Q14. Test cross is made to check the genotype of a trait. Which of the following crosses is a test cross?
A. Unknown x At
B. Unknown x tt
C. Unknown x AB
D. Unknown x TT

Q15. During sliding of actin filaments, ATP is used for?
A. Cross bridge formation
B. Cross bridge breaking
C. Dragging filaments
D. Shortening of filaments

Q16. The cell membrane of muscle cell is:
A. Sarcoplasm
B. Sarcolemma
C. Sarcomere
D. Myofibrils

Q17. Irregular striations and involuntary control is related to?
A. Cardiac muscle cells
B. Fibroelastic cartilage cell
C. Skeletal muscle cells
D. Smooth muscle cells

Q18. Cartilage is a type of which tissue?
A. Connective tissues
B. Epithelial tissues
C. Muscular tissues
D. Nervous tissues

Q19. Production of Follicle-stimulating hormone (FSH) and Luteinizing Hormone (LH) from the pituitary gland of female is controlled by:
A. Ovary
B. Uterus
C. Stimulated follicles
D. Hypothalamus

Q20. The term menopause means:
A. Start of menstruation
B. Start of ovulation
C. Stop of ova production
D. Degeneration of ovaries

Q21. The labour pains to expel fetus are due to action of oxytocin on:
A. Endometrium
B. Myometrium
C. Perimetrium
D. Ovaries

Q22. In human females, what is the small, pear-shaped, muscular, distensible, sac-like organ where gestation takes place?
A. Uterus
B. Kidney
C. Fallopian tube
D. Stomach

Q23. The function of hyaluronidase enzyme is:
A. Penetration of the sperm into the ovum
B. Entrance of the sperm into the vagina
C. Entrance of the sperm into the fallopian tube
D. Inactivation of sperms after their failure to fertilize ovum

Q24. All the following are disinfectants to control bacterial growth except:
A. Tincture of Iodine
B. Potassium Permanganate
C. Mercuric Chloride
D. Hydrogen Peroxide

Q25. Which of the following is an example of spiral shaped bacteria?
A. Diplococcus pneumoniae
B. Hyphomicrobium
C. Escherichia coli
D. Pseudomonas

Q26. Bacterial cell have ability to maintain its shape through
A. Cell wall
B. Capsule
C. Cell wall & slime
D. Slime

Q27. Helicobacter pylori is an example of:
A. Cocci
B. Bacilli
C. Pleomorphic
D. Spiral

...positive bacteria is:
C. 3
D. 4

Q29. The method of bringing oxygenated air into contact with a gas exchange surface is called,
A. photorespiration
B. ventilation
C. gas transport
D. respiration

Q30. Smooth muscles are found in all mentioned below except
A. Trachea
B. Bronchi
C. Bronchioles
D. Alveoli

Q31. The final destination of lymph is:
A. lymph node
B. lymphoid organs
C. lymph capillaries
D. subclavian vein

Q32. Descending aorta is bifurcated into two vessels which on further division from femoral a that supply blood to high muscles of legs:
A. iliac vein
B. iliac artery
C. temporal artery
D. sciatic artery

Q33. Which of the following is the main point of Darwinism?
A. Over production
B. Variation
C. Disuse of organ
D. Perceived unity of life

Q34. Which of the following type of organs are supposed to be functional in ancestral specie than in present day species:
A. Vestigial organs
B. Homologous organs
C. Analogous organs
D. Embryonic organs

Q35. Which of the following is NOT an example of disuse of organs?
A. Snake's legs
B. Shedding of milk teeth
C. Muscle atrophy
D. Movement of ear

Q36. According to evolutionary studies, prokaryotes may have arisen around:
A. 2.5 billion years ago
B. 3.5 billion years ago
C. 4.5 billion years ago
D. 5.5 billion years ago

Q37. The enzyme which can work on pH 7 of the medium is?
A. Pepsin
B. Sucrase
C. Chymotrypsin
D. Pancreatic lipase

Q38. Which enzyme is different from others?
A. Pepsin
B. Trypsin
C. Chymotrypsin
D. Lactase

