SSC JE
General Intelligence and Reasoning

Instructions

In the following questions, select the related word/ letters /number from the given alternatives.

Question 1

5 : 26 :: 8 : ?

A 67

B 64

C 65

D 66

Answer: C

Explanation:
$5^2 + 1 = 25 + 1 = 26$

$8^2 + \ 1 = 64 + 1 = 65$

? = 65

Question 2

Pyorrhea : Teeth :: Eczema : ?

A Skin

B Heart

C Lungs

D Eye

Answer: A

Explanation:
Pyorrhea is a foul-smelling disorder of teeth similarly Eczema is a skin disease

Question 3

$N \times O : 14 \times 15 :: G \times S :?$

A 5×17

B 15×16

C 6×18

D 7×19

Answer: D

Explanation:
$G \times S = 7 \times 19$

$\because$ G 7 and S 19

Question 4

Writer : Book :: ?

A Composer : Song

B Building : Architect

C Poem : Poet

D Chair : Carpenter

Answer: A

Explanation:
Writer is related to book similarly,

Composer is related to song.

Question 5

BMCX : CNDY :: ? : EXFW

A DWEV

B DUGT

C FGUT

D DTGU

Answer: A

Explanation:
n the BMCX : CNDY

B + 1 $\rightarrow$ C

M + 1 $\rightarrow$ N
C + 1 $\rightarrow$ D
X + 1 $\rightarrow$ Y

Similarly,

E - 1 $\rightarrow$ D
X - 1 $\rightarrow$ W
F - 1 $\rightarrow$ E
W - 1 $\rightarrow$ V

So, ? DWEV

$\therefore$ Option A is the correct answer.

Question 6

24 : 288 :: 22 : ?

A 248

B 238

C 240

D 242

Answer: D

Explanation:
$(24)^2/2 = 576/2 = 288$

$$(22)^2/2 484/2 242

Option D is the correct option.

Question 7

Car : Garage :: Aircraft : ?

A Airdrome

B Shelter

C Hangar

D Jetty

Answer: C

Explanation:
Car is parked in garage similarly,

Aircraft is parked in hanger.

Question 8

$$\begin{matrix} 3 & 12 & & 4 \\ 8 & : & 32 & :: & 5 & :? \end{matrix}$$

A $\begin{matrix} 16 \\ 20 \end{matrix}$

B $\begin{matrix} 4 \\ 6 \end{matrix}$

C $\begin{matrix} 5 \\ 6 \end{matrix}$

D $\begin{matrix} 10 \\ 23 \end{matrix}$

Answer: A

Explanation:

$$\begin{matrix} 3\times4 & & 12 \\ 8\times4 & = & 32 \end{matrix}$$

similarly,

$$\begin{matrix} 4\times4 & & 16 \\ 5\times4 & = & 20 \end{matrix}$$

nstructions
For the following questions answer them individually

Question 9

Which one of the following is always associated with JUSTICE ?

A Autocracy

B Hypocracy

C Democracy

D Legitimacy

Answer: D

Explanation:
Legitimacy is always associated with JUSTICE.

nstructions

n the following questions find the odd number/letters/ figure/ numberpair from the given alternatives.

Question 10

A 21 - 27

B 9 - 27

C 9 - 12

D 15 - 19

Answer: D

Explanation:
Except '15 - 19' remaining all pair divisible by 3.

The correct answer is option D.

Question 11

A 38 - 76

B 28 - 84

C 34 - 76

D 23 - 64

Answer: D

Explanation:
n the pair 23 - 64 , one number odd and another even.

The correct answer is option D.

Question 12

A 5 - 7

B 3 - 8

C 6 - 8

D 4 - 5

Answer: C

Explanation:
Only 6 and 8 is divisible by 2.

The correct answer is option C.

Question 13

A Sphere

B Triangle

C Circle

D Oval

Answer: B

Explanation:
Except **triangle** remaining all are circular shape with no angles.

Question 14

A Rosemary

B Mint

C Peepal

D Coriander

Answer: C

Explanation:
Rosemary, mint and coriander all are plant while peepal is a tree.

Question 15

A ZXUR

B ZXWU

C YWVT

D WUTR

Answer: A

Explanation:
In ZXUR,

Z - 2 → X - 2 → U - 4 → R

In ZXWU,

Z - 2 → X - 1 → W- 2 → U

In YWVT,

Y - 2 → W - 1 → V - 2 → T

In WUTR,

W - 2 → U - 1 → T - 2 → R

Odd term ZXUR

Question 16

A Gold

B Iron

C Brass

D Copper

Answer: C

Explanation:
All except Brass, all are metals, while Brass is alloy.

Question 17

A Thrive

B Excite

C Flourish

D Prosper

Answer: B

Explanation:
Flourish, prosper, and thrive are all synonyms; excite does not mean the same thing

Question 18

A Krishna

B Vaigai

C Kaveri

D Narmada

Answer: D

Explanation:
All except Narmada are rivers which flow into Bay of Bengal, while Narmada flows into the Arabian Sea.

∴ Option D is correct answer.

Instructions
For the following questions answer them individually

Question 19

Which one of the given response would be a meaningful order of the following ?
(1) Tissue
(2) Cell
(3) Organ

A (2), (3), (1)

B (1), (2), (3)

C (3), (1), (2)

D (2), (1), (3)

Answer: D

Explanation:
Meaningful order - Cell, Tissue, Organ

∴ Option D is the correct option

Question 20

Which item will appear third in the dictionary ?

A pair

B pain

C page

D pall

Answer: A

Explanation:
Oder according to the dictionary,

page, pain, pair, pall

'pair' will appear third in the dictionary.

nstructions

n the following questions a series is given, with one term missing. Choose the correct alternative from the given ones that will completethe series.

Question 21

1, 2, 8, ?, 148, 765

A 74

B 32

C 40

D 33

Answer: D

Explanation:
he series follows pattern as,

$1 \times 1 + 1^2$ 2

$2 \times 2 + 2^2$ 4 + 4 8

8 $\times 3 + 3^2$ **= 24 + 9 = 33**

$33 \times 4 + 4^2$ 132 + 16 148

$148 \times 5 + 51^2$ 740 + 25 765

Missing term 33

Question 22

BC, FGH, KLMN, ?, XYZABC

A QRSTU

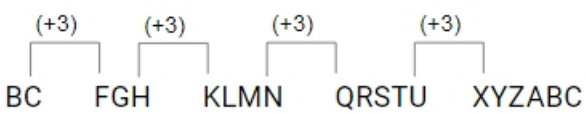
B RSTUV

C PQRST

D QRST

Answer: A

Explanation:



Missing term QRSTU

Question 23

DE, ?, JL, MO

A LN

B CE

C GI

D AC

Answer: C

Explanation:
The series follows pattern as,

(D + 3 = G), (E + 3 = I)

(G + 3 J), (I + 3 L)

(J + 3 M), (L + 3 O)

The missing term JL

Question 24

7, 12, 19, 28, 39, ?

