JUNIOR SCIENTIFIC OFFICER,CHEMICAL EXAMINATIONS LABORATORY

EXAM DATE:10-02-2017

**1.Which of the following amino acids are both Ketogenic and Glucogenic?**

A.Leucine

B.Alanine

C.Asparic acid

D.Isoleucine

Ans:D

**2.The end product of pyrimidine metabolism in animal cells is:**

A.Beta-alanine

B.Ribitol

C.Uric acid

D.Urea

Ans:A

**3.The lipoprotein which helps the transport of TAG synthesized by the liver is:**

A.Chylomicrones

B.VLDL

C.LDL

D.HDL

Ans:B

**4.The deficiency of which Vitamin results in Pernicious Anemia:**

A.Thiamine

B.Riboflavin

C.Niacin

D.Cobalamin

Ans:D

**5.Activation of Gluconeogenesis in liver is achieved by inhibiting one of the key** **enzymes in the Glycolysis.Which of the following Enzyme is inhibited?**

A.Hexokinase

B.Phospho Fructo Kinase-1

C.Pyruvate Kinase

D.Phospho Fructo Kinase-2

Ans:C

**6.Which of the following is an uncoupler of Electron Transport Chain?**

A.2,4 Dinitro Phenol

B.Cyanide

C.Amytal

D.Antimycin A

Ans:A

**7.Which of the following ions are specifically carried by Valinomycin,a carrier** **ionophore?**

A.Na+

B.Ca+

C.K+

D.Cl-

Ans:C

**8.The cofactor of Glycogen phosphorylase is:**

A.TPP

B.PLP

C.NADH

D.CoA

Ans:B

**9.The metal atoms catalyses the decarboxylation of Dimethyl Oxaloacetate is:**

A.Cu & Ni

B.Cu & Co

C.Na & K

D.Mg & Mn

Ans:A

**10.Which of the following is a Cysteine Protease?**

A.Thrombin

B.Subtilisin

C.Elastase

D.Papain

Ans:D

**11.The unique C-Terminal sequence of ER-resident proteins of mammals is:**

A.Leu-Asp-Glu-Lys

B.Lys-Asp-Glu-Leu

C.leu-Glu-Asp-Lys

D.Lys-Asp-Leu-Glu

Ans:B

**12.In glycogen metabolism which hormonal stimulation decreases the** **intracellular concentration of CAMP:**

A.Glucagone

B.Epinephrine

C.Insulin

D.Nor epinephrine

Ans:C

**13.Quabain,a cardiac glycoside specifically inhibit which of the active transport** **system?**

A.H+-K+ATPase

B.Ca+ATPase

C.Na+-K+ATPase

D.H+ATPase

Ans:C

**14.The torsion angles for a plannar,fully extended polypeptide chain is:**

A.90 Degree

B.180 Degree

C.120 Degree

D.60 Degree

Ans:B

**15.From which fatty acid Prosta-glandins are synthesized:**

A.Linoleic acid

B.Linolenic acid

C.Oleic acid

D.Palmitic acid

Ans:A

**16.Which of the following amino acids is degraded finally to Scuccinyl CoA?**

A.Aspargine

B.Proline

C.Methionine

D.Arginine

Ans:C

**17.Which of the following antibiotic is a potent inducer of hepatic-drug** **metabolizing enzymes?**

A.Streptomycin

B.Erythromycin

C.Tetracycline

D.Rifampin

Ans:D

**18.Which of the following detergent is commonly used to release integral** **proteins from its memnbranes?**

A.CNBr

B.Triton x 100

C.Urea

D.DMSO

Ans:B

**19.When PH=PKa,the ratio of conjugate base to acid is:**

A.1:100

B.1:1000

C.1:10

D.1:1

Ans:D

**20.Which class of enzyme catalyses the oxidation of an alcohol to an aldehyde?**

A.Ligase

B.Isomerase

C.Oxidoreductase

D.Lyase

Ans:C

**21.The amyloid protein deposition associated with Alzheimer’s disease is** **composed of:**

A.Alpha-helix

B.Beta sheet

C.Beta Turns

D.Random coil

Ans:B

**22.An uncompetitive inhibitor binds to:**

A.Enzyme-substrate complex

B.Enzyme

C.Product

D.Substrate

Ans:A

**23.The coenzyme involved in Carboxylation reactions is:**

A.FAD

B.CoA

C.TPP

D.Biotin

Ans:D

**24.Which of the following is not a component of dietary fiber?**

A.Cellulose

B.Agar

C.Lignin

D.Pectin

Ans:B

**25.The component of bacterial RNA polymerase responsible for recognizing the** **prometer is:**

A.Alpha subunit

B.Beta subunit

C.Sigma subunit

D.Rho protein

Ans:C

**26.Which of the following virus has double stranded RNA as genetic material?**

A.Tobacco mosaic virus

B.Influenza virus

C.Rous sarcoma virus

D.Reovirus

Ans:D

**27.The normal immunological role of the CD8+ve T-cell is:**

A.Secretes antibodies

B.Rejects transplanted tissue

C.Kills virus infected cells

D.Helps beta-lymphocytes to develop into plasma cells

Ans:C

**28.In Nitrogen cycle,Anammox bacteria convert:**

A.Ammonia to nitrite and nitrate

B.Ammonia and nitrite to nitrogen

C.Nitrate to Nitrogen

D.Nitrogen to Nitrite

Ans:B

**29.Alpha-Amanitin is senisitive to:**

A.Prokaryotic RNA Polymerase

B.Eukaryotic RNA Polymerase I

C.Mitochondrial RNA Polymerase

D.Eukaryotic RNA Polymerase II

Ans:D

**30.Which DNA binding domain is function as transcriptional regulators in** **eukaryotes?**

A.Homeodomain

B.Leucine zipper

C.Helix turn helix

D.Basic helix loop helix

Ans:A

**31.Which antibiotic mimic the structure of UDP N-acetyle glucosamine there by** **blocks the first step in the synthesis of the core oligosaccharide of glycoprotein?**

A.Streptomycin

B.Tunicamycin

C.Puromycin

D.Tetracycline

Ans:B

**32.In mammals,’the telomerase form a special structure called’T loop’.Which of** **the following protein helps the formation of ‘T-Loop’?**

