FINAL ANSWER KEY

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Question1:-

Elements with valence electrons occupying orbitals with the same angular momentum quantum numbers have similarities which diminish in the order ?

A:-

f > d > s > p

B:-

f > d > p > s

C:-

s > p > d > f

D:-

s > p > f > d

Correct Answer:- Option-A

Question2:-

Which among the following electronic configuration(s) is / are correct ?

i. Cu-$3d^{10}$ $4s^{1}$

ii. Cr-$3d^{5}$ $4s^{1}$

iii. Pd-$4d^{10}$ $5s^{0}$

A:-

Only i and ii

B:-

Only i and iii

C:-

Only i

D:-

All of the above (i, ii and iii)

Correct Answer:- Option-D

Question3:-

Which among the following is / are incorrect about covalent character of the bonding ?
i. AlN > MgO > NaF
ii. NaF > MgO > AlN
iii. KF > NaF > LiF

A:-

Only i

B:-

Only i and iii

C:-

Only ii and iii

D:-

All of the above (i, ii and iii)

Correct Answer:- Option-C

Question4:-

The correct structure of diborane may be described with

A:-

Four 2c-2e bonds and two 3c-2e bonds

B:-

Six 2c-2e bonds and no 3c-2e bonds

C:-

Two 2c-2e bonds and four 3c-2e bonds

D:-

2c-2e bonds only

Correct Answer:- Option-A

Question5:-

The number of bond pairs and lone pairs in triiodide I_3^- ion to give a linear shape for the molecule are respectively

A:-

2 and 3

B:-

3 and 2

C:-

2 and 0

D:-

2 and 1

Correct Answer:- Option-A

Question6:-

Identify the correct order of molecules in terms of bond order.

A:-

$O_2 < O_2^- < O_2^{2-} < O_2^+$

B:-

$O_2^{2-} < O_2^- < O_2 < O_2^+$

C:-

$O_2^+ < O_2^- < O_2^{2-} < O_2$

D:-

$O_2^+ < O_2^{2-} < O_2^- < O_2$

Correct Answer:- Option-B

Question7:-

Which of the following complexes has / have unequal M-L bond lengths ?
i. $[Mn(H_2O)_6]^{2+}$
ii. $[CoF_6]^{3-}$
iii. $[FeF_6]^{3-}$
iv. $[Cu(H_2O)_6]^{2+}$

A:-
Only i and iii

B:-
Only iv

C:-
Only ii and iv

D:-
None of them

Correct Answer:- Option-C

Question8:-

Exchange energies for p^3 and p^4 electronic configurations are

A:-
3K and 1K

B:-
3K and 3K

C:-
3K and 4K

D:-
2K and 3K

Correct Answer:- Option-B

Question9:-
Which among the following is not a magic number ?

A:-
20

B:-
28

C:-
54

D:-
82

Correct Answer:- Option-C

Question10:-
Which among the following is not true ?

A:-
Magnetic moments of $[Mn(H_2O)_6]^{2+}$ and $[Fe(H_2O)_6]^{3+}$ are nearly 5.92 BM

B:-
Magnetic moments of $[Mn(H_2O)_6]^{2+}$ and $[MnCl_4]^{2-}$ differ considerably

C:-
Magnetic moments of $[FeCl_4]^{-}$ and $[MnCl_4]^{2-}$ are nearly the same

D:-

$[MnCl_4]^{2-}$ and $[FeCl_4]^{-}$ are tetrahedral complexes

Correct Answer:- Option-B

Question11:-
Cellulose is a polymer of

A:-
Maltose

B:-
Amylose

C:-
β-D-glucose

D:-

α-D-glucose

Correct Answer:- Option-C

Question12:-

Cyclic polymerisation of ethyne gives

A:-

Benzene

B:-

Polyethylene

C:-

Cyclohexane

D:-

Acetaldehyde

Correct Answer:- Option-A

Question13:-

Which of the following compound is anti-aromatic ?

