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Participant ID	
Participant Name	
Test Center Name	iON Digital Zone iDZ Village Adampur Raisen Road
Test Date	12/08/2021
Test Time	9:00 AM - 11:30 AM
Subject	MECHANICAL ENGINEER

Section : English Language

Q.1 Fill in the blank using the most appropriate phrase.
Many children are _____ to be extremely independent thinkers by their parents.

Ans
- ✗ 1. Brought of
- ✗ 2. Brought in
- ✓ 3. Brought up
- ✗ 4. Brought as

Question ID : **50389010629**
Status : **Answered**
Chosen Option : **3**

Q.2 Choose the correct preposition.
As it started to rain, the snail withdrew _____ its shell, using his natural umbrella.

Ans
- ✗ 1. from
- ✓ 2. Into
- ✗ 3. for
- ✗ 4. along

Question ID : **50389010615**
Status : **Answered**
Chosen Option : **2**

Q.3 Select the most appropriate option to complete the sentence.
I know she is not experienced for this job but her communication skills seem to be far _____ than the other candidates who were interviewed today.

Ans
- ✗ 1. Best
- ✗ 2. good
- ✗ 3. More good
- ✓ 4. Better

Question ID : **50389010618**
Status : **Answered**
Chosen Option : **4**

Q.4 Select the most appropriate option to complete the sentence.
This book is _____ and I will not lend it to _____.

Ans
1. My, yours
2. My, you
3. Mine, yours
4. Mine, you

Question ID : **50389010620**
Status : **Answered**
Chosen Option : **4**

Q.5 Choose the appropriate word to complete the phrase.
Sidharth and Madhuri decided to call _____ their wedding just one week before the ceremony.

Ans
1. Off
2. up
3. On
4. In

Question ID : **50389010628**
Status : **Answered**
Chosen Option : **1**

Q.6 Select the misspelt word.

Ans
1. Restaurant
2. Jubiliant
3. Permanent
4. adamant

Question ID : **50389010627**
Status : **Answered**
Chosen Option : **4**

Q.7 Which part of the sentence contains an error?
I was walking down the road when all of the sudden it started raining cats and dogs.

Ans
1. it started raining cats and dogs.
2. down the road
3. I was wa king
4. when all of the sudden

Question ID : **50389010630**
Status : **Answered**
Chosen Option : **4**

Q.8 Choose the word which can be used in place of the words underlined.
She hates eating meat, and all her friends are eaters of meat and chicken.

Ans
1. Lacto-vegetarian
2. Non-Vegan
3. Vegetarian
4. Non-vegetarian

Question ID : **50389010625**
Status : **Answered**
Chosen Option : **3**

Q.9 Which conjunction can be used for this sentence?
Sudha is an extrovert _____ Ramona, her sister, is an introvert.

Ans
✗ 1. so
✗ 2. Also
✓ 3. Whereas
✗ 4. When

Question ID : **50389010617**
Status : **Answered**
Chosen Option : **3**

Q.10 Pick the most appropriate synonym of-
Vicinity

Ans
✗ 1. Removal
✓ 2. surrounding
✗ 3. Separation
✗ 4. Distance

Question ID : **50389010622**
Status : **Answered**
Chosen Option : **2**

Q.11 Select the most appropriate option to complete the sentence.
Did you _____ your essay yourself or did you _____ help from your sister?

Ans
✗ 1. Wrote, take
✓ 2. Write, take
✗ 3. Write, took
✗ 4. Write, taken

Question ID : **50389010619**
Status : **Answered**
Chosen Option : **1**

Q.12 Select the correctly spelt word.

Ans
✗ 1. Recieve
✗ 2. Riceive
✗ 3. recive
✓ 4. Receive

Question ID : **50389010626**
Status : **Answered**
Chosen Option : **4**

Q.13 Choose the most appropriate option to complete the sentence.
The Western Coastal Plains are found _____ Gujarat.

Ans
✗ 1. On
✓ 2. In
✗ 3. At
✗ 4. For

Question ID : **50389010616**
Status : **Answered**
Chosen Option : **2**

Q.14 Pick the most appropriate antonym of- supreme

Ans
1. Excellent
2. Superior
3. Best
4. inconsequential

Question ID : **50389010624**
Status : **Answered**
Chosen Option : **4**

Q.15 Pick the most appropriate synonym of- Vexation

Ans
1. Excitement
2. entertainment
3. Annoyance
4. Ecstasy

Question ID : **50389010623**
Status : **Answered**
Chosen Option : **3**

Q.16 Choose the sentence which is grammatically correct.

Ans
1. the change you be want to see
2. see the change want you to be
3. be the you want to change
4. be the change you want to see

Question ID : **50389010631**
Status : **Answered**
Chosen Option : **4**

Q.17 Select the most appropriate option to complete the sentence.
My father works _____ day and night to make the two ends meet.

Ans
1. Hardly
2. hardest
3. Hard
4. Hardenly

Question ID : **50389010621**
Status : **Answered**
Chosen Option : **3**

Section : **Quantitative Aptitude**

Q.1 If $\frac{2-\sqrt{5}}{2+\sqrt{5}}-\frac{2+\sqrt{5}}{2-\sqrt{5}}=a+b\sqrt{5}$, then what is the value of $(a-b)$?

Ans
1. 8
2. 18
3. -8
4. 20

Question ID : **50389010636**
Status : **Answered**
Chosen Option : **1**

Q.2 If $x=\frac{2}{1-\sqrt{2}}$, then find the value of x^2+4x+3.