A.TRF-1

B.CRP 2

C.TRF 2

D.TFR 1

Ans:C

**33.All of the following post translational modifications are occur within the Golgi** **EXCEPT:**

A.Acetylation of Histones

B.Sulfation of Secretory proteins

C.Phosphorylation of Casein

D.N-Glycosilation of Extra Cellular Matrix proteins

Ans:A

**34.Which metal ion is present in Ascorbic acid Oxidase?**

A.Zn

B.Mg

C.Fe

D.Cu

Ans:D

**35.Neutrophil defensins are:**

A.Anti-toxins

B.Enzymes

C.Glycolipids

D.Peptide antibiotics

Ans:D

**36.The resolving power of unaided human eye is:**

A.100 meu m

B.600 meu m

C.20 meu m

D.400 meu m

Ans:A

**37.Acid phosphatase is the marker enzyme for which sub cellular fraction**

A.Cytosol

B.Peroxisomes

C.Lysosomes

D.Microsomes

Ans:C

**38.Which of the following process involved in the detoxification o f Acetamilide to** **p-acetyl amino phenol?**

A.Acetylation

B.Hydrolysis

C.Reduction

D.Oxidation

Ans:A

**39.Which of the follllowing is a common biological modification that promotes** **the formation of Z-DNA?**

A.Methylation of Cytosine residue

B.Phosphorylation of Cytosine residue

C.Methylation of Thymine residue

D.Phosphorylation of Thymine residue

Ans:A

**40.In the transcription process,which DNA strand act as the template?**

A.Sense strand

B.Antisense strand

C.Plus strand

D.Coding strand

Ans:B

**41.The ion exchange resin are usually mixed with a compound which prevent he** **resin from swelling is:**

A.Styrene

B.Acrylinc acid

C.Divinyl benzene

D.Benzilic phosphoric acid

Ans:C

**42.Which of the following conformer of cyclohexane is more stable?**

A.Chair form

B.Boat form

C.Half-Chair form

D.Twist boat form

Ans:A

**43.Which photochemical reaction involves the formation of oxetane?**

A.Photodimerization reaction

B.Norrish type 1 reaction

C.Barton reaction

D.Paterno-Buchi reaction

Ans:D

**44.An ionization suppressant element used in Augur Electron**

**Spectroscopy:**

A.Na

B.N

C.Cd

D.H

Ans:A

**45.Mond’s process makes use of the formation of:**

A.Cr(CO)5

B.Ni(CO)5

C.Cr(CO)6

D.Ni(CO)4

Ans:D

**46.The co-ordination number ion in the ionic solids NaCl and CsCl respectively are:**

A.6 and 6

B.8 and 6

C.6 and 8

D.8 and 8

Ans:C

**47.The temperature at which conductivity of a superconductor becomes infinite is** **called:**

A.Critical temperature

B.Curie’s Temperature

C.Absolute Temperature

D.Debye Temperature

Ans:A

**48.The values of energy for which Shrodinger’s steady state equation can be** **solved are called:**

A.Eigen-functions

B.Wave equation

C.Eigen-values

D.None of these

Ans:C

**49.In comparison to the frequency of the EPR transition,the NMR transition** **frequency is:**

A.Much higher

B.Much lower

C.Almost same

D.None of these

Ans:B

**50.The particle which obey Bose-Einstein statistics is:**

A.Electron

B.Neutron

C.Graviton

D.Muon

Ans:C

**51.The exchange capacity of an anion exchange generally increases with:**

A.Increase pH

B.Decrease of pH

C.pH has no effect

D.None of these

Ans:B

**52.In amberometric titrations a titrant react with a metal ion which reduces:**

A.Diffusion current

