PROVISIONAL ANSWER KEY

Question Paper Code:	19/2023/OL
Category Code:	057/2019
Exam:	Laboratory Assistant Common Facility Service Centre
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Department	Industries and Commerce

Question1:-Which of the following is not an SI unit ?

A:-Ampere

B:-Mole

C:-Candela

D:-Hour

Correct Answer:- Option-D

Question2:-A person standing at point A travels to point B and then travelled back to A. Then the

A:-Distance travelled is zero but displacement is not zero

B:-Both distance travelled and displacement are zero

C:-Displacement is zero but distance travelled is not zero

D:-Both distance travelled and displacement are not zero

Correct Answer:- Option-C

Question3:-SI unit of speed and velocity are

A:-Same

B:-Different

C:-Speed has no unit but velocity has unit

D:-Velocity has no unit but speed has unit

Correct Answer:- Option-A

Question4:-Area under the velocity-time graph of a moving object gives

A:-Acceleration of the object

B:-Displacement of the object

C:-Average velocity of the object

D:-Momentum of the object

Correct Answer:- Option-B

Question5:-A car can accelerate through a road because of which external force ?

A:-Force of air from behind

B:-Resistive force of air from front

C:-Frictional force of the road

D:-No external force

Correct Answer:- Option-C

Question6:-A cricket player draws his hands backwards while catching a fast ball to

A:-reduce the rate of change of momentum

B:-increase the rate of change of momentum

C:-increase the frictional force

D:-see the ball clearly

Correct Answer:- Option-A

Question7:-According to which law we say force always occur in pairs ?

A:-Kepler's law

B:-Newtons second law

C:-Newtons third law

D:-Pascal's law

Correct Answer:- Option-C

Question8:-The force experienced by Earth due to Sun is along the vector joining the two and hence it is a

A:-Central force

B:-Viscous force

C:-Infinite force

D:-No such force

Correct Answer:- Option-A

Question9:-Who proposed the universal law of gravitation ?

A:-Galileo

B:-Kepler

C:-Ptolemy

D:-Newton

Correct Answer:- Option-D

Question10:-A person jumped out of an airplane flying at high altitude will experience

A:-An increase in weight due to frictional force of air

B:-Weightlessness

C:-Net attractive force towards the airplane

D:-Net attractive force towards the sun

Correct Answer:- Option-B

Question11:-Examples of fluids are

A:-Liquids only, not gases

B:-Gases only, not liquids

C:-All liquids and gases

D:-Only colourless liquids and gases

Correct Answer:- Option-C

Question12:-When an object is submerged in a liquid at rest, the force exerted by the liquid on the object will be

A:-Always normal to the object surfaces

B:-Always parallel to the object surfaces

C:-Normal to the object surface at top and parallel to the bottom surface

D:-Normal to the object surface at top and bottom but parallel to the sides

Correct Answer:- Option-A

Question13:-The pressure P at a depth h below the surface of a liquid having density ρ, open to the atmosphere is greater than the atmospheric pressure by an amount

A:-P = $\frac{1}{2}h\rho g$

B:-$P=\sqrt{h\rho g}$

C:-P = hρg

D:-P = hρg^2

Correct Answer:- Option-C

Question14:-Hydraulic brakes work on the principle of

A:-Pascal's law

B:-Ohms law

C:-Archimedes principle

D:-Joule's law

Correct Answer:- Option-A

Question15:-The SI unit of viscosity is

A:-Nsm^{-1}

B:- $Ns^{-1}m$

C:-$Ns^{-2}m^{-1}$

D:-Nsm^{-2}

Correct Answer:- Option-D

Question16:-What is the work done during the time when a weightlifter holding a 100 kg mass steadily on his shoulder for 5 second ?