Q39. Competitive inhibitors are_____?
A. Homologous to substrate
B. Analogous to substrate
C. Smaller than substrate
D. Larger than substrate

Q40. The active sites of enzymes are composed of?
A. Few Nucleotides
B. Few Nucleosides
C. Few Saccharides
D. Few Amino Acids

Q41. NAD is an important?
A. Enzyme
B. Coenzyme
C. Hormone
D. Vitamin

Q42. What is true about Oxytocin?
A. Acts on kidney tubules
B. Stimulates JCSH
C. Perform cellular functions
D. Dilate milk ducts of mammary glands

Q43. In a typical nerve, the action potential duration is:
A. 1 millisecond
B. 1 microsecond
C. 1 second
D. 1 minute

Q44. During resting membrane potential condition:
A. Outer surface of neuron is more positive
B. Inner surface of neuron is more positive
C. Both of these surfaces are equally positive
D. Both of these surfaces are equally negative

Q45. The value of active membrane potential of the neuron is;
A. 0.01 Volts
B. 0.02 Volts
C. 0.05 Volts
D. 0.07 Volts

Q46. The chemical messengers that transmit action potential across the synapse in the form of chemicals are ?
A. Synaptic knob of synapse
B. Reflex actions
C. Neurotransmitters
D. Acetylcholinesterase

Q47. The pressure receptors that receive deep pressure stimulus in human body are called;
A. Meissner Corpuscles
B. Pacinian Corpuscles
C. Red Blood Corpuscles
D. White Blood Corpuscles

Q48. Cells of different types can be distinguished on the basis of surface:
A. Phospholipids
B. Globular proteins
C. Glycolipids and glycoproteins
D. Cholesterol

Q49. Mitosis, a type of cell division is observed in?
A. E.coli
B. Nostoc
C. Blue green algae
D. Cyanobacteria

Q50. Cell wall of prokaryotic cell is composed of;
A. Carbohydrates
B. Carbohydrates & Proteins
C. Proteins
D. Proteins & Lipids

Q51. Which structure of prokaryotic cell will play the role of mitochondrion?
A. Spores
B. Cyst
C. Nucleoid
D. Mesosomes

Q52. Proteins and lipids are modified into Glycoproteins & Glycolipids by which cell organelle?
A. Golgi complex
B. Rough Endoplasmic Reticulum
C. Smooth Endoplasmic Reticulum
D. Ribosomes & chromosomes

53. Cyclosis and amoeboid movements are due to:
A. Microtubule
B. Cilia
C. Microfilaments
D. Intermediate filaments

54. Number of major layer/layers of cell wall in ram positive bacteria is/are:
A. 1
B. 2
C. 3
D. 4

5. Most of the monosaccharides form a ring structure when in solution. For example ribose will ~~ in~~ a five cornered ring known as ----------
A. glucopyranose
B. ribofuranose
C. glyceradehyde
D. acetaldehyde

Which statement is true about regarding both starch and cellulose?
. They are both polymers of glucose.
. They are geometric isomers of each other
C. They can both be digested by humans.
D. They are both used for energy storage in plants.

Page 5 o

Q57. Which type of bond must be broken for water to vaporize?
A. nonpolar covalent bonds
B. polar covalent bonds
C. hydrogen bonds
D. covalent bonds

Q58. The specific heat of vaporization of water plays an important role in the regulation of
produced by ----------,
A. reduction
B. oxidation
C. redox
D. none of above

Q59. Biologically, ---------- ---------- plays key roles in maintaining the integrity of
bilayer membranes.
A. hydrophilic exclusion
B. hydrophobic exclusion
C. heat of vaporization
D. specific heat capacity

Q60. Energy is ---------- by the breakdown of complex molecules into simpler ones, such
reactions are called catabolic reactions
A. released
B. consumed
C. produced
D. destroyed

Q61. ----------forms almost three-fourth of the body by weight
A. water
B. protein
C. carbohydrates
D. lipids

Q62. The major enzymes involved in transfer of phosphate group from ATP to Glucose is:
A. Isomerase
B. Dehydrogenase
C. Kinase
D. Decarboxylase

Q63. Out of 36 ATPs, how many are produced in electron transport chain?
A. 28
B. 30
C. 32
D. 34

