PROVISIONAL ANSWER KEY

Question Paper Code:	83/2016/OL
Category Code:	382/2014
Exam:	Assistant Engineer SR for PH
Medium of Question:	English
Date of Test	05-12-2016
Alphacode	A

Question1:-How many women members had attended on the occasion of the first Constituent Assembly in independent India ?

A:-18
B:-15
C:-13
D:-11
Correct Answer:- Option-B

Question2:-Where was borrowed from the idea of Nominal head such as President, Cabinet system of Ministers, Post of Prime Minister, etc. ?

A:-United States of America
B:-Ireland
C:-France
D:-United Kingdom
Correct Answer:- Option-D

Question3:-Who was the Chairman of the Minorities' Sub Committee of the Constituent Assembly ?

A:-G. V. Mavalankar
B:-J. B. Kripalani
C:-K. M. Munshi
D:-H. C. Mukherjee
Correct Answer:- Option-D

Question4:-How many times Mahatma Gandhi visited in Kerala ?

A:-5
B:-4
C:-3
D:-2
Correct Answer:- Option-A

Question5:-The book Pathompatham Noottandile Keralam is written by _____

A:-P. Shankunni Menon
B:-K. P. Padmanabha Menon
C:-P. Bhaskaranunni
D:-Vaikathu Pachu Moothathu
Correct Answer:- Option-C

Question6:-Who amongst the following writers has worked for women and tribals in Bengal ?

A:-Mahasweta Devi
B:-R. Champakalakshmi
C:-Tanika Sarkar
D:-Uma Chakravarti
Correct Answer:- Option-A

Question7:-Which is the correct chronological order of the following leaders ?

i) Sree Narayana Guru
ii) Vaikunda Swamikal
iii) Thykkadu Ayyavu
iv) Chattambi Swamikal

A:-iv, iii, i, ii
B:-ii, iii, iv, i
C:-ii, iii, i, iv
D:-iii, ii, i, iv
Correct Answer:- Option-B

Question8:-IMDB is an online database of information and ratings that related to _____

A:-Fiction

B:-Art
C:-Internet sites
D:-Film
Correct Answer:- Option-D

Question9:-Oozhiyam means
A:-The forced labour service
B:-Peasantry
C:-Feudal labour
D:-Government service
Correct Answer:- Option-A

Question10:-Who was wrote the translated Malayalam novel Akbar in 1894 ?
A:-A. R. Rajaraja Varma
B:-Makthi Thangal
C:-Kerala Varma Valiyakoi Thampuran
D:-C. V. Raman Pillai
Correct Answer:- Option-C

Question11:-When was All Kerala Grandhasala Sangham formed ?
A:-1945
B:-1955
C:-1935
D:-1925
Correct Answer:- Option-A

Question12:-Who is the author of Muhyadheen Mala which is twined to folk genre Mappila Pattukal ?
A:-Fazal Pookkoya Thangal
B:-Moinkutty Vaidhyar
C:-Qazi Muhammed Ibn Abdul Aziz
D:-Shaikh Zainudheen Makhdoom
Correct Answer:- Option-C

Question13:-Chairperson of the 'Thiyya Yuvajana Sangham' at Pattanakkadu in 1934 was _____
A:-R. Sankar
B:-C. Kesavan
C:-C. V. Kunhiraman
D:-E. Madhavan
Correct Answer:- Option-D

Question14:-What was the central focus of Rajiv Awas Yojana (RAY) ?
A:-To help the slum dwellers
B:-To help the lower castes
C:-To help the Adivasis
D:-To help the Minorities
Correct Answer:- Option-A

Question15:-'Equal pay for equal work for both men and women' is referred in Indian Constitution of _____
A:-Directive Principles, Article 44
B:-Directive Principles, Article 39(A)
C:-Directive Principles, Article 39(C)
D:-Directive Principles, Article 39(D)
Correct Answer:- Option-D

Question16:-'Kleptophobia' means
A:-Fear of computer
B:-Fear of children
C:-Fear of stealing
D:-Fear of travel
Correct Answer:- Option-C

Question17:-Which organization/mission belongs to Ramon Magsaysay Awardee, Bezwada Wilson ?
A:-Swachh Bharat Abhiyan
B:-Safai Karmachari Andolan
C:-Narmada Bachao Andolan
D:-Jan Sahas Social Development Society
Correct Answer:- Option-B