Ans
1. 23
2. $7-16\sqrt{2}$
3. 7
4. $23+16\sqrt{2}$

Question ID : **50389010633**
Status : **Answered**
Chosen Option : **3**

Q.3 The curved surface area of a cylinder is 484 sq. cm. If height of the cylinder is 7 cm, then what is the volume of the cylinder (in cubic cm)?

$\left(\text{Use } \pi=\frac{22}{7}\right)$

Ans
1. 2650
2. 2200
3. 2662
4. 2750

Question ID : **50389010659**
Status : **Answered**
Chosen Option : **3**

Q.4 A sum of money is to be distributed among A, B, C and D such that A:B = 1:2, B:C = 3:2, C:D = 3:4. If difference in the shares of A and D is 2240, then what is the share of B (in Rs)?

Ans
1. 5120
2. 2880
3. 3840
4. 5760

Question ID : **50389010642**
Status : **Answered**
Chosen Option : **1**

Q.5 If cost of 5 computer keyboards is Rs 750, then what is the cost of 8 keyboards (in Rs)?

Ans
✗ 1. 1150
✗ 2. 1280
✓ 3. 1200
✗ 4. 1250

Question ID : **50389010643**
Status : **Answered**
Chosen Option : **3**

Q.6 A is twice as efficient as B and completes a work in 12 days less than B. They worked together for 3 days and then A left the work. In how many days will B alone complete the remaining work?

Ans
✓ 1. 15
✗ 2. 20
✗ 3. 24
✗ 4. 18

Question ID : **50389010651**
Status : **Answered**
Chosen Option : **1**

Q.7 The ratio between two numbers is 6:11. If 100 and 50 are added to the first and the second number respectively, then the ratio becomes 10:17. What will be the ratio when 50 is subtracted from the first number and added to the second number taken initially?

Ans
✓ 1. 1:2
✗ 2. 8:13
✗ 3. 2:3
✗ 4. 8:15

Question ID : **50389010641**
Status : **Answered**
Chosen Option : **1**

Q.8 A shopkeeper bought shirts at 6 for Rs 1800 and sold them at 5 for Rs 1800. What is his profit percentage?

Ans
✓ 1. 20
✗ 2. 18
✗ 3. 15
✗ 4. 21

Question ID : **50389010652**
Status : **Answered**
Chosen Option : **1**

Q.9 **In the wholesale market, prices of vegetables increased by 5%. In the next week, these further increased by 20% and in the next week, these decreased by 5%. Find the overall increase percentage in the prices after 3 weeks.**

Ans
- ✔ 1. 19.7
- ✘ 2. 20.3
- ✘ 3. 20
- ✘ 4. 30

Question ID : **50389010644**
Status : **Answered**
Chosen Option : **1**

Q.10 **Find the time taken by a train of length 480 m running at 108 km/h to cross an electric pole (in seconds).**

Ans
- ✘ 1. 12
- ✔ 2. 16
- ✘ 3. 15
- ✘ 4. 10

Question ID : **50389010646**
Status : **Answered**
Chosen Option : **2**

Q.11 **Dalip can row 42 km downstream in 2 hours and the same distance upstream in 2 hours and 48 minutes. How much time will he take to row 31.5 km downstream and 22.5 km upstream?**

Ans
- ✘ 1. 2 h 50 m
- ✔ 2. 3 h
- ✘ 3. 3 h 15 m
- ✘ 4. 3 h 5 m

Question ID : **50389010647**
Status : **Answered**
Chosen Option : **2**

Q.12

A circle is drawn in a rectangle in such a way that it touches both the longer sides of the rectangle. If the radius of the circle is two-fifth of the longer side of the rectangle, then find the ratio of the area of the rectangle excluding the circle to the area of the circle.

$\left(\text{Use } \pi = \frac{22}{7}\right)$

Ans
- ✘ 1. 13:23
- ✘ 2. 6:11
- ✘ 3. 12:25
- ✔ 4. 13:22

Question ID : **50389010661**
Status : **Answered**
Chosen Option : **4**

Q.13 Following table shows the earning (in Rs 1000) of 5 persons A, B, C, D and E over the months.What is the ratio of earning of A in March and May taken together to that of E in March and June taken together?

Month/ Persons	March	April	May	June	July
A	24.2	25.5	25.8	26	26.5
B	23.5	24.2	25.5	27	26.8
C	25.5	24.8	26.5	24	28.2
D	24.3	24.7	25.2	27	28.8
E	25	26.9	27.6	27.5	26.2

Ans
✔ 1. 20:21
✘ 2. 181:175
✘ 3. 25:26
✘ 4. 250:263

Question ID : **50389010665**
Status : **Answered**
Chosen Option : **1**

Q.14 A and B can do a work in 12 and 20 days respectively. They worked together for 2 days and then C joined them. This allowed them to complete the whole work in a total of 5 days. In how many days can C alone complete the whole work?

Ans
✘ 1. 10
✘ 2. 7
✔ 3. 9
✘ 4. 8

Question ID : **50389010650**
Status : **Answered**
Chosen Option : **3**

Q.15 The average of 10 numbers is 26.5. If the average of first 6 numbers is 25 and the average of last 6 numbers is 29, then what is the average of the 5th and the 6th number?

Ans
✘ 1. 29
✘ 2. 29.2
✔ 3. 29.5
✘ 4. 28

Question ID : **50389010654**
Status : **Answered**
Chosen Option : **3**

Q.16 The value of a new Laptop depreciated by 5% in the first year, by 10% in the second year and by 15% in the third year. If the present value of the Laptop is Rs 43605, then for how much (in Rs) was the Laptop purchased?