A:-

Cyclopentadienyl anion

B:-

Cyclopropenyl cation

C:-

Cyclobutadiene

D:-

Benzene

Correct Answer:- Option-C

Question14:-

Which one of the following exists as zwitterion at neutral pH ?

A:-

Glycine

B:-

Propionic acid

C:-

Glacial acetic acid

D:-

Ethyl alcohol

Correct Answer:- Option-A

Question15:-

Tertiary alcohols do not undergo oxidation easily because

A:-

They are unstable

B:-

They lack α-hydrogen

C:-

They lack β-hydrogen

D:-

They are aromatic

Correct Answer:- Option-B

Question16:-

Squalene is a

A:-

Sesquiterpene

B:-

Monoterpene

C:-

Diterpene

D:-

Triterpene

Correct Answer:- Option-D

Question17:-

At isoelectric point, an amino acid has

A:-

Maximum solubility

B:-

Net positive charge

C:-

Net negative charge

D:-

Zero net charge

Correct Answer:- Option-D

Question18:-

Pernicious anaemia is caused by deficiency of

A:-

Vitamin B_6

B:-

Vitamin B_{12}

C:-

Vitamin C

D:-

Vitamin K

Correct Answer:- Option-B

Question19:-

Which of the following correctly represents the relationship between α-D-glucose and β-D-glucose ?

A:-

Epimers

B:-

Anomers

C:-

Enantiomers

D:-

Diastereomers

Correct Answer:- Option-B

Question20:-

Which drug shows both analgesic and antipyretic properties ?

A:-

Paracetamol

B:-

Penicillin

C:-

Chloroquine

D:-

Vitamin C

Correct Answer:- Option-A

Question21:-

Which of the following aqueous solution will show maximum vapour pressure at 300K ?

A:-

1 M NaCl

B:-

1 M $CaCl_2$

C:-

1 M AlC_{13}

D:-

1 M $C_{12}H_{22}O_{11}$

Correct Answer:- Option-D

Question22:-

If water kept in an isolated vessel at -10°C freezes suddenly, the ΔS of the system

A:-

Increases

B:-

Is equal to that of surroundings

C:-

Decreases

D:-

Zero

Correct Answer:- Option-D

Question23:-

The units of rate and rate constant for a certain reaction are same. The order of the reaction is

A:-

Zero

B:-

1

C:-

2

D:-

3

Correct Answer:- Option-A

Question24:-

Gold number of haemoglobin is 0.03. i.e. 100 mL of gold sol require _____ mg haemoglobin so that gold is not coagulated by 10 mL of 10% NaCl solution.

A:-

0.03 mg

B:-

30 mg

C:-

0.3 mg

D:-

3 mg

Correct Answer:- Option-C

Question25:-

The smallest interplanar spacing in a crystal which will give n^{th} order bragg reflection is

A:-

$d_{hkl} = n\lambda/2$

B:-

$d_{hkl} = n\lambda$

C:-

$d_{hkl} = n\lambda/3$

D:-

$d_{hkl} = n\lambda/4$

Correct Answer:- Option-A

Question26:-

Calculate the pH of a buffer that contains 0.7 M ammonia and 0.7 M ammonium chloride (pKa = 9.248).

A:-

0

B:-

1

C:-

9.248

D:-

0.7

Correct Answer:- Option-C

Question27:-

Peaks of scattered intensity is observed when the path of difference would be equal to

A:-

: λ

B:-

$\lambda/2$

C:-

$3\lambda/2$

D:-

No peaks are observed at any condition

Correct Answer:- Option-A

Question28:-

Which law of thermodynamics establishes the concept of temperature ?

A:-

Zeroth law

B:-

First law of thermodynamics

C:-

Second law of thermodynamics

D:-

Third law of thermodynamics

Correct Answer:- Option-A

Question29:-

The volume of a given mass of a gas at 27 $^{\circ}$C, 1 atm pressure is 100 CC. Its volume at 327 $^{\circ}$C would be

A:-

200 CC

B:-

20 CC

C:-

2 CC

D:-

None

Correct Answer:- Option-A

Question30:-

Which of the following is not an ideal solute ?

