

NEWS ITEM

It is information to all concerned that Answer Key for the recruitment exam held through CDAC on 02.09.2023 for the post of Industries Promotion Officer (Group B (NG) of Directorate of Industries, Port Blair is available in the A&N Administration State portal <http://andaman.gov.in> and <https://erecruitment.andaman.gov.in> from 18.01.2024 onwards. The claims & objections, if any, in this regard may be submitted by 19.01.2024 from the publication in the above portal. No claims & objection will be entertained after the stipulated time.

Signed by Mukesh Kumar

Lall

Date: 17-01-2024 16:00:09

Reason: Approved

Assistant Director (Admn.)

1

"What numbers should replace the question marks?"

100, 95, ?, 79, 68, 55, 40, 23"

(A)

88

(B)

82

(C)

72

(D)

73

Answer:(A)

2

"What comes next?"

January

February

April

July

November

April

?????"

(A)

December

(B)

March

(C)

October

(D)

February

Answer:(C)

3

In the following questions, a series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. K,J,L,I,M,?

(A)

G

(B)

H

(C)

F

(D)

N

Answer:(B)

4

"Select the related word/letters/numbers from the given alternatives:

4 : 20 :: 8 : ?"

(A)

74

(B)

70

(C)

72

(D)

78

Answer:(C)

5

M is son of P, Q is the grand-daughter of O, who is the husband of P. How is M related to O?

(A)

Son

(B)

Daughter

(C)

Mother

(D)

Father

Answer:(A)

6

"If "A" means "subtraction", "B" means "division", "C" means "addition" and "D" means

"multiplication", then $305 \text{ B } 5 \text{ A } 28 \text{ C } 43 \text{ D } 12 = \underline{\hspace{2cm}}$ "

(A)

569

(B)

549

(C)

560

(D)

530

Answer:(B)

7

"Select the related word/number from the given alternatives:

CLOSE : DNRWJ : : OPEN : _____"

(A)

PRHR

(B)

PRJQ

(C)

RPJB

(D)

RZWR

Answer:(A)

8

Select the word which can be formed from the word IMMEDIATELY.

(A)

DIALECT

(B)

LIMITED

(C)

DIAMETER

(D)

Dictate

Answer:(B)

9

Introducing a girl, Ankit says, "She is the sister of the son of my mother's sister". How is the girl related to Ankit?

(A)

Niece

(B)

Daughter

(C)

Sister

(D)

Cousin

Answer:(D)

10

It was Sunday on jan 2, 2006, what was the day of the week Jan 1, 2010 ?

(A)

Sunday

(B)

Thursday

(C)

Friday

(D)

Saturday

Answer:(B)

11

Neha walks 30m towards south, then turning to her right she walks 30m, then turning to her left, she walks 20m, again she turns to her left and walks 30m. How far is she from her initial position?

(A)

20 mtr

(B)

30 mtr

(C)

50 mtr

(D)

60 mtr

Answer:(C)

12

If in a code GONE is written as ILPB then how may CRIB be written in that code?

(A)

EUKY

(B)

EKUY

(C)

EYUK

(D)

EOKY

Answer:(D)

13

One morning, Ketan walked towards the sun. After some time he turned left and again to his left. Which direction is he facing?

(A)

North

(B)

South

(C)

East

(D)

West

Answer:(D)

14

If India is coded as 27924 and cricket is coded as 1621835 then DIRT will be coded as _____ .

(A)

9878

(B)

9825

(C)

9165

(D)

9265

Answer:(D)

15

If 'Aman' = 4, 'Shivam' = 6, 'Science' = 7, Then 'Bhim' = ?

(A)

4

(B)

3

(C)

6

(D)

5

Answer:(A)

16

Which of the following countries has reduced UN contribution due to 'discrimination'?

(A)

Kuwait

(B)

Pakistan

(C)

Israel

(D)

Iran

Answer:(C)

17

The Central Government issued instructions to link the mobile numbers of all existing mobile phone users in the country with which form?

(A)

Voter Card

(B)

PAN card

(C)

Aadhaar Card

(D)

none

Answer:(C)

18

Which of the following commissions said that incitement to violence cannot be the only criterion for deciding hate speech?

(A)

Finance Commission

(B)

Law Commission

(C)

Home Commission

(D)

None of these

Answer:(B)

19

Which of the following was appointed by the United Nations to run the World Food Program?

(A)

David Baisley

(B)

Billy Elias

(C)

Walter Neer

(D)

Andrew Leslie

Answer:(A)

20

Which British director of Indian origin was awarded the 2017 Sikh Ratna Award for his contribution to British cinema?

(A)

Gurinder Chadha

(B)

Rahul Sachdeva

(C)

Rakesh Roshan

(D)

Ramesh Bhatt

Answer:(A)

21

Which state has recently received the 'Film Friendly State' award?

(A)

Tripura

(B)

Karnataka

(C)

Tamil Nadu

(D)

Madhya Pradesh

Answer:(D)

22

The government of which state has recently started the mission foundation for children to study?

(A)

Delhi

(B)

Haryana

(C)

Jharkhand

(D)

Madhya Pradesh

Answer:(A)

23

The government of which state has recently launched a water ATM policy for urban areas?

(A)

Rajasthan

(B)

Haryana

(C)

Gujarat

(D)

Maharashtra

Answer:(B)

24

Where was India's first air-conditioned rail ambulance service started?

(A)

Shimla

(B)

Mumbai

(C)

Chandigarh

(D)

Surat

Answer:(B)

25

Government of which country has recently decided to abolish reservation in government jobs?

(A)

Pakistan

(B)

Bangladesh

(C)

Sri Lanka

(D)

India

Answer:(B)

26

Which country has recently been renamed as 'The Kingdom of Iswatini'?

(A)

Kenya

(B)

Germany

(C)

Japan

(D)

Swaziland

Answer:(D)

27

Name the woman officer who was included in BSF as the first woman Combat Officer of India?

(A)

Devika Pathak

(B)

Tejaswini Ojha

(C)

Priyanka Gaikwad

(D)

Tanushree Pareek

Answer:(D)

28

Which actor was awarded the Kala Ratna Award by Vice President Hamid Ansari at Punjab University, Chandigarh?

(A)

Anupam Kher

(B)

Ajay Devgan

(C)

Amitabh Bachchan

(D)

Salman Khan

Answer:(A)

29

Mars Orbiter Mission has made which of the following major discoveries in the upper atmosphere of the red planet?

(A)

Superhot carbon

(B)

Superhot Argon

(C)

Superhot nitrogen

(D)

None of these

Answer:(B)

30

Which of the following telecom company launched Airtel Payment Bank on 12 January 2017?

(A)

Idea

(B)

Vodafone

(C)

Bharti Airtel

(D)

Reliance Jio

Answer:(C)

31

The ratio of pure gold to 18 carat gold is

(A)

0.6

(B)

0.75

(C)

0.8

(D)

0.9

Answer:(B)

32

Which of the following states has decided to give 4 percent reservation for backward Muslims?

(A)

Kerala

(B)

Uttar Pradesh

(C)

Andhra Pradesh

(D)

Karnataka

Answer:(C)

33

Where is "Paunar Ashram" established by Vinoba Bhave located?

(A)

Maharashtra

(B)

Rajasthan

(C)

Bihar

(D)

Gujarat

Answer:(A)

34

Where is "Sher Shah's Tomb" located?

(A)

Delhi

(B)

Ajmer

(C)

Lahore

(D)

Sasaram

Answer:(D)

35

Catalyst is a substance, which _____ chemical reaction.

(A)

Increases the speed of a

(B)

Decreases the speed of a

(C)

Can either increase or decrease the speed of a

(D)

Alters the value of equilibrium constant in a reversible

Answer:(A)

36

Higher free energy of activation of a chemical reaction (at a given temperature) implies

(A)

Slower rate of reaction

(B)

Higher rate of reaction

(C)

Higher equilibrium conversion

(D)

none

Answer:(A)

37

If the rate of a chemical reaction becomes slower at a given temperature, then the

(A)

Initial concentration of the reactants remains constant

(B)

Free energy of activation is lower

(C)

Entropy changes

(D)

Free energy of activation is higher

Answer:(D)

38

The eddy diffusivity for a liquid in plug flow must be

(A)

1

(B)

0

(C)

∞

(D)

Between 0 and 1

Answer:(B)

39

The most suitable reactor for carrying out an auto-thermal reaction is a

(A)

Batch reactor

(B)

CSTR

(C)

Semi-batch reactor

(D)

Plug-flow reactor

Answer:(B)

40

In an ideal tubular-flow reactor

(A)

There is no mixing in longitudinal direction

(B)

Mixing takes place in radial direction

(C)

There is a uniform velocity across the radius

(D)

All of the mentioned

Answer:(D)

41

A reactor is generally termed as an autoclave, when it is a

(A)

High pressure batch reactor

(B)

Atmospheric pressure tank reactor

(C)

High pressure tubular reactor

(D)

Atmospheric pressure CSTR

Answer:(A)

42

A batch reactor is suitable for

(A)

Achieving cent percent conversion of reactants into products

(B)

Large scale gaseous phase reactions

(C)

Liquid phase reactions

(D)

Obtaining uniform polymerisation products in highly exothermic reactions

Answer:(C)

43

If Thiele modulus is _____ , then the pore diffusion resistance in a catalyst may be considered as negligible.

(A)

0

(B)

∞

(C)

< 0.5

(D)

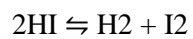
> 0.5

Answer:(C)

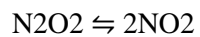
44

Which of the following chemical reactions will be favoured by low pressure?

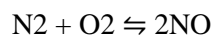
(A)



(B)



(C)



(D)

None of these

Answer:(B)

45

A trickle bed reactor is the one, which

(A)

Has altogether three streams either entering or leaving

(B)

Processes three reactants at different flow rates

(C)

Processes three reactants with same flow rate

(D)

Employs all the three phases (i.e.. .solid, liquid and gas)

Answer:(D)

46

Fuel deposited in large quantity under the ocean sea-bed are present in the in the form of

(A)

Clathrate

(B)

Uranium

(C)

Thorium

(D)

Cellulose

Answer: a

47

Name one of the monomers used in production of epoxy resin

(A)

Caprolactam

(B)

Bisphenol-A

(C)

Terephthalic acid

(D)

Phosgene

Answer: b

48

For the manufacture of urea from ammonia and carbon dioxide

(A)

no catalyst is required

(B)

V₂O₅ is used as catalyst

(C)

silica - alumina mixture is used as catalyst

(D)

iron oxide promoted with K₂O is used as catalyst

Answer: a

49

65% oleum

(A)

is prepared by distilling 20% oleum

(B)

is prepared by chamber process

(C)

does not contain free SO₃

(D)

contains 0.65% free SO₃

Answer: a

50

Contact process for the manufacture of sulphuric acid yields

(A)

80% H₂SO₄ only

(B)

98% H₂SO₄ and higher

(C)

95% H₂SO₄ only

(D)

90% H₂SO₄ only

Answer: b

51

For the production of sulphuric acid chamber process was developed first but produced acid of concentration

(A)

less than 80%

(B)

0.98

(C)

1

(D)

95%

Answer: a

52

Equilibrium constant (K_p) at constant pressure for sulphur dioxide oxidation

(A)

increases with increase in temperature

(B)

decreases with increase in temperature

(C)

remains unaffected with change in temperature

(D)

decreases linearly with increase in temperature

Answer: b

53

The equilibrium yield of sulphur trioxide obtained from the oxidation of sulphur dioxide can be increased

by

(A)

square root of system pressure at a given temperature

(B)

cube root of system pressure at a given temperature

(C)

square of system pressure at a given temperature

(D)

cube of system pressure at a given temperature

Answer: a

54

The most favourable conditions of temperature and pressure for the oxidation of sulphur dioxide to sulphur trioxide are

(A)

low temperature high pressure

(B)

low temperature low pressure

(C)

high temperature high pressure

(D)

high temperature low pressure

Answer: a

55

Poison for platinum catalyst is

(A)

sulphuric acid is formed in solution

(B)

phosphorous

(C)

arsenic

(D)

coke

Answer: c

56

In the manufacture of sulphuric acid by contact process platinum catalyst was previously used but suffers

from

(A)

easy poisoning

(B)

fragility

(C)

high initial investment

(D)

all of these answers

Answer:(D)

57

A square matrix all of whose elements except the main diagonal are zeros is called a :

(A)

null matrix

(B)

singular matrix

(C)

diagonal matrix

(D)

symmetric matrix

Answer:(C)

58

Square matrix A for which $A^T = -A$ is called a :

(A)

row matrix

(B)

column matrix

(C)

symmetric matrix

(D)

skew-symmetric matrix

Answer:(D)