A 51

B 49

C 57

D 52

Answer: D

Explanation:
The series follows pattern as,

7 + 5 12

12 + 7 19

19 + 9 28

28 + 11 39

39 + 13 = 52

Missing term 52

Question 25

DMP, FLN, HKL, JJJ, ?

A MIH

B MII

C LIH

D MIF

Answer: C

Explanation:
The series follows pattern as,

(D + 2 F), (M - 1 L), (P - 2 N)

(F + 2 H), (L - 1 K), (N - 2 L)

(H + 2 J), (K - 1 J), (L - 2 J),

J + 2 L), (J - 1 I), (J - 2 H),

Missing term LIH

Question 26

Z3A, W9D, ?, Q81J, N243M

A R31E

B V21H

C T27G

D S29F

Answer: C

Explanation:
he pattern follows as,

3 × 3 9

9 × 3 = 27

27 × 3 81

81 × 3 243

Missing term by option T27G

nstructions
For the following questions answer them individually

Question 27

f 'EVENT' is coded as 54552 then 'REVENGE' is coded as :

A 9545575

B 8455753

C 9845575

D 8755475

Answer: A

Explanation:
n the EVENT,

E coded as 5.

coded as 4.

N coded as 5.

coded as 2.

Similarly,

REVENGE' is coded as '_5455_5'.

By the option A), 9545575.

∴ Option A is the correct answer.

Question 28

Figure

A 15.300

B 1.5300

C 153.00

D 1530.00

Answer: B

Question 29

f BACTERIA can be written as ABIARCET then how PROTOZOA can be written :

A AROZOTOPO

B ORPTOZOA

C APORZOOT

D TOZOAPRO

Answer: C

Explanation:
n the 'ABIARCET' 1st, 3rd, 5th, and 7th letter replace by 8th, 7th, 6th and 5th letter respectively so,

PROTOZOA' can be written as 'APORZOOT'.

Option C is the correct answer.

Question 30

Unscramble theseletters to make a ..... EYDSNY

A mountain

B city

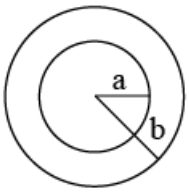
C animal

D river

Answer: B

Question 31

f radius b is double that of radius a, the area of the smaller circle to that of the larger circle is in proportion :



A 1 : 16

B 1 : 2

C 1 : 4

D 1 : 8

Answer: C

Explanation:
b 2a

area of circle πr^2

The area of the smaller circle to that of the larger circle is in proportion $\pi a^2 : \pi b^2 = a^2 : 4a^2 = 1 : 4$

nstructions

nsert the arithmetic signs in the following numerical figure:

Question 32

6, 3, 6 = 24

A $+\times$

B $-+$

C $-\times$

D $-\div$

Answer: A

Explanation:
From option A,

LHS,

6 + 3 $\times$ 6

6 + 18

24

HS

Hence, Option A is the correct answer.

Question 33

9, 3, 4, 6 = 29

A $\times + -$

B $+ - \times$

C $\times - +$

D $+ \times -$

Answer: C

Explanation:
From the option C) -

LHS-

9 $\times$ 3 - 4 + 6

27 - 4 + 6

29

HS

∴ Option C is correct answer.

nstructions

For the following questions answer them individually

Question 34

f 7x - 5y = 20 and 12x + 5y = 75, what is the value of xy?

A 30

B 15

C 18

D 20

Answer: B

Explanation:

x - 5y 20 ---(1)

12x + 5y 75 ---(2)

Eq(1) + (2),

19x 95

x 5

From eq(1),

×5 - 5y 20

5y 15

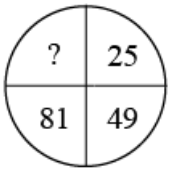
y 3

xy 5×3 15

nstructions

n the following questions, select the missing number from the given responses.

Question 35



A 100

B 36

C 121

D 42

Answer: C

Explanation:

$(5)^2 = 25$

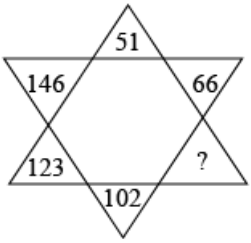
$(7)^2 = 49$

$(9)^2 = 81$

$(11)^2 = 121$

∴ The correct answer is option C.

Question 36



A 82

B 81

C 83

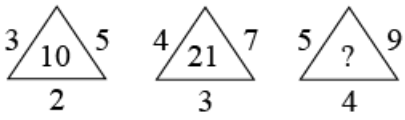
D 84

Answer: C

Explanation:
$7^2 + 2 = 51$
$8^2 + 2 = 66$
$9^2 + 2 = 83$
$10^2 + 2 = 102$
$11^2 + 2 = 123$
$12^2 + 2 = 146$

∴ the correct answer is option C.

Question 37



A 24

B 45

C 63

D 36

Answer: D

Explanation:
Question follows pattern as,

5×2 10

$\times 3$ 21

Similarly,

$9 \times 4 = 36$

nstructions
For the following questions answer them individually

Question 38

Ram started from his house and travelled 3 km towards South. Then turned left and travelled 4 km. Then again he turnedright andtravelled 3 km. From there, he turnedleft and travelled 4 km. At what distance is he now from his house ?