Ans
1. 57500
2. 60000
3. 58000
4. 56000

Question ID : **50389010645**
Status : **Answered**
Chosen Option : **2**

Q.17 Find the value of in 0.35×0.25×=1.75

Ans
1. 2
2. 0.2
3. 20
4. 200

Question ID : **50389010638**
Status : **Answered**
Chosen Option : **3**

Q.18 If the difference between the compound interest and the simple interest earned on a certain sum at 12% per annum in 2 years is Rs 675, then what is the sum (in Rs)?

Ans
1. 46578
2. 46500
3. 48675
4. 46875

Question ID : **50389010657**
Status : **Answered**
Chosen Option : **4**

Q.19 Find the greatest number 281953k such that it is divisible by 3 but not by 6.

Ans
1. 2819539
2. 2819535
3. 2819538
4. 2819532

Question ID : **50389010634**
Status : **Answered**
Chosen Option : **1**

Q.20 Four men can do a work in 3 days which 6 women can do in 4 days or 9 boys in 4 days. How many days will 1 man, 2 women and 3 boys working together take to do the same work?

Ans
1. $4\frac{3}{4}$
2. 4
3. $3\frac{1}{2}$
4. $4\frac{1}{2}$

Question ID : **50389010649**
Status : **Answered**
Chosen Option : **2**

Q.21 Product of two natural numbers is 135. If sum of their squares is 306, then what is the smaller number?

Ans
1. 9
2. 3
3. 15
4. 5

Question ID : **50389010663**
Status : **Answered**
Chosen Option : **1**

Q.22 A trader sells his goods at a discount of 8%. He still makes a profit of 15%. In order to make a profit of 20%, how much percent discount should he allow?

Ans
1. 4
2. 5
3. 3.5
4. 3

Question ID : **50389010653**
Status : **Answered**
Chosen Option : **2**

Q.23 The average weight of 44 students of section A is 44.8 kg and that of 40 students of section B is 44.2 kg. If 2 students of section A are shifted to section B, then the average weight of the students in both the sections become equal. What is the average weight of the two students (in kg) who were shifted from section A to section B?

Ans
1. 50.6
2. 50.8
3. 49.5
4. 50.5

Question ID : **50389010656**
Status : **Answered**
Chosen Option : **2**

Q.24 **A sum of money amounts to Rs 100000 after 4 years and to Rs 156250 after 6 years on compound interest. What is the sum (in Rs)?**

Ans
1. 40960 ✓
2. 41500 ✗
3. 42000 ✗
4. 40000 ✗

Question ID : **50389010658**
Status : **Answered**
Chosen Option : **1**

Q.25 Find the sum of value of k and its reciprocal from the following equation.

$$\frac{2}{7} \text{ of } \frac{3}{4} \text{ of } \frac{7}{10} \text{ of } k = 7\frac{1}{2}$$

Ans
1. $40\frac{1}{40}$ ✗
2. $22\frac{1}{22}$ ✗
3. $30\frac{1}{30}$ ✗
4. $50\frac{1}{50}$ ✓

Question ID : **50389010640**
Status : **Answered**
Chosen Option : **4**

Q.26 **Sum of two numbers is 2750. If the first number increases by 10% and second number increases by 20%, then their sum becomes 3170. Find the positive difference between the two numbers.**

Ans
1. 130 ✗
2. 150 ✓
3. 145 ✗
4. 160 ✗

Question ID : **50389010664**
Status : **Answered**
Chosen Option : **2**

Q.27 What is the value of $\frac{2n-m}{3n+m}$, if $1.05m = 0.035n$?

Ans
1. $\frac{1}{2}$
2. $\frac{59}{89}$
3. $\frac{59}{91}$
4. $\frac{61}{91}$

Question ID : **50389010637**
Status : **Answered**
Chosen Option : **3**

Q.28 A train passes 200 m long platform in 30 seconds and a man standing on the platform in 18 seconds. What is the speed of the train (in km/h)?

Ans
1. 58
2. 56
3. 55
4. 60

Question ID : **50389010648**
Status : **Answered**
Chosen Option : **4**

Q.29 Which is the greatest 4-digit number which is divisible by 12, 15, 20 and 25?

Ans
1. 9980
2. 9999
3. 9996
4. 9900

Question ID : **50389010635**
Status : **Answered**
Chosen Option : **4**

Q.30 Simplify the following expression.

$$\frac{(0.03)^2-(0.01)^2}{0.05-0.03}-\frac{(0.2)^3-(0.2)^2}{(0.2)^5}$$

Ans
1. 100.04
2. 10.04
3. 100.4
4. 10.004

Question ID : **50389010639**
Status : **Answered**
Chosen Option : **1**

Q.31 If $\sqrt[3]{5x-4}-6=0$, then what is the value of $\sqrt{2x-7}$?

Ans
✗ 1. 3
✗ 2. 4
✗ 3. 6
✓ 4. 9

Question ID : **50389010662**
Status : **Answered**
Chosen Option : **4**

Q.32 What will be the remainder when $(132^8 - 68^8)$ is divided by 200?