59

Square matrix A for which $A^T = A$ is called a :

(A)

row matrix

(B)

column matrix

(C)

symmetric matrix

(D)

skew-symmetric matrix

Answer:(D)

60

A square matrix A with complex entries for which $(A)^T = -A$ is called :

(A)

identity matrix

(B)

hermitian matrix

(C)

symmetric matrix

(D)

Skew-symmetric matrix

Answer:(D)

61

Number of solutions to the equation $(1 - i)x = 2x$ is :

(A)

1

(B)

2

(C)

3

(D)

no solution

Answer:(A)

62

If , $\arg(z) < 0$, then $\arg(-z) - \arg(z) =$

(A)

π

(B)

$-\pi/4$

(C)

$-\pi/2$

(D)

$\pi/2$

Answer:(A)

63

If ω is an imaginary cube root of unity, then $(1 + \omega - \omega^2)^7$ equals :

(A)

128ω

(B)

$128 \omega^2$

(C)

-128ω

(D)

$-128 \omega^2$

Answer:(D)

64

Value of $\omega^{1999} + \omega^{299} + 1$ is :

(A)

0

(B)

1

(C)

-1

(D)

2

Answer:(A)

65

The points with position vector $60i + 3j$, $40i - 8j$ and $ai - 52j$ are collinear if :

(A)

$$a = -40$$

(B)

$$a = 40$$

(C)

$$a = 20$$

(D)

none of these

Answer:(A)

66

The value of k for which the points $A(1, 0, 3)$, $B(-1, 3, 4)$, $C(1, 2, 1)$ and $D(k, 2, 5)$ are coplanar is :

(A)

1

(B)

2

(C)

0

(D)

-1

Answer:(D)

67

The pair of lines whose direction cosines are given by the equations $3l+m+5n=0$, $6mn-2nl+5lm=0$ are :

(A)

parallel

(B)

perpendicular

(C)

inclined at $\cos^{-1}(1/6)$

(D)

none of these

Answer:(C)

68

What is fluid mechanics?

(A)

Study of fluid behaviour at rest

(B)

Study of fluid behaviour in motion

(C)

Study of fluid behaviour at rest and in motion

(D)

Study of fluid behaviour at rest and in rest

Answer:(C)

69

Which of the following is the basic principle of fluid mechanics?

(A)

Momentum principle

(B)

Energy equation

(C)

Continuity equation

(D)

All of the mentioned

Answer:(D)

70

What is fluid mechanics used for?

(A)

Fluid mechanics enables to comprehend the behaviour of solid fluids under pressure

(B)

Fluid mechanics enables to comprehend the behaviour of fluids under a variety of forces & atmospheric conditions

(C)

Fluid mechanics enables to comprehend the behaviour of fluids under various temperatures only

(D)

None of the mentioned

Answer:(C)

71

If a person studies about a fluid which is at rest, what will you call his domain of study?

(A)

Fluid Dynamics

(B)

Fluid Mechanics

(C)

Fluid Statics

(D)

Fluid Kinematics

Answer:(C)

72

Which among the following is the standard symbol for Atwood number?

(A)

Ar

(B)

A

(C)

b

(D)

Ac

Answer:(B)

73

Which of the following method is used exclusively in fluid mechanics?

(A)

Eulerian method

(B)

Lagrangian method

(C)

Neither Lagrangian nor Eulerian method

(D)

Both Lagrangian and Eulerian methods

Answer:(A)

74

Which of the following method is most commonly used in fluid mechanics for analysis?

(A)

Eulerian Method

(B)

Control volume analysis

(C)

Langragian method

(D)

None of the mentioned

Answer:(A)

75

When is a fluid called turbulent?

(A)

High viscosity of fluid

(B)

Reynolds number is greater than 2000

(C)

Reynolds number is less than 2000

(D)

The density of the fluid is low

Answer:(C)

76

Which among the following is the standard symbol for Blake number?

(A)

ba

(B)

b

(C)

Bi

(D)

Bl

Answer:(A)

77

Stagnation point is the point in fluid mechanics where the velocity of the fluid at that point is _____

(A)

unity

(B)

constant

(C)

infinite

(D)

zero

Answer:(D)

78

Which among the following is the standard symbol for Archimedes number?

(A)

Ar

(B)

A

(C)

a

(D)

AR

Answer:(A)

79

Which among the following is referred to as the temperature at a stagnation point in the flow of fluids in fluid mechanics and thermodynamics.

(A)

Absolute temperature

(B)

Maximum temperature

(C)

Stagnation temperature

(D)

Hydraulic temperature

Answer:(C)

80

Which of the following is having the lowest value of overall heat transfer coefficient?

(A)

Feed water heaters

(B)

Air condensers

(C)

Air to low viscosity liquids

(D)

Steam condensers

Answer:(C)

81

A cross-flow type air heater has an area of 50 cm^2 . The overall heat transfer coefficient is $100 \text{ W/m}^2 \text{ K}$

and the heat capacity of both hot and cold streams is 1000 W/m K . The value of NTU is

(A)

0.2

(B)

6

(C)

1000

(D)

5

Answer:(D)

82

An oil cooler in a high-performance engine has an outside surface area 0.12 m^2 and a surface temperature of $65 \text{ degree Celsius}$. At any intermediate time air moves over the surface of the cooler at a temperature of $30 \text{ degree Celsius}$ and gives rise to a surface coefficient equal to $45.4 \text{ W/ m}^2 \text{ K}$. Find out the heat transfer rate?

(A)

564.98 W

(B)

324.67 W

(C)

190.68 W

(D)

768.43 W

Answer:(C)

83

Which of the following statement is incorrect according to heat transfer?

(A)

Heat flow doesn't depend on temperature

(B)

A material medium is not necessary for heat transmission

(C)

The process of heat transfer is an irreversible process

(D)

For heat exchange, a temperature gradient must exist

Answer:(A)

84

Consider a convective heat flow to water at 75 degree Celsius from a cylindrical nuclear reactor fuel rod of 50 mm diameter. The rate of heat generation is 50000000 W/m^3 and convective heat transfer coefficient is $1 \text{ kW/m}^2 \text{ K}$. The outer surface temperature of the fuel element would be

(A)

400 degree Celsius

(B)

625 degree Celsius

(C)

700 degree Celsius

(D)

550 degree Celsius

Answer:(C)

85

For a cylindrical rod with uniformly distributed heat sources, the thermal gradient at half the radius

location will be

(A)

One half

(B)

One fourth

(C)

Four times

(D)

Twice

Answer:(A)

86

Water (specific heat = 4 k J/kg K) enters a cross flow exchanger (both fluids unmixed) at $15 \text{ degree Celsius}$ and flows at the rate of 7.5 kg/s . It cools air ($C P = 1 \text{ k J/kg K}$) flowing at the rate of 10 kg/s from an inlet temperature of $120 \text{ degree Celsius}$. For an overall heat transfer coefficient of $780 \text{ k J/m}^2 \text{ hr degree}$ and the surface area is 240 m^2 , determine the NTU

(A)

1.2

(B)

8.2

(C)

6.2

(D)

5.2

Answer:(D)

87

A heat exchanger to preheat oil for a furnace was designed without considering the possibility of scale formation, and the overall heat transfer coefficient based on the fuel oil side was $3200 \text{ k J/m}^2 \text{ hr degree}$.

What would be the corrected coefficient of heat transfer if a fouling factor of $0.00025 \text{ m}^2 \text{ hr degree/k J}$ for the fuel oil is taken into account?

(A)

1222.78 k J/m² hr degree

(B)

1555.78 k J/m² hr degree

(C)

1777.78 k J/m² hr degree

(D)

1233.78 k J/m² hr degree

Answer:(C)

88

Which of the following is the value of fouling factor for engine exhaust?

(A)

0.001 m² K/W

(B)

0.002 m² K/W

(C)

0.003 m² K/W

(D)

0.004 m² K/W

Answer:(B)

89

The value of fouling factor for industrial liquids is _____

(A)

0.0002 m² K/W

(B)

0.0001 m² K/W

(C)

0.0003 m² K/W

(D)

0.0004 m² K/W

Answer:(A)

90

Which of the following is the value of overall heat transfer coefficient for steam condensers?

(A)

2000-9500 W/m² K

(B)

1500-5000 W/m² K

(C)

200-9000 W/m² K

(D)

3000-5500 W/m² K

Answer:(B)

91

Phase lag of the frequency response of a second order system to a sinusoidal forcing function

(A)

Is 30°

(B)

Is 90° at the most

(C)

Approaches 180° asymptotically

(D)

Is 120°

Answer:(C)

92

Which of the following is not classified as a thermo electric pyrometer?

(A)

Resistance thermometer

(B)

Thermocouple

(C)

Optical pyrometer (disappearing filament type)

(D)

Radiation pyrometer

Answer:(C)

93

The temperature of tempering oil baths maintained at 400°C during heat treatment of steel is measured by

a/an _____ thermocouple.

(A)

Chromel-alumel

(B)

Iron-constantan

(C)

Platinum-platinum/rhodium

(D)

None of these

Answer:(B)

94

_____ are analysed using a polarograph.

(A)

Isotonic solutions

(B)

Solids

(C)

Liquids

(D)

Gases

Answer:(B)

95

_____ temperature scale assigns 0° to the 'ice point' and 80° to the 'steam point'.

(A)

Celcius

(B)

Rankine

(C)

Reumur

(D)

Farenhite

Answer:(C)

96

Nickel percentage in invar which is an iron-nickel alloy, and is used as a thermocouple material is

(A)

12

(B)

36

(C)

54

(D)

68

Answer:(B)

97

Operating range of a temperature measuring instrument is 800 to 1600°C. It could be a/an _____

pyrometer.

(A)

Radiation

(B)

Optical

(C)

Photoelectric

(D)

None of these

Answer:(C)

98

Flow rate measurement of hostile acids and alkalis can be most suitably done by a/an

(A)

Venturimeter

(B)

Orificemeter

(C)

Magnetic flow meter

(D)

Hot wire anemometer

Answer:(C)

99

Response of a linear control system for a change in set point is called

(A)

Frequency response

(B)

Transient response

(C)

Servo problem

(D)

Regulator problem

Answer:(C)

100

Compositional analysis of _____ is done using mass spectrometer.

(A)

An isotope

(B)

Natural gas

(C)

A solid

(D)

An alloy

Answer:(A)

101

Very low pressure is expressed in microns(μ), which is equal to _____ mm of Hg column
(absolute) at 0°C.

(A)

0.0001

(B)

0.001

(C)

0.01

(D)

0.1

Answer:(B)

102

Mass transfer rate between two fluid phases does not necessarily depend on the _____ of the two phases.

(A)

Chemical properties

(B)

Physical properties

(C)

Degree of turbulence

(D)

Interfacial area

Answer:(A)

103

For ethanol-water system, the lowering of distillate quality from 95% to 92% will cause _____ plate requirement.

(A)

No change in theoretical

(B)

Marginal decrease in the number of

(C)

Major decrease in the number of

(D)

None of these

Answer:(B)

104

The mass diffusivity, the thermal diffusivity and the eddy momentum diffusivity are same for, $NPr = NSc$

= _____

(A)

1

(B)

0.5

(C)

10

(D)

0

Answer:(A)

105

The interfacial area per unit volume of dispersion, in a gas-liquid contactor, for fractional hold up of gas = 0.1 and gas bubble diameter = 0.5 mm is given by (in m^2/m^3)

(A)

500

(B)

1200

(C)

900

(D)

800

Answer:(A)

106

The ratio of Murphree plate efficiency to point efficiency is 1 in a _____ flow model.

(A)

Plug

(B)

Perfectly mixed

(C)

dilute

(D)

None

Answer:(B)

107

Which of the following binary systems is an example of a maximum boiling azeotrope?

(A)

Water-hydrochloric acid

(B)

Acetone-carbon disulphide

(C)

Water-ethyl alcohol

(D)

N-heptane-n-octane

Answer:(A)

108

Capacity of a rotary dryer depends on its

(A)

R.p.m

(B)

Inclination with ground surface

(C)

R.p.m & Inclination with ground surface

(D)

None

Answer:(C)

109

In a liquid-liquid extraction, 10 kg of a solution containing 2 kg of solute C and 8 kg of solvent A is brought into contact with 10 kg of solvent B. Solvent A and B are completely immiscible in each other whereas solute C is soluble in both the solvents. The extraction process attains equilibrium. The

equilibrium relationship between the two phases is $Y^* = 0.9X$, where Y^* is the kg of C/kg of B and X is kg of C/kg of A. Choose the correct answer.