A:-

N-hexane + n- heptane

B:-

Benzene + Toluene

C:-

Alcohol + Water

D:-

All are ideal solutions

Correct Answer:- Option-C

Question31:-

The primary standard used for standardising NaOH is

A:-

Sodium bicarbonate

B:-

Sodium dichromate

C:-

Oxalic acid

D:-

Sodium carbonate

Correct Answer:- Option-C

Question32:-

The indicator used in the titration of a weak acid with a strong base is

A:-

Methyl orange

B:-

Phenolphthalein

C:-

Bromothymol blue

D:-

Eriochrome black T

Correct Answer:- Option-B

Question33:-

The indicator used for metal ion - EDTA titration to detect the end point is

A:-

Phenolphthalein

B:-

Bromothymol blue

C:-

Eriochrome black T

D:-

Starch solution

Correct Answer:- Option-C

Question34:-

In following reaction, MnO_4^-+ pFe^{2+} + qH^+ → Mn^{2+} + pFe^{3+} + rH_2O the value of coefficients p, q and r respectively are

A:-

5, 2, 6

B:-

5, 1, 4

C:-

5, 3, 2

D:-

5, 8, 4

Correct Answer:- Option-D

Question35:-

According to Beer Lambert Law, the sample path length and its concentration are directly proportional to the

A:-

Reflection of light

B:-

Absorbance of light

C:-

Scattering of light

D:-

Refraction of light

Correct Answer:- Option-B

Question36:-

Which one is an example of a precipitation titration ?

A:-

KOH vs HCl

B:-

Na_2CO_3 vs H_2SO_4

C:-

NaOH vs HNO_3

D:-

NaCl vs $AgNO_3$

Correct Answer:- Option-D

Question37:-

The separation of a precipitate from a solution during gravimetric analysis is

A:-

Filtration

B:-

Post precipitation

C:-

Co-precipitation

D:-

Peptisation

Correct Answer:- Option-A

Question38:-

The stationary phase in thin layer chromatography is

A:-

Solid

B:-

Liquid

C:-

Gas

D:-

None of these

Correct Answer:- Option-A

Question39:-

The number of moles of solute present in 1 kg of solvent is

A:-

Molarity

B:-

Molality

C:-

Normality

D:-

Mole fraction

Correct Answer:- Option-B

Question40:-

Which anion is detected using brown ring test ?

A:-

Nitrate

B:-

Chloride

C:-

Bromide

D:-

Iodide

Correct Answer:- Option-A

Question41:-

Plasmids are

A:-

Plasma proteins

B:-

Endoplasmic reticulum

C:-

Extra chromosomal DNA

D:-

Ribosomes

Correct Answer:- Option-C

Question42:-

Fried egg appearance in culture media is seen in

A:-

E. coli

B:-

Staphylococcus aureus

C:-

Mycoplasma pneumoniae

D:-

Candida albicans

Correct Answer:- Option-C

Question43:-
Hospital acquired infections are called

A:-

Pandemic

B:-

Epidemic

C:-

Endemic

D:-

Nosocomial

Correct Answer:- Option-D

Question44:-

To sterilize antibiotic solution the best method is

A:-

Filtration

B:-

Autoclave

C:-

Hot air oven

D:-

Gamma rays

Correct Answer:- Option-A

Question45:-

Laminar flow hood uses

A:-

IR Rays

B:-

HEPA filter

C:-

UV Rays

D:-

Ethylene dioxide

Correct Answer:- Option-B

Question46:-

Autoclave tape is used as

A:-

Chemical indicator

B:-

Autoclave screws

C:-

Mechanical indicator

D:-

None of the above

Correct Answer:- Option-A

Question47:-

Milk is sterilized by

A:-

Tyndallisation

B:-

Pasteurization

C:-

Autoclave

D:-

Arnold steamer

Correct Answer:- Option-B

Question48:-

The bacterial motility is best visible under which microscope ?

