NUMS ENTRANCE TEST – 2018

Time Allowed: 150 Minutes
Totl MCQs = 100

1-20 Missing

21 On hydrogen atom spectrum, series of _____ within visible region, is
- a. Lymen series
- b. Baimer series
- c. Paschen series
- d. Bracket series
- e. Pfund series

22 At standard conditions
Question not clear
- a. 1 : 1
- b. 1 : 2
- c. 2 : 3
- d. 3 : 2
- e. 2 : 1

23 For a chemical reaction A, B, the
Question not clear
- a. 43 KJ/mole
- b. 37 KJ/mole
- c. 25 KJ/mole
- d. 19 KJ/mole

24 By raising the temperature 1º
Question not clear
- a. Hydration
- b. Neutralization
- c. Hydrolysis
- d. Ionization

25 s-sp^3 overlap occurs in _____ molecules
- a. CI_2
- b. CH_4
- c. HF
- d. HI

26 $\Delta H = \Delta E + P\Delta V$ is the change in enthalpy at constant _____
- a. Volume
- b. Pressure
- c. Temperature
- d. Mass

27 As the concentration of reactant increases, the rate of reacts also increases, it is because:
- a. K.E. increase in molecules
- b. Oscillation increases between molecules
- c. Collisions frequency increases
- d. Temperature of molecules increases

28 The equation shows the reaction between elements X and di ls hydrochloric acid.
What types of bonding are presnt in element X and in compound XCL_2?
$X(s) + 2HCI(aq) \rightarrow XCI\ (aq) \qquad (g)$

	Type of bonding	
	In element X	Incompound XCI_2
A	Covalent	Covalent
B	Covalent	Ionic
C	Metallic	Covalent
D	Metallic	Ionic

- a. Covalent covalent
- b. Covalent ionic
- c. Metallic covalent t
- d. Metallic ionic

29 If the value of Kc is very large then it shows that _____ completed.
- a. Forward reaction
- b. Reverse reaction
- c. Equilibrium is maintained
- d. Kc is moderate

30 For stable molecular geometry, each carbon atom of undergoes
- a. Sp hybridization
- b. Sp^2 hybridization
- c. Sp^3 hybridization
- d. Dsp^2 hybridization
- e. D^2sp^2 hybridization

31 If the absolute tempratre of a gas is reduced to one half and the pressure is doubled, the volume of gas will be:
- a. Increased four times
- b. Decreased four times
- c. Remained unchanged
- d. Reduced to one half
- e. Increased two times

32 Change in extensive property is proportional to the change in ____ of material
- a. Temperature
- b. Volume
- c. Quantity

d. Pressure

33 Which of the following has the highest electrical conductivity?
a. Aqueous sugar solution
b. Solid graphite
c. Solid sodium chloride
d. Gaseous carbon dioxide

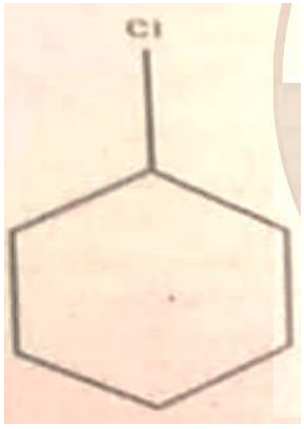
34 The oxidation number of nitrogen in the HNO is _____
a. 4+
b. 5+
c. 6+
d. 7+

35 X is a salt that decomposed in water
What is the reason for decomposition?
a. This potential oxidizes salt
b. This potential reduces salt
c. This potential reduces water
d. This potential oxidizes water

42 In acidic medium, oxidation action of potassium permanganate depends upon
a. Mn^{2+}
b. KMn^{3+}
c. MnO_3
d. Mn^{4+}

43 The energy required to remove the outermost electron from gaseous atom is called:
a. Electro negativity
b. Electro positivity
c. Ionization potential
d. Electron affecinity

44 Which sequence of reaction conditions should be used to produce the compound below from benzene?



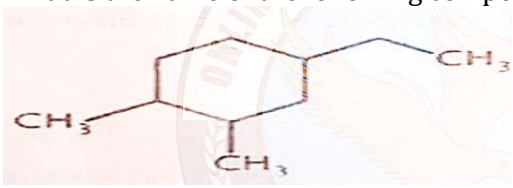
a. $AICI_3/CI_2,H_2/RH$ / C
b. CI_2/ UC light, H_2 / RH / C
c. H_2 / Rh / C; $AICI_3$ / CI_2
d. HCI ; H_2 / Rh / C

45 Cyanothydrins can be synthesized from ketones through
a. Nucleophilic addition reaction
b. Uni-molecular nucleophilic substitution reaction
c. Electrophilic substitution reaction
d. Bimolecular nucleophilic substitution reaction
e. Nucleophilic elimination reaction