A 15 km

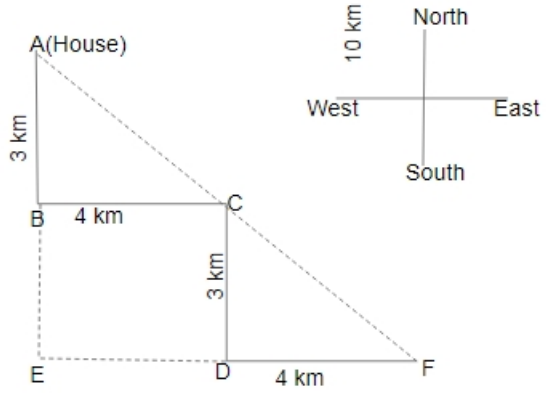
B 5 km

C 10 km

D 14 km

Answer: C

Explanation:



From the figure,

AE 3 + 3 6 km

EF 4 + 4 8 km

n △ AEF,

$$AF)^2 = (AE)^2 + (EF)^2$$

$$AF)^2 = (6)^2 + (8)^2$$

$$AF)^2 = 36 + 64$$

$$AF)^2 = 100$$

AF 10 km

Distance 10 km

Question 39

From point A, Ravi walks 5 km North-West to point B, from point B he walks 10 km South to point 'C'. From point Che moves 5 km North - East to point D. From point D he was back to point A. If Ravi always walked in a straight line what figure has he traced ?

A Trapezium.

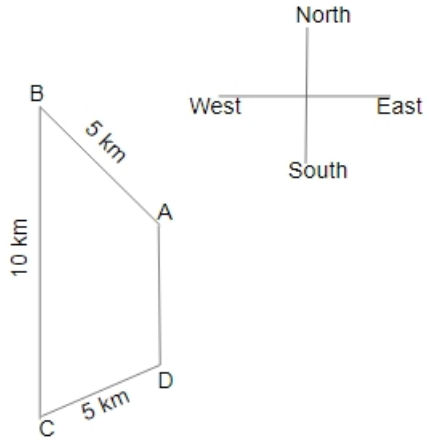
B Rhombus

C Kite

D Parallelogram

Answer: A

Explanation:



From the diagram, Ravi traced the Trapezium figure.

Question 40

dentify the answer figure from which the given pieces in question figure are found.

Question figure :

A 

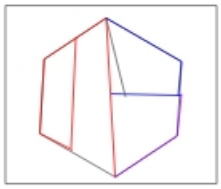
B 

C 

D 

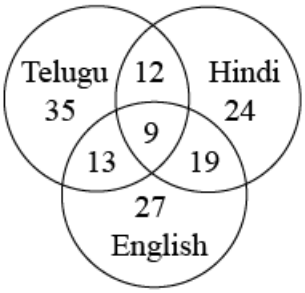
Answer: B

Explanation:



Question 41

This Venn diagram shows the no. of people who can speak Telugu, Hindi and English. Find out the total no. of people who can speak all the three languages?



A 19

B 13

C 12

D 9

Answer: D

Explanation:

he total no. of people who can speak all the three languages 9

$$

The correct answer is option D.

Question 42

How many triangles are there in the figure ?

A 7

B 13

C 11

D 9

Answer: B

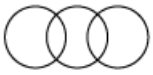
Explanation:

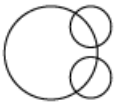
otal number of triangles 13

The correct answer is option B.

Question 43

ndicate the est relation among blackboard, classroom and school.

A 

B 

C 

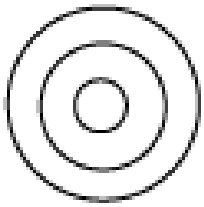
D 

Answer: D

Explanation:

Blackboard is in the class and class s in the school.

So, related Venn diagram,



nstructions

n the following questions, one or two Statements is given followed by two Conclusions I, and II. You have to consider the statement to be true, even if it seems to be at variance from commonly known facts. You are to decide which of the given conclusions can definitely be drawn from the given statement. Indicate your answer.

Question 44

Statement: Some fishes are crocodiles.
Some Crocodiles are snakes.
No snake is snail.
All snails are tortoises.

Conclusion:
. Some snakes are Crocodiles.
I. Some Crocodiles are tortoise

A None of these Conclusions I and II follow

B Conclusion I follow

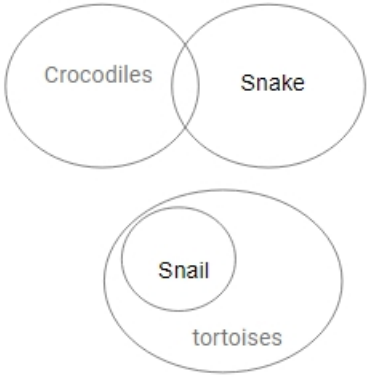
C Conclusion II follow

D Both the Conclusions I and II follow

Answer: B

Explanation:

enn diagram,



From the Venn diagram, only conclusion I follow.

Question 45

Statement:
Jessica has 4 children. Two of them have blue eyes and two have brown eyes. Half of the childrenare girls.

Conclusions:
. At least one girl has blue eyes
I. Two of the children are boys.
II. The boys have brown eyes.

A Conclusion I only

B Conclusion II only

C Conclusion I and III only

D Conclusion II and III only

Answer: B

Explanation:
Only Statement II is true because Two of the children are boys is definitely true.

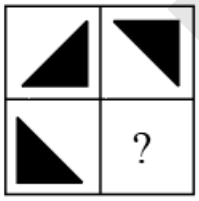
Option B is the correct answer.

nstructions

n the following questions, which answer figure will complete the pattern in the question figure.

Question 46

Question figure :



A

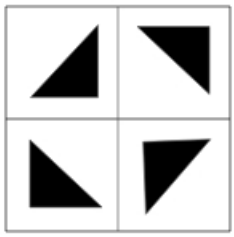
B

C 

D 

Answer: C

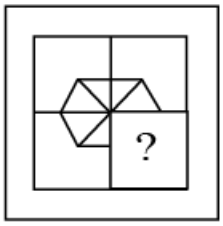
Explanation:

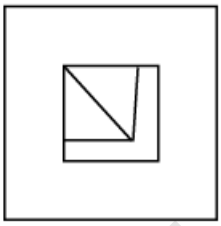


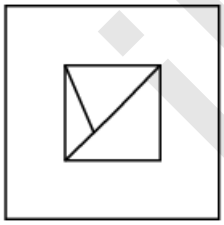
The correct option is D.