A:-

Dark field

B:-

Fluorescence microscope

C:-

Electron microscope

D:-

Confocal microscope

Correct Answer:- Option-A

Question49:-

Oral thrush is caused by

A:-

Mucor

B:-

Mycoplasma

C:-

Coccidiodes

D:-

Candida albicans

Correct Answer:- Option-D

Question50:-

The concentration of KOH is used in nail preparation is

A:-

1-2%

B:-

2-5%

C:-

5-10%

D:-

20-40%

Correct Answer:- Option-D

Question51:-

Anaerobic bacteria do not grow in the presence of oxygen because they lack

A:-

Catalase enzyme

B:-

Peroxidase enzyme

C:-

Oxidase enzyme

D:-

Phosphatase enzyme

Correct Answer:- Option-A

Question52:-

A protein hydrolysate made by incomplete digestion of meat, casein and other protein sources is called as

A:-

Propionolactone

B:-

Hydrolyses

C:-

Peptone

D:-

None of the above

Correct Answer:- Option-C

Question53:-

Endotoxin is a

A:-

Lipoprotein

B:-

Protein

C:-

Lipopolysaccharide

D:-

Polysaccharide

Correct Answer:- Option-C

Question54:-

The Voges - Proskauer (VP) test detects which end product of glucose fermentation

A:-

Nitrite

B:-

Acetoin

C:-

Hydrogen sulphide

D:-

Acetic acid

Correct Answer:- Option-B

Question55:-

Toxic shock syndrome is attributed to infection with

A:-

Stapylococcus aureus

B:-

Stapylococcus epidermidis

C:-

Stapylococcus hominis

D:-

Stapylococcus saprophyticus

Correct Answer:- Option-A

Question56:-

Which among the following structure of bacteria is concerned with respiration ?

A:-

Mitochondria

B:-

Mesosomes

C:-

Pili

D:-

Golgi apparatus

Correct Answer:- Option-B

Question57:-

Antibiotic solutions and toxins are sterilized by

A:-

Flaming

B:-

Hot air oven

C:-

Filtration

D:-

Autoclaving

Correct Answer:- Option-C

Question58:-

Which among the following is copnophilic bacteria ?

A:-

Escherichia coli

B:-

Klebsiella pneumoniae

C:-

Salmonella typhi

D:-

Brucella abortus

Correct Answer:- Option-D

Question59:-

The test used to identify Mycobacterium tuberculosis is

A:-

VDRL test

B:-

Widal test

C:-

Mantoux test

D:-

Catalase test

Correct Answer:- Option-C

Question60:-

Which bacteria cause peptic ulcer ?