Q64. Which is the major event in electron transport chain?
A. ATP synthesis
B. Decarboxylation
C. Substitution
D. Isomerisation

Q65. Which of the following is used in baking?
A. Aerobic respiration
B. Anaerobic respiration
C. External respiration
D. Internal respiration

Q66. The provirus of HIV is structurally and chemically made up of?
A. ssRN
B. ssDNA
C. dsRNA
D. dsDNA

Q67. The molecules used to control virus during infection of animal cells are:
A. Interferon
B. Histone
C. Antigen
D. Serum

Q68. Virus is what type of agent?
A. Cellular agent
B. Infectious agent
C. Non-infectious agent
D. Non-protein agent

CHEMISTRY

Q69.Alkylbenzene is formed when benzene is treated with an alkyl halide in the presence o
anhydrous aluminum chloride. Identify the type of reaction.
A. Halogenation
B. Friedel-Crafts acylation reaction
C. Friedel-Crafts alkylation reaction
D. Sulphonation

Q70. The increasing stability order of the following compounds (1) CH3 CH2 CH2+ (2) (CH3) 3C+ (3)
CH3 CH2 CH+ CH3 are ?

A. 1 > 2 > 3
B. 3 > 2 > 1

C. 3 > 1 > 1
D. 1 > 1 > 2

Q71. When 2-bromopropane reacts with sodium ethoxide, the major product is/are......?

A. Propene
B. Propane

C. Ethyl isopropyl ether
D. All are formed

Q72. Propanone can be prepared from propyne by:

A. Passing a mixture of propyne and steam over a catalyst, magnesium oxide
B. Passing a mixture of propyne and steam over a catalyst, zinc chromate

C. Boiling propyne with water in the presence of HgSO4 and H2SO4
D. Treating propyne with iodine and NaOH

Q73. If carboxylic acid and ketone groups C=O are present in a chain then final name will be given as

A. oxo, oic acid
B. one, oic acid

C. Both 1 and 2
D. None of these

Q74. Acetic acid is weak acid than sulphuric acid because of which of the following reasons?

A. It decomposes on increasing temperature
B. It has less degree of ionisation

C. It has -COOH group
D. It has more inductive effect

Q75. Mr. Khan mix acetic acid with thionyl chloride. Which product is obtained?

A. $CH_3COCl + SO_2 + HCl$
B. $CH_2Cl + CH_3COCl$

C. $CH_3COOCH_3 - SO_2$
D. $CH_3O - SO_2 - HCl$

Q76. After the digestion & before absorption the product of the protein is:

A. Amino Acid and small polypeptide
B. Only Amino Acid

C. Only small polypeptide
D. Only ammonia

Q77. Dehydration of alcohol gives which of the following product in the presence of H_2SO_4 at 140°?

A. Acetaldehyde
B. Diethyl ether

C. Ethyl acetate
D. Ethyl chloride

Q78. Complete oxidation of alcohol gives which of the following?

A. Aldehyde
B. Alkane

C. Carboxylic acid
D. Ketone

Q79. One can estimate the direction in which equilibrium will shift with the help of:

A. Le chaltier's principle
B. Law of mass action

C. Mass's law
D. Law of heat of formation

B. 431KJ/mol

D. 346kJ/mol

Q81.What are vinyl alcohol and acetaldehyde?

A. Position isomers
B. Chain isomers

C. Metamers
D. Tautomers

Q82.Oxidation number of free magnesium is?

A. 0
B. +1

C. +2
D. +3

Q83.Select the metal which is extracted from bauxite?

A. Al
B. Ca

C. Mg
D. Cu

Q84.Which of the following has the highest atomic radius in its period?

A. Alkaline earth metals
B. Alkali metals

C. Chalcogens
D. Halogens

Q85.The electronic configurations of some elements are given below. Recognize the ele
belongs to group IIIA

A. 1s2 2s2 2p3
B. 1s2 2s2 2p4

C. 1s2 2s2 2p1
D. 1s2 2s2 2p2

Q86.All alkali metals react with chlorine gas to form white metal chlorides salt. The metal
salt formed is:

A. Insoluble
B. Soluble in water to give neutral solution of
ph 7

C. Soluble in water to give acidic sol
ph 1
D. Soluble in water to give alkaline
ph 14

Q87.Which one of them is amphoteric in nature?