(A)

The entire amount of C is transferred to solvent B

(B)

Less than 2 kg but more than 1 kg of C is transferred to solvent B

(C)

Less than 1 kg of C is transferred to B

(D)

No amount of C is transferred to B

Answer:(A)

110

Removal of _____ exemplifies an adsorption unit operation.

(A)

Uranium from its ore

(B)

Water from petrol

(C)

Ammonia from coke oven gas

(D)

Mustard oil from mustard seed

Answer:(B)

111

Pick out the wrong statement pertaining to the analogy between equations of heat and mass transfer operations.

(A)

Sherwood number in mass transfer is analogous to Nusselt number in heat transfer

(B)

Prandtl number in heat transfer is analogous to Schmidt number in mass transfer

(C)

Reynolds number in mass transfer is analogous to Grashoff number in heat transfer

(D)

Reynolds number remains the same in both heat and mass transfer

Answer:(C)

112

Co-current absorbers are usually used when the gas to be dissolved in the liquid is

(A)

Sparingly soluble

(B)

Highly soluble

(C)

A pure substance

(D)

A mixture

Answer:(C)

113

In most of the shell and tube heat exchangers, the tube pitch is generally _____ the tube diameter.

(A)

Less than

(B)

1.25-1.50 times

(C)

2.5 times

(D)

One-fourth of

Answer:(B)

114

Value of Peclet number = 0, is the representative of

(A)

Laminar flow

(B)

Complete back mixing

(C)

Plug flow

(D)

Eddy diffusivity = 0

Answer:(B)

115

The ideal size of round bubble caps to be used in industrial distillation column having a diameter of

3-6 metres is _____ cms.

(A)

5

(B)

15

(C)

7.5

(D)

50

Answer:(B)

116

Pick out the wrong statement pertaining to the design of a horizontal tube evaporator.

(A)

It is unsuitable for concentrating those liquids, which form a scale or deposit salt

(B)

It is suitable for process, in which the final product is a liquor instead of solid

(C)

Its usual dimensions are: tube dia = 2-3 cms; evaporator body dia = 1-4 metres and evaporator height =

2.5-4 metres

(D)

Liquor flows inside the tube, while the steam is outside submerging the tube

Answer:(D)

117

Pick out the wrong statement pertaining to the design of the bubble cap tray of a distillation column to give stable operation and even vapour distribution.

(A)

The pressure drop due to the caps & slots and the static submergence should be as high as practicable for reasonable operation

(B)

Tendency towards stable operation is increased by increasing the skirt clearance of the caps, lowering the rate of liquid flow per unit plate width or increasing the spacing between the caps

(C)

The dimensionless ratio of liquid gradient to pressure drop head caused by the bubble cap assembly should be less than 0.4

(D)

None of these

Answer:(D)

118

A certain pressure vessel manufacturer avoids doing reinforcements calculations for openings by always providing a reinforcing pad extending upto double the diameter of the opening and of the same material and thickness as that of the shell wall. If area compensation is accepted as a code guideline, his approach leads to safe design

(A)

Only if the opening is on spherical vessel

(B)

Only if the opening is on a vertical cylindrical vessel

(C)

Only if the opening is on a horizontal cylindrical vessel

(D)

Irrespective of the shape of the vessel

Answer:(D)

119

_____ heat exchanger is also known as 'hair pin type' exchanger,

(A)

Double pipe

(B)

Finned

(C)

Plate type

(D)

Regenerative

Answer:(A)

120

_____ head is the most economical for cylindrical vessels designed for operating at high pressure

(> 15 atm.).

(A)

Hemispherical

(B)

Dished

(C)

Ellipsoidal

(D)

Conical

Answer:(C)

121

Hazards associated with the relief valve leakage for extremely hazardous material storage can be taken care of by providing

(A)

Rupture diaphragm

(B)

Dikes

(C)

Surge chamber

(D)

None of these

Answer:(A)

122

In a shell and tube heat exchanger, the shortest centre to centre distance between the adjacent tubes is

(A)

Called tube pitch

(B)

Called tube clearance

(C)

Always less than the diameter of the tube

(D)

None of these

Answer:(A)

123

The ratio of the largest load in a test to the original cross-sectional area of the test specimen is called the

_____ stress.

(A)

Yield point

(B)

Breaking

(C)

Ultimate

(D)

None of these

Answer:(C)

124

In which of the following systems does mass transfer occur across the system boundary?

(A)

isolated system

(B)

closed system

(C)

open system

(D)

none of the mentioned

Answer:(C)

125

When more than one fluid stream enters or leaves the control volume, which of the following type of balance is taken?

(A)

mass balance

(B)

energy balance

(C)

mass balance and energy balance

(D)

none of the mentioned

Answer:(C)

126

Fluid flow through which of the following throttles the flow?

(A)

partially opened valve

(B)

orifice

(C)

porous plug

(D)

all of the mentioned

Answer:(D)

127

Rate of energy increase within the control volume is given by

(A)

rate of energy inflow * rate of energy outflow

(B)

rate of energy inflow / rate of energy outflow

(C)

rate of energy inflow - rate of energy outflow

(D)

rate of energy inflow + rate of energy outflow

Answer:(B)

128

Which of the following is true for a discharging tank?

(A)

the process is quasi-static

(B)

the process is adiabatic

(C)

$Dq=0$

(D)

all of the mentioned

Answer:(D)

129

A cylinder/piston contains 1kg methane gas at 100 kPa, 20°C. The gas is compressed reversibly to a pressure of 800 kPa. What is the work required if the process is isothermal?

(A)

-116.0 kJ

(B)

-316.0 kJ

(C)

-216.0 kJ

(D)

-416.0 kJ

Answer:(B)

130

A piston/cylinder contains carbon dioxide at 300 kPa, 100°C with a volume of 0.2 m³. Weights are added at such a rate that the gas compresses according to the relation $PV^{1.2} = \text{constant}$ to a final temperature of 200°C. Find the work done during the process.

(A)

60.4 kJ

(B)

-50.4 kJ

(C)

80.4 kJ

(D)

-80.4 kJ

Answer:(D)

131

Which of the following statements are true for a mechanical energy reservoir(MER)?

(A)

all processes within an MER are quasi-static

(B)

it is a large body enclosed by an adiabatic impermeable wall

(C)

stores work as KE or PE

(D)

all of the mentioned

Answer:(D)

132

Which of the following is true according to Clausius statement?

(A)

it is possible to construct a device that can transfer heat from a cooler body to a hotter body without any effect

(B)

it is impossible to construct a device that can transfer heat from a cooler body to a hotter body without any effect

(C)

it is impossible to construct a device that can transfer heat from a hotter body to a cooler body without any effect

(D)

none of the mentioned

Answer:(B)

133

What is the relationship between Kelvin-Planck's and Clausius' statements?

(A)

violation of one doesn't violate the other

(B)

not connected to each other

(C)

virtually two parallel statements of the second law

(D)

none of the mentioned

Answer:(C)

134

Which of the following causes irreversibility?

(A)

electrical resistance, magnetic hysteresis

(B)

friction, viscosity

(C)

lubrication

(D)

inelasticity

Answer:(D)

135.

Fill in the blanks

Our country is spiritual country, theirs..... religious.

A.

is

B.

are

C.

also

D.

have

Answer:(A)

136.

Fill in the blanks

Our sir teaches Mathematics..... English.

A.

across

B.

besides

C.

beside

D.

both

Answer:(B)

137.

Fill in the blanks

Please, come..... the bathroom.

A.

out of

B.

over

C.

on

D.

in

Answer:(A)

138.

Fill in the blanks

Please, don't laugh ... those beggars.

A.

for

B.

on

C.

at

D.

against

Answer:(C)

139.

Fill in the blanks

Please, stop..... so many mistakes.

A.

to make

B.

make

C.

making

D.

makes

Answer:(C)

140.

Fill in the blanks

She ___ her husband for 15 minutes.

A.

is beating

B.

has been beating

C.

has been beaten

D.

beats

Answer:(B)

141.

Choose the correct synonym of the given word:

Augury

(A)

Altar

(B)

Omen

(C)

Dispute

(D)

Place of refuge

Answer:(B)

142.

Fill in the blanks

The rain comes..... the clouds.

A.

in

B.

near

C.

from

D.

under

Answer:(C)

143.

Fill in the blanks

The ship..... , Robinson arrived on the Island.

A.

had been broken

B.

having been broken

C.

having broken

D.

has broken

Answer:(C)

144.

Fill in the blanks

The stars..... counted.

A.

can

B.

can be

C.

cannot be

D.

must

Answer:(C)

145.

Fill in the blanks

Three Idiots..... really a watchable movie.

A.

are

B.

is

C.

super

D.

do

Answer:(B)

146.

Choose the correct spelling.

A.

Intillect

B.

Intelact

C.

Intelect

D.

Intellect

Answer:(D)

147.

Fill in the blanks

Chirag hardly ever cooks,..... ?

A.

isn't he

B.

he doesn't

C.

doesn't he

D.

does he

Answer:(D)

148.

Fill in the blanks

I don't know the cityhe lives.

A.

what

B.

where

C.

when

D.

which

Answer:(B)

149.

Choose the appropriate option that correctly completes the sentence. He always stammers in public meetings, but his today's speech.....

A.

was fairly audible to everyone.

B.

was not liked by the audience.

C.

was not received by the audience.

D.

was surprisingly fluent.

Answer:(D)

150

Choose the correct synonym of the given word:

Apex

(A)

Banner

(B)

Top

(C)

Category

(D)

Inborn

Answer:(B)

1

If "A" denotes "added to", "B" denotes "divided by", "C" denotes "multiplied by" and "D" denotes "subtracted from", then $87 \text{ B } 3 \text{ C } 4 \text{ A } 4 \text{ D } 50 = ?$

(A)

65

(B)

75

(C)

70

(D)

80

Answer:(C)

2

In a certain code language "feel free to fly" = "4l 4e 2o 3y". "Why the statement" = "3y 3e 9t" then "Media" is coded as _____ .

(A)

5m

(B)

5e

(C)

5a

(D)

4a

Answer:(C)

3

Mohini is taller than Nita but not shorter than Sarita. Sarita and Mahek are of same height. Mohini is shorter than Hemali. Among them, who is the second tallest?

(A)

Mohini

(B)

Nita

(C)

Hemali

(D)

None of all mentioned

Answer:(D)

4

In a certain code language, "CAB" is written as "6" and "LEG" is written as "6". How is "MAP" written in that code language?

(A)

6

(B)

4

(C)

3

(D)

8

Answer:(C)

5

If $11 \# 2 @ 6 = 78$ and $15 \# 4 @ 8 = 152$, then $17 \# 6 @ 7 = ?$

(A)

161

(B)

143

(C)

221

(D)

157

Answer:(A)

6

"A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series. MN, PQ, TU, YZ, ?"

(A)

YZ

(B)

AB

(C)

EF

(D)

EJ

Answer:(C)

7

In the following question, select the odd word pair from the given alternatives.

(A)

Zinc – Metal

(B)

Aluminum – Metal

(C)

Crocodile – Water

(D)

Gold – Metal

Answer:(C)

8

"Select the related number from the given alternatives.

97 : 63 :: 67 : ?"

(A)

38

(B)

56

(C)

42

(D)

45

Answer:(C)

9

Jayesh is facing towards the east. He turns 270 degrees clockwise and then takes a right turn. Finally, he turns 90 degrees anticlockwise. Which direction is he facing now?

(A)

West

(B)

South

(C)

North

(D)

East

Answer:(C)

10

"Which set of letters when sequentially placed at the gaps in the given letter series shall complete it?"

p_rt_rr_p_rt"

(A)

rprr

(B)

rrtp

(C)

prrr

(D)

trrr

Answer:(A)

11

In the following question, select the odd number pair from the given alternatives.

(A)

17 – 12

(B)

29 – 14

(C)

21 – 16

(D)

31 – 26

Answer:(B)

12

"S, R, N, L, M, T, O, & P are eight persons sitting in a circle facing the center. Their different occupations are-reporter, doctor, cricketer, teacher, accountant, shopkeeper, painter & Supervisor, but not necessarily in the same order as given.

M is third to the left of O. Doctor is at the immediate right of M & M is not a reporter. R is fourth to the right of P. None of R & P are the nearest neighbours of M.T is a teacher & sitting third to the right of doctor. A shopkeeper is sitting second to the left of the teacher. Painter is sitting second to the left of M. Cricketer S is sitting exactly between T & P. Accountant is sitting second to the right of a cricketer. N is third to the left of T.

Who form the following is a reporter?"

(A)

O

(B)

L

(C)

N

(D)

R

Answer:(A)

13

"S, R, N, L, M, T, O, & P are eight persons sitting in a circle facing the center. Their different occupations are-reporter, doctor, cricketer, teacher, accountant, shopkeeper, painter & Supervisor, but not necessarily in the same order as given.