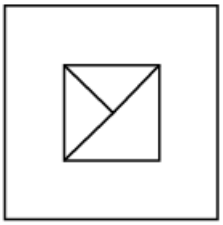
Question 47

Question figure :

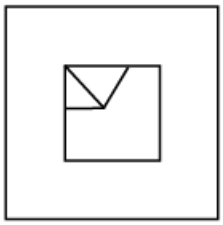


A 

B 

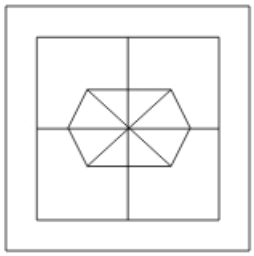
C 

D



Answer: D

Explanation:



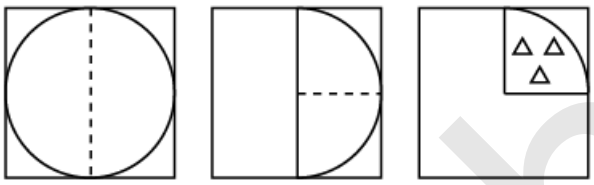
The correct answer is option D.

Instructions
For the following questions answer them individually

Question 48

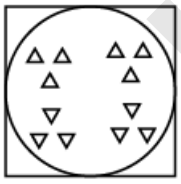
A piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

Question figure :

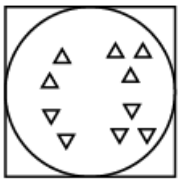


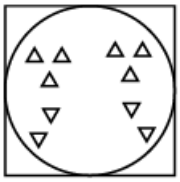
A

B



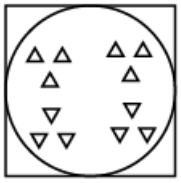
C



D 

Answer: B

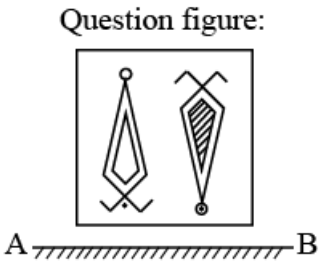
Explanation:

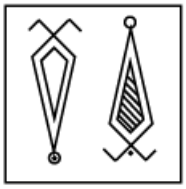


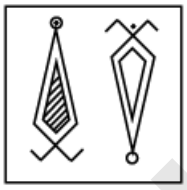
The correct answer is option B.

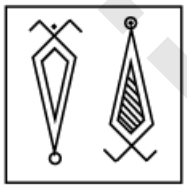
Question 49

if a mirror is placed on the line AB, then which of the answer figures is the right image of the given figure:



A 

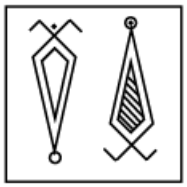
B 

C 

D 

Answer: C

Explanation:



The correct answer is option C.

Question 50

In the following question, a matrix of certain characters is given. These characters follow a certain trend, row - wise or column - wise. Find out this trend and choose the missing character accordingly.

Z	?	S
J	G	?
?	T	P

A WCV

B RHS

C WCW

D RQM

Answer: C

Explanation:
Z - 3 W - 4 S
J - 3 G - 4 C
W - 3 T - 4 P
Missing character WCW
The correct answer is option C.

General Awareness

nstructions
For the following questions answer them individually

Question 51

During National emergency, the following article cannot be suspended:

A Article 20

B Article 17

C Article 21

D Article 19

Answer: C

Question 52

Which one of the following states has a separate Constitution ?

A Sikkim

B Assam

C Jammu and Kashmir

D Arunachal Pradesh

Answer: C

Question 53

"Origin of Species by Natural Selection" was written by:

A William Harvey

B Lamark

C Charles Darwin

D Wallace

Answer: C

Question 54

How many islands are there in Lakshadweep ?

A 47

B 17

C 27

D 36

Answer: C

Question 55

Cockroach is:

A Sanguivorous

B Carnivorous

C Herbivorous

D Omnivorous

Answer: D

Question 56

Which of the following plant is grown for the reclamation of ravines ?

A Eucalyptus globulus

B Prosopis juliflora

C Dalbergia sissoo

D All of the above

Answer: B

Question 57

The Brahmo Samaj was founded by:

A Keshab Chandra Sen

B Raja Rammohan Roy

C Devendranath Tagore

D Dayananda Saraswathi

Answer: B

Question 58

The banks are required to maintain a certain ratio betweentheir cash in hand andtotal assets. This is called :

A CLR (Central Liquid Reserve)

B SBR(Statutory Bank Ratio)

C SLR (Statutory Liquid Ratio)

D CBR (Central Bank Reserve)

Answer: C

Question 59

The chemical substance present in bones and teeth is :

A $Ca_3(BO_3)_2$

B $Ca(NO_3)_2$

C $Ca_3(PO_4)_2$

D CaF_2

Answer: C

Question 60

What is the primary effect of excess phosphorous in the aquatic environment called ?

A Radiation

B Fixation

C Nitrification

D Eutrophication

Answer: D

Question 61

MS Office, Photoshop and Animagic are examples of:

A Device driver

B Application software

C System software

D Operating system

Answer: B

Question 62

ndian Income Tax is:

A Indirect and Progressive

B Direct and Proportional

C Indirect and Proportional

D Direct and Progressive

Answer: D

Question 63

NABARD is a:

A Department

B Bank

C Bureau

D Board

Answer: B

Question 64

The onset of reproductive life is called :

A Maturation

B Menarche

C Menopause

D Puberty

Answer: D

Question 65

Which among the following instruments producesel ectricity ?

A Transmitter

B Electrografers

C Dynamo

D Voltametre

Answer: C

Question 66

Unit of electric current is :

A Velocity

B Volts

C Ampere

D Calorie

Answer: C

Question 67

Reservation for the Scheduled Castes and Scheduled Tribes in the services has been provided in the Indian Constitution under:

A Article 375

B Article 315

C Article 335

D Article 365

Answer: C

Question 68

Nucleolus is present within the:

A Lysosome

B Cytoplasm

C Mitochondria

D Nucleus

Answer: D

Question 69

The subject on which both the Centre and State Governments canlegislate are contained in:

A Residuary List

B The Union List

C The State List

D The Concurrent List

Answer: D

Question 70

Plants are green because of the presence ofa pigment called:

A Oxygen

B Glucose

C Nitrogen

D Chlorophyll

Answer: D

Question 71

One billion bytes is approximately equal to:

A Gigabyte

B Megabyte

C Terabyte

D Petabyte

Answer: A

Question 72

The term 'NIFE' refers to:

A Ocean floor

B Earthquakes

C Core of the earth

D Crust of the earth

Answer: C

Question 73

The river cauvery originates from which of the following states ?

A Madhya Pradesh

B Andhra Pradesh

C Tamil Nadu

D Karnataka

Answer: D

Question 74

The Jawaharlal Nehru Port is located at :

A Kolkata

B Paradip

C Cochin

D Mumbai

Answer: D

Question 75

Which type of energy is converted into electrical energy by a battery ?