A. Lithium oxide
B. Beryllium oxide

C. Calcium oxide
D. Potassium oxide

Q88.Which of the following is correct electronic configuration of iron (II) ion (atomic no
=26)?

A. [Ar] 4s0, 3d6
B. [Ar] 4s2, 3d6

C. [Ar] 4s2, 3d4
D. [Ar] 4s2, 3d5

Q89.Which of the functional group are present in ethyl acetate?

A. Aldehyde group
B. Carboxyl group

C. Ester group
D. Ether group

Q90.What is the molecular formula of pyridine molecule?

A. C_6H_5N
B. C_5H_5N

C. C_5H_5NH
D. C_6H_6N

Q91. Identify which method is used to prepare Alkynes?

A. Dehalogenation of Vicinal Dihalides in the presence of methanol.
B. Dehydration of Alcohols in the presence of Al_2O_3 at 340-450-degree centigrade.
C. Dehalogenation of Vicinal Dihalides in the presence of strong base.
D. Electrolysis of a carboxylic acid salts.

Q92. The addition reaction of 2-butene with HBr produces?

A. 1-bromobutane
B. 2-bromobutane
C. 1,3-dibromobutane
D. 2,3-dibromobutane

Q93. Under suitable conditions alkanes cannot undergo ....reactions?

A. Substitution
B. Combustion
C. Hydrogenation
D. Addition

Q94. A compound of phosphorus oxide has 43.6% of Oxygen. Its empirical formula is?

A. P_2O_5
B. P_2O_3
C. P_2O_2
D. PO_3

Q95. Which element is used as standard to determine atomic mass of an element?

A. H
B. C
C. P
D. Cl

Q96. The average weight of atoms of an element compared to the weight of one atom of ---------is called atomic weight.

A. Carbon
B. Helium
C. Hydrogen
D. Nitrogen

Q97. Which of the following electronic configuration is correct for ^{24}Cr?

A. $1s^2,2s^2,2p^6,3s^2,3p^6,4s^1,3d^5$
B. $1s^2,2s^2,2p^6,3s^2,3p^6,4s^2,3d^4$
C. $1s^2,2s^2,2p^6,3s^2,3p^6,3d^6$
D. $1s^2,2s^2,2p^6,3s^2,3p^6,4f^6$

Q98. The same moles of H_2, N_2 and O_2 are present in 0.1 cc volume at STP. Which one has greatest number of molecules:

A. N_2
B. H_2
C. O_2
D. Number of molecules are equal

Q99. Which is not a property of liquid?

A. Osmotic pressure
B. Freezing point
C. Diffusion
D. Melting

Q100. Which type of forces exist between iodine molecules?

A. Dipole-dipole forces
B. Dipole-induced dipole forces
C. Instantaneous dipole-induced dipole forces
D. Non-polar forces

101. In anisotropic crystals which property do not change with the change in direction of crystalline structure?

A. Electrical conductance
B. Thermal conductance
C. Molar mass
D. Refractive index

2. In metals, why electric conductivity decreases with the increase of temperature?

A. Because electron movement decrease with the increase of temperature
B. Because metal ions oscillations hinder electron movement
C. Because electron direction changes at h temperature
D. Because they pass heat current throug collision of electrons

Q103. Why fluorine has less electron affinity as compared to bromine?

A. Electronegativity
B. Thick small electronic cloud

C. Seven electrons in outermost
D. Higher ionization energy

Q104. Which oxyacid of halogen is strong oxidizing agent?

A. $HClO_4$
B. $HClO_3$

C. $HClO$
D. $HClO_2$

Q105. Which of the following transition metal show 3d5 configuration in its +2-oxidation

A. Cu+2
B. Fe+2

C. Mn+2
D. Zn+2

Q106. Which of the following reagents can be used to distinguish between 1-Pentyne and
Pentyne?