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What is the position of S regarding R?"

(A)

Third to the right

(B)

Second to the right

(C)

Third to the left

(D)

Second to the left

Answer:(A)

14

"S, R, N, L, M, T, O, & P are eight persons sitting in a circle facing the center. Their different occupations are-reporter, doctor, cricketer, teacher, accountant, shopkeeper, painter & Supervisor, but not necessarily in the same order as given.

M is third to the left of O. Doctor is at the immediate right of M & M is not a reporter. R is fourth to the right of P. None of R & P are the nearest neighbours of M.T is a teacher & sitting third to the right of doctor. A shopkeeper is sitting second to the left of the teacher. Painter is sitting second to the left of M. Cricketer S is sitting exactly between T & P. Accountant is sitting second to the right of a cricketer. N is third to the left of T.

If we count in the anti-clockwise direction starting from N; then how many persons are sitting between P & N?"

(A)

One

(B)

Two

(C)

Three

(D)

Four

Answer:(D)

"S, R, N, L, M, T, O, & P are eight persons sitting in a circle facing the center. Their different occupations are-reporter, doctor, cricketer, teacher, accountant, shopkeeper, painter & Supervisor, but not necessarily in the same order as given.

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As per the position mentioned above; four of the following pairs are alike & so they form their group.

Which one does not belong to this group?"

(A)

Teacher-Painter

(B)

Supervisor – Shopkeeper

(C)

Cricketer – Reporter

(D)

Shopkeeper – Doctor

Answer:(D)

16

Where is Salar Jung Museum located?

(A)

Patna

(B)

New Delhi

(C)

Hyderabad

(D)

Lucknow

Answer:(C)

17

Who is the UN Secretary-General(since 1st January 2017)?

(A)

Antonio Guterres

(B)

Marathon Mania

(C)

Trump

(D)

Bush

Answer:(A)

18

What is the full form of ESA?

(A)

European Space Agency

(B)

European seculars agency

(C)

East Space Agency

(D)

Earth Space Agency

Answer:(A)

19

How many public institution banks are there in India?

(A)

27

(B)

29

(C)

25

(D)

none

Answer:(A)

20

Does the bank provide?

(A)

Central Services

(B)

Direct Services

(C)

Financial Services

(D)

none

Answer:(C)

21

When was the Reserve Bank of India established?

(A)

1-Apr-1935

(B)

25-Mar-1947

(C)

17-Dec-1937

(D)

none

Answer:(A)

22

Where is the headquarters of the Reserve Bank of India?

(A)

Nagpur

(B)

Delhi

(C)

Mumbai

(D)

Bhopal

Answer:(C)

23

When did the Reserve Bank of India nationalize?

(A)

2-Sep-1950

(B)

19-Mar-1947

(C)

1-Jan-1949

(D)

26-Jan-1950

Answer:(C)

24

What is the bank rate of the Reserve Bank of India?

(A)

6%

(B)

7.75%

(C)

7%

(D)

5%

Answer:(B)

25

When was the Bharatiya Mahila Bank established?

(A)

19-Nov-2013

(B)

15-Aug-2014

(C)

26-Jan-2013

(D)

none

Answer:(A)

26

After how many years Palestine is ready to hold its first national election in the year 2021?

(A)

10 years

(B)

25 years

(C)

20 years

(D)

14 years

Answer:(D)

27

Recently which country successfully test-fired the supersonic cruise missile BrahMos?

(A)

India

(B)

Nepal

(C)

Pakistan

(D)

Bangladesh

Answer:(A)

28

When was the "National Vayoshri Yojana" launched?

(A)

1-Apr-2016

(B)

1-Jul-2016

(C)

1-Jul-2017

(D)

1-Apr-2017

Answer:(D)

29

Where has Nirav Modi, who cheated Punjab National Bank, been arrested?

(A)

London

(B)

Hungary

(C)

Spain

(D)

Portugal

Answer:(A)

30

The United Nations Security Council has imposed new comprehensive international sanctions on which country in March 2016?

(A)

Pakistan

(B)

China

(C)

North Korea

(D)

South Korea

Answer:(C)

31

The International Day for the Eradication of Poverty is observed on which of the following days?

(A)

10-Jan

(B)

12-Mar

(C)

15-Apr

(D)

17-Oct

Answer:(D)

32

Dogri' language is spoken in which Indian territory?

(A)

Puducherry

(B)

Jammu and Kashmir Province

(C)

Nagaland

(D)

Andaman and Nicobar Islands

Answer:(B)

33

Which of the following organizations is a publication of 'World Development Report'?

(A)

International Monetary Fund

(B)

World Trade Organization

(C)

World Bank

(D)

UNCTAD

Answer:(C)

34

Where is the headquarters of the World Bank?

(A)

Washington DC

(B)

Geneva

(C)

The Hague

(D)

Paris

Answer:(A)

35

Recently, where was the 15 thousand square feet Rangoli made?

(A)

Gujarat

(B)

Mumbai

(C)

Bangalore

(D)

Trivandrum

Answer:(B)

36

Study of chemical kinetics is the easiest in the case of _____ reactions.

(A)

Irreversible

(B)

Reversible

(C)

Surface

(D)

Side

Answer:(A)

37

The catalyst in a first order chemical reaction changes the

(A)

Equilibrium constant

(B)

Activation energy

(C)

Heat of formation of the product

(D)

Heat of reaction

Answer:(B)

38

Limiting reactant in a chemical reaction decides the

(A)

Rate constant

(B)

Conversion

(C)

Reaction speed

(D)

Equilibrium constant

Answer:(B)

39

In an exothermic chemical reaction, the reactants compared to the products have

(A)

Higher temperature

(B)

More energy

(C)

Less energy

(D)

Same energy

Answer:(B)

40

An isothermal aqueous phase reversible reaction, $P \rightleftharpoons R$, is to be carried out in a mixed flow reactor. The reaction rate in $\text{k.mole/m}^3\cdot\text{h}$ is given by, $r = 0.5C_P - 0.125C_R$. A stream containing only P enters the

(A)

0.8

(B)

1.33

(C)

1.6

(D)

2.67

Answer:(C)

41

According to the 'law of mass action', the rate of reaction is directly proportional to the

(A)

Equilibrium constant

(B)

Volume of the reaction vessel

(C)

Nature of the reactants

(D)

Molar concentration of the reactants

Answer:(D)

42

For an ideal mixed flow reactor (CSTR), the exit age distribution $E(t)$ is given by

(A)

A dirac delta function

(B)

A step function

(C)

A ramp function

(D)

None of all mentioned

Answer:(D)

43

Mean residence time is equal to the space time, when

(A)

The feed rate is measured at temperature and pressure in the reactor

(B)

The temperature, pressure and the density of reaction mixture remains constant throughout the reactor

(C)

There is no change in number of moles in gaseous reaction

(D)

All of the mentioned

Answer:(D)

44

A space time of 3 hours for a flow reactor means that

(A)

The time required to process one reactor volume of feed (measured at specified conditions) is 3 hours

(B)

Three reactor volumes of feed can be processed every hour

(C)

It takes three hours to dump the entire volume of the reactor with feed

(D)

Conversion is cent per cent after three hours

Answer:(A)

45

Which of the following will give maximum gas conversion?

(A)

Fixed bed reactor

(B)

Fluidized bed reactor

(C)

Semi-fluidized bed reactor

(D)

Plug-flow catalytic reactor

Answer:(C)

46

For the same residence time, which one will give the maximum conversion?

(A)

Single stirred tank ($v = 5$ litres)

(B)

Two stirred tank (each of 2.5 litres) in series

(C)

Stirred tank followed by tubular flow reactor (each of 2.5 litres)

(D)

Single tubular flow reactor ($v = 5$ litres)

Answer:(A)

47

The catalyst used in the manufacture of sulphuric acid by contact process is

(A)

iron

(B)

aluminium oxide

(C)

nickel

(D)

vanadium pentoxide

Answer:(D)

48

Sulphuric acid produced by contact process is

(A)

cheaper

(B)

pure and concentrated

(C)

of poor quality

(D)

very dilute

Answer:(B)

49

When sulphur dioxide is passed through a solution of hydrogen sulphide in water

(A)

A sulphuric acid is formed in solution

(B)

sulphurous acid is formed in solution

(C)

sulphur is precipitated

(D)

no change is observed

Answer:(C)

50

The allotrope of sulphur which is insoluble in carbon disulphide is

(A)

monoclinic sulphur

(B)

rhombic sulphur

(C)

milk of sulphur

(D)

plastic sulphur

Answer:(D)

51

The form of sulphur which is the most stable at ordinary temperature is

(A)

Monoclinic

(B)

plastic

(C)

rhombic

(D)

flowers of sulphur

Answer:(C)

52

Select the correct statement

(A)

Electrolysis cell uses exothermic reactions to produce electrical energy

(B)

In the electrolysis cell the positive current flows from the positive electrode to the negative electrode outside the cell

(C)

Electrolysis cell uses electrical energy to produce endothermic chemical changes

(D)

In the electrolysis cell the positive current flows from the negative electrode to the positive electrode inside the cell

Answer:(C)

53

The degree of ionisation does not depend upon

(A)

nature of solvent

(B)

nature of solute

(C)

temperature

(D)

current strength

Answer:(D)

54

When the same quantity of electricity is passed through different solutions the amounts of different substances produced are proportional to

(A)

their atomic weight

(B)

their molecular weight

(C)

their equivalent weight

(D)

the square of their equivalent weight

Answer:(C)

55

The quantity of electricity required to deposit one gram equivalent of any substance is

(A)

one coulomb

(B)

one faraday

(C)

one ampere

(D)

one microfaraday

Answer:(B)

56

The percentage by volume of argon in the air is about

(A)

2.97%

(B)

0.94%

(C)

0.01%

(D)

0.00%

Answer:(B)

57

Nitrogen gas is used

(A)

as protective atmosphere to prevent oxidation in metal working and food preservation

(B)

for welding

(C)

for cutting of metals

(D)

as refrigerant

Answer:(A)

58

The angle between any two diagonals of a cube is :

(A)

$$\cos \theta = \sqrt{3}/2$$

(B)

$$\cos \theta = 1/\sqrt{2}$$

(C)

$$\cos \theta = 1/3$$

(D)

$$\cos \theta = 1/\sqrt{6}$$

Answer:(D)

59

The point equidistant from the four points $(a,0,0)$, $(0,b,0)$, $(0,0,c)$ and $(0,0,0)$ is :

(A)

(a,b,c)

(B)

$(a/2,b/2,c/2)$

(C)

$(a/3,b/3,c/3)$

(D)

None of these

Answer:(B)

60

The line joining the points $(1,1,2)$ and $(3, -2, 1)$ meets the plane $3x+2y+z = 6$ at the point :

(A)

$(1,1,2)$

(B)

$(3,-2,1)$

(C)

$(2,-3,1)$

(D)

$(3,2,1)$

Answer:(B)

61

Two balls are drawn at random with replacement from a box containing 10 black and 8 red balls. Find the probability that both balls are red ?

(A)

$11/81$

(B)

$16/81$

(C)

$20/81$

(D)

$40/81$

Answer:(B)

62

Two cards are drawn at random and without replacement from a pack of 52 playing cards. Find the probability that both the cards are black ?

(A)

$7/109$

(B)

$6/109$

(C)

$10/102$

(D)

$25/102$

Answer:(D)

63

A die is tossed thrice. Find the probability of getting an odd number at least once ?

(A)

$7/5$

(B)

6/5

(C)

7/8

(D)

2/8

Answer:(C)

64

Laplace transform of the unit impulse function $\delta(t-a)$ is :

(A)

e^{-as}

(B)

eas

(C)

e^{-t}

(D)

None of these

Answer:(A)

65

L [eat] is:

(A)

$1/s+a$

(B)

$1/s$

(C)

$1/s-a$

(D)

None of these

Answer:(C)

66

The Laplace transform of $t^3 \delta(t-4)$ is :

(A)

$4^3 e^{-4s}$

(B)

$3^4 e^{3s}$

(C)

$e^{4s} 3^2$

(D)

None of these

Answer:(A)

67

$L[f'(t)]$ is :

(A)

$s L[f(t)] - f(0)$

(B)

$F(s)$

(C)

$S L[f(t)]$

(D)

None of these

Answer:(A)

68

$L [et]$ is:

(A)

$1/s-\log 2$

(B)

$1/s+\log 2$

(C)

$1/s+2$

(D)

None of these

Answer:(A)

69

What is model testing?

(A)

Overall testing

(B)

Function testing

(C)

Partial testing

(D)

Performance testing

Answer:(D)

70

When is the fluid called laminar?