A Thermal

B Mechanical

C Chemical

D Biological

Answer: C

Question 76

Birthday of which Indian personality is celebrated on 2^{nd} October along with M.K. Gandhi?

A V.P. Singh

B Rabindranath Tagore

C Bal Gangadhar Tilak

D Lal Bahadur Shashtri

Answer: D

Question 77

The 24^{th} Thirthankara of Jainism

A Mahaveera

B Vrushabha

C Parshwanatha

D Ashwagosha

Answer: A

Question 78

Mohamud Ghazni's last famous expedition to Hindustan was against:

A Somanath

B Kalinjar

C Kannauj

D Mathura

Answer: A

Question 79

Savanna grasslands in Brazil are called:

A Campos

B Downs

C Prairies

D Pampas

Answer: A

Question 80

Which of the following is a triploid plant ?

A Orange

B Wheat

C Banana

D Mango

Answer: C

Question 81

The fundamental duties are incorporated in Article 51A of the constitution of India by the:

A 44^{th} Amendment Act

B 41^{st} Amendment Act

C 42^{nd} Amendment Act

D 43^{rd} Amendment Act

Answer: C

Question 82

A consumer is said to be in equilibrium, if:

A He is able to locate new sources of income.

B He is able to fulfill his needs with a given level of income.

C His income and expenditure are equal.

D He can fulfill his needs without consumption of certain items.

Answer: B

Question 83

Which metal gives H_2, with steam in Red heat condition?

A Pb

B Cu

C Fe

D Ag

Answer: C

Question 84

The source of River Vaigaiis in thehills of :

A Cardamom

B Agasthiar

C Amarkantak

D Jawadi

Answer: A

Question 85

The universal energy currency of plants and animals is:

A ATP

B Chlorophyll

C Calorie

D NADP

Answer: A

Question 86

Air pollution is caused by :

A Loud speakers

B Insecticides

C Sewage

D Smoke

Answer: D

Question 87

Who among the following can be removed from the office without impeachment ?

A Chief Election Commissioner

B President of India

C Chief Justice of India

D Governor of a State

Answer: D

Question 88

The fundamental Rights of Indian citizen are contained in :

A Part VIII of constitution

B Part III of constitution

C Part IV of constitution

D The seventh schedule of the constitution

Answer: B

Question 89

School Capital' of India is :

A Lucknow

B Dehradun

C Bangalore

D Delhi

Answer: B

Question 90

Where in India can you find the highest cricket ground above sea level?

A Guwahati

B Dehradun

C Chail

D Gwalior

Answer: C

Question 91

The fertilizer Nitrolym is:

A $CaCN_2 + C$

B $CaCN_2$

C $CaCN + C$

D $Ca(CN)_2 + CO_2$

Answer: A

Question 92

Sambalpur' is situated on the bank of whichof the following rivers ?

A Mahanadi

B Yamuna

C Saraswati

D Saryu

Answer: A

Question 93

The Per Capita Income is obtained by :

A Dividing the total national capital with the profit earned.

B Summing up the incomeof the citizens of the country.

C Dividing the national incomeby the population.

D Estimating the minimum income of individual citizens.

Answer: C

Question 94

Mistralis acold wind which blows downthevalley of:

A Volga

B Rhine

C Rhone

D Seine

Answer: C

Question 95

The largest nationalized bank of India is the :

A Central Bank of India

B State Bank of India

C Reserve Bank of India

D Bank of India

Answer: B

Question 96

With increasing quantum number, the energy difference between adjacent energy levels in atoms:

A Decreases first and then increases

B Decreases

C Increases

D Remains constant

Answer: B

Question 97

Megasthanees was a Greek Ambassador sent by:

A Seleukos

B Alexander

C Philippos

D Justin

Answer: A

Question 98

n the etching of glass, we use the acid :

A HBr

B HCl

C HF

D HI

Answer: C

Question 99

Steppe grassland is found in:

A Russia

B Africa

C South America

D Australia

Answer: A

Question 100

The Sikh religion originated with the teaching of:

A Rangit Singh

B Ramdas

C Guru Nanak

D Govind Singh

Answer: C

General Engineering (Mechanical)

Instructions
For the following questions answer them individually

Question 101

For laminar flow in a pipe, average velocity is equal to:

A $2U_{max}$

B U_{max}

C $0.5U_{max}$

D $0.25U_{max}$

Answer: C

Question 102

Crude oil of kinematic viscosity 2.25 stokes flows through a 20 cm diameter pipe, the rate of flow being 1.5 litres/s. the flow will be

A Uncertain

B Laminar

C Turbulent

D Transition

Answer: B

Question 103

The power transmitted by a belt is maximum when the maximum tension in the belt compared to centrifugal tension is

A 3-5 times

B 2 times

C 3 times

D 4 times

Answer: C

Question 104

Effort lost in friction in a simple machine is:

A $P - 2P_0$

B $2P - P_0$

C $P_0 - \frac{P}{2}$

D $P - P_0$

Answer: A

Question 105

Non uniform ramming of moulding sand may lead to the following casting defect

A Scabs

B Swells

C Blow holes

D Bends

Answer: A

Question 106

A bell Coleman cycle is

A Reversed stirling cycle

B Reversed Carnot cycle

C Reversed Joule cycle

D Reversed Atkinson cycle

Answer: C

Question 107

For a centrifugal blower, power consumption is proportional to:

A Cubic power of r.p.m.

B r.p.m.

C Square of r.p.m.

D Square root of r.p.m.