Ans
✗ 1. 112
✗ 2. 12
✓ 3. 0
✗ 4. 102

Question ID : **50389010632**
Status : **Answered**
Chosen Option : **3**

Q.33 **A path has been developed around a circular park. Inner and outer circumferences of the path are 308 m and 352 m respectively. Find the area of the path (in sq. m).**

$\left(\text{Use } \pi = \frac{22}{7}\right)$

Ans
✗ 1. 2420
✓ 2. 2310
✗ 3. 2500
✗ 4. 2280

Question ID : **50389010660**
Status : **Answered**
Chosen Option : **2**

Q.34 **The average of 10 consecutive odd numbers is 60. What is the average of the three greatest numbers and the numbers 44 and 60?**

Ans
✓ 1. 61
✗ 2. 63
✗ 3. 62
✗ 4. 65

Question ID : **50389010655**
Status : **Answered**
Chosen Option : **1**

Q.1 **Select the option that is similar to the key word given below:**
Ear

Ans
✔ 1. Nose
✘ 2. Lungs
✘ 3. Liver
✘ 4. Kidney

Question ID : **50389010677**
Status : **Answered**
Chosen Option : **1**

Q.2 **Select the option that is related to the third term in the same way as the second term is related to the first term.**
7 : 64 : : 11 : ?

Ans
✘ 1. 121
✔ 2. 144
✘ 3. 132
✘ 4. 111

Question ID : **50389010668**
Status : **Answered**
Chosen Option : **2**

Q.3 **In a code language, MUSIC is coded as NFHRX; TONIC is coded as GLMRX; and BOOST is coded as YLLHG. Then, how would MOIST be coded in that language?**

Ans
✘ 1. NMSGH
✔ 2. NLRHG
✘ 3. MNRGH
✘ 4. NRSGH

Question ID : **50389010676**
Status : **Answered**
Chosen Option : **2**

Q.4 **Select the number that will come next in the number series.**
99, 92, 83, 71, 58, ?

Ans
✘ 1. 47
✔ 2. 43
✘ 3. 45
✘ 4. 41

Question ID : **50389010685**
Status : **Answered**
Chosen Option : **2**

Q.5 Azhar bought a piano for Rs. 12,000; then he spent Rs. 3,500 on repairs and renovation. For the next 3 months, he lent it to a music company at a monthly rent of Rs.1,500. After 3 months, he sold the piano to the same music company for a price of 14,300. Did Azhar make profit or loss in the entire transaction? Select the correct option.

Ans
1. Profit of Rs.2,300
2. Loss of Rs.2,300
3. Loss of Rs.1,200
4. Profit of Rs.3,300

Question ID : **50389010688**
Status : **Answered**
Chosen Option : **4**

Q.6 In a family there are 3 married couples, 2 married sons, 1 grandson, 3 fathers, 3 mothers, 2 mothers-in-law, 2 fathers-in-law, 2 daughters-in-law, 2 unmarried daughters, 2 unmarried granddaughters and 1 unmarried great granddaughter. What is the LEAST number of members in the family?

Ans
1. 21
2. 7
3. 12
4. 8

Question ID : **50389010687**
Status : **Answered**
Chosen Option : **3**

Q.7 Three out of the four figures — A, B, C and D — are different from figure Q. Select the figure that is similar to figure Q.

Ans
1. C
2. A
3. B
4. D

Question ID : **50389010699**
Status : **Answered**
Chosen Option : **2**

Q.8 Sasikala is Malathi's only daughter. Pavan is Sasikala's father, Umesh's only son. How is Pavan's daughter, Navya related to Sasikala?

Ans
1. Niece
2. Cousin
3. Aunt
4. Daughter

Question ID : **50389010683**
Status : **Answered**
Chosen Option : **1**

Q.9 Select the option that is related to the third term in the same way as the second term is related to the first term.
DL : JR : : FN : ?

Ans
1. KS
2. LS
3. MU
4. LT

Question ID : **50389010667**
Status : **Answered**
Chosen Option : **4**

Q.10 In a code language, DIAL is coded as LAID; MOOD is coded as DOOM; and EVIL is coded as LIVE. Then, how would PLUG be coded in that language?

Ans
1. LUPG
2. GLUP
3. GLUE
4. GULP

Question ID : **50389010673**
Status : **Answered**
Chosen Option : **4**

Q.11 Select the mirror image of the following figure.

BLISSFUL

Ans
1. 
2. 
3. 
4. 

Question ID : **50389010691**
Status : **Answered**
Chosen Option : **2**

Q.12 Select the option that is similar to the pair given below:
Natural : Artificial

Ans
1. Fiction : Legendary
2. Optimism : Pessimism
3. Revolt : Rebellion
4. Generous : Exquisite

Question ID : **50389010680**
Status : **Answered**
Chosen Option : **2**

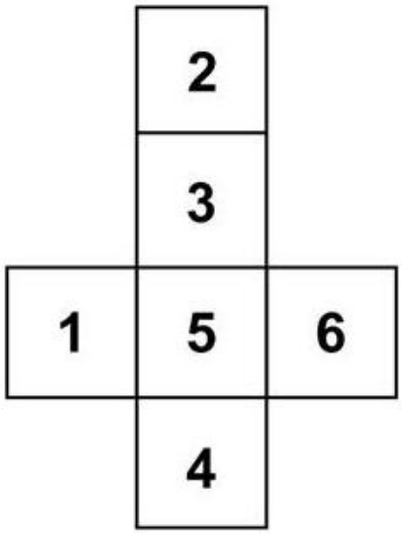
Q.13 **Select the option that is related to the third term in the same way as the second term is related to the first term.**
50 : 125 : : 70 : ?