A. $AgNO_3$ + NH_4OH
B. 1 % alkaline dilute $KMnO_4$

C. Br_2/CCl_4
D. $K_2Cr_2O_7$ + H_2SO_4

Q107. In SN1 reactions the correct order of reactivity of alkyl halide is?

A. Primary>secondary>tertiary
B. Tertiary>secondary>primary

C. Secondary>primary>tertiary
D. Primary>tertiary >secondary

Q108. What is the IUPAC name of diisopropyl ketone?

A. 1,3-Diisopropylpropan-2-one
B. 2,4-Dimethylpentan-3-one

C. 2,4-Dimethylpentan-2-one
D. 1,3-Dimethylpropan-2-one

Q109. The appearance of a silver mirror in Tollens' test indicates the presence of which of the
following?

A. A ketone
B. An aldehyde

C. An acid
D. An alcohol

Q110. Competitive inhibitors stop an enzyme from working by:

A. Changing the shape of the enzyme
B. Merging with the substrate instead

C. Blocking the active site of the enzyme
D. Combining with the product of the reaction

Q111. If phenol is treated with 3 moles of conc. HNO3 in the presence of H2SO4 what will be the
product?

A. o-nitro phenol
B. p-nitro phenol

C. o-nitro phenol and p-nitro phenol
D. picric acid

Q112. When 6d orbital is filled, the entering electron goes into?

A. 7f
B. 7d

C. 7p
D. 7s

Q113. Which element has the ground state electronic configuration of 1s2, 2s2, 2p6, 3s2, 3p6

A. Ar
B. Cl

C. Na
D. S

Q114. What is the proton (atomic number) of an element that has four unpaired electrons in its ground state?

A. 6
B. 14

C. 22
D. 26

Q115. Which one of the following gases has the lowest density under room conditions?

A. Neon
B. Nitrogen

C. Oxygen
D. Fluorine

Q116. The process of heat flow between hotter and colder gases remains continued until all the molecules have equal

A. Average translational kinetic energy
B. Average rotational kinetic energy

C. Average translational potential energy
D. Average vibrational kinetic energy

Q117. What is the ultimate fate of reversible reaction?

A. Completion of reaction
B. Complete consumption of reactants

C. Complete consumption of products
D. A state when there is no net concentration change

Q118. In reversible reaction, when product is removed, the equilibrium shift towards the:

A. Reactant side
B. Product side

C. Both side one by one
D. No effect

Q119. The rate of reaction between two specific time intervals is called?

A. Instantaneous rate of reaction
B. Rate of reaction

C. Average rate of reaction
D. Initial rate

Q120. How will be the rate of reaction, if the slope of the curve is greater near the start of the reaction?

A. Constant
B. Equilibrium

C. Greater
D. Lesser

Q121. What is the reason of energy changes in chemical reactions?

A. Bond formation
B. Bond breakage

C. Bond formation and breakage
D. Ionic bonds

Q122. What is the unit of heat capacity?

A. JK-1
B. kJmol-1

C. kJ/K
D. kJ.mol

PHYSICS

Q123. Which of the following the fractional change in resistance per kelvin?

A. Conductivity
B. Resistivity

C. Temperature coefficient of resistivity
D. Temperature coefficient of resistance

Q124. According to maximum power transfer theorem, which of the following is the max...
delivered by the battery to the output?

A. $E^2/4r$
B. $E^2/2r$

C. $E^2/5r$
D. $E^2/3r$

Q125. Velocity selector will select only those charge particles whose velocity is given by:

A. $V= E/B$
B. $V=B/E$

C. $V=E \times B$
D. $V=0$

Q126. The induced emf produced in the coil is sometimes called as?

A. Self-inductance
B. Back emf

C. Motional emf
D. Mutual inductance

Q127. The quantity $\Delta\varphi/\Delta t$ has the same units as that of?

A. Current
B. Magnetic induction

C. Charge
D. Emf

Q128. Working principal of magnetic levitation train is according to?

A. Faraday law
B. Max planks law

C. Ohm law
D. Lenz law

Q129. The expression for the emf produced by A. C. generator is?