(A)

Low viscosity

(B)

The density of the fluid is high

(C)

Reynolds number is greater than 2000

(D)

Reynolds number is less than 2000

Answer:(D)

71

Which among the following provides the third principle in fluid mechanics?

(A)

Conservation of Heat

(B)

Conservation of volume

(C)

Conservation of linear momentum

(D)

Conservation of mass

Answer:(C)

72

When a fluid is subjected to resistance, it undergoes a volumetric change due to _____

(A)

Cohesion

(B)

Strain

(C)

Compressibility

(D)

Adhesion

Answer:(C)

73

The compressible flow is assumed to be _____

(A)

Adiabatic only

(B)

Isentropic only

(C)

Isentropic and adiabatic

(D)

Polytropic

Answer:(B)

74

Principle of fluid mechanics works on the utilization of _____

(A)

Velocity

(B)

Accelerating mass

(C)

Volume

(D)

Work

Answer:(D)

75

Open channel flow takes place _____

(A)

In a pump

(B)

Within a cylindrical depth

(C)

On a free surface

(D)

In the pipe

Answer:(C)

76

Which of the following is a type of fluid based on viscosity?

(A)

Real Fluid

(B)

Ideal Fluid

(C)

Newtonian Fluid

(D)

All of the mentioned

Answer:(D)

77

The viscous force the relative motion between the adjacent layers of a fluid in motion. Which of the following flowing fits best in the sentence?

(A)

never affects

(B)

may effect under certain conditions

(C)

facilitates

(D)

opposes

Answer:(D)

78

Pressure intensity or force due to pressure gradient for fluid at rest is considered as which of the following kind of force?

(A)

Body force

(B)

Force due to motion

(C)

Surface force

(D)

None of the mentioned

Answer:(C)

79

Pressure variation for compressible fluid is maximum for which of the following kind of process?

(A)

Adiabatic

(B)

Quasi Static

(C)

Isothermal

(D)

None of the mentioned

Answer:(C)

80

Which of the following principle is used for calculating the centre of pressure?

(A)

Principle of balancing of momentum

(B)

Principle of momentum

(C)

Principle of conservation of energy

(D)

None of the mentioned

Answer:(A)

81

A 25 mm diameter egg roll ($k = 1 \text{ W/m degree}$) is roasted with the help of microwave heating. For good quality roasting, it is desired that temperature at the center of roll is maintained at 100 degree Celsius when the surrounding temperature is 25 degree Celsius. What should be the heating capacity in W/m^3 of the microwave if the heat transfer coefficient on the surface of egg roll is $20 \text{ W/m}^2 \text{ degree}$?

(A)

613.31 k W/m^3

(B)

93.31 k W/m^3

(C)

6713.31 k W/m^3

(D)

213.31 k W/m^3

Answer:(D)

82

The rate of heat transfer for a plane wall of homogenous material with constant thermal conductivity is given by which of the following equation?

(A)

$$Q = 2k/\delta x$$

(B)

$$Q = 2kA\delta x$$

(C)

$$Q = kA (t_1 - t_2) / \delta$$

(D)

$$Q = 2kAx / \delta$$

Answer:(C)

83

The appropriate rate equation for convective heat transfer between a surface and adjacent fluid is prescribed by which law?

(A)

Newton's law of cooling

(B)

Kirchhoff's law

(C)

Newton's first law

(D)

Wein's displacement law

Answer:(A)

84

A wire of radius 3 mm and 1.25 m length is to be maintained at 60 degree Celsius by insulating it by a material of thermal conductivity 0.175 W/m K. The temperature of surrounding is 20 degree Celsius with heat transfer coefficient 8.5 W/ m² K. Find percentage increase in heat loss due to insulation?

(A)

124.23%

(B)

100.00%

(C)

12.55%

(D)

134.46%

Answer:(D)

85

A heating unit is made in the form of a vertical tube of 50 mm outside diameter and 1.2 m height. The tube is fitted with 20 steel fins of rectangular section with height 40 mm and thickness 2.5 mm. The temperature at the base of fin is 75 degree Celsius, the surrounding air temperature is 20 degree Celsius and the heat transfer coefficient between the fin as well as the tube surface and the surrounding air is $9.5 \text{ W/m}^2 \text{ K}$. If thermal conductivity of the fin material is 55 W/m K , find the amount of heat transferred from the tube without fin

(A)

118.44 W

(B)

98.44 W

(C)

8.44 W

(D)

908.44 W

Answer:(B)

86

What is the rate of heat transfer from the fin in case of fin insulated at the tip?

(A)

$(h P k)^{1/2} (t_0 - t_a) \tanh h m l$

(B)

$(h P A)^{1/2} (t_0 - t_a) \tanh h m l$

(C)

$(h P k A)^{1/2} (t_0 - t_a) \tanh h m l$

(D)

$(h k A)^{1/2} (t_0 - t_a) \tanh h m l$

Answer:(C)

87

"Consider the following statements pertaining to heat transfer through fins

- (i) They must be arranged at right angles to the direction of flow of working fluid
- (ii) The temperature along the fin is variable and accordingly heat transfer rate varies along the fin elements
- (iii) Fins are equally effective irrespective whether they are on the hot side or cold side of the fluid
- (iv) Fins are made of materials that have thermal conductivity higher than that of wall

Identify the correct statements"

(A)

i and ii

(B)

iii and iv

(C)

i and iv

(D)

ii and iii

Answer:(A)

88

In which of the following cases provision of fins on a given heat transfer surface will be more effective?

(A)

Fewer but thin fins

(B)

Large number of thin fins

(C)

Large number of thick fins

(D)

Fewer but thick fins

Answer:(B)

89

What are the relevant boundary conditions in case of heat transfer from a bar connected to two heat sources at different temperatures?

(A)

$\alpha = \alpha_1$ at $x = 1$ and $\alpha = \alpha_2$ at $x = 2L$

(B)

$\alpha = \alpha_1$ at $x = 0$ and $\alpha = \alpha_2$ at $x = \text{infinity}$

(C)

$\alpha = \alpha_1$ at $x = 0$ and $\alpha = \alpha_2$ at $x = L$

(D)

$\alpha = \alpha_1$ at $x = \text{infinity}$ and $\alpha = \alpha_2$ at $x = 1$

Answer:(C)

90

Radiation heat transfer is characterized by

(A)

Movement of discrete packets of energy as electromagnetic waves

(B)

Due to bulk fluid motion, there is a transport of energy

(C)

There is the circulation of fluid by buoyancy effects

(D)

Thermal energy transfer as vibrational energy in the lattice structure of the material

Answer:(A)

91

A thin metal plate of 4 cm diameter is suspended in atmospheric air whose temperature is 290 K. This plate attains a temperature of 295 K when one of its faces receives radiant energy from a heat source at the rate of 2 W. If heat transfer coefficient on both surfaces of the plate is stated to be $87.5 \text{ W/m}^2 \text{ K}$, workout the reflectivity of the plate.

(A)

0.15

(B)

0.55

(C)

0.25

(D)

0.45

Answer:(D)

92

Measurement of pressure in ammonia reactor is done by

(A)

Bourdon gauge

(B)

U-tube manometer

(C)

Inclined tube manometer

(D)

Pirani gauge

Answer:(A)

93

With increase in temperature, the electrical conductivity of the platinum used in the resistance thermometer

(A)

Increases

(B)

Decreases

(C)

Remains constant

(D)

Increases exponentially

Answer:(B)

94

Normal mercury thermometer can be used to measure a temperature of about 300°C . However, its maximum temperature measurement range can be increased upto about 500°C by

(A)

Filling nitrogen under pressure in the stem

(B)

Increasing the diameter of the tube

(C)

Using steel tube in place of glass tube

(D)

Accounting for the tube expansion

Answer:(A)

95

An emf of the order of mV is generated when two solutions of different hydrogen ion concentration are separated by a thin glass wall. This is the working principle of a

(A)

PH meter

(B)

Polarimeter

(C)

Chromatograph

(D)

Polarograph

Answer:(A)

96

A negative gain margin expressed in decibels means a/an _____ system.

(A)

Stable

(B)

Unstable

(C)

Critically damped

(D)

None of these

Answer:(B)

97

Strain gage pressure transducers are used to measure _____ pressures.

(A)

Gage as well as vacuum

(B)

Absolute as well as differential

(C)

Gage as well as vacuum & Absolute as well as differential

(D)

None

Answer:(C)

98

Pressure of 0.0001 absolute psi can be measured by _____ gauge.

(A)

Mcloid

(B)

Pirani

(C)

Thermocouple

(D)

None of these

Answer:(A)

99

Pressure of 0.01 psi (absolute) can be measured by _____ gauge.

(A)

Ionization

(B)

Pirani

(C)

Mcloid

(D)

None of these

Answer:(C)

100

Dome temperature of blast furnace stove is most accurately measured by a

(A)

Radiation pyrometer

(B)

Platinum-platinum/rhodium thermocouple

(C)

Iron-constantan thermocouple

(D)

Platinum resistance thermometer

Answer:(B)

101

Humidity of air can be determined by a

(A)

Chromatograph

(B)

Sling psychrometer

(C)

Mass spectrometer

(D)

Polarimeter

Answer:(B)

102

Thermodynamic Celsius scale of temperature measurement is

(A)

Defined on the basis of melting point of ice and evaporation temperature of water vapor

(B)

Defined on the basis of melting point of ice and condensation temperature of water vapor

(C)

Having an interval of 100° between ice point to steam point

(D)

Defined on the basis of melting point of ice and condensation temperature of water vapor & Having an interval of 100° between ice point to steam point

Answer:(D)

103

The overall mass transfer co-efficient for the absorption of SO₂ in air with dilute NaOH solution can be increased substantially by

(A)

Increasing the gas film co-efficient

(B)

Increasing the liquid film co-efficient

(C)

Increasing the total pressure

(D)

Decreasing the total pressure

Answer:(A)

104

The diffusion co-efficient in m²/s. of acetic acid in benzene (liquid in liquid) is

(A)

2.09×10^{-4}

(B)

2.09×10^{-5}

(C)

2.09×10^{-9}

(D)

2.09×10^{-12}

Answer:(A)

105

The relative saturation of a partially saturated mixture of vapour and gas can be increased by _____ of the mixture.

(A)

Reducing the total pressure

(B)

Increasing the total pressure

(C)

Reducing the temperature

(D)

Increasing the total pressure & Reducing the temperature

Answer:(D)

106

Experimental determination of _____ is done by wetted wall column method.

(A)

Diffusion co-efficient

(B)

Mass transfer co-efficient

(C)

NTU

(D)

None of these

Answer:(B)

107

Powdery materials can be guarded against caking tendency on storage by

(A)

Providing irregular grain size

(B)

Providing minimum percentage of voids

(C)

Having maximum possible points of contact

(D)

None of these

Answer:(D)

108

Measurement of the interfacial area of mass transfer is achieved easily & accurately in case of a _____ column.

(A)

Spray

(B)

Packed

(C)

Bubble cap plate

(D)

Wetted wall

Answer:(D)

109

The equilibrium liquid composition compared to the vapor composition in case of azeotropic mixture is

(A)

More

(B)

Less

(C)

Same

(D)

Either more or less; depends on the system

Answer:(C)

110

When the gas to be dissolved in liquid is a/an _____ then normally co-current adsorber are used.

(A)

Mixture of two gases

(B)

Pure gas

(C)

Ideal gas

(D)

Sparingly soluble gas

Answer:(B)

111

Coffee is prepared from coffee beans by leaching with

(A)

Cold water

(B)

Hot water

(C)

Dilute hot caustic solution

(D)

Naphtha

Answer:(B)

112

Flooding in a distillation column is detected by a sharp

(A)

Increase in Murphree plate efficiency

(B)

Decrease in pressure drop

(C)

Decrease in liquid hold up in the column

(D)

Increase in pressure drop

Answer:(D)

113

With increase in the liquid flow rate at a fixed gas velocity in a randomly packed counter current gas-liquid absorption column, the gas pressure drop

(A)

Decreases

(B)

Remains unchanged

(C)

Increases

(D)

Decreases exponentially

Answer:(C)

114

Thickness of the frame of a plate and frame filter as compared to that of plates is

(A)

Less

(B)

Same

(C)

More

(D)

Same or Less

Answer:(C)

115

For couplings and unions would be

(A)

60

(B)

200

350

(D)

Negligible

Answer:(D)

116

In case of a 'thin' pressure vessel, the ratio of its diameter to wall thickness is

(A)

< 10

(B)

> 10

(C)

> 20

(D)

30

Answer:(B)

117

A pressure vessel is said to be made of 'thick' shell, if the ratio of its diameter to wall thickness is

(A)

10

(B)

40

(C)

20

(D)

30

Answer:(A)

118

Liquid redistribution should be done in a packed tower packed with Raschig rings every 6 metres or _____ times the column diameter, whichever is lower.