A:-500 J

B:-20 J

C:-0.05 J

D:-Zero

Correct Answer:- Option-D

Question17:-36 km/h is equal to

A:-100 m/s

B:-10 m/s

C:-1000 m/s

D:-36 m/s

Correct Answer:- Option-B

Question18:-The rate at which work done is

A:-Power

B:-Energy

C:-Momentum

D:-Force

Correct Answer:- Option-A

Question19:-A virtual and erect image of the same size as that of the object is always formed by a

A:-Convex mirror

B:-Concave mirror

C:-Plane mirror

D:-All of the above

Correct Answer:- Option-C

Question20:-What will be the height of the image if an object of height 4 cm is placed in front of a concave mirror at a distance 10 cm away from it and the image is formed 20 cm away from the mirror ?

A:-2 cm and erect

B:-2 cm and inverted

C:-8 cm and erect

D:-8 cm and inverted

Correct Answer:- Option-D

Question21:-Field of view is maximum for

A:-Plane mirror

B:-Convex mirror

C:-Concave mirror

D:-Both convex and concave mirror

Correct Answer:- Option-B

Question22:-As per the new cartesian sign convention, object and image distances for a spherical mirror is taken with respect to the origin as

A:-The principal axis

B:-Focal point

C:-Pole of the mirror

D:-Infinity

Correct Answer:- Option-C

Question23:-Refractive index of normal optical materials is always

A:-Greater than one

B:-Less than one

C:-Equal to one

D:-Equal to zero

Correct Answer:- Option-A

Question24:-The principle of light propagation through an optical fiber is

A:-Dispersion

B:-Refraction

C:-Magnification

D:-Total internal reflection

Correct Answer:- Option-D

Question25:-The SI unit of power of a lens is

A:-Watt

B:-Dioptre

C:-Joule

D:-It has no unit

Correct Answer:- Option-B

Question26:-When we look at nearer objects, lenses in our eyes are contracted and

A:-Curvature of the lens increases and focal length decreases

B:-Curvature of the lens decreases and focal length increases

C:-Both curvature of the lens and focal length increases

D:-Both curvature of the lens and focal length decreases

Correct Answer:- Option-A

Question27:-The persistence of vision for human eye is approximately

A:-16 s

B:-1/16 s

C:-60 s

D:-1/60 s

Correct Answer:- Option-B

Question28:-Mechanical waves are

A:-Always transverse

B:-Always longitudinal

C:-Can be either longitudinal or transverse

D:-Electromagnetic in nature

Correct Answer:- Option-C

Question29:-Distance between two consecutive points with the same phase of a wave is

A:-Its frequency

B:-Its propagation constant

C:-Its amplitude

D:-Wavelength

Correct Answer:- Option-D

Question30:-Acoustic echo happens due to

A:-Reflection of sound

B:-Refraction of sound

C:-Doppler effect

D:-Interference of sound

Correct Answer:- Option-A

Question31:-According to Joule's law, the heat generated in a current carrying conductor is given by

A:-I^2Rt

B:-IR^2t

C:-I^2R/t

D:-IR^2/t

Correct Answer:- Option-A

Question32:-If two equal resistances R and R are connected in series and parallel configurations, then which statement is correct ?

A:-Effective resistance of series combination is R^2

B:-Effective resistance of parallel combination is R/2

C:-Both series and parallel combinations have same effective resistance

D:-Effective resistance of series combination is R/2

Correct Answer:- Option-B

Question33:-Alloy of tin and lead is generally used as fuse wires because

A:-It has very high melting point

B:-It has low melting point

C:-It never heats up

D:-No current flows through it

Correct Answer:- Option-B

Question34:-Electric power consumed by an electrical appliance can be measured using

A:-Voltmeter alone

B:-Ammeter alone

C:-Using a voltmeter and an ammeter

D:-It is not a measurable quantity

Correct Answer:- Option-C

Question35:-In an AC generator, the insulated conducting wire wound on a soft iron core is called

