Answer Key :Biotechnology

Type: Biotechnology

1) The pH obtained from dissolving 1.025g anhydrous sodium acetate (MW=82) in 100 mll of 0.25M acetic acid. Where pKa of acetic acid is 4.75

Options:

- 1.4.75
- 2.5.25
- 3.4.45
- 4.6.25

Correct Option: 3

Type: Biotechnology

2) A person sold two different items at the same price. He made 10% profit in one item, and 10% loss in the other item. In selling these two items, the person made a total of

Options:

- 1.1% profit
- 2.2% profit
- 3.1% loss
- 4.2% loss

Correct Option: 4

Type: Biotechnology

3) The CORRECT order of electronegativity is

Options:

- 1.P > Si > Al >Mg
- 2.Si > Mg> P > Al
- 3.Mg > Si > Al > P
- 4.S > Mg > Si > Al

Correct Option: 1

Type: Biotechnology

4) According to VSEPR theory which one species has smallest X-F-X angle?

Options:

- 1.BF3
- 2.PF3
- 3.BF4-
- 4.IF4-

Correct Option: 4

Type: Biotechnology

5) In case of SN1 and SN2 nucleophilic substitution reactions, which statement is not true?

Options:

- 1.SN1 is one step and SN2 is two step reaction.
- 2.SN1depend on substrate only while SN2 depends on both substrate & nucleophile
- 3.In SN1 weak nucleophiles and SN2 Strong nucleophile is required
- 4.in SN1 Tertiary > Secondary > Primary while in SN2 Primary > Secondary > Tertiary is favored substrate

Correct Option: 1

Type: Biotechnology

6) Cystic fibrosis is a genetic disease associated with a detletion mutation of an amino acid in a specific genes. Find the correct pair of gene and assciated mutation.

Options:

- 1.p53::Cysteine
- 2.CFTR::phenylalanine
- 3.K-Ras::glycine
- 4.GAPDH::Tyrosine

Correct Option: 2

Type: Biotechnology

7) Isoelectric point of a protein is 6, if the protein is dissolved in a buffer of pH 4 what will be overall charge on the proteins?

Options:

- 1.Positive
- 2.Negative
- 3.Zwitter ion
- 4.Can not be determined

Correct Option: 1

Type: Biotechnology

8) The X90 value for a filtration system for sterilization is

Options:

- 1.the time required to reduce microbial population by 90%
- 2.the time required to traverse survivor curve by one log cycle
- 3.the depth required to reduce population by 90%
- 4.none of the above

Correct Option: 3

Type: Biotechnology

9) Consider the below given food chain and tell which type of food chain ? dead animals → blowfly maggot → maggots → frog → snake

Options:

- 1.Parasitic food chain
- 2.Saprophytic food chain
- 3.Predator food chain
- 4.Grazing food chain

Correct Option: 2

Type: Biotechnology

10) A genetically modified tomato was generated by using antisense technology to increase its self life which supress the activity of

Options:

- 1.cellulase
- 2.protease
- 3.collaginase
- 4.polygalacturonase

Correct Option: 4

Type: Biotechnology

11) Induced pluripotent cells (iPSCs) not used in-

Options:

- 1.regenerative medicine
- 2.drug screening
- 3.activate immune cells
- 4.disease modeling

Correct Option: 3

Type: Biotechnology

12) Most of the global warming is due to the perturbation of which of these cycles?

Options:

- 1.Global nitrogen cycle
- 2.Global carbon cycle
- 3.Global sulphur cycle
- 4.Global oxygen cycle

Correct Option: 2

Type: Biotechnology

13) Which gene set is not a tumor suppressor-

Options:

- 1.P53 and RB1
- 2.RB1 and PTEN
- 3.P53 and Smad4
- 4.P53 and KRAS

Correct Option: 4

Type: Biotechnology

14) A metabolite from bacterial cell was found maximum during growth phase. The maximum yield of metabolite will be obtained at

Options:

- 1.lag phase
- 2.log phase
- 3.stationary phase
- 4.decline phase

Correct Option: 2

Type: Biotechnology

15) Tertiary structure of a 100 kDa protein may be determined by-

Options:

- 1.Circular Dichroism
- 2.Ramachandran plot
- 3.NMR
- 4.X-rays crystallography

Correct Option: 4

Type: Biotechnology

16) ATP nucleotide does not belong to-

Options:

- 1.DNA
- 2.RNA
- 3.miRNA
- 4.Long non-coding RNA

Correct Option: 1

Type: Biotechnology

17) The most effective method of sterilization from following technique's is-

Options:

- 1.UV light
- 2.75% alcohol
- 3.Moist heat
- 4.Dry heat

Correct Option: 3

Type: Biotechnology

18) A human cell line is treated with a drug and observed that 75% cells are present in a G1 phase. While S, G2 and M phase has 2%, 5% and 18% cells, respectively. Therefore, drug is a-