Question18:-Pusarla Venkata Sindhu's home town is _____

A:-Bengaluru
B:-Hyderabad
C:-Secunderabad
D:-Puducherry
Correct Answer:- Option-B

Question19:-In which city Anne Frank write her famous diary ?
A:-Utrecht
B:-The Hague
C:-Rotterdam
D:-Amsterdam
Correct Answer:- Option-D

Question20:-Herself : Gender and Early Writings of Malayalee Women is written by _____
A:-K. Saradamoni
B:-Janaki Nair
C:-J. Devika
D:-G. Arunima
Correct Answer:- Option-C

Question21:-A reversible heat engine receives 300 kJ from a heat source, delivers 100 kJ of work and rejects the balance heat to a sink. If the sink is at `30^(@)C`, determine the temperature of the heat source
A:-`45.55^(@)C`
B:-`181.55^(@)C`
C:-`171.55^(@)C`
D:-`161.55^(@)C`
Correct Answer:- Option-B

Question22:-For the same compression ratio
A:-Thermal efficiency of Otto cycle is greater than that of Diesel cycle
B:-Thermal efficiency of Otto cycle is less than that of Diesel cycle
C:-Thermal efficiency of Otto cycle is same as that of Diesel cycle
D:-Thermal efficiency of Otto cycle cannot be predicted
Correct Answer:- Option-A

Question23:-In Aqua-Ammonia and Li-Br water absorption refrigeration systems, the refrigerants are respectively.
A:-Water and water
B:-Water and Li-Br
C:-Ammonia and Li-Br
D:-Ammonia and water
Correct Answer:- Option-D

Question24:-An apartment has a cooling load of 300 MJ/day. An air conditioner working 24 hours a day will have an approximate capacity of
A:-5TR
B:-2TR
C:-1TR
D:-7.5TR
Correct Answer:- Option-C

Question25:-A pelton wheel is ideally suitable for
A:-High head and high discharge
B:-Low head and low discharge
C:-High head and low discharge
D:-Medium head and medium discharge
Correct Answer:- Option-C

Question26:-A fluid jet of cross sectional area A and velocity V and density ρ strikes a flat plate moving with a velocity u. The fluid mass striking it per second is
A:-ρAV
B:-ρA(V+u)
C:-ρA(u−V)
D:-ρA(V−u)
Correct Answer:- Option-D

Question27:-The radial heat transfer rate through hollow cylinder increases as the ratio of outer radius to inner radius
A:-Decreases
B:-Increases
C:-Constant

D:-None of the above

Correct Answer:- Option-A

Question28:-The unit of coefficient of convective heat transfer 'h' is expressed as

A:-W/mK

B:-W/m²K

C:-W/hmK

D:-W/h²m²K

Correct Answer:- Option-B

Question29:-An increase in the percentage of carbon in steel results into decrease in its

A:-Hardness

B:-Corrosion resistance

C:-Ultimate strength

D:-Ductility

Correct Answer:- Option-D

Question30:-Dislocation in materials is a _____ defect.

A:-Point

B:-Line

C:-Plane

D:-Volumetric

Correct Answer:- Option-B

Question31:-For transmission of maximum power the maximum tension in the belt should be

A:-Equal to centrifugal tension

B:-Two times the centrifugal tension

C:-Three times the centrifugal tension

D:-Four times the centrifugal tension

Correct Answer:- Option-C

Question32:-A worm gearing is used to obtain speed reduction between shafts whose axes are

A:-Perpendicular and do not intersect

B:-Inclined

C:-Parallel

D:-Perpendicular and intersect

Correct Answer:- Option-A

Question33:-A 50mm diameter rod is to be turned on a lathe at a cutting speed of 30m/minute. The required spindle speed in rpm should be approximately.

A:-160

B:-170

C:-180

D:-190

Correct Answer:- Option-D

Question34:-The angle between the face and flank of the single point cutting tool is known as

A:-Rake angle

B:-Clearance angle

C:-Lip angle

D:-Point angle

Correct Answer:- Option-B

Question35:-The swaying couple in locomotives has maximum or minimum value when the angle of inclination of crank with the line of stroke.