A:-Slip rings

B:-Brushes

C:-Field magnet

D:-Armature

Correct Answer:- Option-D

Question36:-If a transformer has 500 turns in its primary and 5000 turns in secondary, what will be the secondary voltage, if the primary voltage is 5 V

A:-50 V

B:-5 V

C:-1 V

D:-0.5 V

Correct Answer:- Option-A

Question37:-Transmission loss during the distribution of electricity from power stations is generally reduced by

A:-Decreasing the current and increasing the voltage

B:-Decreasing the voltage and increasing the current

C:-Decreasing both current and voltage

D:-Increasing both current and voltage

Correct Answer:- Option-A

Question38:-In an agricultural field a 750 W water pump is used for 3 hours every day. The daily consumption shown by the watt hour meter will be

A:-250 W

B:-One unit

C:-2250 unit

D:-2.25 unit

Correct Answer:- Option-D

Question39:-Magnetic field due to a current flowing through a circular loop is proportional to

A:-The strength of the current through the coil

B:-Number of turns of the coil

C:-Both (1) and (2)

D:-Independent of current and number of turns

Correct Answer:- Option-C

Question40:-In terms of working principle, which one among the following is different from others ?

A:-Soldering iron

B:-Immersion water heater

C:-Microwave oven

D:-Iron box

Correct Answer:- Option-C

Question41:-Electron was discovered by

A:-Rutherford

B:-J J Thomson

C:-Max Planck

D:-Julius Plucker

Correct Answer:- Option-B

Question42:-The chargeless particle present inside the nucleus of an atom is

A:-Proton

B:-Electron

C:-Neutron

D:-Positron

Correct Answer:- Option-C

Question43:-The atomic number of an atom is

A:-Number of electrons/protons in an atom

B:-Total number of protons and neutrons in an atom

C:-Number of neutrons in an atom

D:-Total number of electrons and protons in an atom

Correct Answer:- Option-A

Question44:-The atomic number of an atom is 17 and mass number is 35. The number of protons, neutrons and electrons in the atom respectively are

A:-17, 18, 18

B:-17, 17, 17

C:-18, 17, 35

D:-17, 18, 17

Correct Answer:- Option-D

Question45:-Among the following, which pair of atoms are isobars

A:-$^{40}_{20}Ca$ and $^{40}_{18}Ar$

B:-$^{37}_{17}Cl$ and $^{35}_{17}Cl$

C:-$^{12}_{6}C$ and $^{14}_{6}C$

D:-All the above are isobars

Correct Answer:- Option-A

Question46:-How many groups and periods are there in modern periodic table ?

A:-7 groups and 8 periods

B:-8 groups and 18 periods

C:-8 groups and 7 periods

D:-18 groups and 7 periods

Correct Answer:- Option-D

Question47:-The inert element among the following is

A:-Hydrogen

B:-Sodium

C:-Helium

D:-Oxygen

Correct Answer:- Option-C

Question48:-The main shell electronic configuration of Fluorine atom is (Atomic number of Fluorine = 9)

A:-9

B:-2, 7

C:-1, 2, 6

D:-2, 2, 5

Correct Answer:- Option-B

Question49:-Trend of atomic size along the period and down the group.

A:-Increases along the period and decreases down the group

B:-Decreases along the period and increases down the group

C:-Increases along the period and down the group

D:-Decreases along the period and down the group

Correct Answer:- Option-B

Question50:-Choose the correct pairs of elements with symbol
(i) Magnesium - Mg
(ii) Aluminium - Ar
(iii) Chlorine - Cl
(iv) Potassium - Pt

