

PROVISIONAL ANSWER KEY

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Question1:-Calculate the density and specific weight of Nitrogen at an absolute pressure of 1 MPa and a temperature of 40°C.

A:-15.75 kg/m³ and 154.5 N/m³

B:-8.75 kg/m³ and 85.83 N/m³

C:-11.75 kg/m³ and 115.2 N/m³

D:-10.75 kg/m³ and 105.4 N/m³

Correct Answer:- Option-D

Question2:-Which of the following factors does not contribute to the pressure drop in a pipeline ?

A:-Velocity of fluid

B:-Size of pipe

C:-Length of pipe and number of bends

D:-None of these

Correct Answer:- Option-D

Question3:-The no-slip condition of fluid in direct contact with a solid surface, stick to the surface is due to

A:-Density

B:-Pressure

C:-Viscosity

D:-Molecular weight

Correct Answer:- Option-C

Question4:-Hydraulic radius of a pipe is the ratio of

A:-Wetted perimeter to flow area

B:-Flow area to wetted perimeter

C:-Flow area to square of wetted perimeter

D:-Square root of flow area to wetted perimeter

Correct Answer:- Option-B

Question5:-To handle smaller quantity of fluid at higher discharge pressure, use a _____ pump.

A:-Reciprocating

B:-Centrifugal

C:-Volute

D:-Rotary vacuum

Correct Answer:- Option-A

Question6:-A U-tube manometer contains Kerosene, Mercury and Water, each at 21.2°C. The manometer is connected between two pipes (A and B) measured the pressure difference between the pipe centerlines, is $P_B - P_A = 31.02$ kPa. The mercury elevation difference z in manometer is (Density of Kerosene = 809 kg/m³, Mercury = 13550 kg/m³, Water = 1000 kg/m³)

A:-0.261 m

B:-0.255 m

C:-0.302 m

D:-0.325 m

Correct Answer:- Option-A

Question7:-Equation for pressure drop in a packed bed for laminar flow is given by the

A:-Kozzeny-Karman

B:-Blake-Plummer

C:-Leva's

D:-Fanning friction factor

Correct Answer:- Option-A

Question8:-Which of the following valve facilitates close control of fluid flow ?

- A:-Gate valve
- B:-Globe valve
- C:-Check valve
- D:-Butterfly valve

Correct Answer:- Option-B

Question9:-Boiler feed water pump is usually a _____ pump.

- A:-Reciprocating pump
- B:-Gear
- C:-Multistage centrifugal
- D:-Diaphragm

Correct Answer:- Option-C

Question10:-The discharge through a V-notch weir varies as

- A:- $H^{\frac{3}{2}}$
- B:- $H^{\frac{1}{2}}$
- C:- $H^{\frac{5}{2}}$
- D:- $H^{\frac{2}{3}}$

Correct Answer:- Option-C

Question11:-Two particles settling under laminar condition are called equally falling particles, if they are having

- A:-Same size
- B:-Same specific gravity
- C:-Equal terminal settling velocity in the same fluid and different field of force
- D:-None of these

Correct Answer:- Option-D

Question12:-Choose the most suitable industrial screening equipment for separating fine materials.

- A:-Grizzly
- B:-Trommel
- C:-Shaking screen
- D:-Vibrating screen

Correct Answer:- Option-D

Question13:-Which among the following sentences are not true regarding size reduction ?

- A:-Size reduction is an energy inefficient process as the energy required for grinding is very high
- B:-Some of the energy liberated in the formation of new small surfaces is the grinding energy required by food material per unit surface area to form new surface areas and the rest is generally just heat
- C:-The crushing efficiency is directly proportional to the surface created
- D:-None of the above

Correct Answer:- Option-D

Question14:-A material that sinks in water in floatation process are known as

- A:-Tailing
- B:-Concentrate
- C:-Scavengers
- D:-None of the above

Correct Answer:- Option-A

Question15:-The angle that is tangent to the roll surface at the points of contact between the rolls and the particle is known as

- A:-Angle of contact
- B:-Angle of nip
- C:-Angle of dip
- D:-Angle of repose

Correct Answer:- Option-B

Question16:-Which of the following mills are termed as disintegrators ?