(A)

2.5-3.0

(B)

5-7.5

(C)

10-12.5

(D)

15-20

Answer:(A)

119

Shortest distance between two tubes is

(A)

Called tube pitch

(B)

Called tube clearance

(C)

More in case of triangular pitch as compared to square pitch of tube layout

(D)

None of these

Answer:(B)

120

A rivetted joint does not fail by _____ of rivets.

(A)

Tearing

(B)

Shearing

(C)

Tearing of the plate across a row

(D)

None of these

Answer:(D)

121

_____ dished head is the strongest of all.

(A)

Hemispherical

(B)

Elliptical

(C)

Tori spherical

(D)

None of these

Answer:(A)

122

Value of Peclet number = ∞ , is the representative of

(A)

Laminar flow

(B)

Complete back mixing

(C)

Plug flow

(D)

Eddy diffusivity = 0

Answer:(C)

123

For identical operating conditions, the pressure drop over _____ tray is the highest out of the following.

(A)

Sieve

(B)

Valve

(C)

Counterflow

(D)

Bubble cap

Answer:(D)

124

Rate of filtrate delivery is inversely proportional to the

(A)

Filtering area & the pressure difference driving force

(B)

Viscosity of filtrate

(C)

Cake & filter medium resistance

(D)

Filtering area & the pressure difference driving force & Viscosity of filtrate

Answer:(D)

125

At 100°C, a sealed rigid vessel with a volume of 1 m³ and 2 kg of water has a volume of 1 m³. The vessel has now been warmed up. What pressure should a safety pressure valve be adjusted to achieve a maximum temperature of 200°C if one is installed?

(A)

431.3 kPa

(B)

231.3 kPa

(C)

831.3 kPa

(D)

131.3 kPa

Answer:(A)

126

When the diver is 8 meters below the surface, the pressure gauge on his air tank reads 60 kPa. The gauge pressure will be 0 at what depth?

(A)

44.118 m

(B)

24.118 m

(C)

34.118 m

(D)

None of the mentioned

Answer:(B)

127

Which of the following is chosen as the standard thermometric substance?

(A)

Liquid

(B)

Solid

(C)

Gas

(D)

None of the mentioned

Answer:(C)

128

What is the magnitude of mechanical work?

(A)

product of the force and distance travelled perpendicular to the force

(B)

product of the force and distance travelled parallel to the force

(C)

sum of the force and distance travelled perpendicular to the force

(D)

sum of the force and distance travelled parallel to the force

Answer:(B)

129

Which of the following gives the Mechanical efficiency of the engine?

(A)

IP/BP

(B)

$1/(BP*IP)$

(C)

(BP*IP)

(D)

BP/IP

Answer:(D)

130

Which of the following type of motion does Shaft uses to do work?

(A)

vertical motion

(B)

horizontal motion

(C)

rotational motion

(D)

none of the mentioned

Answer:(C)

131

A refrigerator with a 2 kW motor for powering the compressor gives 6000 kJ of cooling to the refrigerated space during 30 minutes of operation in a thermally insulated kitchen. Calculate the change in internal energy of the kitchen if the condenser coil behind the refrigerator rejects 8000 kJ of heat to the kitchen over the same time period.

(A)

3600 Kj

(B)

2400 Kj

(C)

4800 Kj

(D)

none of the mentioned

Answer:(A)

132

At 15°C, a steel pot with a 5 mm thick bottom is filled with liquid water (conductivity 50 W/m K). The pot has a 10 cm radius and is now placed on a stove with a heat transmission of 250 W. Calculate the temperature on the bottom of the outer pot assuming the inner surface is 15°C.

(A)

15.8°C

(B)

16.8°C

(C)

18.8°C

(D)

19.8°C

Answer:(A)

133

Heat flow into a system is _____, and heat flow out of the system is _____

(A)

positive, positive

(B)

negative, negative

(C)

negative, positive

(D)

positive, negative

Answer:(D)

134

What does $(m \cdot g \cdot z)$ give?

(A)

macroscopic kinetic energy

(B)

microscopic kinetic energy

(C)

macroscopic potential energy

(D)

microscopic potential energy

Answer:(C)

135

The enthalpy and internal energy are the function of temperature for

(A)

all gases

(B)

steam

(C)

water

(D)

ideal gas

Answer:(D)

136

Fill in the blanks

He and she..... watching a movie now.

A.

do

b.

is

c.

are

D.

were

Answer:(C)

137

Fill in the blanks

He didn't wait even..... minutes but started a lecture.

A.

few

B.

a few

C.

little

D.

a little

Answer:(A)

138

Fill in the blanks

He divided his property..... his two sons.

A.

among

B.

in

C.

between

D.

in

Answer:(C)

139

Fill in the blanks

He is very weak. He..... more.

A.

can walk

B.

can be not walked

c.

cannot walk

D.

can't

Answer:(C)

140

Fill in the blanks

He or she..... watching a movie now.

A.

is

B.

are

C.

does

D.

has

Answer:(A)

141

Fill in the blanks

He reminds us Paul Walker.

A.

about

B.

of

C.

for

D.

with

Answer:(B)

142

Fill in the blanks

How you solve this puzzle?

A.

can solved

B.

can be solved

C.

do solved

D.

can solve

Answer:(D)

143

Fill in the blanks

How many friends she ?

A.

do have

B.

does has

C.

does have

D.

are has

Answer:(C)

144

Fill in the blanks

How many kites in the sky now ?

A.

are fly

B.

flying

C.

are flying

D.

have

Answer:(C)

145

Fill in the blanks

I _____ always capital.

A.

am

B.

is

C.

has

D.

do

Answer:(B)

146

synonym of Tentative

(A)

mocking

(B)

wry

(C)

experimental

(D)

prevalent

Answer:(C)

147

synonym of Tenacity.....

(A)

ingratitude

(B)

decimation

(C)

splendor

(D)

perseverance

Answer:(D)

148

synonym of Replenish....

(A)

reinstall

(B)

refill

(C)

refuse

(D)

polish

Answer:(B)

149.

Antonym of Full

a)

Tranquil

b)

Unimportant

c)

hidden

d)

Empty

Answer:(D)

150

Antonym of Yesteryear

a)

Host

b)

Foundling

c)

Modern

d)

Repercussion

Answer:(C)

1.

AYD, BVF, DRH, ?, KGL

(A)

FMI

(B)

GMJ

(C)

HLK

(D)

GLJ

Answer: (D)

2.

42 40 38 35 33 31 28 ..?

(A)

25 22

(B)

26 23

(C)

26 24

(D)

25 23

Answer: (C)

3.

Pituitary : Brain :: Thymus : ?

(A)

Larynx

(B)

Spinal Cord

(C)

Throat

(D)

Chest

Answer: (D)

4.

"Here are some words translated from an artificial language.

gorblflur means fan belt

pixngorbl means ceiling fan

arthtusl means tile roof

Which word could mean "'ceiling tile'"?"

(A)

gorbltusl

(B)

flurgorbl

(C)

arthflur

(D)

pixnarth

Answer: (D)

5.

A, CD, GHI, ?, UVWXY

(A)

LMNO

(B)

MNO

(C)

MNOP

(D)

NOPQ

Answer: (C)

6.

6 10 14 18 22 26 30 ..?

(A)

36 40

(B)

33 37

(C)

38 42

(D)

34 38

Answer: (D)

7.

Blunt : Sharp :: Sow : ?

(A)

Water

(B)

Crow

(C)

Farm

(D)

Reap

Answer: (D)

8.

"Here are some words translated from an artificial language.

hapllesh means cloudburst

srenchoch means pinball

resbosrench means ninepin

Which word could mean "'cloud nine'"?"

(A)

leshsrench

(B)

ochhapl

(C)

haploch

(D)

haplresbo

Answer: (D)

9.

AK, EO, IS, ?

(A)

MW

(B)

MV

(C)

XW

(D)

NX

Answer: (A)

9.

AK, EO, IS, ?

(A)

MW

(B)

MV

(C)

XW

(D)

NX

Answer: (A)

10.

8 12 9 13 10 14 11,?,?

(A)

14 11

(B)

15 12

(C)

8 15

(D)

15 19

Answer: (B)

11.

Amnesia : Memory : : Paralysis : ?

(A)

Movement

(B)

Limbs

(C)

Handicapped

(D)

Legs

Answer: (A)

12.

"Here are some words translated from an artificial language.

agnoscrenia means poisonous spider

delanocrenia means poisonous snake

agnosdeery means brown spider

Which word could mean "black widow spider"?"

(A)

deeryclostagnos

(B)

agnosdelano

(C)

agnosvitriblunin

(D)

trymuttiagnos

Answer: (C)

13.

MHZ, NIW, OKT, PNQ, ?

(A)

RRN

(B)

QRN

(C)

QRM

(D)

QQN

Answer: (B)

14.

36 31 29 24 22 17 15..?

(A)

13 11

(B)

10 5

(C)

13 8

(D)

10 8

Answer: (D)

15.

Book : Publisher : : Film : ?

(A)

Producer

(B)

Director

(C)

Editor

(D)

Writer

Answer: (A)

16.

World Minority Day is celebrated on which of the following day?

(A)

45278

(B)

44936

(C)

44997

(D)

45132

Answer: (A)

17.

On which date is Good Governance Day celebrated in India?

(A)

44936

(B)

45000

(C)

45028

(D)

45285

Answer: (D)

18.

According to Dr. Ambedkar, which article is the most important article of the Indian Constitution?

(A)

Article - 32

(B)

Article 21

(C)

Article - 24

(D)

Article 256

Answer: (A)

19.

On which lake is the Tul Bul project?

(A)

Kolleru Lake

(B)

Chilka Lake

(C)

Wular Lake

(D)

Bhimtal Lake

Answer: (C)

20.

Where is Saat Tal Lake situated?

(A)

Uttarakhand

(B)

Rajasthan

(C)

Jammu and Kashmir

(D)

Tamil Nadu

Answer: (A)

21.

The country has recently deployed a fleet of underwater drones in the Indian Ocean?

(A)

Russia

(B)

Japan

(C)

China

(D)

Bangladesh

Answer: (C)

22.

The largest artificial freshwater lake in Asia is?

(A)

Himayat Sagar, Hyderabad

(B)

Udaipur, Dhebar Lake

(C)

Kaliveli, Tamil Nadu

(D)

Pulicat, Tamil Nadu

Answer: (B)

23.

The largest natural freshwater lake in India is?

(A)

Cho Lamu Lake

(B)

Lonar Lake

(C)

Dal Lake

(D)

Wular Lake

Answer: (D)

24.

Pulicat is a?

(A)

Khari Lake

(B)

dry lake

(C)

Crater Lake

(D)

Lagoon

Answer: (D)

25.

Where is Kolleru Lake?

(A)

Uttar Pradesh

(B)

Andhra Pradesh

(C)

Madhya Pradesh

(D)

Maharashtra

Answer: (B)

26.

In which city was 102nd Indian Science Congress held in 2015?

(A)

Mumbai

(B)

Kolkata

(C)

Gandhinagar

(D)

New Delhi

Answer: (D)

27.

In which city was 18th SAARC summit held in 2014?

(A)

Islamabad

(B)

Kathmandu

(C)

New Delhi

(D)

Dhaka

Answer: (A)

28.

In which country was 6th BRICS Summit held in 2014?

(A)

Russia

(B)

South Africa

(C)

India

(D)

Brazil

Answer: (C)

29.

In which city was UN Climate Change Summit held in 2014?

(A)

Paris

(B)

Brisbane

(C)

New York

(D)

Sydney

Answer: (A)

30.

In which city was 9th G-20 Summit held in 2014?

(A)

Seoul

(B)

London

(C)

Saint Petersburg

(D)

Brisbane

Answer: (D)

31.

In which city was 25th ASEAN Summit held in 2014?

(A)

Nay Pyi Daw

(B)

Singapore

(C)

Bail

(D)

Kulala Lumpur

Answer: (D)

32.

The 6th IBSA Summit was held in 2013 at _____.

(A)

Brasilia

(B)

New Delhi

(C)

Pretoria

(D)

Cape Town

Answer: (D)

33.

The member countries of IBSA Dialogue Forum are _____.'

(A)

India, Brazil and South Africa

(B)

India, Britain and Spain

(C)

Israel, Brazil and Sweden

(D)

India, Bangladesh and South Africa

Answer: (A)

34.

The member countries of BRICS are _____.

(A)

Britain, Russia, Ireland, Canada and Sweden

(B)

Brazil, Russia, Indonesia, China and South Africa

(C)

Brazil, Russia, India, China and South Africa

(D)

Britain, Russia, India, Canada and Spain

Answer: (C)

35.