A. $N\omega AB \sin\theta$
B. $N\omega AB \cos\theta$

C. $N\omega AB$
D. $ILB \cos\theta$

Q130. For the positive half cycle i.e., $0 - T/2$, the diode D:

A. Is reverse biased
B. Is forward biased

C. Behaves as open
D. Shows maximum resistance

Q131. The process of ejection of loosely bound electrons from a certain photo sensitive surf...
absorption of photon is called:

A. Compton effect
B. Photoelectric effect

C. Pair production
D. Black body radiation

Q132. In Compton effect, a photon of a certain wavelength collides with a stationary electron...
wavelength of the emitted photon is:

A. Longer
B. Shorter

C. Same
D. Infinite

133. The Balmer series of hydrogen is important because it:

A. Is the only one for which the quantum theory can be used
B. Is the only series that occurs for hydrogen

C. Is in the visible region
D. Involves the lowest possible quant... number n

Q134. The SI unit of equivalent dose is:

A. Gray
B. Mass

C. Rad
D. Sievert

Q135. The decay rate of radioactive substance is:

A. Constant with time
B. Varies inversely with time

C. Decreases exponentially with time
D. Decreases linearly with time

Q136. The relation between gray and rad is given as: 1 Gy = _____ rad

A. 0.01
B. 0.001

C. 10
D. 100

Q137. In the displacement-time graph, if the slope is constant then the velocity is

A. Variable
B. Constant

C. May be variable or constant
D. Infinite

Q138. An 8.0-kg box slides along a horizontal frictionless floor at 3 m/s and collides with a relatively massless spring that compresses 12 cm before the box comes to a rest. Calculate the retarding force of the spring.

A. 3 N
B. 30 N

C. 300 N
D. 3000 N

Q139. The circular line has a fix distance from _____?

A. Any point
B. A fix point

C. A point on a circle
D. A point from outside

Q140. If a particle is moving with uniform circular motion, then:

A. Velocity and acceleration are antiparallel
B. Velocity and acceleration are parallel

C. Velocity and acceleration are perpendiculars
D. Zero acceleration

Q141. One degree is equal to:

A. n/90 radians.
B. n/180 radians.

C. n/270 radians.
D. n/360 radians.

Q142. An observer standing near the sea shore observes 54 waves per minute. If the wavelength of the water wave is 10m then the velocity of water wave is:

A. 540 m/s
B. 9 m/s

C. 5.4 m/s
D. none

Q143. If the length of second pendulum becomes four times, then its time period will become:

A. Four times
B. Two times

C. Half
D. One fourth

Q144. First law of thermodynamics concerns with the conservation of

A. Heat
B. Work

C. Momentum
D. Energy

Q145. An ideal gas has molar specific heat Cp at constant pressure. When the temperature of n moles is increased by ΔT the increase in the internal energy is:

A. $nCp\ \Delta T$
B. $n(Cp + R)\ \Delta T$

C. $n(Cp - R)\ \Delta T$
D. $n(2Cp + R)\ \Delta T$

...6.The ohmmeter of a portable digital multi meter need:

A. Internal battery
B. Wet cell

C. Voltmeter
D. Ammeter

Q147. A wire of uniform area of cross-section 'A', length 'L', and resistance 'R' is cut into...parts. What will happen to the resistivity of each part?

A. It will be doubled
B. It will be one fourth

C. It will be halved
D. It will remain the same

Q148. If 0.5 T field is applied over an area of 2-meter square which lies at an angle of 50...with the field, then the resulting flux will be:

A. 0.5 T
B. 0.5 Wb

C. 0.25 Wb
D. 0.25 T

Q149.The magnitude of magnetic force will be maximum on current carrying conductor in unif...magnetic field if conductor is placed?

A. Parallel to magnetic field
B. At 45 degree in magnetic field

C. Perpendicular to magnetic field
D. Antiparallel in magnetic field

Q150.In principle, the transformer consists of two coils of copper, electrically insulated from e...other, wound on the same?

A. Iron core.
B. Copper core.

C. Gold core
D. Steel core.

Q151.In Compton effect, the incident photon when compared to the scattered photon is of:

A. Greater energy
B. Greater frequency

C. Greater energy and momentum
D. Equal energy

Q152.Which of the following is the longest wavelength of radiation for the Paschen series?