A:-Compartment

B:-Pebble

C:-Cage

D:-All the above

Correct Answer:- Option-C

Question17:-What is the effect of pressure drop on the filtration rate ?

A:-Increases

B:-Decreases

C:-Varies depending on the compressibility

D:-None of the above

Correct Answer:- Option-C

Question18:-The power number (N_p) for an agitator is a function of

A:-Reynold's number

B:-Prandtl number

C:-Weber number

D:-Schmidt number

Correct Answer:- Option-A

Question19:-A bin with a bottom aperture diameter B, discharge free-flowing solids at a rate proportional to

A:-B

B:- B^2

C:- B^3

D:- $B^{\frac{4}{3}}$

Correct Answer:- Option-C

Question20:-Slugging in fluidized bed can be prevented by

A:-Use tall narrow vessel and fine particles

B:-Deep bed of coarse particle

C:-Shallow beds of solids and proper choice of particle size

D:-Shallow beds of solids and fine particles

Correct Answer:- Option-C

Question21:-1 BTU/lb°F is equivalent to _____ kcal/kg°C.

A:-2.42

B:-1.987

C:-1

D:-4.24

Correct Answer:- Option-C

Question22:-What is the volumetric flowrate (m^3/s) and cross-sectional area (m^2) of pipe, if a solution with density 1.5 kg/m^3 flowing through at a velocity of 5 m/s and a mass flow rate of 500 g/min ?

A:- $2.22 \times 10^{-3} \text{ m}^3/s$ and $1.11 \times 10^{-3} \text{ m}^2$

B:- $3.33 \times 10^{-3} \text{ m}^3/s$ and $2.11 \times 10^{-3} \text{ m}^2$

C:- $5.55 \times 10^{-3} \text{ m}^3/s$ and $1.11 \times 10^{-3} \text{ m}^2$

D:- $4.44 \times 10^{-3} \text{ m}^3/s$ and $3.11 \times 10^{-3} \text{ m}^2$

Correct Answer:- Option-C

Question23:-Pick out the correct statements from the following.

(i) Temperature is extensive property and density is intensive property.

(ii) Temperature is intensive property and mass is extensive property.

(iii) Density and specific heat capacity are intensive property.

(iv) Temperature and mass are extensive property.

A:-(i) and (ii)

B:-(i) and (iii)

C:-(ii) and (iii)

D:-(i) and (iv)

Correct Answer:- Option-C

Question24:-Pick out the wrong statements from the following.

(i) Bound moisture is removed during constant rate drying period.

(ii) Free moisture is removed during falling rate drying period.

(iii) The some of free moisture and equilibrium moisture in a solid is called the critical moisture.

(iv) The driving force for mass transfer in a wet solid is its free moisture content.

A:-(i), (ii) and (iv)

B:-(ii), (iii) and (iv)

C:-(i), (iii) and (iv)

D:-(i), (ii) and (iii)

Correct Answer:- Option-D

Question25:-In a given plant, 1906 kg of Nitrogen and 475 kg of Hydrogen are fed to the synthesis reactor per hour. Production of pure ammonia from this reactor is 1633 kg/h. What is the percent excess reactant ?

A:-16.2%

B:-10.5%

C:-15.6%

D:-14.3%

Correct Answer:- Option-A

Question26:-Calculate the number of moles of K_2CO_3 in 650 g. Take the molecular weight of K = 39.1, C = 12 and O = 16.

A:-2.7 mol

B:-3.7 mol

C:-4.7 mol

D:-5.7 mol

Correct Answer:- Option-C

Question27:-Natural gas is piped from the well at temperature 300 K and pressure 400 kPa. The gas is found to contain 90% Methane, 5.5% Ethane and the rest Nitrogen. Calculate the partial pressure of Nitrogen.

A:-15 kPa

B:-16 kPa

C:-17 kPa

D:-18 kPa

Correct Answer:- Option-D

Question28:-Which of the following statement is correct according to Dalton's law ?