Following 2014 Crimean crisis, the G-8 Group became G-7 Group by expelling _____.

(A)

Russia

(B)

Germany

(C)

France

(D)

Canada

Answer: (B)

36

The conversion of a reactant, undergoing a first order reaction, at a time equal to three times the half life of the reaction is

(A)

0.875

(B)

0.5

(C)

0.425

(D)

Data insufficient to calculate

Answer: (A)

37.

A typical example of an exothermic reversible reaction conducted at high pressure in industry is

(A)

Dehydration of ethanol

(B)

Methanol synthesis

(C)

Reformation of methane

(D)

Polymerisation of ethylene

Answer: (A)

38.

Recycling back of outlet stream to the reactor from an ideal CSTR carrying out a first order liquid phase reaction will result in _____ in conversion.

(A)

Decrease

(B)

Increase

(C)

No change

(D)

Either decrease or increase depends on the type of reaction

Answer: (C)

39.

Threshold energy in a reaction is equal to the

(A)

Activation energy

(B)

Normal energy of reactants

(C)

Both Activation energy & Normal energy of reactants

(D)

None

Answer: (C)

40.

In case of calcination of limestone, $\text{CaCO}_3 \rightleftharpoons \text{CaO} + \text{CO}_2$, the addition of more of CaO will result in _____ in the concentration of CO_2 .

(A)

No change

(B)

Increase

(C)

Decrease

(D)

Unpredictable from the data

Answer: (A)

41.

The equilibrium constant of chemical reaction _____ in the presence of catalyst.

(A)

Increases

(B)

Decreases

(C)

Remains unaffected

(D)

Can either increase or decrease (depends on the type of catalyst)

Answer: (C)

42.

From among the following, choose one which is not an exothermic process.

(A)

Methanol synthesis

(B)

Catalytic cracking

(C)

Ammonia synthesis

(D)

Oxidation of sulphur

Answer: (B)

43.

If a solid-gas non-catalytic reaction occurs at very high temperature, the rate controlling step is the _____ diffusion.

(A)

Film

(B)

Ash layer

(C)

Pore

(D)

None of these

Answer: (A)

44.

The rate constant of a chemical reaction increases by 100 times when the temperature is increased from 400 °K to 500 °K. Assuming transition state theory is valid, the value of E/R is

(A)

8987°K

(B)

9210°K

(C)

8764°K

(D)

8621°K

Answer: (B)

45.

The catalytic activity of enzymes is due to their capacity to lower the _____ energy.

(A)

Activation

(B)

Potential

(C)

Kinetic

(D)

None of these

Answer: (A)

46.

For a fluidised bed reactor, the most suitable/relevant model is a _____ model.

(A)

Tank in series

(B)

Bubbling bed

(C)

Plug flow

(D)

None of these

Answer: (B)

47.

High purity oxygen is used for

(A)

welding

(B)

cutting of metals

(C)

medicinal purposes

(D)

all of these

Answer: (D)

48.

The liquefaction of gases in general is favoured at

(A)

low temperature and low pressure

(B)

low temperature and high pressure

(C)

high temperature and high pressure

(D)

high temperature and low pressure

Answer: (B)

49.

The raw materials for the manufacture of calcium carbide are

(A)

limestone and coke

(B)

limestone and slaked lime

(C)

limestone and sand

(D)

limestone and caustic soda

Answer: (A)

50.

Acetylene is manufactured by

(A)

reacting calcium carbide with liquid water

(B)

Sachsse process

(C)

Wulff process

(D)

all of these

Answer: (D)

51.

The producer gas is mainly used in

(A)

petroleum refinery

(B)

fertilizer industry

(C)

steel industry

(D)

pharmaceutical industry

Answer: (C)

52.

Producer gas is obtained by

(A)

thermal cracking of naphtha

(B)

passing steam and air through red hot coke

(C)

passing air through red hot coke

(D)

passing steam through red hot coke

Answer: (C)

53

Which one of the following reactions is not an exothermic

(A)

Absorption of sulphur trioxide by 98.5% sulphuric acid

(B)

Oxidation of sulphur trioxide

(C)

Oxidation of sulphur to sulphur dioxide

(D)

Thermal dissociation of iron pyrites

Answer: (D)

54.

Grignard reagent is

(A)

ethyl magnesium chloride

(B)

ethyl chloride

(C)

sodium sulphate

(D)

sodium carbonate

Answer: (A)

55.

Potassium carbonate is not prepared by the Solvy process because

(A)

potassium bicarbonate is unstable

(B)

potassium bicarbonate is soluble in water

(C)

potassium bicarbonate is soluble in ammonium chloride and potassium chloride solutions

(D)

potassium bicarbonate does not decompose on heating

Answer: (C)

56.

Soda ash is also called

(A)

sodium carbonate

(B)

sodium hydroxide

(C)

sodium bicarbonate

(D)

sodium oxide

Answer: (A)

57.

During the electrolysis of sodium chloride the anodic reaction is

(A)

oxidation of sodium ions

(B)

reduction of sodium ions

(C)

oxidation of chloride ions

(D)

reduction of chloride ions

Answer: (C)

58.

The Fourier transform of product of two time functions $[f_1(t)f_2(t)]$ is given by :

(A)

$$[f_1(\omega) + f_2(\omega)]$$

(B)

$$[f_1(\omega) / f_2(\omega)]$$

(C)

$$[f_1(\omega) * f_2(\omega)]$$

(D)

$$[f_1(\omega) \times f_2(\omega)]$$

Answer: (C)

59.

The magnitude spectrum of a Fourier transform of a real-valued time signal has _____ symmetry.

(A)

no

(B)

odd

(C)

even

(D)

conjugate

Answer: (C)

60.

The trigonometric Fourier series of a periodic time function can have only _____ terms.

(A)

sine

(B)

cosine

(C)

sine and cosine

(D)

dc and cosine

Answer: (D)

61.

In Fourier series expansion, A_n will zero for _____ function and will be zero for _____ function.

(A)

odd, odd

(B)

odd, even

(C)

even, odd

(D)

even, even

Answer: (B)

62.

The inverse Fourier transform of product of two time functions $[f_1(\omega)f_2(\omega)]$ is given by :

(A)

$[f_1(t) + f_2(t)]$

(B)

$[f_1(t) * f_2(t)]$

(C)

$[f_1(t) / f_2(t)]$

(D)

$[f_1(t) \times f_2(t)]$

Answer: (B)

63.

In equation $3x - y \geq 3$ and $4x - 4y > 4$

(A)

Have solution for positive x and y

(B)

Have no solution for positive x and y

(C)

Have solution for all x

(D)

Have solution for all y

Answer: (A)

64.

In a LPP, the objective function is always

(A)

Linear

(B)

Quadratic

(C)

Cubic

(D)

Biquadratic

Answer: (A)

65.

The objective function of a linear programming problem is:

(A)

a constraint

(B)

function to be optimised

(C)

A relation between the variables

(D)

None of these

Answer: (B)

66.

The linear inequalities or equations or restrictions on the variables of a linear programming problem are called:

(A)

a constraint

(B)

Decision variables

(C)

Objective function

(D)

None of these

Answer: (A)

67.

Which of the following is a type of Linear programming problem?

(A)

Manufacturing problem

(B)

Diet problem

(C)

Transportation problems

(D)

All of these

Answer: (D)

68.

Feasible region in the set of points which satisfy

(A)

The objective functions

(B)

Some the given constraints

(C)

All of the given constraints

(D)

None of these

Answer: (C)

69.

Which of the following cannot be the value of absolute pressure of a fluid at any point?

(A)

0

(B)

1.45 bar

(C)

- 1 bar

(D)

24 bar

Answer: (C)

70.

When the body is completely or partially immersed in a fluid, how much its weight be distributed for it to be in stable equilibrium.

(A)

Is independent of weight distribution

(B)

Around the lower part

(C)

round the upper part

(D)

None of the mentioned

Answer: (B)

71.

Which of the following equation must be perfunctorily satisfied while dealing with fluid flow problems?

(A)

Newton's third law

(B)

Law of conservation of momentum

(C)

Continuity equation

(D)

Newton's second law

Answer: (C)

72.

Which among the following is an assumption of Hagen-Poiseuille equation?

(A)

Fluid is uniform

(B)

Fluid is laminar

(C)

Fluid is turbulent

(D)

Fluid is compressible

Answer: (B)

73.

Which of the following is a formula for the friction factor of circular pipes?

(A)

$Re/64$

(B)

$16/Re$

(C)

$64/Re$

(D)

$Re/16$

Answer: (C)

74.

Which among the following is not global parameters of fluid?

(A)

Mass flow rate

(B)

Density

(C)

Viscosity

(D)

External diameter

Answer: (D)

75.

Which of the following is the mathematical technique used to predict physical parameters?

(A)

Dimensional analysis

(B)

Temperature analysis

(C)

Pressure analysis

(D)

Combustion analysis

Answer: (A)

76.

Which among the following have the same forces acting on them?

(A)

Dynamic similarity

(B)

Geometric similarity

(C)

Conditional similarity

(D)

Kinematic similarity

Answer: (A)

77.

Absorption with chemical reaction' is involved in the removal of

(A)

Carbon dioxide from gaseous stream using alkaline solution

(B)

Benzol from coke oven gas using solar oil/wash oil

(C)

Ammonia from coke oven gas using refrigerated water

(D)

Tar from coke oven gas in primary gas coolers using chilled water

Answer: (A)

78.

"Direction: It consists of two statements, one labelled as 'Statement (I)' and the others as 'Statement (II)'. You are to examine these two statements carefully and select the answer using the codes given below:

Statement (I): The concept of Just-In-Time is operationalized when the exact number of units required are bought at each successive stage of production, at the appropriate time.

Statement (II): Just-In-Time concept has been expanded to mean a manufacturing philosophy of eliminating waste."

(A)

Both Statement (I) and Statement (II) individually true and Statement (II) is the correct explanation of Statement (I)

(B)

Both statement (I) and Statement (II) are individually true, but Statement (II) is not the correct explanation of Statement (I)

(C)

Statement (I) is true, but Statement (II) is false

(D)

Statement (I) is false, but Statement (II) is true

Answer: (B)

79.

The ratio of the largest load in a test to the original cross-sectional area of the test specimen is called the _____ stress.

(A)

Yield point

(B)

Breaking

(C)

Ultimate

(D)

None of these

Answer: (C)

80.

A sand mixture was screened through a standard 20-mesh screen. The mass fraction of oversize material in feed, overflow and underflow were found to be 0.50, 0.70 and 0.20 respectively. The screen effectiveness based on the undersize is _____.

(A)

0.64

(B)

0.56

(C)

0.46

(D)

None of the mentioned

Answer: (A)

81.

What is heat transfer?

(A)

Flow of thermal energy from low-temperature reservoir to high-temperature reservoir

(B)

Flow of energy in the form of heat from high-temperature reservoir to low-temperature reservoir

(C)

Flow of thermal energy irrespective of reservoir temperature

(D)

None of these

Answer: (B)

82.

Which of the following is a method of heat transfer?

(A)

Convection

(B)

Radiation

(C)

Conduction

(D)

All of the mentioned

Answer: (D)

83.

Heat transfer takes place according to which of the following law?

(A)

Newton's second law of motion

(B)

First law of thermodynamics

(C)

Newton's law of cooling

(D)

Second law of thermodynamics

Answer: (D)

84.

Which of the following is the rate of heat transfer unit?

(A)

Watt

(B)

Pascal

(C)

Joule

(D)

Newton

Answer: (A)

85.

Which of the following is an example of steady-state heat transfer?

(A)

Electric bulb cools down by the surrounding atmosphere

(B)

Chilling effect of cold wind on a warm body

(C)

Boilers and turbines

(D)

Cooling of I.C engine

Answer: (A)

86.

Which way is heat transfer believed to take place in a long, hollow cylinder that is kept at consistent but varied temperatures on its inner and outer surfaces?

(A)

Unpredictable

(B)

Radial only

(C)

No heat transfer takes place

(D)

Axial only

Answer: (B)

87.

Which of the following is correct regarding one dimensional heat transfer?

(A)

Steady – $f(x, y, t)$, Unsteady – $f(x)$

(B)

Steady – $f(y, z)$, Unsteady – $f(y)$

(C)

Steady – $f(x, t)$, Unsteady – $f(x)$

(D)

Steady – $f(x)$, Unsteady – $f(x, t)$

Answer: (D)

88.

A person prefers to sit by a fire during the cold winter months. Which of the following heat transfer types gives him with the most heat?