Answer: C

Question 108

A reaction turbine (hydraulic) discharge 34 m^3/s under a head of 8 m and with an overall efficiency of 91%. The power developed in MW is:

A 4.32

B 3.24

C 2.43

D 2.34

Answer: C

Question 109

The equivalent evaporation (kg/hr) of a boiler producing 2000kg/hr. of steam with enthalpy content of 2426 kJ/kg from feed water at temp, $40^\circ C$ (liquid enthalpy = 168 kJ/kg; enthalpy of vaporization of water at $100^\circ C$ = 2258 kJ/kg) is:

A 1649

B 2000

C 2149

D 1682

Answer: B

Question 110

For maximum work output in a two stage expansion gas turbine with perfect, the intermediate pressure (P) has the following relationship with maximum pressure (P_1) and minimum pressure (P_2) of the cycle:

A $P = \sqrt{\frac{P_1}{P_1}\frac{P_2}{P_2}}$

B $P = \sqrt{P_1 P_2}$

C $P = \left(\frac{P_1}{P_2}\right)^{\frac{1}{2}}$

D $P = \left(\frac{P_1 \quad P_2}{4}\right)^{\frac{1}{2}}$

Answer: B

Question 111

Discharge (Q) of a centrifugal pump is given by:
where, D = diameter of impeller at inlet
b = Width of impeller at inlet
Vf **= velocity of flow at inlet**

A bVf

B πDVf

C πbVf

D $\pi dbVf$

Answer: D

Question 112

When steam flows over moving blades of an impulse turbine:

A Both pressure and velocity decreases

B Pressure drops and velocity increases

C Pressure remains constant and velocity decreases

D Both pressure and velocity remains constant

Answer: C

Question 113

Electrode used in TIG is:

A Copper

B Tungsten

C Aluminium

D Cast iron

Answer: B

Question 114

Maximum efficiency for a single pure impulse blading (symmetric) with nozzle angle ' α**' is**

A $\cos^2\left(\frac{a}{2}\right)$

B $\cos\alpha$

C $\cos^2 \alpha$

D $\cos\left(\frac{\alpha}{2}\right)$

Answer: C

Question 115

The crank pin is to be connected in the bush and the dimensions for the bush and crank are given Respectively of in mm
$16\ ^{0.017}_{0.000}16\ ^{0.035}_{0.062}$

A 0.079 mm

B 0.0079 mm

C 0.035 mm

D 0.062 mm

Answer: A

Question 116

How many links does a pantograph mechanism contain?

A Ten

B Two

C Four

D Nine

Answer: C

Question 117

A single-stage impulse turbine with a diameter of 120 cm runs at 3000 r.p.m. if the blade speed ratio is 0.42, the inlet velocity of steam will be:

A 900 m/s

B 80 m/s

C 200 m/s

D 450 m/s

Answer: D

Question 118

For hydrodynamically smooth boundaries, the friction factor for turbulent flow is:

A Dependent on relative roughness only

B Constant

C Dependent only a Reynolds number

D Function of Reynolds number and relative roughness

Answer: D

Question 119

An important factor to be taken into account while designing a core print is:

A Pouring temperature

B Pattern Material

C Type of mould

D Moulding sand characteristics

Answer: D

Question 120

The flow of water in wash basin through a central opening is an example of:

A Rankine vortex

B Free vortex

C Forced vortex

D Rotational vortex

Answer: B

Question 121

Which one of the following safety device is used to protect the boiler when the water level falls below a minimum level :

A Safety valve

B Water level indicator

C Fusible plug

D Blow off cock

Answer: C

Question 122

One stroke is equal to :

A 1 cm^2/sec

B 1 m^2/sec

C 1 mm^2/sec

D 10 m^2/sec

Answer: A

Question 123

Euler's number relates

A Inertia force and elastic force

B Inertia force and gravity force

C Inertia force and Pressure force

D Pressure force and viscous force

Answer: C

Question 124

The length of a pipe is 1000 m and its diameter is 20cm. if the diameter of an equivalent pipe is 40cm, then its length is:

A 4000 m

B 32000 m

C 20000 m

D 8000 m

Answer: B

Question 125

A casting defect which results in general enlargement of a casting is known as:

A Swell

B Shift

C Sand wash

D Blow hole

Answer: C

Question 126

A jet of water issues from nozzle with a velocity 20m/s on a flat plate moving away from it at 10m/s. The cross-sectional area of the jet is 0.01 m^2 and the density of water = 1000 kg/m^3. The force developed on the plate in newton's is :

A 2000

B 9810

C 5000

D 7000

Answer: B

Question 127

The total number instantaneous centers for a mechanism consisting of 'n' links are:

A $\frac{n(n-1)}{2}$

B $\frac{n}{2}$

C n

D $\frac{n-1}{2}$

Answer: A

Question 128

Poisson's ratio is defined as the ratio of:

A Shear stress to shear strain

B Longitudinal stress to Lateral strain

C Lateral strain to longitudinal strain

D Axial stress and axial strain

Answer: C

Question 129

The product of circular pitch and diameter pitch is equal to:

A π

B Module

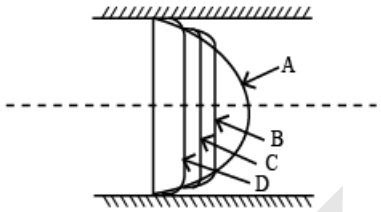
C Unity

D $\frac{1}{\pi}$

Answer: A

Question 130

The figure shows four curves for velocity distribution across a section for Reynolds number equal to 1000, 3000, 4000, and 5000. Curve A corresponding to Reynolds number:



A 5000

B 1000

C 3000

D 4000

Answer: A

Question 131

The dimensions of the surface tension tension are:

A $[M^1L^0T^2]$

B $[M^1L^0T^{\ 2}]$

C $[M^1L^1T^{\ 2}]$

D $[M^1L^{\ 1}T^{\ 2}]$

Answer: B

Question 132

To prevent oscillation of the meniscus the length of the connecting tubes should be:

A Unequal

B Large

C Small

D Equal to 10 times diameter

Answer: C

Question 133

For an ideal gas the compressibility factor is:

A Some finite value greater than unity

B Zero

C Units

D Infinity

Answer: C

Question 134

A body of mass 5 kg is pushed up to 2 m on a smoth 30° incline by a force of 60 N acting parallel to the plane. The work done on the body is:

A Zero

B 70.95 J

C 141.9 J

D 35.47 J

Answer: B

Question 135

Reheat factor for a multi-stage steam turbine is the ratio of:

A Inlet temperature to the exit temperature

B Cumulative enthalpy drop to the total isontropic enthalpy

C Total isentropic enthalpy drop to the total entropy increases

D Total isentropic enthalpy drop to the exit temperature

Answer: C

Question 136

The purpose of the flywheel in an IC engine is:

A To regulate the fuel supply

B To keep the output power constant at the crank shaft

C To increase the power capacity of the engine

D To reduce the vibration is an engine

Answer: C

Question 137

The ratio of equivalent length of the column to minimum radius of gyration is called as:

A Bulking factor

B Factor of safety

C Poisson s ratio

D Co-efficient restitution

Answer: A

Question 138

The hot wire anemometer is used to measure:

A Liquid velocities

B Pressure in gases

C Discharge of gases and liquids

D Gas velocities

Answer: D

Question 139

An engine oil of viscosity 22.5×10^{2} (Per.s) is flowing through a pipe of radius 1 m. average velocity of oil through the pipe is 1.2 m/sec. if the velocity profile is parabolic profile then maximum velocity of oil is:

A 2.4 m/sec

B 1.8 m/sec

C 1.5 m/sec

D 3.6 m/sec

Answer: A

Question 140

n a 1 = 100 scale model of a harbour, time which corresponds to the prototype tidal period of 12 Hrs will be in Hr:

A 12

B 1

C 10

D 1.2

Answer: D

Question 141

Two tensile forces, each of magnitude F are acting at a point perpendicular to each other, then their resultant force will be:

A $\sqrt{2}$

B Zero

C $\sqrt{F}$

D $\sqrt{2F}$

Answer: D

Question 142

The Taylor's correlation between the cutting speed (V) and the tool life (T) is given by:

A $\frac{V^n}{T} = Constant$

B $VT^n = Constant$

C $\frac{V}{T^n} = Constant$

D $V^nT = Constant$

Answer: B

Question 143

The co-efficient of discharge, velocity and contraction Cd, Cv and Cc are related as:

A $Cd = Cc - Cv$

B $Cd = \frac{Cc}{Cv}$

C $Cd = Cc \times Cv$

D $Cd = Cc + Cv$

Answer: C

Question 144

The expression for capillary rise is given by when, σ surface tension, θ -angle of contact and ρ - density

A $h = \frac{2\sigma \mathrm{s\ n}\theta}{\rho g d}$

B $h = \frac{4\sigma \cos\theta}{\rho g d}$

C $h = \frac{2\sigma \cos\theta}{\rho g d}$

D $h = \frac{4\sigma \sin\theta}{\rho g d}$

Answer: B

Question 145

Notch is a device used for measuring:

A Velocity through small channels

B Rate of flow through pipes

C Rate of flow through small channels

D Velocity through pipes

Answer: C

Question 146

Which cross-section of a cantilever beam which is loaded with UDL can give economical design:

A Square

B Circular

C I-section

D Rectangular

Answer: C

Question 147

What torque is Nm is required to give 3m3/s of water, a moment of momentum, so that it has a tangential velocity of 3 m/s at a distance of 1.8m from the axis?

A 16200

B 157

C 2624

D 8138

Answer: A

Question 148

The device which permits the connection and disconnection of shafts is:

A Bearing

B Connector

C Clutch

D Pulley

Answer: C

Question 149

Heating wet steam at constant temperature is the same as heating at consonant:

A Entropy

B Pressure

C Volume

D Enthalpy

Answer: B

Question 150

The term bleeding in a steam turbine refer to:

A Removal of wet steam in the low pressure stages of turbine

B Leakage of steam

C Steam extracted for preheating feed water

D Steam doing no useful work

Answer: C

Question 151

Which of the following is an extensive property?

A Temperature

B Pressure

C Density

D Enthalpy

Answer: D

Question 152

The latent heat of evaporation of water at $100^{\circ}C$ is 2560 kJ/kg. what is the change of entropy associated with the evaporation?

A -25.6kJ/kg-k

B 25.6kJ/kg-k

C 256×10^3 kJ/kg-k

D 6.86kJ/kg-k

Answer: D

Question 153

Using lubricants on engine parts is an example of reducing:

A Motion

B Force

C Acceleration

D Friction

Answer: D

Question 154

One poise is equivalent to:

A 1 kg/m-hr

B 1 gm/cm-sec

C 98 dyne/sec

D 68 kgf-sec/m^2

Answer: B

Question 155

For maximum discharge, ratio of the pressure at the exit and at inlet of nozzle $\left(\frac{P_2}{P_1}\right)$ is equal to:

A $\left[\frac{2}{(n+1)}\right]^{\frac{n}{n-1}}$

B $\left[\frac{2}{(n+1)}\right]^{\frac{n}{n-1}}$

C $\left[\frac{2}{(n+1)}\right]^{\frac{n-1}{n}}$

D $\left[\frac{2}{(n+1)}\right]^{\frac{n}{n-1}}$

Answer: B

Question 156

The process of removing unwanted material from the casting is called:

A Blowing

B Clearing

C Finishing

D Fettling

Answer: D

Question 157

If in a diesel engine petrol is used then the engine will:

A Run at low speed

B Explode

C Run at high speed

D Run with high knocking

Answer: D

Question 158

For a closed system, the difference between heat added to the system and work done by the system, is equal to change in:

A Entropy

B Temperature

C Internal energy

D Enthalpy

Answer: C

Question 159

The indicator on a engine is used to determine:

A IHP and mcp

B BHP

C Speed

D Temperature

Answer: A

Question 160

The circular pitch of a toothed wheel having 24 teeth and module of 4.25 mm will be

A 8.50 mm

B 1.35 mm

C 4.25 mm

D 6.67 mm

Answer: B

Question 161

The process in which no heat enters or leaves the system is called as:

A Isentropic

B Isobaric

C Isochoric

D Isothermal

Answer: A

Question 162

Two gases X and Y having the same temperature T, the same pressure P and the same volume V are mixed. If the mixture has the volume V and temperature T, then the pressure of the mixture will be:

A 4P

B $\frac{P}{2}$

C P

D 2P

Answer: D

Question 163

Which gas among the following has the highest value of adiabatic index?