A:- $P_t = P_1 + P_2 + \dots + P_i + \dots + P_n$

B:- $V_t = V_1 + V_2 + \dots + V_i + \dots + V_n$

C:- $T_t = T_1 + T_2 + \dots + T_i + \dots + T_n$

D:- $P = \text{Constant}$

Correct Answer:- Option-A

Question29:-A crystallizer is charged with 100 kg of a solution containing 25% $Ba(NO_3)_2$ in water. On cooling 10% of the original water present evaporates. Calculate the yield of crystals when the solution is cooled to 283 K. The solubility at 283 K is 7 kg $Ba(NO_3)_2$ /100 kg total water.

A:-20.28 kg

B:-21.28 kg

C:-19.28 kg

D:-18.28 kg

Correct Answer:- Option-A

Question30:-Which of the petroleum product, the Octane no is an important test ?

A:-LPG

B:-Kerosene

C:-Gasoline

D:-Light diesel oil

Correct Answer:- Option-C

Question31:-Crude petroleum consists of carbon and hydrogen composition

- A:-84 - 87% carbon and 11 - 14% hydrogen
- B:-11 - 14% carbon and 84 - 87% hydrogen
- C:-54% carbon and 25% hydrogen
- D:-70 - 72% carbon and 5 - 7% hydrogen

Correct Answer:- Option-A

Question32:-Polymerisation of petroleum products leads to

- A:-Causes olefins to combine with each other
- B:-Produce i-octane from cracked gases containing n-butane and i-butane
- C:-Causes aromatics to combine with each other
- D:-Produce lubricating oil

Correct Answer:- Option-A

Question33:-The measure of aromatic content in diesel is known as

- A:-Octane number
- B:-Pour point
- C:-Flash point
- D:-Aniline point

Correct Answer:- Option-D

Question34:-The average calorific value of Anthracite coal will be in the range

- A:-8330 - 8670 kcal/kg
- B:-10250 - 14350 kcal/kg
- C:-5640 - 7250 kcal/kg
- D:-5940 - 8250 kcal/kg

Correct Answer:- Option-A

Question35:-The ultimate analysis of a coal sample is as follows :

Carbon : 72%; Hydrogen : 5%; Oxygen : 5.9%; Nitrogen : 1.5%; Sulphur : 5.5%; Water : 2.1%; Ash : 8%. Calculate the total oxygen required for burning of carbon, hydrogen and sulphur to produce CO_2 , H_2O and SO_2 respectively.

- A:-4.31624 kg
- B:-2.31624 kg
- C:-5.31624 kg
- D:-3.31624 kg

Correct Answer:- Option-B

Question36:-Solar refrigeration can be accomplished using either _____ source supplied from a solar collector or _____ supplied from photovoltaics.

- A:-Thermal energy and electricity
- B:-Light energy and electricity
- C:-Radiation energy and electricity
- D:-Vapour compression energy and electricity

Correct Answer:- Option-A

Question37:-Which of the following compounds is added in LPG to impart a distinct colour ?

- A:-Amyl nitrate
- B:-Ethyl mercaptan
- C:-Tetra ethyl lead
- D:-Phenol

Correct Answer:- Option-B

Question38:-The purpose of refractory lined chamber in furnace is

- A:-To enhance the heat energy by radiation
- B:-To enhance the flame from fuel
- C:-To enhance the gas and vapour flow rate
- D:-To absorb the excess heat

Correct Answer:- Option-A

Question39:-Furnaces have in common the general features of heat transfer from _____ to _____.

- A:-Hot gas source to a cold sink
- B:-Hot refractory surface to hot gas
- C:-Hot gas source to refractory lined surface
- D:-Cold sink to a hot gas source

Correct Answer:- Option-A

Question40:-Which of the following sources are effective for harnessing the energy from Ocean ?

- (i) Ocean waves
- (ii) Tidal range (rise and fall)
- (iii) Humidity
- (iv) Wind

- A:-(i) and (ii)
- B:-(i) and (iv)
- C:-(ii) and (iii)
- D:-(ii) and (iv)

Correct Answer:- Option-A

Question41:-Which one of the following is not an assumption in multiple effect evaporator's calculations ?