A. 187000000 m
B. 187000000/ m

C. 0.00000187 m
D. 0.00000187 / m

Q153.Which of the following is the correct definition of variable velocity?

A. Unequal distances are covered in equal intervals of time
B. Equal displacements are made in unequal intervals of time

C. Unequal displacements are made in e... intervals of time
D. Equal displacements are made in equa... intervals of time

Q154.The velocity-time plot for a moving particle shows a straight line. This means:

A. The particle has a constant acceleration
B. The particle has never turned around

C. The particle has zero displacement
D. The data in insufficient

Q155.A man is in a car that is moving with the velocity of 36km/hr.His speed with respect to the...is:

A. 10m/s
B. 36m/s

C. Zero
D. Infinite

DCAT 2023

Q156. On which car there is resultant force?

A. Car moving on a straight horizontal road
B. Car moving at constant speed around a bend

C. Car moving uphill at a constant velocity
D. Car that is stationary

Q157. If two equal masses are in motion with same individual speeds, we can conclude that

A. Their momentums are same
B. Their momentums can be different from each other

C. Their kinetic energies are different from each other
D. Their total energies are same

Q158. The work done by a variable force can be found by dividing the:

A. Force into small intervals
B. The displacement into small intervals

C. Both force and displacement into small intervals
D. By taking displacements at different angles

Q159. Two bodies with kinetic energies in the ratio of 4 : 1 are moving with equal linear momentum. The ratio of their masses is:

A. 1 : 2
B. 1 : 1

C. 4 : 1
D. 1 : 4

Q160. A fisherman lifts a fish of mass 250 g from rest through a vertical height of 1.8 m. The fish gains a speed of 1.1 m/s. What is the energy gained by the fish?

A. 0.15 J
B. 4.3 J

C. 4.4 J
D. 4.6 J

Q161. One radian is analogous to:

A. $57°3'$
B. $57°3''$

C. $57°18'$
D. $57°18''$

Q162. Wave trough refers to the:

A. Wave length
B. Wave speed

C. Highest point of the wave
D. Lowest point of the wave

Q163. When a wave goes from one medium to another, there is a no change in the:

A. Frequency
B. Amplitude

C. Wavelength
D. Velocity

Q164. If transverse waves are passing through medium, then particle of medium:

A. Remain stationary
B. Move away

C. Move toward
D. Move in Simple Harmonic Motion

Q165. The speed of sound in an ideal gas depends upon:

A. Temperature and amplitude
B. Frequency and fog

C. Temperature and density
D. Density and amplitude

distant star is receding from the Earth with a speed of 1.40×10^7 m/s. It emits light of frequency 4.57×10^{14} Hz. The speed of light is 3.0×10^8 m/s. The Doppler effect formula is used with light waves.

What will be the frequency of this light when detected on Earth?

A. 2.04×10^{13} Hz
B. 4.37×10^{14} Hz

C. 4.57×10^{14} Hz
D. 4.79×10^{14} Hz

Q167. For an ideal gas equation PV= nRT, the dimensions of Real Gas Constant R are:

A. $[M^1 L^2 T^{-2} K^{-1}]$
B. $[M^1 L^{-3} T^{-1} K^{-1}]$

C. $[M^1 L^{-2} T^{-1} K^{-1}]$
D. $[M^1 L^{-3} T^{-2} K^{-1}]$

Q168. As per Coulomb's law, the force of attraction or repulsion between two-point charges is directly proportional to the:

A. Sum of the magnitude of charges
B. Square of the distance between them

C. Product of the magnitude of charges
D. Cube of the distance

Q169. Electric field intensity inside a hollow charged sphere is:

A. Maximum
B. Zero

C. Negative
D. Positive

Q170. Gauss law cannot be used to find which of the following quantity?

A. Electric field intensity
B. Electric flux density

C. Charge
D. Permittivity

Q171. A charged particle moves in a uniform electric field between two oppositely charged parallel metal plates. To calculate the force acting on the particle due to the electric field, which quantity is not required?

A. Particle charge
B. Particle speed

C. Plate separation
D. Potential difference between the plates

Q172. What is the potential difference between two points in an electric field if it takes 600 J energy to move a charge of 2 C between these two points?