B.Residual current

C.Migration current

D.Limiting current

Ans:A

**53.Both turbidimetry and nephelometry are based on:**

A.Diffraction

B.Refraction

C.Reflection

D.Scattering

Ans:D

**54.[4]annulene is:**

A.Aromatic

B.Antiaromatic

C.Nonaromatic

D.None of these

Ans:B

**55.In a crystal,a plane cuts intercepts 2a,3b and c along the crystallographic** **axis.The Miller indices of the plane are:**

A.1,2,3

B.2,3,1

C.6,1,1

D.3,2,6

Ans:D

**56.The reagent used in coulometric titrations:**

A.NaOH

B.Kcl

C.Electrons

D.Protons

Ans:C

**57.Linear molecules with C axis and a plane belong to --------point group**

**58.The efficiency of a chromatographic column is:**

A.Directly proportional to polarity of the mobile phase

B.Directly proportional to plate height

C.Inversely proportional to plate count

D.Inversely proportional to plate height

Ans:D

**59.How many stereoisomers are possible for the following compounds?**

**CH3CH2CH(Br)CH(CI)CH3**

A.4

B.8

C.16

D.2

Ans:A

**60.Thermal isomerisation of 1,5 dienes by a 3,3 sigmatropic shift is known as:**

A.Cope rearrangement

B.Claisen rearrangement

C.Di-pi-methane rearrangement

D.Paterno-Buchi reaction

Ans:A

**61.The stereoisomers which are non-superimposable and are not related as** **object and mirror images are called:**

A.Enantiomers

B.Racemic mixture

C.Meso Compounds

D.Diastereoisomers

Ans:D

**62.An example of cyclo addition reaction:**

A.Diels-Alder Reaction

B.Darzens reaction

C.Perkin reaction

D.Reformatsky reaction

Ans:A

**63.[CoF6]4-is:**

A.Outer orbital and diamagnetic

B.Inner orbital and paramagnetic

C.Inner orbital and diamagnetic

D.Outer orbital and paramangnetic

Ans:D

**64.The distribution constant for iodine between an organic solvent and water is** **85.The concentration of iodine remaining in the aqueous layer after extraction of** **50 ml of 1 x 10-3 M iodine with 50 ml of organic solvent will be:**

A.2.16 x 10-5 M

B.1.16 x 10-5 M

C.1.16 x 10-6 M

D.2.16 x 10-6 M

Ans:B

**65.The IR spectra of CO2 molecules shows only:**

A.3 band

B.4 band

C.2 band

D.1 band

Ans:C

**66.The number of Bravals lattices pertaining to the cubic system is:**

A.14

B.8

C.3

D.6

Ans:C

**67.When a ketonic group attached to a chiral centre under goes nucelophilic** **addition with a metal hydride reagent,the relative configuration of the** **predominant isomer is predicted by:**

A.Mills rule

B.Cram’s rule

C.Distance rule

D.Displacement rule

Ans:B

**68.In infrared spectroscopy which frequency range is known as the fingerprint** **region?**

A.400-2500 cm-1

B.900-600 cm-1

C.1400-600 cm-1

D.600-250 cm-1

Ans:C

**69.For a reaction the rate constant is doubled when the temperature is increased** **from 17 Degree C to 37 Degree C.What is the activation energy for the reaction?**

A.3.1 kcal

B.6.2 kcal

C.12.4 kcal

D.24.8 kcal

Ans:B

**70.The distribution of probability density calculated from Maxwell-Boltzmann** **statistics in an arbitrary chosen directions spreads with:**