A:-

Klebsiella pneumoniae

B:-

Escherichia coli

C:-

Brucella abortus

D:-

Helicobacter pylori

Correct Answer:- Option-D

Question61:-

Active feeding stage of a protozoan parasite is

A:-

Cyst

B:-

Pre-Cyst

C:-

Trophozoite

D:-

All the three

Correct Answer:- Option-C

Question62:-

In Hepatic amoebiasis, it is not true

A:-

Alkaline phosphatase decreses

B:-

Leukocytosis

C:-

High ESR

D:-

All the above

Correct Answer:- Option-A

Question63:-

Infective form is an embryonated egg in case of

A:-

Trichinella spiralis

B:-

Capillaria philippinensis

C:-

Trichuris trichiura

D:-

Both 1 and 2

Correct Answer:- Option-C

Question64:-

Example for a cestode is

A:-

Ascaris lumbricoides

B:-

Enterobius vermicularis

C:-

Wuchereria bancrofti

D:-

Echinococcus granulosus

Correct Answer:- Option-D

Question65:-

Histidine-rich protein 2 (HRP-2) is detected to diagnose

A:-

Malaria

B:-

Filaria

C:-

Kala Azar

D:-

Trypanosomiasis

Correct Answer:- Option-A

Question66:-

In TPHA test

A:-

Red blood cells used are coated with treponema pallidum antigens

B:-

Identifies specific antibodies your immune system

C:-

Less sensitive than FTA ab test

D:-

All the above

Correct Answer:- Option-D

Question67:-

A p24 antigen test is used in case of

A:-

HBSAg

B:-

HCV

C:-

HIV

D:-
Nipah virus

Correct Answer:- Option-C

Question68:-
In ELISA test

A:-
TMB is used

B:-
Acid is the stopping solution

C:-
Usually colour is measured to get quantination

D:-
All the above

Correct Answer:- Option-D

Question69:-
Cytopathic effect (CPE) is mainly related with

A:-
Bacteria

B:-
Antibody

C:-
Viruses

D:-
Parasites

Correct Answer:- Option-C

Question70:-
Example for a flocculation test

A:-
ELISA

B:-
VDRL

C:-
Wasserman's Test

D:-
Schick test

Correct Answer:- Option-B

Question71:-
Cleaning solution used to remove Idoine stains

A:-
Diluted Hcl

B:-
Nitric acid

C:-
Sodium Carbonate

D:-
Sodium Hydroxide

Correct Answer:- Option-B

Question72:-
Photometric method is used to calibrate

A:-
Volumetric pipette

B:-
Graduated pipette

C:-
TC pipette

D:-
Automated pipette

Correct Answer:- Option-C

Question73:-
Normal solution contains

A:-
Gram molecular wt/litre of solute

B:-
Gram Equivalent wt/litre of solute

C:-
Gram of solute/100 ml

D:-

Gram/litre of solute

Correct Answer:- Option-B

Question74:-

Qualities of a good deionized water are

A:-

Poor conductivity and high resistivity

B:-

Pyrogen free

C:-

High conductivity and poor resistivity

D:-

Sterilised

Correct Answer:- Option-A

Question75:-

Flouride is a poison for the enzyme

A:-

Glucose-6-phosphatase

B:-

Phosphofructokinase

C:-

Enolase

D:-

Lactate Dehydrogenase

Correct Answer:- Option-C

Question76:-

Quality control chart used to detect the type of error

A:-

L J chart

B:-

Cusum chart

C:-

Youden plot

D:-

Wester gard multirule chart

Correct Answer:- Option-D

Question77:-

Anti coagulant used for blood gas analysis

A:-

Sodium Citrate

B:-

EDTA

C:-

Double Oxalate

D:-

Heparin

Correct Answer:- Option-D

Question78:-

Preservative used for 24 hour urine collection for urinary VMA

A:-

Hcl

B:-

Toluene

C:-

Chloroform

D:-

Acetic acid

Correct Answer:- Option-A

Question79:-

Co-enzyme for amino transferases enzyme

A:-

Pyridoxal phosphate

B:-

NADPH

C:-

ATP

D:-

$FADH_2$

Correct Answer:- Option-A

Question80:-

Schilling test is used for the detection of

A:-

Fat in stool

B:-

Malabsorption

C:-

Malabsorption of Vit. B_{12}

D:-

Chronic pancreatitis

Correct Answer:- Option-C

Question81:-

An example of inhibitor of prostatic ACP

A:-

Formaldehyde

B:-

L-Tartrate

C:-

Sodium Carbonate

D:-

Potassium Ferricyanide

Correct Answer:- Option-B

Question82:-

Location agent for sugar chromatography

A:-

Ninhydrin

B:-
Sulphuric acid

C:-
Diphenylamine

D:-
Nitric acid

Correct Answer:- Option-C

Question83:-
Enzyme used as a tumor marker

A:-
SGOT

B:-
SGPT

C:-
ACP

D:-
Enolase

Correct Answer:- Option-C

Question84:-
In Dry Chemistry Analysers the reaction is monitored using

A:-
Spectrophotometer

B:-
Colourimeter

C:-
Reflectance Spectrophotometer

D:-
Spectroscope

Correct Answer:- Option-C

Question85:-
Example of a protein stain used for electrophoresis

A:-

Coomassie Brilliant Blue

B:-

Bromophenol Blue

C:-

Sudan Black

D:-

Oil red O

Correct Answer:- Option-A

Question86:-

Which reagent is commonly used in the sickling test ?