- A:-There is no sub cooling of the condensate from different steam chests
- B:-Heat transfer surface does not undergo fouling
- C:-The entering steam is at their boiling point
- D:-Pressure is same in every effect

Correct Answer:- Option-D

Question42:-A hollow sphere of internal diameter ID = 20 cm and outer diameter OD = 30 cm contains hot fluid. What should be the critical radius of insulation for maximum rate of heat transfer ? Thermal conductivity $k = 0.86 \text{ W/mK}$ and convection heat transfer coefficient of outer fluid $h_o = 20 \text{ W/m}^2 \text{ K}$.

- A:-0.86 m
- B:-8.6 mm
- C:-8.6 cm
- D:-0.086 cm

Correct Answer:- Option-C

Question43:-A metal ball of radius 0.1 m at a uniform temperature of 90°C is left in air at 30°C . The density and the specific heat of the metal are 3000 kg/m^3 and 0.4 kJ/kg.K respectively. The heat transfer co-efficient is $50 \text{ W/m}^2 \text{ K}$. Neglecting the temperature gradients inside the ball, the time taken (in hours) for the ball to cool to 60°C is

- A:-555
- B:-55.5
- C:-0.51
- D:-015

Correct Answer:- Option-D

Question44:-An athlete is sitting unclothed in a locker room whose dark walls are at a temperature of 15°C . Estimate his rate of heat loss by radiation, assuming a skin temperature of 34°C and $\epsilon = 0.70$. Take the surface area of the body not in contact with the chair to be 1.5 m^2 .

- A:-120 W
- B:-100 W
- C:-140 W
- D:-80 W

Correct Answer:- Option-A

Question45:-A shirtless rider under a circus tent feels the heat radiating from the sunlit portion of the tent. Calculate the temperature of the tent canvas based on the following information : The shirtless rider's skin temperature is 34.0°C and has an emissivity of 0.970. The exposed area of skin is 0.400 m^2 . He receives radiation at the rate of 20.0 W - half what you would calculate if the entire region behind him was hot. The rest of the surroundings are at 34.0°C .

- A:- 48.5°C
- B:- 45°C
- C:- 32.6°C
- D:- 48.5°C

Correct Answer:- Option-A

Question46:-A room heater is made up of 6 thin-wall tubes of copper, each 1.0 m long and 4.0 cm in diameter. Hot water at 77°C circulates constantly through the tubes. Calculate the amount of heat radiated per second in a room where the average temperature is 27°C . The emissivity of copper = 0.8 and Stefan's constant = $5.67 \times 10^{-8} \text{ Wm}^{-2} \text{ K}^{-4}$.

- A:-236 J/s

B:-201 J/s

C:-195 J/s

D:-160 J/s

Correct Answer:- Option-A

Question47:-In a _____ heat exchanger, both fluids flow alternatively through the same flow passages and hence heat transfer is intermittent.

A:-Shell and Tube

B:-Fluidised Bed

C:-Storage Type

D:-Cross Flow Type

Correct Answer:- Option-C

Question48:-Which of the following is not a classification based on construction of the heat exchanger ?

A:-Tubular

B:-Plate Type

C:-Multipass

D:-Regenerative

Correct Answer:- Option-C

Question49:-Pick out the wrong statement.

A:-In process heat exchangers, saturated steam is preferred over the superheated steam.

B:-The maximum emissive power of a surface at a temperature T_1 occurs at a wavelength of $\lambda_{1.1}$. If the surface temperature is halved, the maximum in the emissive power would occur at a wavelength of $0.5 \lambda_{1.1}$.

C:-When a vertical plate is heated in infinite air environment under natural convection conditions, the velocity profile in air, normal to the plate, exhibits a maximum.

D:-A body at 925 K emits an energy of $1.42 \times 10^{11} \sigma W/m^2$ (σ is the Stefan-Boltzman constant) in the wavelength band between $3 \mu m$ to $4 \mu m$. The fraction of this energy in the total energy emitted over the entire wavelength range is equal to emissivity.

Correct Answer:- Option-B

Question50:-What is the steam consumption of an evaporator if the evaporator capacity is 30 kg/hr and the steam consumption is 45 kg/hr ?

A:-67%

B:-70%

C:-80%

D:-65%

Correct Answer:- Option-A

Question51:-Diffusivity of a binary gas mixture is $2.83 \times 10^{-5} m^2/s$ at 300 K. What will be the approximate value for the diffusivity at 600 K ?