(A)

Convection and radiation together

(B)

Radiation will provide quick warmth

(C)

If it is near the fire, convection sounds good

(D)

Conduction from the fire

Answer: (B)

89.

On which of the following does convective heat transfer coefficient doesn't depend?

(A)

Orientation of solid surface

(B)

Time

(C)

Surface area

(D)

Space

Answer: (C)

90.

In liquids and gases, heat transmission is primarily caused by

(A)

Convection

(B)

Radiation

(C)

Conduction

(D)

Conduction as well as convection

Answer: (A)

91.

For conduction heat transfer, the heat energy propagation will be minimal for _____

(A)

Copper

(B)

Air

(C)

Water

(D)

Lead

Answer: (B)

92.

Instrumentation in a plant offers the advantage of

(A)

Greater safety of operation

(B)

Better quality of product

(C)

Greater operation economy

(D)

All of these

Answer: (D)

93.

Select the correct statement from the following.

(A)

The frequency response of a pure capacity process is unbounded

(B)

The phase lag of a pure time delay system decreases with increasing frequency

(C)

The amplitude ratio of a pure capacity process is inversely proportional to frequency

(D)

The amplitude ratio of a pure time delay system increases with frequency

Answer: (C)

94.

Which of the following instruments is not used for measuring sub-zero ($<0^{\circ}$) temperatures?

(A)

Platinum resistance thermometer

(B)

Mercury in glass thermometer

(C)

Vapor pressure thermometer

(D)

Radiation pyrometer

Answer: (D)

95.

A non-linear chemical system is exemplified by a/an

(A)

Isothermal CSTR

(B)

Mixer

(C)

Non-isothermal CSTR

(D)

None of these

Answer: (C)

96.

Thermal well made of _____ gives the fastest speed of response, while measuring temperature by thermocouples.

(A)

Steel

(B)

Vycor (a glass)

(C)

Nichrome

(D)

Inconel

Answer: (B)

97.

Silver point temperature is _____ °C.

(A)

760.5

(B)

860.5

(C)

960.5

(D)

1060.5

Answer: (C)

98.

Which of the following controllers has the least maximum deviation?

(A)

P-controller

(B)

P-I controller

(C)

P-I-D controller

(D)

P-D controller

Answer: (D)

99.

_____ controller has the maximum stabilising time.

(A)

P

(B)

PD

(C)

PI

(D)

PID

Answer: (C)

100.

A control system is unstable, if the open loop frequency response exhibits an amplitude ratio exceeding unity at the crossover frequency. This is _____ criterion.

(A)

Bode stability

(B)

Nyquist

(C)

Routh stability

(D)

None of these

Answer: (A)

101.

Bode diagram are generated from output response of the system subjected to which of the following input?

(A)

Impulse

(B)

Step

(C)

Ramp

(D)

Sinusoidal

Answer: (D)

102.

Working principle of mercury in glass thermometer is based on the _____ of mercury with increase in temperature.

(A)

Increase of pressure

(B)

Increase of thermal conductivity

(C)

Volumetric expansion

(D)

Differential linear expansion

Answer: (C)

103.

Which of the following is directly concerned with psychrometry?

(A)

Lewis relationship

(B)

Galileo number

(C)

Weber number

(D)

Dean number

Answer: (A)

104.

The 'shanks system' of leaching (i.e., counter-current multiple contact leaching) is used for

(A)

Recovery of tannis from the tree barks and woods

(B)

Leaching sodium nitrate from Chilean nitrate bearing rock

(C)

Both Recovery of tannis from the tree barks and woods & Leaching sodium nitrate from Chilean nitrate bearing rock

(D)

None of these

Answer: (C)

105.

Which is not concerned directly with mass transfer?

(A)

Schmidt number

(B)

Sherwood number

(C)

Lewis relationship

(D)

Froude number

Answer: (D)

106.

Calculation of mass transfer co-efficient is mostly/normally done using _____ theory.

(A)

Surface renewal

(B)

Film

(C)

Penetration

(D)

None of these

Answer: (B)

107.

Component A is diffusing in a medium B. The flux N_A relative to a stationary point is equal to the flux due to molecular diffusion, if

(A)

Mass transfer is accompanied by reaction

(B)

Diffusion of A is in stagnant medium B

(C)

Molecular mean free path is high

(D)

There is equimolar counter diffusion

Answer: (D)

108.

One mole feed of a binary mixture of a given composition is flash vaporised at a fixed P and T. If Raoult's law is obeyed, then changing the feed composition would effect

(A)

The product composition but not the fraction vaporised

(B)

The product composition as well as the fraction vaporised

(C)

The fraction vaporised but not the product composition

(D)

Neither the product composition nor the fraction vaporised

Answer: (C)

109.

The recovery of pencillin from the acidified fermentation broth is done by

(A)

Distillation

(B)

Evaporation

(C)

Absorption

(D)

Liquid extraction

Answer: (D)

110.

Absorption factor, for a fixed degree of absorption from a fixed amount of gas should be

(A)

1

(B)

> 1

(C)

< 1

(D)

≤ 1

Answer: (B)

111.

Polar organic compounds are normally used as separating agents for the azeotropic and extractive distillation. Which of the following is the most important factor to be considered for the choice of the separating agent for extractive distillation?

(A)

Cost

(B)

Availability

(C)

Toxicity

(D)

Selectivity

Answer: (D)

112.

Ponchan-Savarit method analyses the fractional equipment based on

(A)

Enthalpy balance only

(B)

Material balance only

(C)

Both enthalpy and material balances

(D)

The assumption of constant molaloverflow

Answer: (C)

113.

The solvent used in liquid extraction should not have high latent heat of vaporisation, because

(A)

The pressure drop and hence the pumping cost will be very high

(B)

It cannot be recovered by distillation

(C)

Its recovery cost by distillation may be prohibitatively high

(D)

It will decompose while recovering by distillation

Answer: (C)

114.

Overall tray efficiency of a distillation column is the ratio of the number of

(A)

Overall gas transfer units to the number of ideal trays required

(B)

Ideal trays required to the number of real trays required

(C)

Real trays required to the number of ideal trays required

(D)

None of these

Answer: (B)

115.

Wind load consideration in the design of a support can be neglected, when the vessel is

(A)

Tall (say 30 metres), but is full of liquid

(B)

Tall but empty

(C)

Short (< 2 m) and housed indoor

(D)

None of these

Answer: (C)

116.

Vertical condenser is advantageous to the horizontal condenser from operation point of view, when

(A)

Hydrostatic head is required for refluxing the condensate

(B)

Only the function of condensation is to be carried out

(C)

Sub cooling of condensate is desired

(D)

Both the functions of condensation & sub cooling are carried out in a single unit

Answer: (D)

117.

In a distillation column, bubble caps are located on trays with a pitch of _____ times the outside diameter of the caps.

(A)

1.3 to 2

(B)

1.6 to 2

(C)

2.5

(D)

1.5 to 3

Answer: (A)

118.

Minimum tube pitch recommended for shell and tube heat exchangers is about _____ times the outside diameter of the tube.

(A)

1.25

(B)

1.75

(C)

2.5

(D)

3.5

Answer: (A)

119.

Brass valves are usually made for pipe sizes _____ inches.

(A)

≤ 1

(B)

≤ 2

(C)

> 2.5

(D)

> 3.5

Answer: (B)

120.

An increase in the liquid resistance to interphase mass transfer and a resultant reduction in plate efficiency is caused by

(A)

An increase in liquid viscosity

(B)

An increase in relative volatility for rectification columns

(C)

Decrease in gas solubility for absorbers

(D)

All of these

Answer: (D)

121.

Welded joint efficiency in the design of chemical process equipment is taken as

(A)

0.55

(B)

0.75

(C)

0.85

(D)

0.95

Answer: (C)

122.

Apex angle of conical heads used in the bottom heads of chemical process equipments is usually

(A)

30°

(B)

45°

(C)

60°

(D)

75°

Answer: (C)

123.

The minimum shell thickness for tank ≤ 15 metres diameter is limited to _____ mm, for reasons of elastic stability.

(A)

2

(B)

5

(C)

10

(D)

15

Answer: (B)

124.

The retention time of material in a rotary dryer depends upon its

(A)

Rpm

(B)

Slope & length

(C)

Flights arrangement

(D)

All of these

Answer: (D)

125.

What is thermodynamics?

(A)

study of the relationship between heat and other forms of energy

(B)

study of the conversion of chemical energy to other forms of energy

(C)

study of the relationship between mechanical energy to other forms of energy

(D)

study of the conversion of mechanical energy to other forms of energy

Answer: (A)

126.

Which of the following is a branch of thermodynamics?

(A)

Equilibrium thermodynamics

(B)

Classical thermodynamics

(C)

Chemical thermodynamics

(D)

All of the mentioned

Answer: (D)

127.

Which of the following is a thermodynamics law?

(A)

Zeroth law of thermodynamics

(B)

Faraday's Law of thermodynamics

(C)

Ideal Gas Law of thermodynamics

(D)

Boyle's Law of thermodynamics

Answer: (C)

128.

Heat does not spontaneously flow from a colder body to a hotter one. Which of the following thermodynamics law states this?

(A)

Zeroth law of thermodynamics

(B)

First law of thermodynamics

(C)

Second law of thermodynamics

(D)

Third law of thermodynamics

Answer: (C)

129.

Which of the following is an application of thermodynamics?

(A)

Refrigerators

(B)

Gas compressors

(C)

Power plants

(D)

All of the mentioned

Answer: (C)

130.

Which of the following is a type of thermodynamic system

(A)

Open system

(B)

Closed system

(C)

Thermally isolated system

(D)

All of the mentioned

Answer: (D)

131.

Which of the following occurs without a change in the internal energy?

(A)

Isochoric process

(B)

Isenthalpic process

(C)

Steady-state process

(D)

None

Answer: (C)

132.

Which of the following thermodynamic law gives the concept of enthalpy?

(A)

First law of thermodynamics

(B)

Second law of thermodynamics

(C)

Third law of thermodynamics

(D)

Fourth law of thermodynamics

Answer: (C)

133.

What is the value of the absolute thermodynamic temperature scale?

(A)

3K

(B)

0K

(C)

1K

(D)

4K

Answer: (B)

134.

Which of the following follows the Carnot theorem?

(A)

Heat engines

(B)

Gas turbine engines

(C)

Gas compressors

(D)

All of the mentioned

Answer: (D)

135.

If a piston/cylinder with a cross-sectional size of 0.01 m^2 is resting on the stops, what should the water pressure be to lift the piston with an outside pressure of 100 kPa ?

(A)

218kPa

(B)

168kPa

(C)

198kPa

(D)

318kPa

Answer: (C)

136.

----- elephant is a vegetarian

(A)

a

(B)

an

(C)

the

(D)

no article

Answer: (C)

137.

Identify the Sentences:

Don't tease him or he will attack you.

(A)

simple

(B)

negative

(C)

complex

(D)

compound

Answer: (D)

138.

Find Sentence Pattern:

The doctor advised him complete rest

(A)

SVOC

(B)

SVCC

(C)

SVOA

(D)

SVOO

Answer: (D)

139.

New York is ----- large city

(A)

a

(B)

an

(C)

the

(D)

no article

Answer: (A)

140.

Identify the Sentences:

He was carrying a heavy load.

(A)

simple

(B)

negative

(C)

compound

(D)

complex

Answer: (A)

141.

Find Prepositions:

She is good ----- English.

(A)

in

(B)

about

(C)

at

(D)

for

Answer: (C)

142.

Find out the Tense:

I studied French at the college.

(A)

simple past

(B)

past perfect

(C)

present continuous

(D)

present perfect

Answer: (A)

143.

Fill in the blanks with Gerund :

The boys were punished for ----- late.

(A)

came

(B)

to come

(C)

to coming

(D)

coming

Answer: (D)

144.

Select the odd one out

(A)

Kitchenware

(B)

Chair

(C)

Sofa

(D)

Table

Answer: (A)

145.

Are you attending ----- reception today

(A).

a

(B)

an

(C)

the

(D)

no article

Answer: (C)

146.

Identify the Errors:

Are / you involved / in this project? / are you?

(A)

are

(B)

you involved

(C)

in this project

(D)

are you

Answer: (D)

147.

Select the odd one out

(A)

Radium

(B)

Radio

(C)

Granite

(D)

Dynamite

Answer: (B)

148.

Identify the Sentence:

Can you help me with a thousand rupees?

(A)

interrogative

(B)

negative

(C)

complex

(D)

compound

Answer: (A)

149.

find out the Homophones:

----- is a heavy metal.

(A)

led

(B)

lid

(C)

lead

(D)

none of these

Answer: (C)

150.

find out the Homophones:

----- him very well.

(A)

no

(B)

now

(C)

know

(D)

none

Answer: (C)