A.Increasing temperature

B.Decreasing temperature

C.Temperature is independent

D.None of these

Ans:A

**71.Among the following which is the spin forbidden process:**

A.Fluorescence

B.Phosphorescence

C.Internal conversion

D.Inter system crossing

Ans:D

**72.Which of the following nuclei will have a magnetic moment?**

A.2D1

B.12C6

C.16O8

D.32S16

Ans:A

**73.In which technique temperature difference between sample and reference is** **recorded as a function of time?**

A.TGA

B.DTA

C.Thermometric titration

D.Derivative TGA

Ans:B

**74.An electron volt is equal to:**

A.4.4186 x 1014 Hz

B.1.5 x10-6m

C.1.602x10-12 erg

D.1.5x10-10erg

Ans:C

**75.The point group of xenon oxytetrafluride is:**

A.C2v

B.C4v

C.C meu

D.C3v

Ans:B

**76.Which of the following compound exhibit optical activity?**

A.2-chloro propane

B.3-chloro propane

C.2-Chloro butane

D.4-chloro heptanes

Ans:C

**77.Which of the following is aromatic?**

A.Tropylium cation

B.Tropylium anion

C.Biphenyl

D.Cyclopentane

Ans:A

**78.The planes which will be absent in simple cubic system is:**

A.100

B.200

C.111

D.110

Ans:B

**79.Which of the following wave length ranges is associated with UV** **spectroscopy?**

A.0.8-500 meu m

B.400-100 nm

C.380-750 nm

D.0.01-10 nm

Ans:B

**80.The term symbol for ground state of V 3+ ion is:**

A.2D5/2

B.5D0

C.3F4

D.3F2

Ans:D

**81.The Punnapra Vayalar uprising took place in:**

A.October,1943

B.October,1944

C.October,1945

D.October,1946

Ans:D

**82.Akalis from Punjab openend a canteen in Kerala during-------------Satyagraha**

A.Vaikom

B.Guruvayur

C.Sucheendram

D.Cheemeni

Ans:A

**83.The author of the play’Adukkalayil Nunnum Arangathekku’:**

A.M.R.B

B.V.T.Bhattathirippad

C.Premji

D.Ponkunnam Varkey

Ans:B

**84.Founder and proprietor of Swadeshabhimani newspaper:**

A.Ramakrishna Pillai

B.G.P.Pillai

C.Vakkom Maulavi

D.Makthi Thangal

Ans:C

**85.Founder of Prathaksha Raksha Daiva Sabha:**

A.Pampady John Joseph

B.Poikayil Yohannan

C.Charathan Solomon

D.T.T.Kesava Sastri

Ans:B

**86.The present Chancellor of Germany(2016):**

A.Angela Merckel

B.Karoline Linnert

C.Katja Kipping

D.Frauke Petry

Ans:A

**87.Who is known as Burmese Gandhi?**

A.Khin Khin Win

B.Aung San Su Chi

C.May Win Myint

D.Zin Mar Aung

Ans:B

**88.Who designed Indian National Flag?**

A.Subash Chandra Bose

B.Pingali Venkaiyyah

C.B.G.Tilak

D.B.M.Malabari

Ans:B

**89.Whose autobiography is the Turbulent Years 1980-1996?**

A.Pranab Mukherjee

B.A.B.Vajpayee

C.Prathiba Patel

D.K.R.Narayanan

Ans:A

**90.In which country INA was oranised?**

A.India

B.Sri Lanka

C.Singapore

D.Canada

Ans:C

**91.Who is known as the Grand Old Man of India?**

A.Mahatma Gandhi

B.Subash Chandra Bose

C.W.C.Bannerjee

D.Dadabai Naoroji

Ans:D

**92.Which day is observed as World Cancer Day?**

A.February 4th

B.March 4th

C.April 4th

D.May 4th

Ans:A

**93.Who is the first President of Travancore State Congress?**

A.T.M.Varghese

B.Annie Mascrene

C.Pattom Thanu Pillai

D.G.P.Pillai

Ans:C

**94.Who is the founder of Vala Samudaya Parishkarini Sabha?**

A.Ayyankali

B.Vaikunta Swamikal

C.Pandit K.P.Karuppan

D.T.T.Kesava Sastri

Ans:C

**95.Who is the author of Daiva Dasakam?**

A.Chattampi Swamikal

B.Sree Narayana Guru

C.Thaikkad Ayya

D.Brahmananda Sivayogi

Ans:B

**96.Who was the author of Adi Bhasha,a research work in the field of linguistics?**

A.Sri Narayana Guru

B.C.Krishnan

C.Pandit karuppan

D.Chattampi Swamikal

Ans:D

**97.The Magna Carta of modern Travancore:**

A.Vaikom Satyagraha

B.Guruvayur Satyagraha

C.Kundara Proclamation

D.Temple Entry Proclamation

Ans:D

**98.Head Quarters of Kerala Floklore Academy:**

A.Kannur

B.Kozhikode

C.Kasargod

D.Wayanad

Ans:A

**99.First political drama of kerala:**

A.Ritumati

B.Pattabakki

C.Aphante Makal

D.Thozil Kendrathilekku

Ans:B

**100.In which year Sadhu Jana Paripalana Sangham was formed?**

A.1905

B.1906

C.1907

D.1908

Ans:C