A:-Only i and ii

B:-Only ii and iii

C:-Only i and iii

D:-Only ii and iv

Correct Answer:- Option-C

Question51:-The oxidation state of H in metal hydrides is

A:-+2

B:-+1

C:-−2

D:-−1

Correct Answer:- Option-D

Question52:-Catalyst used in the synthesis of sulphuric acid is

A:-Iron

B:-Phosphoric acid

C:-Manganese dioxide

D:-Vanadium pentoxide

Correct Answer:- Option-D

Question53:-The bond present in NaCl is

A:-Ionic bond

B:-Covalent bond

C:-Coordinate bond

D:-Hydrogen bond

Correct Answer:- Option-A

Question54:-The sour taste of tamarind is due to the presence of

A:-Citric acid

B:-Hydrochloric acid

C:-Tartaric acid

D:-Lactic acid

Correct Answer:- Option-C

Question55:-NaOH + HCl $\rightarrow$ A + B. Identify A and B

A:-A is NaCl and B is H_2O

B:-A is NaCl and B is HCl

C:-A is NaH and B is H_2O

D:-A is NaOCl and B is NaCl

Correct Answer:- Option-A

Question56:-The major mineral present in Chavara barrier beach in Kerala which is

used for the manufacturing of TiO_2 is

A:-Monozite

B:-Sillimanite

C:-Rutile

D:-Ilmenite

Correct Answer:- Option-D

Question57:-The ore of some metals are given below. Pick the correct match.

A:-Al - Bauxite

B:-Fe - Copper pyrites

C:-Cu - Calamine

D:-Zn - Hematite

Correct Answer:- Option-A

Question58:-The most abundant element in earth's crust is

A:-Carbon

B:-Iron

C:-Oxygen

D:-Nitrogen

Correct Answer:- Option-C

Question59:-The depletion of ozone layer is caused by

A:-Ozone

B:-Chlorofluorocarbons

C:-Carbon dioxide

D:-Ultraviolet radiation

Correct Answer:- Option-B

Question60:-Chlorine is prepared in the laboratory by heating

A:-$KMnO_4$ and concentrated HCl

B:-$KMnO_4$ and concentrated H_2SO_4

C:-$MnCl_2$ and concentrated HCl

D:-All the above reactants can be used for the preparation of chlorine

Correct Answer:- Option-A

Question61:-Pick the correct statement about allotropes
i. Compounds having same physical properties and different chemical properties.
ii. Different forms of same element.
iii. Compounds having different physical properties and same chemical properties.
iv. Same forms of different elements.

A:-Only i and ii

B:-All of the above (i, ii, iii and iv)

C:-Only ii and iii

D:-Only iii and iv

Correct Answer:- Option-C

Question62:-The process of increasing atmospheric temperature as a result of increase in the amount of carbon dioxide in the atmosphere is called

A:-Global warming

B:-Greenhouse effect

C:-Eutrophication

D:-Acid rain

Correct Answer:- Option-B

Question63:-Find A and B in the following chemical reaction
$CaCO_3+2A \rightarrow CaCl_2+H_2O+B$

A:-A is HCl and B is CO_2

B:-A is CO_2 and B is HCl

C:-A is H_2O and B is CO_2

D:-A is HCl and B is Ca

Correct Answer:- Option-A

Question64:-Graphite is a good conductor of electricity. Which of the following statement justify your answer ?

A:-Absence of free electron in graphite

B:-Presence of free electron in graphite

C:-Presence of ionic bond in graphite

D:-None of the above

Correct Answer:- Option-B

Question65:-When a person inhale Carbon monoxide, the haemoglobin present in his blood reacts with carbon monoxide and form a compound which decreases the oxygen carrying capacity of haemoglobin and the person may die. Name the compound formed

A:-Oxy haemoglobin

B:-Oxy myoglobin

C:-Carboxy haemoglobin

D:-Carboxy myoglobin

Correct Answer:- Option-C

Question66:-Pick the correct statement about hydrocarbons

A:-Hydrocarbons contains carbon and oxygen

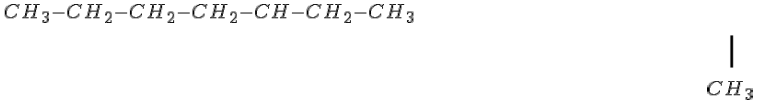
B:-Hydrocarbons contains carbon, nitrogen and oxygen