46 Which of the following elements does not belong to elements?
a. Uranium
b. Samarium
c. Thorium
d. Osmium

47 Gasoline is a mixture of hexane and _____.
a. Methane
b. Butane
c. Decane
d. Heptanes

48 What is the name of the following compound?



a. 1-ethyl-3, 4-dimethylcycloheptane
b. 2-ethyl-4, 5-dimethylcyclohexane
c. 1-ethyl-3, 4- dimethylcyclohexane
d. 4-ethyl-1, 2- dimethylcyclohexane

49 Bakelite is a polymer of formaldehyde and _____
a. Phenol
b. Ethanol
c. Beutanol
d. Methanol

50 To avoid the formation of toxic ocmpounds with _____ substance is used for disinfecting water?
a. $KMNO_4$
b. Chloramines
c. O_3
d. Alums

51 Question not clear
a. Formaldehyde
b. Acetaldehyde
c. Benzaldehyde
d. Trimethyalacetaldehyde

52 Which one of the following is called animal starch?
a. Amylose
b. Cellulose
c. Glycogen
d. Glycine

53 Enzymes are _____ that catalyze chemical living organisms and are very specific in their action
- a. Proteins
- b. Vitamins
- c. Lipids
- d. Minerals

54 HCOOH is the structure of
- a. Acetic acid
- b. Formic acid
- c. Valeric acid
- d. Caproic acid

55 The reaction CHCH + H_2O + 3{O} shows the formation of _____
- a. Acetic acid
- b. Pictric acid
- c. Oxalic acid
- d. Formic acid

56 In composition of natural gas 0.17% is constituted by:
- a. Methane
- b. Ethane
- c. Butan e
- d. Nitrogen

57 By fermentation process of starch and by the catalytic a enzyme _____ is produced.
- a. Methyl alcohol
- b. Ethyl alcohol
- c. Acethyl alcohol
- d. Methanol

58 Methyl ketones can be characterized by performing:
- a. Iodeform test
- b. Schiff's test
- c. Benedict reagent test
- d. Tollen's test
- e. Cannizzaro's test

59 In RNA, which of the base is replaced by uracil?
- a. Cytosine
- b. Adenine
- c. Guanine
- d. Thymine

60 In the atmosphere, CO_2 is about
- a. 0.01
- b. 0.03
- c. 0.05
- d. 0.09

61 Chlorophyll, a naturally occurring macromolecule contain
- a. Mo^+
- b. AI
- c. Fe
- d. B

62 The reactions of below diagram with RMgX leads to the for of

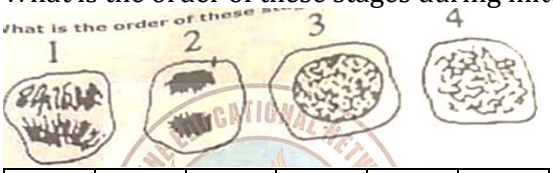
- a. RCHOHR
- b. $RCHOHCH_3$
- c. R_2CHCH_2OH
- d. RCH_2CH_2OH

63 Alkyl halides can also be obtained by halogenation of _____.
- a. Alcohols
- b. Alkenes
- c. Alkanes
- d. Ketones

64 Which of the following is necessary for the mornal development of leaves and bark of the plants.
- a. Sodium
- b. Aluminium
- c. Calcium
- d. Beryllium

65 Which of the following fertilizers has maximum percentage of nitrogen in solid state?
- a. Ammonia
- b. Urea
- c. DI ammonium hydrogen phosphate
- d. Ammonium nitrate

77 The below given diagrams show stages of mitosis. What is the order of these stages during mitosis?



A	1	2	4	3	5
B	2	3	5	1	4
C	3	5	4	1	2
D	4	4	5	1	2

78 Most bacteria require vitamins for which of the purpose?
- a. Source of energy
- b. Growth factors
- c. Source of carbon
- d. Source of electron donors

79 Germs theory of disease was proposed by
Leeuwenhoek
Louis Pasteur
Walther flemming
Robert kock

Edward jenner

80 Freeding of an object from all living organisms bacteria and their spores, fungi and their sp
- a. Sterilization
- b. Disinfection
- c. Decontamination
- d. Immunization

81 The process by which various components of cells including its organelle can be isolated is called
- a. Homogenization
- b. Cel fractionation
- c. Cell fixation
- d. Cell electrophoresis
- e. Ultracentrifuge

82 Which of the following correctly shows structures which are found in a eukaryotic cell? (yess present; No = absent)

	Nuclear membrane	Mitochondrid	Ribosomes
a	No	No	No
b	No	Yes	No
c	Yes	No	No
d	Yes	No	Yes
e	Yes	Yes	yes