A:- $1.43 \times 10^{-5} m^2/s$

B:- $5.66 \times 10^{-5} m^2/s$

C:- $8 \times 10^{-5} m^2/s$

D:- $1.68 \times 10^{-5} m^2/s$

Correct Answer:- Option-C

Question52:-A pure drug is administered as a sphere and as a cube. The amount of drug is the same in the two tablets. Assuming that the shape and size do not influence the mass transfer, the ratio of rate of dissolution in water at $t = 0$ for the cubic to spherical tablet is

A:-0.54

B:-1.04

C:-1.24

D:-1.94

Correct Answer:- Option-C

Question53:-Find the HTU, if gas rate is 0.07 kmol/sq.m.s and $F_g \cdot a$ (F type mass transfer co-efficient is 0.06 kmol/cu.m.s).

A:-1.167

B:-0.85

C:-0.042

D:-0.067

Correct Answer:- Option-A

Question54:-The solubility curve for highly soluble gas in liquid

A:-lies closer to the liquid concentration axis

B:-lies closer to the gas concentration axis

C:-is concave downwards

D:-is concave upwards

Correct Answer:- Option-A

Question55:-Stacked packing compared to dumped packing

A:-provides good contact between the fluids

B:-gives lower pressure drop

C:-gives higher pressure drop

D:-none of the above

Correct Answer:- Option-A

Question56:-Heterogeneous azeotropes exist when the vapor is in equilibrium with

A:-Dual liquid phase

B:-Dual solid phase

C:-Dual phase

D:-Triple phase

Correct Answer:- Option-C

Question57:-The evaporator used in household refrigerators is

A:-Frosting evaporator

B:-Non-frosting evaporator

C:-Defrosting evaporator

D:-None of these

Correct Answer:- Option-A

Question58:-A mixture consists of 30 kg A, 50 kg B and 20 kg C. (A = carrier liquid in the feed, B = extraction solvent, C = solute extracted). On the Janecke diagrams the coordinates of the mixture point are

A:- $x = 0.4, N = 1$

B:- $x = 0.4, N = 0.6$

C:- $x = 0.25, N = 0.625$

D:- $x = 0.2, N = 0.5$

Correct Answer:- Option-A

Question59:-The heat conduction in dry air is

A:-less rapid than in steam

B:-more rapid than in steam

C:-similar to steam

D:-none of these

Correct Answer:- Option-A

Question60:-Tubular adsorber follows which isotherm ?

A:-Langmuir

B:-Freundlich

C:-Linear adsorption

D:-BET

Correct Answer:- Option-C

Question61:-Systemic insecticide

A:-are absorbed throughout the plant

B:-kill insects following external bodily contact

C:-are stomach poisons

D:-emits poisonous vapour

Correct Answer:- Option-A

Question62:-Sizing materials are incorporated in paper to

A:-imparts resistance to penetration by liquids

B:-make glossy surface

C:-increase opacity

D:-increase brightness

Correct Answer:- Option-A

Question63:-Trinitrotoluene is made by the nitration of

A:-nitrobenzene

B:-toluene

C:-nitrotoluene

D:-benzene

Correct Answer:- Option-D

Question64:-Fumigant insecticides

A:-kills insects, when they eat it

B:-emits poisonous vapour

C:-are absorbed throughout the plant

D:-none of these

Correct Answer:- Option-B

Question65:-Oils are partially hydrogenated to manufacture vanaspati, because fully saturated solidified oil

A:-cause cholesterol built up and blood clotting

B:-transform glycerine from lye

C:-have affinity to retain harmful sulphur component in oil

D:-retains certain amount of cadmium content

Correct Answer:- Option-A

Question66:-Lubricant greases are a mixture of

A:-mineral oil metallic soap

B:-mineral oil and fatty oil

C:-mineral oil with frothing agents and additives

D:-mineral oil, soap and additives

Correct Answer:- Option-D

Question67:-Frasch process is for

A:-producing Mineral oil

B:-producing Helium

C:-making Oxygen

D:-mining Sulphur

Correct Answer:- Option-D

Question68:-Paper grade bamboo contains about _____ % cellulose.