C:-Hydrocarbons contains carbon, hydrogen and oxygen

D:-Hydrocarbons contains carbon and hydrogen

Correct Answer:- Option-D

Question67:-The IUPAC name of the organic compound



is

A:-5-methylheptane

B:-3-methylheptane

C:-5-ethylhexane

D:-2-ethylhexane

Correct Answer:- Option-B

Question68:-Identify the wrong pair among the following
(i) Alkane - hexane
(ii) Alkene - ethene
(iii) Alkyne - C_nH_{2n+2}
(iv) Branched hydrocarbon - 3-methylpentene

A:-(i)

B:-(ii)

C:-(iii)

D:-(iv)

Correct Answer:- Option-C

Question69:-COOH is the functional group present in

A:-Alcohols

B:-Esters

C:-Ethers

D:-Carboxylic acids

Correct Answer:- Option-D

Question70:-Marsh gas is

A:-Butane

B:-Methane

C:-Propane

D:-Ethene

Correct Answer:- Option-B

Question71:-To prevent the misuse of ethanol as a beverage, it is mixed with poisonous compounds to make use it in industries. The resulting product is called

A:-Wash

B:-Rectified spirit

C:-Denatured spirit

D:-None of the above

Correct Answer:- Option-C

Question72:-In a homologous series each member differs in composition from one another by one

A:-CH_2 group

B:-CH_2-CH_2 group

C:-CH_3 group

D:-CH_2-CH_3 group

Correct Answer:- Option-A

Question73:-When heated at $1000°C$, methane is decomposed to a finely divided powder which is used in making printer's ink. What is the name of that powder ?

A:-Charcoal

B:-Graphite powder

C:-Carbon black

D:-Amorphous carbon

Correct Answer:- Option-C

Question74:-The gaseous hydrocarbon used for welding of metals is

A:-Methane

B:-Ethane

C:-Butane

D:-Acetylene

Correct Answer:- Option-D

Question75:-Absolute alcohol contains

A:-95.6% ethanol

B:-99% ethanol

C:-8-10% ethanol

D:-100% alcohol

Correct Answer:- Option-B

Question76:-The monomer of natural rubber is

A:-Ethylene

B:-Propylene

C:-Styrene

D:-Isoprene

Correct Answer:- Option-D

Question77:-Saritha had fever and doctor advised her to take paracetamol 500 tablets thrice a day, because paracetamol is a

A:-Tranquillizer

B:-Anti-inflammatory

C:-Antipyretic

D:-Anti-depressant

Correct Answer:- Option-C

Question78:-NPK value of a fertilizer is 10 : 5 : 20. What does it mean ?

A:-The fertilizer contains 10% N, 5% P and 20% K

B:-The fertilizer contains 10% N, 5% P and 20% K_2O

C:-The fertilizer contains 10% N, 5% P_2O_5 and 20% K_2O

D:-The fertilizer contains 10% N, 5% P_2O_5 and 20% K

Correct Answer:- Option-C

Question79:-The natural polymer among the following is

A:-Polythene

B:-Cellulose

C:-PVC

D:-Urea formaldehyde resin

Correct Answer:- Option-B

Question80:-Which vitamin is called as sunshine vitamin ?

A:-Vitamin A

B:-Vitamin E

C:-Vitamin K

D:-Vitamin D

Correct Answer:- Option-D

Question81:-Colloidal stability of natural rubber latex is imparted by _____ layer around the rubber particles.