- a. No no no
- b. No yes no
- c. Yes no no
- d. Yes no yes
- e. Yes yes yes

83 Which of the following terms is used to describe the membrane of central vacuole?
- a. Tonopisat
- b. Myoplast
- c. Periplast
- d. Epitonoplast

84 The major portion of $(NH)_2CO$ is secreted by
- a. Sweat
- b. Salvia
- c. Urine
- d. Stool

85 In white blood cells, monocytes have a short life period of _____ hours
- a. 10 – 20
- b. 21 – 30
- c. 31 – 35
- d. 36 – 40

86 The fungal cell wall contains
- a. Peptidoglycan
- b. Chitin
- c. Suberin
- d. Cutin

87 DNA synthesis takes place in _____ phase of the cell
- a. G_0
- b. G_1
- c. G_2
- d. S

88 The RNA found in Ribosomes is
- a. M RNA
- b. R RNA
- c. T RNA
- d. Polysome
- e. Genes

89 The outermost boundary in most of the leaf cell is:
- a. Cell wall
- b. Cell membrane
- c. Tonoplast
- d. Unit membrane
- e. Polar substances

90 In human, cell _____ is responsible for producing hydrogen peroxides
- a. Lysosomes
- b. Mitochondria
- c. Peroxisomes
- d. Glyoxisomes

91 The soluble part of the blood is called
- a. Karyolymph
- b. Nucleoplasm
- c. Protoplasm
- d. Serum

92 The animals that feed on organic debris from decomposing platns and animals are called
- a. Herbivores
- b. Carnivores
- c. Omnivores
- d. Detritivores

93 Pinacocytes forms _____.
- a. Pores
- b. Ostia
- c. Epidermis
- d. Spongocoel

94 Actinia is the biological name of
- a. Sea apemone
- b. Corals
- c. Obella
- d. Jellyfish
- e. Frog

95 The simplest form in kingdom Animalia belongs to
- a. Eumetazoa
- b. Bilateria
- c. Parazoa
- d. Protostomia

96 The porifera are pore-bearing animals, commonly called
- a. Corals
- b. Sponges
- c. Hydras
- d. Anemones

97 Question not clear

98 High level of _____ and ____ in the bblood, contributing factors in the formation of kidney stones.
- a. Calcium, oxalate
- b. Calcium, magnesium
- c. Calcium, sodium
- d. Sodium, sulphate

99 Identify the correct order?
- a. Organ>function>cell>tissue
- b. Cell>organ>tissue>function
- c. Cell>tissue>organ>system
- d. Tissue>organ>cell>function

100 Blood containing CO_2 is
- a. Red color
- b. Blue color
- c. Reddish purple color
- d. Reddish blue color

101 The mechanism by which substances are removed from the blood and are directly added to the tubular fluids is called
- a. Glomerular filtration
- b. Excretion
- c. Tubular secretion
- d. Tubular re-absorption

PHYSICS

107 Neurons CANNOT undergo division, because they do not have
- a. Centrosomes
- b. Nucleus
- c. Mitochondria
- d. Golgi apparatus

108 Hypothalamus initiates the release of hormones, by their releasing factors, whilte ____ is directly released by is.
- a. TSH
- b. Oxytocin
- c. ACTH
- d. FSH
- e. GH

109 Transport of glucose across the cell membrane occurs by
- a. Simple diffusion
- b. Facilitated diffusion
- c. Osmosis
- d. Primary active transport
- e. Secondary active transport

110 Which artery supplies blood to the liver?
- a. Pulmonary artery
- b. Hepatic artery
- c. Cellac artery
- d. Thoracic artery

111 Movement of the Hip joint is which type of synovial joints?
- a. Gliding joint
- b. Ball and socket joint
- c. Pivot joints
- d. Hinge joint

112 A hormone called _____ controls the secretion of gastic juice.
- a. Gastrin
- b. Seceretin
- c. Thyroxin
- d. Iodothyroxine
- e. Parathormone

113 Process of uncontrolled cell division is due to which one of the following reasons?
- a. DNA replication
- b. Mutations
- c. Translation
- d. Transcription

114 Which of the following is derived from Latin word VENUME which means poisonous?
- a. Bacteria
- b. Fungi
- c. Virus
- d. Malaria

115 Functions of the brainstem include all of the following EXCEPT:
- a. Integration of righting reflexes
- b. Autonomic control for respiration
- c. Equilibrium and posture regulation
- d. Initialation of voluntary movments
- e. Fixation of the eyes

116 Cardiac output is increased by all the following EXCEPT
- a. Hypoxia
- b. Exercise
- c. Sleep
- d. Pregnancy
- e. Anemia