A. 1200 J
B. 800 J

C. 300 J
D. 0 J

Q173. To store the electric charge the ultra-capacitors use _____ effect.

A. Single layer
B. Double layer

C. Triple layer
D. Quadruple layer

Q174. A capacitor of capacitance 'C' has a charge 'Q' and stored energy is 'w'. If the charge increased to '2Q'. The stored energy will be:

A. 2W
B. 4W

C. W/4
D. W/2

Q175. The resistance of the wire varies inversely as:

A. Area of cross section
B. Length

C. Resistivity
D. Temperature

Q176. The following formula can be used to determine the resistance of a length of conductor. $R = \rho l / A$. In the formula, the symbol ρ stands for the:

A. Cross-sectional area of the conductor in m^2
B. Product of the length of the conductor in meters

C. Resistivity of the material in ohm
D. Resistance of the material in ohm meter

Q177. He is teaching nicely. The word 'is' is?

A. Regular verb
B. Irregular verb

C. Helping verb
D. Main verb

Q178. Katherine made her children _____ chores on Sunday. Choose the appropriate:
the blank:

A. make some
B. take some

C. to make
D. take some

Q179. Right after the Civil War, many distraught soldiers made their way home to fortune. Some could not go home because there were no homes to go to. That was true for them. One young man, Will Goodlad, made his fortune in the hills of Colorado. He built a little river near Grand Junction. His fortune was short lived, however, for he went bankruptcy and returned to the land of his birth- the Piedmont of South Carolina. Where will Will fight during the War?

A. East
B. West

C. North
D. South

Q180. _____ so many people been out of work as today. Which part is the most appropriate
to be filled in the blank?

A. More than ever before
B. Never before have

C. In the past, there never have
D. Formerly, there never were

181. Spot the error out of the bracketed words. We try to speak (with) (one another) (but)
(convey) nothing.

A. with
B. one another

C. but
D. convey

182. In winter, the days and nights is cold. Choose the part of the sentence that carries error

A. In winter
B. The days

C. And nights
D. Is cold

Q183. _____ methods don't work. Choose the correct option:

A. This
B. These

C. The
D. That

A. has ———— a game of tennis.
B. had

C. have
D. have had

Q185. The pen is expensive; still I _____ it.

A. bought
B. will buy

C. have bought
D. buyed

Q186. Punctuate the given sentence correctly.

My father is Chairman of the Committee on Internal Relations he also heads the Discipline Committee.

A. My father is Chairman of the Committee on Internal Relations. He also heads the Discipline Committee.
B. My father is Chairman of the Committee on Internal Relations - he also heads the Discipline Committee.

C. My father is Chairman of the Committee on Internal Relations: he also heads the Discipline Committee.
D. My father is Chairman of the Committee on Internal Relations, but he also heads the Discipline Committee.

Q187. Which of the following sentences is correct?

A. I want to live near my parents live.
B. I want to live where my parents live.

C. I want to live where, my parents live.
D. I want to live where: my parents live.

Q188. Choose the sentence that is grammatically correct:

A. He weighed himself two maunds.
B. He weighed two maunds.

C. He weighed themselves two maunds.
D. He weighed itself two maunds.

Q189. Choose the correct option.

We felt as if the ground was _____ beneath our feet.

A. digging
B. sinking

C. slipping
D. bursting

Q190. A few years ago, it _____ that human beings do not belong to this earth.

A. found
B. was found

C. were found
D. had found

Q191. A shoal of fish _____ killed by the fishermen.

A. has been
B. have

C. had
D. has

Q192. At last the fly was _____. The most appropriate word to be filled in is:

A. Trapped by the spider
B. Entertained by the spider

C. Invited by the spider
D. Spared by the spider.

Only III is correct

Only I and II are correct

C. Only I and III are correct
D. Only II and III are correc

All children are silly people. Some silly people are rich people. All rich people
of the following conclusions are NECESSARILY TRUE?

LUSIONS:

I. Some silly people are children.
II. Some rich people are children.
III. Some silly people are big shots.

I and III

II

C. II and III
D. I and II

Rough Work