Ans

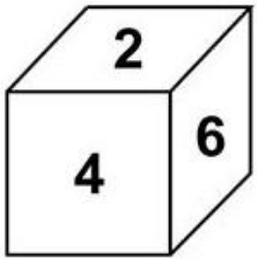
1. 275
2. 375
3. 343
4. 243

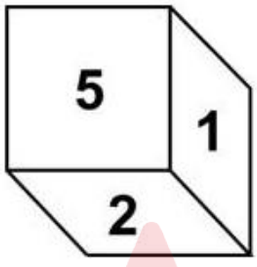
Question ID : **50389010670**
Status : **Answered**
Chosen Option : **3**

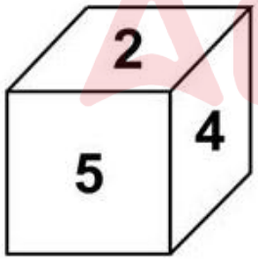
Q.14 Select the image that will be formed after the unfolded net of the cube is folded inwards to form the cube.

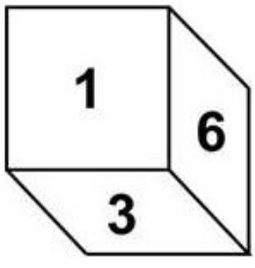


Ans

1. 

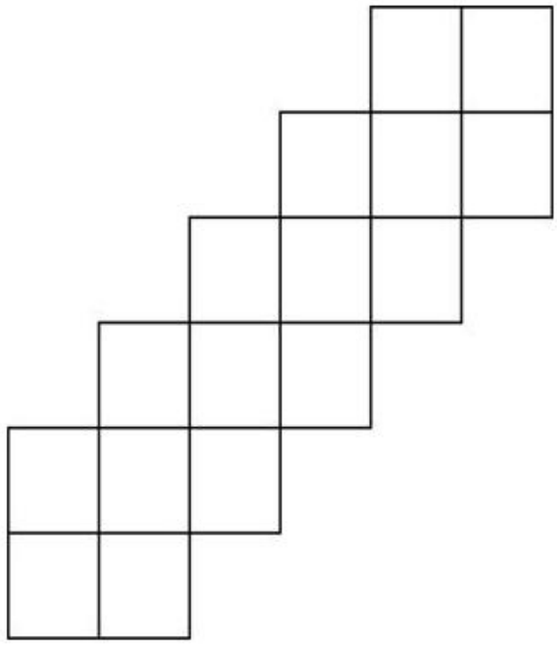
2. 

3. 

4. 

Question ID : **50389010693**
Status : **Answered**
Chosen Option : **1**

Q.15 What is the maximum number of squares in this image?



Ans
1. 24
2. 21
3. 16
4. 19

Question ID : **50389010696**
Status : **Answered**
Chosen Option : **2**

Q.16 Three out of the following for options share a similarity. Select the option that is different from the others.

Ans
1. 37, 23, 51, 91
2. 43, 17, 67, 83
3. 47, 19, 61, 89
4. 41, 13, 53, 97

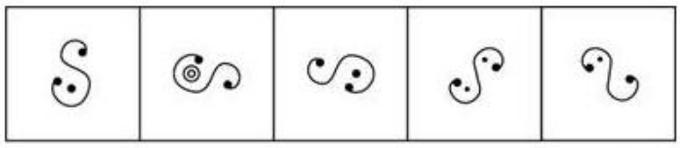
Question ID : **50389010672**
Status : **Answered**
Chosen Option : **1**

Q.17 Select the option that is similar to the pair given below:
Silk : Sericulture

Ans
1. Aviculture : Apes
2. Fish : Pisciculture
3. Silviculture : Silver
4. Fodder : Horticulture

Question ID : **50389010679**
Status : **Answered**
Chosen Option : **4**

Q.18 Three out of the four figures — A, B, C and D — are different from figure Q. Select the figure that is similar to figure Q



Ans
1. C
2. B
3. D
4. A

Question ID : **50389010698**
Status : **Answered**
Chosen Option : **2**

Q.19 Select the number that will come next in the number series.
0, 2, 6, 14, 30, 62, ?

Ans
1. 124
2. 126
3. 130
4. 128

Question ID : **50389010684**
Status : **Answered**
Chosen Option : **2**

Q.20 What the difference between the greatest and smallest 3-digit even numbers?

Ans
1. 986
2. 896
3. 898
4. 893

Question ID : **50389010689**
Status : **Answered**
Chosen Option : **3**

Q.21 Three out of the following for options share a similarity. Select the option that is different from the others.

Ans
1. Pascal
2. Newton
3. Candela
4. Watt

Question ID : **50389010671**
Status : **Answered**
Chosen Option : **3**

Q.22 Select the option that is related to the third term in the same way as the second term is related to the first term.
Malaria : Mosquito : : Plague : ?