A:-`30^(@)`

B:-`45^(@)`

C:-`60^(@)`

D:-`90^(@)`

Correct Answer:- Option-B

Question36:-At a particular rotational speed the unbalanced force due to revolving mass

A:-varies both in magnitude and direction

B:-is constant in magnitude as well as direction

C:-varies in magnitude but is constant in direction

D:-is constant in magnitude but varies in direction

Correct Answer:- Option-D

Question37:-The static deflection of a shaft under a fly wheel is 1mm. What is the critical speed in rad/s if `g=10m//s^(2)`

A:-100
B:-200
C:-50
D:-75
Correct Answer:- Option-A

Question38:-For a shaft fixed at one end and carrying a rotor at the free end the nodal point will lie at
A:-free end
B:-the mid length of the shaft
C:-the fixed end
D:-`2//3^(rd)` of distance from the free end
Correct Answer:- Option-C

Question39:-For a small change of speed, if the displacement of the sleeve is high, then the governor
A:-Hunting
B:-Isochronous
C:-Sensitive
D:-Stable
Correct Answer:- Option-C

Question40:-Dryness fraction is the ratio of
A:-Mass of dry steam to the mass of water vapour in suspension
B:-Mass of water vapour in suspension to the mass of water vapour and mass of dry steam
C:-Mass of dry steam to the mass of dry steam and mass of water vapour in suspension
D:-Mass of water vapour in suspension to the mass of dry steam
Correct Answer:- Option-C

Question41:-The function of a steam trap is
A:-To stop water particles going along with steam
B:-To drain off water resulting from partial condensation of steam pipes
C:-To prevent steam leaking out from the boiler
D:-To regulate the steam flow rate from the boiler
Correct Answer:- Option-B

Question42:-For a thin cylinder subjected to internal pressure the ratio of circumferential and longitudinal stresses are in the ratio
A:-2 : 1
B:-3 : 2
C:-1 : 1
D:-1 : 2
Correct Answer:- Option-A

Question43:-In a gas turbine the function of regenerator is
A:-Heating the compressed air on its way to combustion chamber
B:-Heating the fuel supplied to combustion chamber
C:-Heating the gases leaving the combustion chamber
D:-Heating the turbine exhaust before it enters the low pressure stage
Correct Answer:- Option-A

Question44:-The air screw of an airplane is rotating clockwise when looking from the front. If it makes a left turn the gyroscopic effect will be
A:-Tend to depress the nose and raise the tail
B:-Tend to raise the nose and depress the trail
C:-Tilt the aeroplane
D:-None of the above
Correct Answer:- Option-B

Question45:-For forced convection Nusselt number is a function of
A:-Prandtl and Grashoff number
B:-Reynolds Mach number
C:-Reynolds and Grashoff number
D:-Reynolds and Prandtl number
Correct Answer:- Option-D

Question46:-If the mean velocity of water is V, R be hydraulic mean depth, ρ and μ be density and viscosity of water then Reynold number `(R_(e))` is defined as
A:-`V/sqrt(gR)`
B:-`(rhoR)/(muV`
C:-`(rhoVR)/mu`

D:-None of these

Correct Answer:- Option-C

Question47:-Find the area of rapid sand filters required for a town having a population of 80000 with an average rate of demand as 200 litres per head per day. Assume a rate of filtration as 5000 litres per hour per `m^(2)` of filter area.

A:-`300m^(2)`

B:-`200m^(2)`

C:-`100m^(2)`

D:-`400m^(2)`

Correct Answer:- Option-B

Question48:-Two plates of 16 mm and 14 mm are joined by fillet. What should be the size of fillet weld to be used ?

A:-12.5

B:-2.0

C:-17.5

D:-10.5

Correct Answer:- Option-A

Question49:-The relation between modulus of Elasticity (E) and modulus of rigidity (N) and bulk modulus (K) is given by the relation

A:-`E = (3KN)/(9K-N)`

B:-`E=(3KN)/(9K+N)`

C:-`E=(9KN)/(3K-N)`

D:-`E=(9KN)/(3K+N)`

Correct Answer:- Option-D

Question50:-Due to negative skin friction on a pile, the load carrying capacity of the pile

A:-Remains same

B:-Decreases

C:-Increases

D:-None of these

Correct Answer:- Option-B

Question51:-Find the discharge through a rectangular channel of width 2m, having a bed slope of 4 in 8000. The depth of flow is 1.5 m and take the value of N in Manning's formula as 0.012