A:-20.35

B:-44

C:-5

D:-7.5

Correct Answer:- Option-C

Question69:-Fish contain about _____ % oil.

A:-10

B:-25

C:-20

D:-77

Correct Answer:- Option-C

Question70:-10% oleum comprises of 10%

A:-SO

B:-SO₃

C:- SO_2

D:- H_2SO_4

Correct Answer:- Option-B

Question71:-Percentage of alcohol in beer may be around _____ %.

A:-2-11

B:-2-10

C:-2-8

D:-1-4

Correct Answer:- Option-C

Question72:- _____ is used as a catalyst in fat splitting.

A:-ZnO

B:-Ni

C:- V_2O_5

D:-FeO

Correct Answer:- Option-A

Question73:-Good quality of edible salt is obtained from brine by the process of

A:-Solar evaporation

B:-Vacuum evaporation

C:-Freeze drying

D:-Electrolysis

Correct Answer:- Option-B

Question74:-Which of the following grades of nitric acid is described as "fuming" ?

A:-Acid over 63% concentration

B:-Acid over 72% concentration

C:-Acid over 86% concentration

D:-Acid over 98% concentration

Correct Answer:- Option-C

Question75:-Zeolite used in water softening process is regenerated by washing with

A:-Chloramines

B:-Disinfectant

C:-Sodium bisulphite

D:-Brine

Correct Answer:- Option-D

Question76:-Electric bulbs are made up of _____ glass.

A:-jena

B:-flint

C:-crookes

D:-pyrex

Correct Answer:- Option-B

Question77:-Electroplating is never done on

A:-metals

B:-alloys

C:-refractories

D:-non-metals

Correct Answer:- Option-C

Question78:-Which of the following contains least amount of N_2 ?

A:-Coke oven gas

B:-Blast furnace gas

C:-Producer gas

D:-Water gas

Correct Answer:- Option-A

Question79:-Fire clay is _____ refractory materials.

A:-basic

B:-acidic

C:-neutral

D:-either acidic or basic

Correct Answer:- Option-B

Question80:-Which among the following form of sulphur is more stable at room temperature ?

A:-Plastic

B:-Monoclinic

C:-Rhombic

D:-S₀₂

Correct Answer:- Option-C

Question81:-Which is the best and the most effective method for the removal of organic contaminants present into polluted water in very small quantities (say <200 mg/L) ?

A:-Lagooning

B:-Activated carbon adsorption

C:-Biological oxidation pond

D:-Chemical coagulation

Correct Answer:- Option-B

Question82:-Industrial chimney located near tall buildings should be at least _____ times the height of the building.

A:-0.5

B:-2.5

C:-4

D:-5.5

Correct Answer:- Option-B

Question83:-Most efficient and suitable dust removal equipment for removal of flyash from flow gas in a thermal power plant is the

A:-Gravity settling chamber

B:-Cyclone separator

C:-Electrostatic precipitator

D:-Bag filter

Correct Answer:- Option-C

Question84:-Which of the following dust collection equipments is the least efficient for submicronic particles ?

A:-Dust catcher

B:-Cyclone separator

C:-Bag filter

D:-Hollow wet scrubber

Correct Answer:- Option-A

Question85:-Acute danger to humans life exists, is the concentration of the CO₂ in atmospheric air exceeds _____% (by Volume).

A:-1

B:-3

C:-12

D:-20

Correct Answer:- Option-D

Question86:-The max. allowed noise level to which a man working in a chemical plant can be exposed for 8 hrs/day is about

A:-60 decibels

B:-90 decibels

C:-105 decibels

D:-120 decibels

Correct Answer:- Option-B

Question87:-Match the following (Choose the most suitable answer).

P. Bakelite i. Perspex
Q. PVC ii. Thermoset
R. PMMA iii. Neoprene
S. Polychloroprene iv. chloroethane

A:-P-iv, Q-ii, R-i, S-iii

B:-P-ii, Q-i, R-iii, S-iv

C:-P-ii, Q-iv, R-i, S-iii

D:-P-i, Q-iii, R-iv, S-ii

Correct Answer:- Option-C

Question88:-Find the wrong pair.