Ans
1. Virus
2. Bacteria
3. Bat
4. Rat

Question ID : **50389010666**
Status : **Answered**
Chosen Option : **4**

Q.23 Select the option that is similar to the key word given below:
Patna

Ans
1. Thiruvananthapuram
2. Allahabad
3. Mysuru
4. Ahmedabad

Question ID : **50389010678**
Status : **Answered**
Chosen Option : **4**

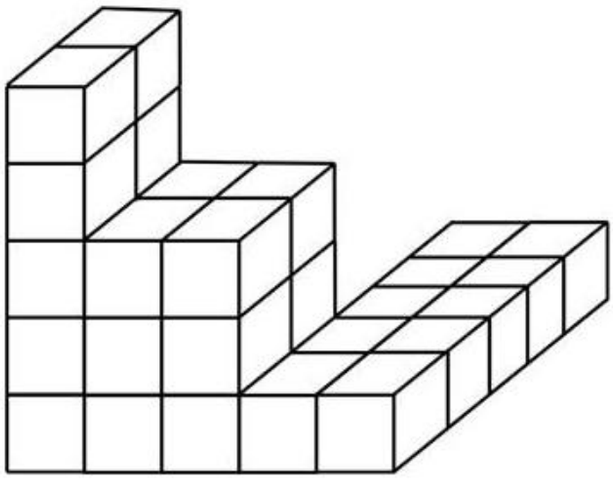
Q.24 Select the image that shows the correct water image of the following figure.

QUESTION

Ans
1. 
2. 
3. 
4. 

Question ID : **50389010692**
Status : **Answered**
Chosen Option : **3**

Q.25 What is the total number of cubes in the 3-D figure given below? (Assume that the entire arrangement is made up of the cubes)



Ans
1. 25
2. 32
3. 30
4. 27

Question ID : **50389010694**
Status : **Answered**
Chosen Option : **2**

Q.26 D's mother H is the only daughter-in-law of Z. Z's husband P has two sons only, named X and Y. How is D's father related to P?

Ans
1. Nephew
2. Son
3. Father
4. Grandson

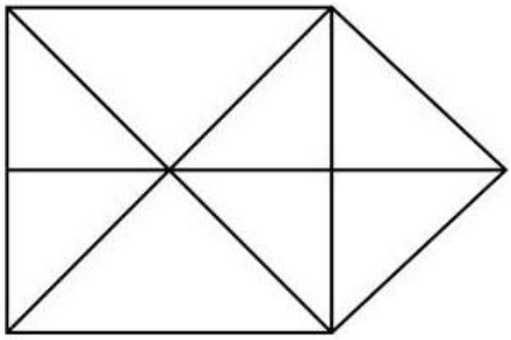
Question ID : **50389010682**
Status : **Answered**
Chosen Option : **2**

Q.27 Select the option that is related to the third term in the same way as the second term is related to the first term.
Tokyo : Yen : : Moscow: ?

Ans
1. Dollar
2. Ruble
3. Pesos
4. Russia

Question ID : **50389010669**
Status : **Answered**
Chosen Option : **2**

Q.28 What is the maximum number of triangles in this image?



Ans
1. 10
2. 14
3. 19
4. 17

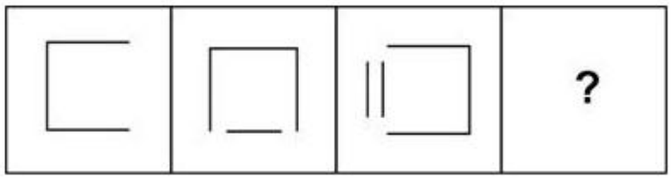
Question ID : **50389010695**
Status : **Answered**
Chosen Option : **4**

Q.29 The product of two consecutive odd numbers is 483, and their sum is 44. What is the square of the smaller of these 2 numbers?

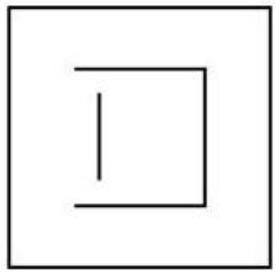
Ans
1. 400
2. 441
3. 484
4. 529

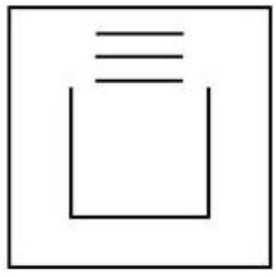
Question ID : **50389010690**
Status : **Answered**
Chosen Option : **2**

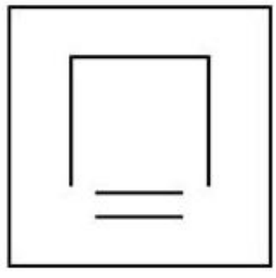
Q.30 Select the option that will replace the question mark and complete the series correctly.

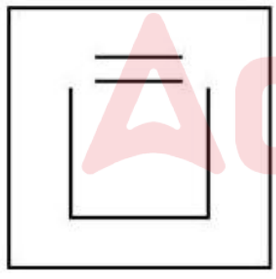


Ans

✗ 1.


✓ 2.


✗ 3.


✗ 4.


Question ID : **50389010697**
Status : **Answered**
Chosen Option : **2**

Q.31 Mandakini's father, Himalaya, is the only son-in-law of Sagar. Ganga has only two daughters, Yamuna and Kaveri; one of them is married, and has a daughter. How is Yamuna's only niece, Mandakini related to Sagar?

Ans
✗ 1. Daughter
✗ 2. Sister-in-law
✓ 3. Granddaughter
✗ 4. Niece

Question ID : **50389010681**
Status : **Answered**
Chosen Option : **3**

Q.32 In a code language, green is called blue; blue is called red; red is called orange; and orange is called white. Then, what would be the colour of peas in this code language?

Ans
✔ 1. Blue
✘ 2. orange
✘ 3. Red
✘ 4. White

Question ID : **50389010675**
Status : **Answered**
Chosen Option : **1**

Q.33 In a code language, ROOM is coded as *@@&; POOR is coded as #@@*; ROME is coded as *@&$; and ROAM is coded as *@%&. Then, how would POEM be coded in that language?