A:-`3.98 m^(3)//s`

B:-`4.67 m^(3)//s`

C:-`2.76 m^(3)//s`

D:-`8.26 m^(2)//s`

Correct Answer:- Option-A

Question52:-Most weather phenomena occur in the

A:-Thermosphere

B:-Mesosphere

C:-Stratosphere

D:-Troposphere

Correct Answer:- Option-D

Question53:-The diameter of a rivet connecting plate of thickness 15 mm given by Unwin's formula is

A:-26 mm

B:-22 mm

C:-24 mm

D:-20 mm

Correct Answer:- Option-C

Question54:-Elongation produced in a bar of density ρ, length `l` and Young's modulus E due to its self-weight

A:-`(9.81rhol^(2))/(2E)`

B:-`(9.81rhol^(2))/(E)`

C:-`(9.81rhol^(2))/(2N)`

D:-`(9.81rho^(2)l)/(2E)`

Correct Answer:- Option-A

Question55:-N value for medium sand lies between

A:-10 to 30

B:-5 to 10

C:-30 to 50

D:-0 to 5

Correct Answer:- Option-A

Question56:-Beams of uniform strength can be made by varying the cross sectional dimension in such a way that

A:-`Sigma/y` is constant

B:-`M/z` is constant

C:-`E/R` is constant

D:-Section modulus (z) is constant

Correct Answer:- Option-B

Question57:-The minimum specific energy `(E_(min)) `is related to critical depth `(h_(c))` for open channel flow as ``

A:-`E_(min) =(3)/(2)h_(c)`

B:-`E_(min) =(5)/(2)h_(c)`

C:-`h_(c)=(3)/(2)E_(min)`

D:-`h_(c)=(5)/(2)E_(min)`

Correct Answer:- Option-A

Question58:-The relation between porosity (n) specific yield `(S_(y))` and specific retention `(S_(r))` is correctly given in the relationship. ` `

A:-`n = S_(y)-S_(r)`

B:-`n = S_(y) + S_(r)`

C:-`S_(r) = S_(y) - n`

D:-`S_(r) = S_(y) + n`

Correct Answer:- Option-B

Question59:-Initial setting time `(T_(1))` and final setting time `(T_(2))` for ordinary Portland Cement is given by the relation

A:-`T_(2) = 90 + 2.4 T_(1)`

B:-`T_(2) = 90 - 2.4 T_(1)`

C:-`T_(2) = 90 + 1.2 T_(1)`

D:-`T_(2) = 90 - 1.2 T_(1)`

Correct Answer:- Option-C

Question60:-The temperature strain in a steel rod is _____ proportional to the change in temperature.

A:-Directly

B:-Indirectly

C:-Either (1) or (2)

D:-Only depends on the material of the rod

Correct Answer:- Option-A

Question61:-In measuring horizontal angles, the error due to imperfect levelling of the plate bubble is

A:-Large when sights are nearly level

B:-Large for long sights

C:-Less for steeply inclined sights

D:-Large for steeply inclined sights

Correct Answer:- Option-D

Question62:-A cantilever 1.5m long carries a uniformly distributed load over the entire length. Find the deflection at the free end if the slope at the free end is `1.5^(@)`.

A:-34.5 mm

B:-15.6 mm

C:-29.5 mm

D:-None of these

Correct Answer:- Option-C

Question63:-The heights of water on the upstream and downstream side of a submerged weir of 3m length are 20 cm and 10 cm respectively. If `C_(d)` for free and drowned portions are 0.6 and 0.8 respectively, find the discharge over the weir.

A:-`0.61 m^(3)//s`

B:-`0.48m^(3)//s`

C:-`0.058m^(3)//s`

D:-`0.51m^(3)//s`

Correct Answer:- Option-D

Question64:-Activated sludge is

A:-Aerated sewage in the secondary tank containing aerobic microorganisms

B:-Aerated sludge in the aerated unit

C:-Sludge settled in the humus tank

D:-Aerated sewage in the secondary tank containing nutrients

Correct Answer:- Option-A

Question65:-The maximum area of tension reinforcement in a beam having cross sectional area as `bd `shall not exceed

