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 folllllowing 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(Cl)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