Ans
✘ 1. &@%#
✔ 2. #@$&
✘ 3. @*%#
✘ 4. #$@&

Question ID : **50389010674**
Status : **Answered**
Chosen Option : **2**

Q.34 Select the number that will come next in the number series.
4, 10, 18, 28, 40, 54, ?

Ans
✘ 1. 68
✘ 2. 69
✔ 3. 70
✘ 4. 75

Question ID : **50389010686**
Status : **Answered**
Chosen Option : **3**

Section : **Domain Knowledge**

Q.1 A vibrating system consists of a mass of 200 kg, spring stiffness of 80 N/mm. The natural frequency of vibration
of the system is

Ans
✘ 1. 5.0 rad/s
✘ 2. 2.5 rad/s
✔ 3. 20 rad/s
✘ 4. 40 rad/s

Question ID : **50389010723**
Status : **Answered**
Chosen Option : **3**

Q.2 The unbalanced vertical force, which tends to slide one portion of the beam upward or downward, is called as

Ans
1. Body force
2. Shear force
3. Reactive force
4. Bending force

Question ID : **50389010712**
Status : **Answered**
Chosen Option : **3**

Q.3 In the MIG welding process, a lot of spattering occurs when the shielding gas used is

Ans
1. Mixture of Argon
2. Argon
3. Helium
4. Carbon Dioxide

Question ID : **50389010774**
Status : **Answered**
Chosen Option : **4**

Q.4 Long cast-iron pipes of uniform thickness are manufactured by

Ans
1. Green Sand casting method
2. Lost wax method
3. Die casting method
4. Centrifugal casting method

Question ID : **50389010768**
Status : **Answered**
Chosen Option : **4**

Q.5 In a reciprocating engine, the primary direct crank makes an angle θ with the line of stroke. Then the secondary direct crank will make an angle of

Ans
1. θ/2
2. θ/4
3. 2θ
4. θ

Question ID : **50389010722**
Status : **Answered**
Chosen Option : **3**

Q.6 The performance of a steam cycle in a power plant is compared with a standard process of

Ans
1. Rankine cycle
2. Carnot cycle
3. Air standard cycle
4. Constant pressure cycle

Question ID : **50389010752**
Status : **Answered**
Chosen Option : **2**

Q.7 At constant pressure, heat energy of 1800 J supplied to 2 kg of fluid, which cause a rise in temperature of 15 degree C. The average specific heat of the fluid is

Ans
1. Cp=30 J/kg°C
2. Cp=60 J/kg°C
3. Cv= 60 J/kg°C
4. Cv=30 J/kg°C

Question ID : **50389010738**
Status : **Answered**
Chosen Option : **2**

Q.8 A Pelton wheel with a mean diameter D has the jet diameter d. The number of buckets required for this impulse turbine is

Ans
1. $\frac{D}{2d}+10$
2. $\frac{2D}{d}+15$
3. $\frac{D}{2d}+15$
4. $\frac{2D}{d}+10$

Question ID : **50389010758**
Status : **Answered**
Chosen Option : **3**

Q.9 The total weight of a body is an example for a

Ans
1. Distributed Area force
2. Point force
3. Volume force
4. Traction force

Question ID : **50389010700**
Status : **Answered**
Chosen Option : **2**

Q.10 Generally, the bill of material does not consist of

Ans
1. Part number
2. Price of the part
3. Name of the part
4. Specifications of part

Question ID : **50389010784**
Status : **Answered**
Chosen Option : **4**

Q.11 The fundamental property of material able to resist abrasion is called as

Ans
✔ 1. Hardness
✘ 2. Toughness
✘ 3. malleability
✘ 4. Resilience

Question ID : **50389010761**
Status : **Answered**
Chosen Option : **1**

Q.12 In TIG welding, the welding zone is shielded by an atmosphere of

Ans
✘ 1. Hydrogen gas
✘ 2. Carbon dioxide gas
✔ 3. Argon gas
✘ 4. Oxygen gas

Question ID : **50389010775**
Status : **Answered**
Chosen Option : **3**

Q.13 An ideal reciprocating air compressor demands less work to run if the compression follows

Ans
✘ 1. Reversible adiabatic process
✘ 2. adiabatic process
✔ 3. isothermal process
✘ 4. non-isothermal process

Question ID : **50389010750**
Status : **Answered**
Chosen Option : **3**

Q.14 The power transmitted through the pipe is maximum when the head loss due to friction in the pipe is

Ans
✔ 1. 1/3 of the total supply head
✘ 2. 2/3 of the total supply head
✘ 3. 1/2 of the total supply head
✘ 4. 1/4 of the total supply head

Question ID : **50389010748**
Status : **Answered**
Chosen Option : **1**

Q.15 The hardness of the steel can be reduced considerably by the treatment of:

Ans
✘ 1. Normalizing
✘ 2. Hardening
✘ 3. Normalizing and hardening both
✔ 4. Annealing

Question ID : **50389010763**
Status : **Answered**
Chosen Option : **4**

Q.16 In the Nitriding process for steels to harden the surface, the gas used is

Ans
✗ 1. Carbon Dioxide
✓ 2. Ammonia
✗ 3. Hydrogen
✗ 4. Oxygen

Question ID : **50389010764**
Status : **Answered**
Chosen Option : **2**

Q.17 The concept of internal energy is discussed in

Ans
✗ 1. Second Law of Thermodynamics
✗ 2. Thermodynamic Zeroth Law
✗ 3. Third Law of Thermodynamics
✓ 4. First Law of Thermodynamics