Options:

- 1.G1 inhibitor
- 2.S inhibitor
- 3.G2 inhibitor
- 4.M inhibitor

Correct Option: 1

Type: Biotechnology

19) Consider which statement is correct for cell freezing-

Options:

- 1.Slow Freezing forms larger ice crystal interacellularly
- 2.Freezing too fast results in ice crystal deposition exteracellularly
- 3.DMSO is used to induces osmolysis
- 4.Freezing too fast forms larger ice crystal interacellularly

Correct Option: 4

Type: Biotechnology

20) If a two bases may define a codon. Then calculate the toal number of amino acids encoded by it

Options:

- 1.8
- 2.16
- 3.32
- 4.64

Correct Option: 2

Type: Biotechnology

21) If an enzyme has a Vmax of 150mM per min and gave an Initial rate of 50mM mer min at a substrate concentration 1mM.if this emzymetic reaction follows

Michaelis-Menten equation then calculate the Km of enzume

Options:

- 1.1 mM
- 2.2mM
- 3.3mM
- 4.4mM

Correct Option: 2

Type: Biotechnology

22) Which of the following statement is TRUE for colchicine?

Options:

- 1.It inhibits crossover of chromosomes during meiosis.
- 2.It inhibits chromosome condensation during Prophase.
- 3.It blocks mitotic cells in Metaphase.
- 4.It inhibits the polymerization of microtubule during metaphse

Correct Option: 4

Type: Biotechnology

23) Make a correct pair of enzyme and their cofactor-

P	Fe(3+)	i	Cytochrome oxydase
Q	Cu(2+)	ii	DNA Polymerase
R	Se	iii	Catalase
S	Mg(2+)	iv	Glutathione peroxidase

Options:

- 1.P-(ii), Q-(i), R-(iv), S-(iii)
- 2.P-(i), Q-(ii), R-(iii), S-(iv)
- 3.P-(iii), Q-(i), R-(iv), S-(ii)
- 4.P-(iv), Q-(ii), R-(iii), S-(i)

Correct Option: 3

Type: Biotechnology

24) The synthesis of thyroxine (T4) in human body does not requires-

Options:

- 1.Iodine
- 2.Tyrosine
- 3.Thyroglobulin
- 4.Tryptophan

Correct Option: 4

Type: Biotechnology

25) Which of the Gram Positive bacteria cuse food born disease?

Options:

- 1.Helicobactor pylori
- 2.Clostridium botulinum
- 3.Vibrio cholerae
- 4.Salmonella typhi

Correct Option: 2

Type: Biotechnology

26) Cultured cells were counted using hemocytometer where average cells per quadrant were 40. If dilution factor is 2, then what will be cell number per ml?

Options:

- 1.2,00,000/ml
- 2.4,00,000/ml
- 3.8,00,000/ml
- 4.12,00,000/ml

Correct Option: 3

Type: Biotechnology

27) A protein completely get dissolved after addition of 50mM NaCl in Phosphate buffer solution. This process is because of-

Options:

- 1.Precipitation
- 2.Aggregation
- 3.Salting Out
- 4.Salting in

Correct Option: 4

Type: Biotechnology

28) In hepatocyte, the detoxification occur in

Options:

- 1.Rough endoplasmic reticulum
- 2.Smooth endoplasmic reticulum
- 3.Nucleolus
- 4.Golgi body

Correct Option: 2

Type: Biotechnology

29) For SDS-PAGE of a protein which statement is not true?

Options:

- 1.In stacking gel (pH=6.8), glycinate ion is fully ionized remain ahead of protein molecules
- 2.1 molecule of SDS binds two amino acids
- 3.Boiling with beta-mercaptoethanol reduces S-S bond
- 4.In resolving gel protein get separated by seiving effect

Correct Option: 1

Type: Common

30) Which one of the following belongs to the category of homogeneous data

Options:

- 1.Multi-storeyed houses in a colony
- 2.Trees in a garden
- 3.Vehicular traffic on a highway
- 4.Student population in a class

Correct Option: 1

Type: Common

31) Following incomplete series is presented. Find out the number which should come at the place of question mark which will complete the series 4, 16, 36, 64,?

Options:

- 1.200
- 2.300
- 3.100
- 4.150

Correct Option: 3

Type: Common

32) In the absence of covariance among securities in the portfolio, if each security has an average standard deviation of 20%, the portfolio of 100 securities would have a standard deviation of

Options:

- 1.0.02
- 2.0.2
- 3.0.05
- 4.Zero

Correct Option: 1

Type: Common

33) In a certain code, 'bi nie pie' means 'some good jokes', 'nie bat lik' means 'some real stories', and 'pie lik tol' means 'many good stories'. Which word in that code means 'jokes'?

