the host plant begins to produce a different toxin that is lethal to aphids. This is an example of:

- (a) Parasitism
- (b) Coevolution
- (c) Mutualism
- (d) Commensalism

143. Which of the following best describes a pattern of idealized population growth that is restricted by limiting factors:

- (a) Logistic growth model.
- (b) Carrying capacity model.
- (c) Exponential growth model.
- (d) Habitat cap model.

144. Induction of cell division activity and delay in senescence is caused by:

- (a) Gibberellin
- (b) Auxin
- (c) Cytokinin
- (d) Ethylene

145. Which plant part is modified into pitcher in pitcher plant?

- (a) Root
- (b) Stem
- (c) Leaf
- (d) Flower

146. Natural insecticide obtained from Neem tree is:

- (a) Azadirachtin
- (b) Nicotine
- (c) Ecdysone
- (d) Malathion

147. Which of the following insect can be used for production of formic acid?

- (a) Bed bugs
- (b) Crickets
- (c) Locusts
- (d) Red ants

148. The practice of painless killing of laboratory animal to relieve pain after experimentation is called:

- (a) Euthanasia
- (b) Dissection
- (c) Post Mortem



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(d) Autopsy

149. Which of the animals are referred to as solipeds?

- (a) Dog
- (b) Cattle
- (c) Horse
- (d) Poultry

150. Which one of the following is a mammal?

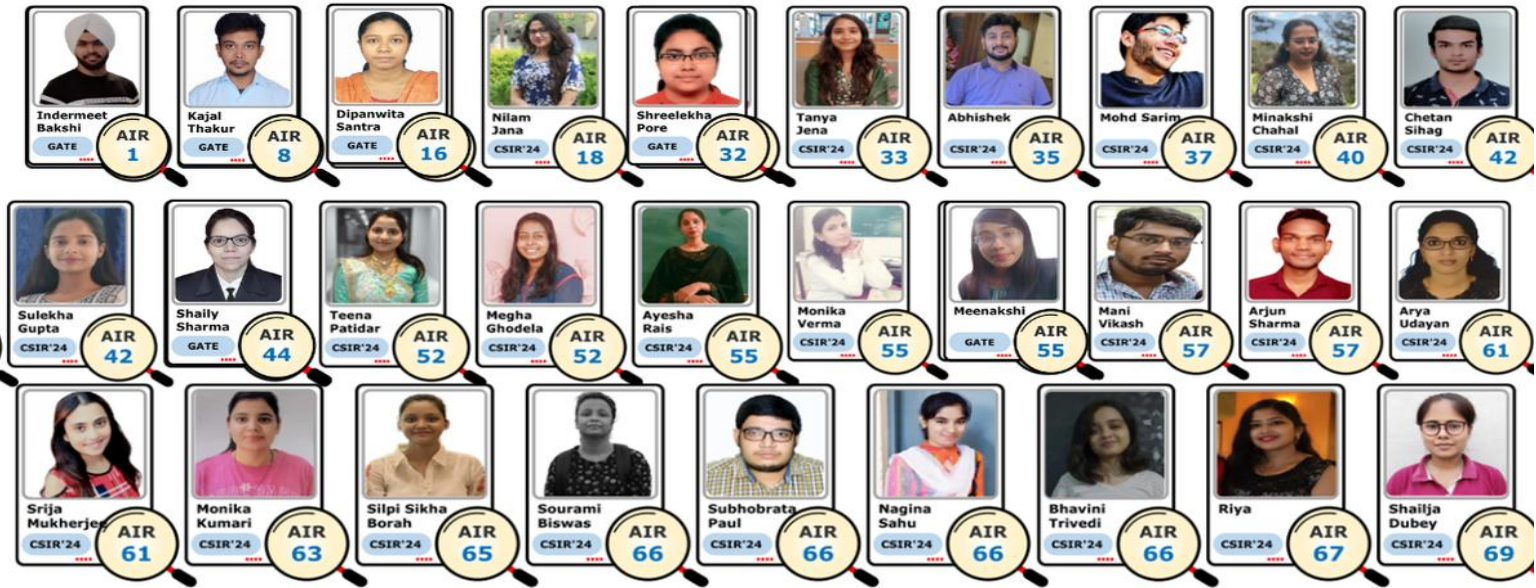
- (a) Shark
- (b) Trout
- (c) Whale
- (d) Salmon

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
c	a	a	d	b	b	a	a	a	a	a	b	a	a	b	c	a	b	c	b
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c	c	c	b	b	d	b	a	d	a	b	c	c	a	b	d	b	b	d	b
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
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141	142	143	144	145	146	147	148	149	150										
a	b	a	c	c	a	d	a	c	c										



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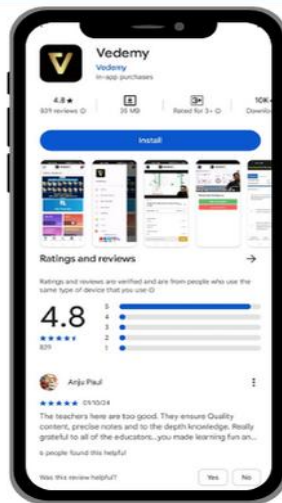
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