P. Nylon 6 : Condensation polymer
Q. Starch : Condensation polymer
R. Dacron : Condensation polymer
S. Teflon : Condensation polymer

A:-P and Q

B:-Q and S

C:-P, Q and S

D:-P and S

Correct Answer:- Option-D

Question89:-Choose the right pair.

P. Dacron : Terylene
Q. PTFE : Teflon
R. PMMA : Lucite

A:-Q only

B:-P and Q only

C:-P, Q and R

D:-Q and R only

Correct Answer:- Option-C

Question90:-Maximum consumption of polymers is in

A:-Electrical insulation

B:-Toys making

C:-Coating and films

D:-Packaging

Correct Answer:- Option-C

Question91:-Which of the following radioactive wastes emits all α , β and γ rays and hence is the most hazardous of all radioactive emitters ?

A:-I-131

B:-Sr-90

C:-Au-198

D:-Ra-226

Correct Answer:- Option-D

Question92:-Which of the following is a characteristic of an instrument ?

A:-High drift

B:-High fidelity

C:-High measuring lag

D:-Poor reproducibility

Correct Answer:- Option-B

Question93:-Find out the radius of the cylinder in which a liquid of 40g is filled upto 5 cm. Specific gravity is 20.

A:-0.356 cm

B:-0.459 cm

C:-0.678 cm

D:-0.756 cm

Correct Answer:- Option-A

Question94:-Which is not a use of Flame photometry ?

A:-Biological fluids analysis

B:-Na, K determination in soil

C:-Determination of metals such as Mn, Cu

D:-Analysis of complex mixtures

Correct Answer:- Option-D

Question95:-Find the correct order of Mass spectrometric procedure.

(i) The ion signal is processed into mass spectra.

(ii) The ions are detected usually by a quantitative method.

(iii) The ions are separated according to their mass to charge ratio in an analyzer by electromagnetic fields.

(iv) The components of the sample are ionized by one of a variety of methods (E.g. by impacting them with an electron beam) which result in the formation of charged particles.

(v) A sample is loaded into the MS instrument and undergoes vaporization.

A:-(i) > (ii) > (iii) > (iv) > (v)

B:-(v) > (iv) > (iii) > (ii) > (i)

C:-(i) > (v) > (iii) > (iv) > (ii)

D:-(ii) > (v) > (iii) > (iv) > (i)

Correct Answer:- Option-B

Question96:-Find out the wrong statement.

A:-Active transducer generates the output in the form of current or voltage without any external energy.

B:-In passive transducers, internal parameters like resistance, inductance and capacitance doesn't change because of the input signal.

C:-The smallest change in measurement that will result in a measurable change in the transducer output is called threshold.

D:-Thermistor is a transducer having a -ve temperature coefficient.

Correct Answer:- Option-B

Question97:-The LD50 for retinol is 2000 mg/kg, how many chewable tablets would a 10 kg kid have to consume to reach the LD50 if each tablet contains 1 mg of retinol ?

A:-2000

B:-20000

C:-1000

D:-10000

Correct Answer:- Option-B

Question98:-How many breaths/seconds do you give an adult during Artificial Respiration for 2 minutes ?

A:-1 breath/5 sec

B:-1 breath/ 3 sec

C:-2 breath/5 sec

D:-2 breath/3 sec

Correct Answer:- Option-A

Question99:-Gauge factor is given by

A:- $(\text{Change in resistance caused by strain} \times \text{Resistance of the undeformed gauge}) / \text{strain}$

B:- $(\text{Change in resistance caused by strain} / \text{Resistance of the undeformed gauge}) / \text{strain}$

C:- $(\text{Change in resistance caused by strain} / \text{Resistance of the undeformed gauge}) \times \text{strain}$

D:- $(\text{Change in resistance caused by strain} + \text{Resistance of the undeformed gauge}) / \text{strain}$

Correct Answer:- Option-B

Question100:-The repeating units of PTFE are

A:- $\text{Cl}_2\text{CH} - \text{CH}_3$

B:- $\text{F}_2\text{C} - \text{CF}_2$

C:- $\text{F}_3\text{C} - \text{CF}_3$

D:- $\text{FCIC} - \text{CF}_2$

Correct Answer:- Option-B