117 An enzyme that helps in the conversion of RNA to DNA is called
- a. Transcriptase
- b. Polymerase
- c. Reverse transcriptase

d. Synthetase

118 Sequence of stop codon in DNA is
a. TAG
b. AUG
c. UAG
d. AAA
e. AGT

119 The type of gene interaction in which the effect caused by a gene at one force interfere with the effect caused by another gene at another locus is known as
a. Pleiotropy
b. Epistasis
c. Polygenic inheritance
d. Gene linkage
e. Crossing over

120 Which one of the following pairs represents analogous feature
a. Elephant tusks and human incisors
b. Teleost erythrocyte and mammation erythrocyte
c. Insect wing and bat wing
d. Mole forelimb and bird wing
e. Reptilian heat and mammalian heat

121 The position of an organism in a food chain of an ecosystem called:
a. Level of ecosystem
b. Food chain
c. Food web
d. Trophic level
e. Energy pyramid

122 Which of the following trophic levels has largest biomas ecosystem?
a. Decomposers
b. Primary consumer
c. Secondary consumer
d. Producers
e. Herbivores

123 The zone with insufficient light to support photosynthesis ecosystem is called:
a. Oceanic sub-sone
b. Limnetic zone
c. Profundal zone
d. Littoral benthal zone

136 DURING THE PROCESS OF _____
a. One unit: one unit
b. One unit : no units
c. No units: one unit
d. No units : no units

137 If an ideal gas has volume V at 27º and R is heated at constant pressure so that its volume becomes 1.5V. then the value of final temperature is
a. 327K
b. 873L
c. 177ºC
d. 600ºC

138 An electron is moving along the axis of a solenoid carrying correct statement abou the electromagnetic force acting on
a. The force acts radially inwards
b. The force acts radially outwards
c. The force acts in the direction of motion
d. No force acts

139 The magnetic lines of force are directed in a manner that th
a. Origloate at south pole and terminate at north pole
b. Pass thorugh the magnet
c. Orginate at north pole and terminate at south pole
d. Go away from both the poles

140 What happends to the pressure of a sample of helium gas 200K to 300 K, with no change volume?
a. Pressure increases by a factor of 4
b. Pressure decreases by a factor of 4
c. Pressure decreases by a factor of 2
d. Pressure increases by a factor of 2
e. No change in pressure

144 Which of the following following is dimentionless quantity
a. Power
b. Frequency
c. Refractive index
d. Impulse

145 Alpha ray are nuclear radiations. They are in fact same as _
a. Hydrogen
b. Deuterium
c. Tritium
d. Helium
e. Lithium

146 When two bodies move towards each other with constan decreases at the rate of 6 m/sec, ___ they move in the same increases at the rate of 4 m/sec. calculate their velocities?
a. 5m/sec , 1 m/sec
b. 3 m/sec, 3 m/sec
c. 6 m/sec, 1 m/sec
d. 4 m/sec, 2 m/sec

150 The magnetic field a produced in a solenoid depends on
a. Its length
b. Its length and current in it
c. Its length and number of turns in it
d. The number of turns and current in it

151 Equation of continuity is expressed as
a. A1V2 = A2V1
b. A1V1 = A2V2
c. A1H2=A2H1
d. A1H1=A2H2

152 The path difference for the constructive interference is
a. (n-1)A

b. (n+2)A
c. nA/2
d. 2n/A
e. n/A

153 The light exhibits the phenomena of constructive interference under the situation when it is _____ and _____.
a. Monochromatic and in phase
b. Monochromatic and out of phase
c. In phase and non-monochromatic
d. Out of phase and non-monochromatic

154 The distance between two consecutive antinodes is equal to
a. λ / 8
b. λ /6
c. λ /4
d. λ /2

155 The charge on neutron is:
a. 1.6×10^{-27} C
b. Zero
c. 1.6×10^{-21} C
d. 9.11×10^{-19} C
e. 9.6×10^{-15} C

156 When an applied stress changes the volume, the changes in volume per unit volume is known as
a. Polymetric strain
b. Crystalline strain
c. Volumetric strain
d. Equal strain

157 When fluid is imcopressible, it means
a. No internal frictional force
b. Independent of coordinates
c. Independent of time
d. Its density remains constant
e. Its density remains variable

158 In medical diagonasis for precise internal imaging of brain
a. X-ray
b. Eta ray
c. Gamma ray
d. Alpha ray

159 A steady current of 5 A is drawn from an electric sou consumed (in watts) is
a. 0.05
b. 5
c. 500
d. 50000

160 S.I. unit of rate flow of a fluid =
a. meter / sec
b. $meter^2$ / sec
c. $meter^3$ / sec
d. $meter^2/sec^2$

161 The level of radiation to which human body can be _____ exp natural _____
a. 1 to 10
b. 10 to 100
c. 10 to 1000
d. 10 to 10000