Options:

- 1.bi
- 2.nie
- 3.pie
- 4.None of the above

Correct Option: 1

Type: Common

34) 'Demonstrator' is related to 'Laboratory' in the same way as 'Leader' is related to

Options:

- 1.Podium
- 2.Assembly
- 3.Country
- 4.State

Correct Option: 2

Type: Common

35) A variable that is presumed to cause a change in another variable is called

Options:

- 1.A categorical variable
- 2.A dependent variable
- 3.An independent variable
- 4.An intervening variable

Correct Option: 3

Type: Common

36) The research design is

Options:

- 1.A common method adopted by all researchers to carry out research
- 2.The final choice between using qualitative or quantitative methods.
- 3.Presentation of research findings
- 4.A framework for every stage of the data collection and its analysis

Correct Option: 4

Type: Common

37) A technique of building up a list or a sample of a special population by using an initial set of members as informants is called

Options:

- 1.Quota sampling
- 2.Convenience sampling

- 3.Snowball sampling,
- 4.Purposive sampling

Correct Option: 3

Type: Common

38) In the context of Data Mining, which one of the following is a method of Data Reduction?

Options:

- 1.Data Compression
- 2.Multiple Regression
- 3.Normalization
- 4.Outlier Analysis

Correct Option: 1

Type: Common

39) A hypothesis can be described as

Options:

- 1.Just as a hunch
- 2.A wild guess
- 3.A type of statement made by researchers when they are attempting to get funding for their research
- 4. A prediction of some sort regarding the possible outcomes of a study

Correct Option: 4

Type: Common

40) Which scheme on performance and credit rating has been launched by Union MSME Ministry to assess the credit worthiness and capabilities of industries in the sector?

Options:

- 1.Zero Defect Scheme
- 2.Certification Performance and Economy Rating Scheme
- 3.Performance and Credit Rating Scheme
- 4.Industrial Incentive Scheme

Correct Option: 3

Type: Common

41) Interlocking of two or more types of food chains at different trophic levels is called

Options:

- 1.Food chain
- 2.Food web
- 3.Succession
- 4.Ecological pyramid

Correct Option: 2

Type: Common

42) A by-product of fossil fuel combustion is carbon dioxide. Which of the following is the cleanest with respect to the release of carbon dioxide?

Options:

- 1.Coal
- 2.Oil
- 3.Wood
- 4.Natural gas

Correct Option: 4

Type: Common

43) Maintaining balance between fulfilment of human needs and protection of environment is termed as

Options:

- 1.Environmental development
- 2.Sustainable development
- 3.Economic development
- 4.None of the above

Correct Option: 2

Type: Common

44) Identify the main Principle on which the Parliamentary System operates.

Options:

- 1.Responsibility of Executive to Legislature
- 2.Supremacy of Parliament
- 3.Supremacy of Judiciary
- 4.Theory of Separation of Power

Correct Option: 1

Type: Common

45) A 280 m train is moving at a speed of 80 kmph. How much time will it take to pass a bridge that is 120 m long?

Options:

- 1.30 s
- 2.32 s
- 3.18 s
- 4.40 s

Correct Option: 3

Type: Common

46) A, B, C, D and E are sitting on a bench. A is sitting next to B; C is sitting next to D, and D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position A is sitting?

Options:

- 1.Between B and D
- 2.Between B and C
- 3.Between E and D
- 4.Between C and E

Correct Option: 2

Type: Common

47) If all the letters in the word 'ARGUMENT' are rearranged in alphabetical order and substituted by the

letter immediately following it in English alphabet, then what will be the new arrangement of letters?

Options:

- 1.BFHNOSUV
- 2.BFHONSWV
- 3.BFHNOUSV
- 4.BFHNOQUV

Correct Option: 1

Type: Common

48) Find the odd pair of words

Options:

- 1.Room : House
- 2.Atom : Electron
- 3.Car : Engine
- 4.Milk : Water

Correct Option: 1

Type: Common

49) Vinita, who is the sister-in-law of Amit, is the daughter-in-law of Kamni. Deepak is the father of Sandy who is the only brother of Amit. How is Kalyani related to Ashok?

Options:

- 1.Mother-in-law
- 2.Aunt
- 3.Wife
- 4.None of the above

Correct Option: 4

Type: Biotechnology

50) Match the immunological statements in Column I with the appropriate descriptions from Column II

P	Active acquired immunity	**i**	Complement proteins and interferons
Q	First line of defense	**ii**	Direct contact with pathogens that enter the body
R	Passive natural immunity	**iii**	Surface barriers
S	Second line of defense	**iv**	Antibodies pass through placenta

Options:

- 1.P – (iv) ; Q – (iii) ; R – (i) ; S – (ii)
- 2.P – (iv) ; Q – (ii) ; R – (iii) ; S – (i)
- 3.P – (i) ; Q – (iv) ; R – (iii) ; S – (ii)
- 4.NA

Correct Option: 1