A Helium

B Nitrogen

C Oxygen

D Methane

Answer: B

Question 164

Rotameter is a device used to measure:

A Rotation

B Absolute pressure

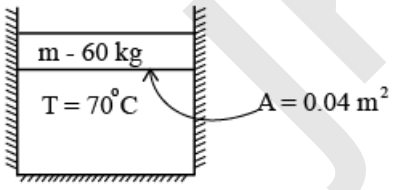
C Velocity of fluid

D Flow rate

Answer: D

Question 165

The piston of a vertical piston-cylinder device containing a gas has a mass of 60 kg and a cross-sectional area 0.04 m ^{2}. The entire system is placed in a vacuum chamber. If temperature of the gas is $70°C$. What is the pressure of gas inside the cylinder? g = 9.8 m/s^2



A 0.7 bar

B 0 bar

C 0.3 bar

D 0.147 bar

Answer: B

Question 166

The only angle on which the strength of the tool depends, is:

A Lip angle

B Clearance angle

C Rake angle

D Cutting angle

Answer: C

Question 167

The size of the gear is usually specified by:

A Pitch circle diameter

B Pressure angle

C Circular pitch

D Diameter pitch

Answer: A

Question 168

The circumferential stress in a thin shell due to internal fluid is given by:

A $\frac{\pi P d^2}{4}$

B $\frac{Pd}{t}$

C $\frac{4P}{\pi d^2}$

D $\frac{Pd}{2t}$

Answer: D

Question 169

A long circular cylinder has a diameter D and length L. The slenderness ratio of the column is:

A $\sqrt{\frac{L}{D}}$

B $\left(\frac{L}{D}\right)$

C $\left(\frac{2L}{D}\right)$

D $\left(\frac{4L}{D}\right)$

Answer: D

Question 170

Rivets generally specified by:

A Diameter of head

B Thickness of plates to be riveted

C Length of rivet

D Nominal diameter

Answer: D

Question 171

A beam is fixed at one end and free at the other end. A load acts in the center. The maximum bending moment will occur at:

A Between center and fixed end

B Under the load

C Fixed end

D Free end

Answer: C

Question 172

Which of the following material is added to base sand to impart bonding strength?

A sea coal

B Silica

C Bentonite

D Wood flour

Answer: C

Question 173

The commercially available petrol in India has an octane rating of:

A 85-90

B 20-30

C 40-50

D 60-75

Answer: A

Question 174

Herring bone gears are:

A Double helical gears

B Spur gears with small teeth

C Large worm gears

D Spiral gears

Answer: A

Question 175

Which of the following fuel having maximum resistance to detonation?

A n-heptane

B Benzene

C Toluene

D Iso-octane

Answer: D

Question 176

n arc welding temperature generated is of the order of:

A $8000°C$

B $1000°C$

C $3500°C$

D $5500°C$

Answer: D

Question 177

A fan rotates at a constant speed at 60 rpm. The total angular displacement it makes in 10 sec is:

A Zero

B $10\pi rad$

C $40\pi rad$

D $20\pi rad$

Answer: A

Question 178

Barometer is used to measure:

A Rain level

B Pressure in pipes and channels

C Atmospheric pressure

D Very low pressure

Answer: C

Question 179

Bending moment at the supports in case of simply supported beam is:

A > 1

B zero

C 1

D < 1

Answer: B

Question 180

A simply supported beam of 1 m length is subjected to a distributed load of 0.4 N/m. The maximum bending moment occurring in the beam is:

A 1.0 N-m

B 0.1 N-m

C 0.05 N-m

D 0.025 N-m

Answer: C

Question 181

The maximum speed and minimum speed in r.p.m. At a watt governor are 72 and 68 respectively. The range of speed of the governor is:

A 4

B 2

C 8

D 6

Answer: A

Question 182

The rate of change of moment of momentum represent the:

A Power developed by the fluids

B Force exerted by fluid

C Torque applied by the fluid

D Work done by the fluid

Answer: C

Question 183

Fan belt in automobiles is:

A E-section V belt

B A three layer flat belt

C A five layer flat belt

D B-section V belt

Answer: B

Question 184

For a particular ideal gas, the value of R is 0.280 kJ/kgK and the value of γ is 1.375. The value of Cp and Cv are, respectively, in kJ/kgK:

A 1.25, 0.8

B 1.0267, 0.7467

C 1.111, 0.66

D 1.2, 0.70

Answer: B

Question 185

The compression ratio for diesel engine lie in the range of:

A 30 to 40

B 5 to 8

C 15 to 20

D 3 to 6

Answer: C

Question 186

The degree of reaction of a Kaplan turbine is:

A Equal to 1

B Equal to 380

C Greater than zero but less than $^{1}_{2}$

D Greater than $^{1}_{2}$ but less than 1

Answer: D

Question 187

A fluid with kinematic viscosity $0.4 \times 10^{\ 4} m^2/s$ flows through a 80 mm diameter pipe. The maximum velocity for laminar flow will be:

A $\leq 2m/s$

B $\leq 10mm/s$

C $< 1m/s$

D $\leq 1.5m/s$

Answer: C

Question 188

Which is not a part of magneto-ignition system?

A Condenser

B Battery

C Induction coil

D Circuit breaks

Answer: B

Question 189

If the x-component of a force is negative and the y-component is positive, the direction of that force must lie in the:

A Fourth quadrant

B First quadrant

C Second quadrant

D Third quadrant

Answer: C

Question 190

In a gear drive, module is equal to:

A $\frac{1}{Diametralpitch}$

B $\frac{1}{Circularpitch}$

C $\frac{Circularpitch}{\pi}$

D $\frac{Diametralpitch}{\pi}$

Answer: E

Question 191

The quantity, which is equal to rate of change of momentum is known as:

A Impulse

B Displacement

C Acceleration

D Force

Answer: D

Question 192

Multistage centrifugal pumps are used to obtain high:

A Pumping of viscous fluids

B Discharge

C Head

D Efficiency

Answer: C

Question 193

The diameter of core of a circular section is given as:

A $\frac{d}{\sqrt{2}}$

B $\frac{d}{2}$

C $\frac{d}{3}$

D $\frac{d}{4}$

Answer: D

Question 194

The path traced by a single particle of smoke issuing from a burning wooden stick is a:

A Flow line

B Stream line

C Streak line

D Path line

Answer: D

Question 195

What amongst the following is not related to a CI engine?

A Flywheel

B Fuel pump

C Fuel injector

D Carburettor

Answer: D

Question 196

The relation between the number of links (L) and number of pairs (P) is:

A L 2P - 3

B L 2P - 2

C L 2P - 4

D L 3 - 2P

Answer: C

Question 197

A Current meter is a device for measuring

A Viscosity

B Velocity

C Current

D Pressure

Answer: B

Question 198

Density of water is maximum at:

A 277° Kelvin

B 0° C

C 0° Kelvin

D 100° C

Answer: A

Question 199

An isothermal process is one in which:

A The pressure of the gas in the system is proportional to the volume of the gas.

B The internal energy of the system under consideration decreases during the change

C The heat transfer of the system under consideration is zero

D The temperature of the system under consideration remains constant during the change

Answer: D

Question 200

n I.C. engine removing the burnt gases from combustion chamber of engine cylinder, is known as:

A Polymerisation

B Scavengeing

C Supercharging

D Detonation

Answer: B