A:-0.02 bd

B:-0.03 bd

C:-0.04 bd
D:-0.05 bd
Correct Answer:- Option-C
Question66:-A circular rod 0.2m long tapers from 20mm diameter at one end to 10mm diameter at the other. On applying an axial pull of 6kN, it was found to extend by 0.068mm. Find the Young's modulus of the material of the rod.
A:-`126 GN//m^(2)`
B:-`106 GN//m^(2)`
C:-`98 GN//m^(2)`
D:-`112GN//m^(2)`
Correct Answer:- Option-D
Question67:-In establishing the line of sight which of the following statement is not correct ?
A:-Eyepiece optical centre is needed
B:-Optical centre of the objective is needed
C:-Diaphragm containing cross hairs is needed
D:-None of these
Correct Answer:- Option-A
Question68:-Equation of flexure is given as
A:-`(M)/(I)=(sigma)/(y)=(E)/(R)`
B:-`(I)/(M)=(sigma)/(y)=(E)/(R)`
C:-`(M)/(I)=(y)/(sigma)=(E)/(R)`
D:-`(M)/(I)=(sigma)/(y)=(R)/(E)`
Correct Answer:- Option-A
Question69:-A cut in the frame of a door to receive the shutter, is called
A:-Groove
B:-Rebate
C:-Horn
D:-Louver
Correct Answer:- Option-B
Question70:-Lap length in compression reinforcement should not be less than _____ tiimes the diameter of the bar.
A:-16
B:-20
C:-24
D:-30
Correct Answer:- Option-C
Question71:-Moment of inertia of a quadrant circle of radius R about its XX axis is given by
A:-`0.11` `xx` `R^(4)`
B:-`0.055` `xx` `R^(4)`
C:-`0.011` `xx` `R^(4)`
D:-`0.55` `xx` `R^(4)`
Correct Answer:- Option-B
Question72:-The point of contra-flexure is also called as
A:-Point of inflexion
B:-A virtual hinge
C:-Both (1) and (2)
D:-None of these
Correct Answer:- Option-A
Question73:-Pitot tube is used to measure
A:-Discharge
B:-Pressure at a point
C:-Velocity at a point
D:-None of these
Correct Answer:- Option-C
Question74:-Between Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD).
A:-BOD should always measure higher than COD
B:-COD should always measure higher than BOD
C:-COD should always be equal to BOD
D:-Depends on the type of sewage
Correct Answer:- Option-B
Question75:-Queen closer may be placed

A:-in header course

B:-in stretcher course

C:-in header course next to first brick

D:-in stretcher course next to first brick

Correct Answer:- Option-C

Question76:-Half life for a general `n^(th)` order reaction is

A:-`(0.5^(n-1)-1)/(k(n-1)` `C_(AO)^(1-n)`

B:-`(0.5^(1-n)-1)/(k(n-1))` `C_(AO)^(1-n)`

C:-`(0.5^(1-n)-1)/(k(1-n))` `C_(AO)^(1-n)`

D:-`(0.5^(1-n)-1)/(k(n-1))` `C_(AO)^(n-1)`

Correct Answer:- Option-B

Question77:-After 8 minutes in a batch reactor, `C_(AO) = 1mol//l` and conversion is 80%. After 18 minutes, the conversion is 90%. Then the rate equation is

A:-`-r_(A) = 0.5 ``C_(A)^(2)`

B:-`-r_(A)=0.25` `C_(A)^`

C:-`-r_(A) = 0.25` `C_(A)^(2)`

D:-`-r_(A) = 0.5` `C_(A)^`

Correct Answer:- Option-A

Question78:-Holding time $(\bar{t})$ and space time (τ) for flow reactors are related by

A:- $\bar{t} = \frac{\tau}{1+\varepsilon_A X_A}$

B:- $\bar{t} = \frac{\tau}{\varepsilon_A X_A}$

C:- $\bar{t} = \tau(1+\varepsilon_A X_A)$

D:- $\bar{t} = \tau$

Correct Answer:- Option-A

Question79:-A first order reversible reaction $A \rightleftarrows rR$ is carried out in an ideal plug flow reactor. The design equation is given by; `M=(C_(RO))/(C_(AO))`

A:-`k_(1)``tau` = `(M+r X_(Ae))/(M + X_(A))` `[-(1 +epsi_(A) X_(Ae)) ln (1-(X_(A))/X_(Ae)) - epsi_(A)X_(A)]`

B:-`k_(1)``tau` = `M+rX_(Ae)` `[-(1 +epsi_(A) X_(A)) ln (1-(X_(A))/X_(Ae)) - epsi_(A)X_(A))`

C:-`k_(1)``tau` = `(M + rX_(Ae))/(M+r)` `[-(1 +epsi_(A) X_(Ae)) ln (1-(X_(A))/X_(Ae)) - epsi_(A)X_(A)]`