A:-

Potassium ferricyanide

B:-

Ammonium oxalate

C:-

Sodium meta bisulphate

D:-

Di sodium hydrogen phosphate

Correct Answer:- Option-C

Question87:-

Haemolysis during blood collection may caused by

A:-

Proper needle size

B:-

Gentle mixing

C:-

Correct tourniquet time

D:-

Forcing blood through the needle

Correct Answer:- Option-D

Question88:-

Calcium chloride is added during coagulation testing is to

A:-

Prevent clotting

B:-

Neutralize anticoagulant

C:-

Haemolyse RBCs

D:-

Activate platelets

Correct Answer:- Option-B

Question89:-

Presence of auer rods in blast cells indicate

A:-

Acute myeloid leukaemia

B:-

Acute lymphoblastic leukaemia

C:-

Chronic lymphocytic leukaemia

D:-

Hairy cell leukaemia

Correct Answer:- Option-A

Question90:-

Which parameter indicates variation in RBC size ?

A:-

MCV

B:-

MCHC

C:-

RDW

D:-

MCHC

Correct Answer:- Option-C

Question91:-

Terminal sugar in 'B' antigen is

A:-

Sucrose

B:-

Galactose

C:-

N-acetyl Galactosamine

D:-

Fucose

Correct Answer:- Option-B

Question92:-

Platelet concentrate must contains at least

A:-

4.5×10^{10} platelets/unit

B:-

3.5×10^{10} platelets/unit

C:-

5.5×10^{10} platelets/unit

D:-

6.8×10^{10} platelets/unit

Correct Answer:- Option-C

Question93:-

Incomplete washing during coomb's test gives

A:-

False negative

B:-

False positive results

C:-

Haemolysis

D:-

Both 2 and 3

Correct Answer:- Option-A

Question94:-

The binding site for plasmodium vivax is present on RBCs of

A:-

Kell blood group

B:-

Kidd blood group

C:-

Duffy blood group

D:-

Lewis blood group

Correct Answer:- Option-C

Question95:-

The RARA - PML fusion gene which is characteristic cytogenetic abnormality in acute promyelocytic leukaemia is due to

A:-

t (15 ; 17) (q^{22} ; q^{11})

B:-

t (15 ; 17) (q^{22} ; q^{21})

C:-

t (5 ; 17) (q^{22} ; q^{11})

D:-

t (11 ; 21) (q^{22} ; q^{21})

Correct Answer:- Option-B

Question96:-
Metachromatic dyes belong to

A:-
Oxazine group

B:-
Azo group

C:-
Thiazine group

D:-
Azine group

Correct Answer:- Option-C

Question97:-
For the evaluation of kidney basement membrane PAS stain is combined with the following

A:-
Diastase

B:-
Silver stain

C:-
Verhoeff's stain

D:-
Alcian blue stain

Correct Answer:- Option-B

Question98:-

Colour index of orange G. 6 is

A:-
16230

B:-
42095

C:-
45380

D:-

21000

Correct Answer:- Option-A

Question99:-

Urine bilirubin is absent in

A:-

Obstructive Jaundice

B:-

Hepatitis

C:-

Haemolytic Jaundice

D:-

Cholestasis

Correct Answer:- Option-C

Question100:-

Normal range of CSF sodium is

A:-

135-150 meq/L

B:-

60-120 meq/L

C:-

80-100 meq/L

D:-

70-100 meq/L

Correct Answer:- Option-A