A:-Proteinic

B:-Phospholipid

C:-Phospholipo proteinic

D:-Serum

Correct Answer:- Option-C

Question82:-The species name of Guayule rubber producing plant

A:-Hevea brasiliensis

B:-Parthenium argentatum

C:-Castilla Elastica

D:-Manihot Glaziovii

Correct Answer:- Option-B

Question83:-Charles Goodyear invented the vulcanization of rubber in

A:-1941

B:-1939

C:-1940

D:-1938

Correct Answer:- Option-B

Question84:-Identify the mixing mill size most suitable for laboratory uses

A:-6” × 12” or 6” × 13”

B:-3” × 7” or 3” × 8”

C:-8” × 16” or 10” × 20”

D:-10” × 20” or 12” × 24”

Correct Answer:- Option-A

Question85:-Insert imbedded rubber articles in multiple numbers in a single moulding is usually accomplished using _____ technique.

A:-Compression moulding

B:-Transfer moulding

C:-Injection moulding

D:-Flash less moulding

Correct Answer:- Option-B

Question86:-PET bottles are manufactured using _____ process.

A:-Extrusion Blow Moulding

B:-Injection Blow Moulding

C:-Co-axial Blow Moulding

D:-Stretch Blow Moulding

Correct Answer:- Option-D

Question87:-Choose the ASTM standard for vulcanized rubber properties in tension

A:-ASTM D 624

B:-ASTM D 412

C:-ASTM D 1415

D:-ASTM D 395

Correct Answer:- Option-B

Question88:-From 3° arc oscillating disc rheograph, the scorch safety time is taken as time taken for _____ unit rise in torque from minimum.

A:-5

B:-3

C:-7

D:-2

Correct Answer:- Option-D

Question89:-In compression set test under constant deflection of vulcanized rubber samples, the specimen is compressed to _____ of its actual height.

A:-20%

B:-30%

C:-25%

D:-50%

Correct Answer:- Option-C

Question90:-The standard for methods of test for vulcanized rubber according to BIS

A:-IS 3400

B:-IS 13360

C:-IS 3708

D:-IS 15636

Correct Answer:- Option-A

Question91:-In the tear test of rubber samples, maximum strength is obtained when the sample direction is _____ to the compound milling direction.

A:-Angled

B:-Parallel

C:-Perpendicular

D:-None of the above

Correct Answer:- Option-C

Question92:-In ross flexing test the rubber sample is repeatedly flexed about the cut portion through ____ angle.

A:-45°

B:-120°

C:-180°

D:-90°

Correct Answer:- Option-D

Question93:-MFI test is used to compare _____ with in a thermoplastic polymer type.

A:-Densities

B:-Grades

C:-Molecular weights

D:-Melting temperatures

Correct Answer:- Option-B

Question94:-The moles of a solute in relation to the mass of the solution is known as

A:-Molality

B:-Formality

C:-Normality

D:-Molarity

Correct Answer:- Option-A

Question95:-Choose the chemical that dissolves in water rises H^+ ion concentration in the solution

A:-Alkalis

B:-Solutes

C:-Acids

D:-Bases

Correct Answer:- Option-C

Question96:-The coagulum prepared for DRC determination of NR latex is dried at _____ in a hot air oven.

A:-70 ± 2°C

B:-65 ± 2°C

C:-90 ± 2°C

D:-95 ± 2°C

Correct Answer:- Option-A

Question97:-The indicator used in the determination of alkalinity of latex when 0.1 N HCl used as titrant

A:-Methyl orange

B:-Phenolphthalein

C:-Methylene blue

D:-Methyl red

Correct Answer:- Option-D

Question98:-The difference between DRC and TSC is known as

A:-Coagulum content

B:-Non-rubber content

C:-Sludge content

D:-Rubber content

Correct Answer:- Option-B

Question99:-During MST determination the mechanical stirring is done at

A:-14000 ± 200 rpm

B:-12000 ± 100 rpm

C:-1400 ± 200 rpm

D:-1200 ± 100 rpm

Correct Answer:- Option-A

Question100:-The maximum Ash content in percentage permitted in ISNR - 10 as per BIS specification

A:-1.0

B:-0.5

C:-0.75

D:-1.5

Correct Answer:- Option-C