D:-`k_(1)``tau` =`(M + rX_(Ae))/(M+r)``[-(1 +epsi_(A) X_(A)) (1-(X_(A))/X_(Ae)) - epsi_(A)X_(A)]`

Correct Answer:- Option-C

Question80:-The rate determining step of Michaelis Menten kinetics is

A:-The complex formation step

B:-The complex dissociation step to produce product

C:-Both 1) and 2)

D:-None of the above

Correct Answer:- Option-B

Question81:-The thermal conductivity is maximum for

A:-Silver

B:-Chrome-nickel steel

C:-Plaster of paris

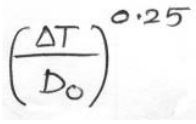
D:-Carbon steel

Correct Answer:- Option-A

Question82:-A metal wire of 0.01m diameter and thermal conductivity `200 (W)/(mK)` is exposed to a fluid stream with a convective heat transfer coefficient `1000 (W)/(m^(2)K` . The Biot number is

A:-10

B:-12.5
C:-0.0035
D:-0.0125
Correct Answer:- Option-D

Question83:-The total heat loss by convection and radiation from an unlagged steam pipe of 50 mm outer diameter at 415 K to air at 290 K. Given ε = 0.90 `h_(c) = 1.18`  `W//m^(2)K` `h_(c)` = convective film coefficient.

A:-133 `(W)/ "m length of pipe"`
B:-344.7 `(W)/ "m length of pipe"`
C:-230 `(W)/ "m length of pipe"`
D:-55 `(W)/ "m length of pipe"`
Correct Answer:- Option-B

Question84:-A multiple effect evaporator as compared to a single effect evaporator of the same capacity has

A:-Lower heat transfer area
B:-Lower steam economy
C:-Higher steam economy
D:-Higher solute concentration in the product
Correct Answer:- Option-C

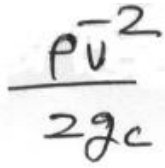
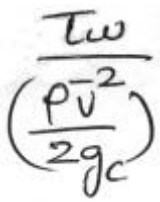
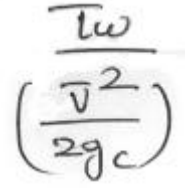
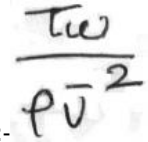
Question85:-The overall heat transfer coefficient for a shell and tube heat exchanger for clean surface is `u_(o) = 400 (W)/(m^(2)K)`. The fouling factor after one year of operation is found to be `hd_(o) = 2000` `(W)/(m^(2)K)`. The overall heat transfer coefficient at this time is

A:-1200 `(W)/(m^(2)K)`
B:-894 `(W)/(m^(2)K)`
C:-333 `(W)/(m^(2)K)`
D:-287 `(W)/(m^(2)K)`
Correct Answer:- Option-C

Question86:-In a shell and tube heat exchanger, baffles are provided on the shell side to ``

A:-Prevent the stagnation of shell side fluid
B:-Improve heat transfer
C:-Provide support for tubes
D:-All of the above
Correct Answer:- Option-D

Question87:-Fanning friction factor is defined as

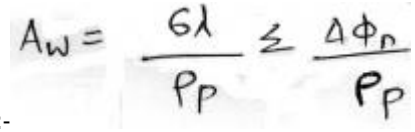
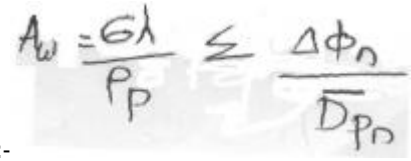
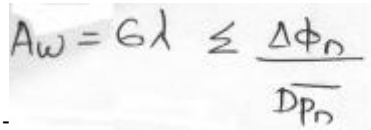
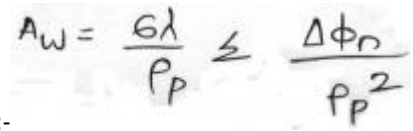
A:- 
B:- 
C:- 
D:- 
Correct Answer:- Option-B

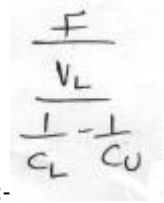
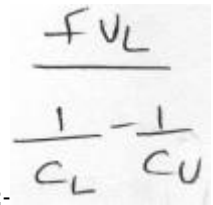
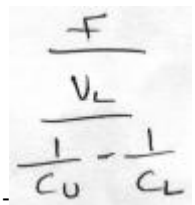
Question88:-A continuous gravity decanter is used for separation of two immiscible liquids A and B of differing densities `rho_(A)` and `rho_(B)` . If μ is the viscosity of continuous phase, the separation time is given by

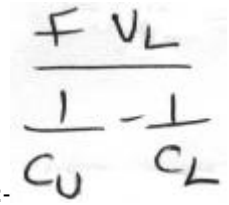
A:-t=`(100mu)/(rho_(A)+rho_(B))`
B:-t =`(100mu)/(rho_(A)rho_(B))`
C:-t=`(100mu)/(rho_(A)-rho_(B))`
D:-t=`100murho_(A)rho_(B)`
Correct Answer:- Option-C

Question89:-If the suction pressure is only slightly greater than the vapor pressure
A:-Some liquid may flash to vapor inside the pump
B:-There will be vaporization in the suction line
C:-No liquid can be drawn into the pump
D:-None of the above
Correct Answer:- Option-A

Question90:-The pressure loss is maximum for
A:-Orificemeter
B:-Venturimeter
C:-Rotameter
D:-Flow nozzle
Correct Answer:- Option-A

Question91:-Specific surface area by differential analysis is
A:- 
B:- 
C:- 
D:- 
Correct Answer:- Option-B

Question92:-If F = feed rate of solids, `C_(u)` = under flow concentration, `C_(L)` = capacity limiting layer concentration, `V_(L)` = velocity of particles through the capacity limiting layer, area of a continuous thickener is
A:- 
B:- 
C:- 

D:- 

Correct Answer:- Option-A

Question93:-The power required for a propeller mixer of diameter 25 cm for a liquid of specific gravity 1.4 and viscosity 2.5 cp for operating at a Reynolds number of 20,000 and power number is equal to 32 is given by

A:-0.816 W

B:-81.6 W

C:-816 W

D:-8.16 W

Correct Answer:- Option-D

Question94:-The Henry's law constant for oxygen in water at 298 K is `4.4 xx 10^(4)` bar. For a partial pressure of oxygen at 0.25 bar and at 298 K, the solubility of oxygen in water is

A:-`5.68 xx 10^(-5)` moles/mole `H_(2)O`

B:-5.68 moles/mole `H_(2)O`

C:-`5.68 xx 10^(-6)` moles/mole `H_(2)O`

D:-`5.68 xx 10^(-7)` moles/mole `H_(2)O`

Correct Answer:- Option-C

Question95:-A stream of nitrogen flowing at the rate of 7000 kg/h and a stream of hydrogen flowing at the rate of 1500 kg/h mix adiabatically in a steady flow process. If the gases are ideal and are at the same temperature and pressure, the rate of entropy increases in KJ/hK is

A:--4675.3

B:-4675.3

C:-`4675.3 xx 10^(3)`

D:-None of the above

Correct Answer:- Option-A

Question96:-The Lewis number is defined as

A:-`(N_(pr))/(N_(sc))`

B:-`N_(pr)` `N_(sc)`

C:-`N_(sc)/N_(pr)`

D:-`Np_(r).N_(sc)^(1/2)`

Correct Answer:- Option-C

Question97:-If the feed is all saturated vapour, then q is given by

A:-q = 0

B:-q = 1

C:-q < 1

D:-q > 1

Correct Answer:- Option-A

Question98:-A packed tower is designed to recover 98% `CO_(2)` from a gas mixture containing 10% `CO_(2)` and 90% air using water. Y = 14 X can be used for equilibrium conditions where Y is kg `CO_(2)`/kg dry air and X is kg `CO_(2)`/kg water. The water to gas rate is kept 30% more than the minimum value. The height of the tower if HTU is 1 metre will be

A:-10.3 m

B:-11.3 m

C:-12.3 m

D:-14.3 m

Correct Answer:- Option-B

Question99:-For any particular duty and for all positive reaction orders

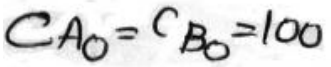
A:-Mixed reactor is always smaller than a plug flow reactor

B:-Mixed reactor and plug flow reactor are of same volume

C:-Mixed reactor is always larger than the plug flow reactor

D:-None of the above

Correct Answer:- Option-C

Question100:-For a gaseous reaction A + 2B → R,  `C_(B) = 20, ` the conversion of B is

A:-1.0

B:-0.889

C:-0.62
D:-0.53
Correct Answer:- Option-B