Question ID : **50389010734**
Status : **Answered**
Chosen Option : **4**

Q.18 A vehicle of mass 1200 kg is moving at a speed of 72 km/h. The amount of energy to be absorbed by the brakes to stop the vehicle is

Ans
✗ 1. 1440 kJ
✗ 2. 720 kJ
✗ 3. 480 kJ
✓ 4. 240 kJ

Question ID : **50389010728**
Status : **Answered**
Chosen Option : **4**

Q.19 A simply supported beam of span 4 m and I= $12x10^6$ mm^4 is subjected to a central load of 9 kN. The deflection of the beam when E=200 GPa, is

Ans
✗ 1. 15 mm
✗ 2. 0.037 mm
✓ 3. 5 mm
✗ 4. 0.074 mm

Question ID : **50389010714**
Status : **Answered**
Chosen Option : **3**

Q.20 The absolute temperature (K) scale needs only one fixpoint, which is the

Ans
✗ 1. Normal body temperature
✗ 2. Boiling point water
✗ 3. The melting point of ice
✓ 4. The triple point of water

Question ID : **50389010736**
Status : **Answered**
Chosen Option : **4**

Q.21 Transfer of heat from one part of a substance to another by lattice vibration is called

Ans
✗ 1. Radiation
✓ 2. Conduction
✗ 3. Natural Convection
✗ 4. Forced Convection

Question ID : **50389010729**
Status : **Answered**
Chosen Option : **2**

Q.22 The strain energy stored in a body due to the external loads is known as

Ans
✗ 1. Proof Resilience
✓ 2. Resilience
✗ 3. Modulus of Resilience
✗ 4. Resonance

Question ID : **50389010716**
Status : **Answered**
Chosen Option : **2**

Q.23 The moment of inertia about X-X axis for a hollow rectangular section with external dimensions breadth 6 mm, depth 8 mm and internal dimensions, breadth 3 mm and depth 4 mm respectively, is

Ans
✓ 1. $240\ mm^4$
✗ 2. $36\ mm^4$
✗ 3. $28\ mm^4$
✗ 4. $272\ mm^4$

Question ID : **50389010705**
Status : **Answered**
Chosen Option : **1**

Q.24 The algebraic difference between the maximum limit and the basic size is called

Ans
✗ 1. fundamental deviation
✓ 2. upper deviation
✗ 3. actual deviation
✗ 4. lower deviation

Question ID : **50389010779**
Status : **Answered**
Chosen Option : **1**

Q.25 The allowance for the liquid shrinkage is considered in designing casting patterns. The reduction in the volume of cast metal occurs during

Ans
✓ 1. Cooling of liquid metal to solid-state
✗ 2. Due to ramming
✗ 3. mould cooling
✗ 4. Rise in volume of a raiser

Question ID : **50389010770**
Status : **Answered**
Chosen Option : **1**

Q.26 A frame is made with four joints and five members. This frame is a

Ans
✗ 1. Redundant frame
✓ 2. Perfect frame
✗ 3. Imperfect frame
✗ 4. Deficient frame

Question ID : **50389010708**
Status : **Answered**
Chosen Option : **2**

Q.27 A mirror image for a 2D reflection is generated relative to an axis of reflection by rotating the object by

Ans
✗ 1. 360 degree
✗ 2. 90 degree
✗ 3. 270 degree
✓ 4. 180 degree

Question ID : **50389010782**
Status : **Answered**
Chosen Option : **4**

Q.28 A number of forces are acting simultaneously on a particle. The resultant of these forces will have the same effect as produced by all the forces. This principle is known as

Ans
✗ 1. Transmissibility of forces
✗ 2. Resolution of forces
✓ 3. Physical independence of forces
✗ 4. Equilibrium of forces

Question ID : **50389010703**
Status : **Answered**
Chosen Option : **2**

Q.29 A rectangular steel bar of size 100 x 25 x 20 mm has strains in x, y and z directions, 0.0065, 0.0025 and 0.002 respectively. The change in volume due to these strains is

Ans
✗ 1. $366.6\ mm^3$
✗ 2. $625\ mm^3$
✓ 3. $550\ mm^3$
✗ 4. $183.3\ mm^3$

Question ID : **50389010710**
Status : **Answered**
Chosen Option : **3**

Q.30 CNC machine operator can set the zero point at any position on the machine table. This feature is called

Ans
✗ 1. Machine zero
✗ 2. Fixed zero
✗ 3. Fixed origin
✓ 4. Floating zero

Question ID : **50389010781**
Status : **Answered**
Chosen Option : **4**

Q.31 The lattice structure of a ferrite iron at room temperature is

Ans
✗ 1. Close packed hexagonal
✗ 2. Cubic
✗ 3. Face centred
✓ 4. Body centred

Question ID : **50389010760**
Status : **Answered**
Chosen Option : **4**

Q.32 A vernier caliper has main scale with 10 divisions for 1 cm and vernier scale has 10 divisions for 9mm. The least count of the caliper is

Ans
✗ 1. 0.2 mm
✗ 2. 0.02 mm
✓ 3. 0.1 mm
✗ 4. 0.01 mm

Question ID : **50389010780**
Status : **Answered**
Chosen Option : **4**

Q.33 In a simple Lever of the third order, the position of effort, load and fulcrum is

Ans
✗ 1. The load is in between the fulcrum and the effort on the same side of the fulcrum
✗ 2. The fulcrum is in between the effort and the load
✗ 3. The effort and the load are equidistance to the fulcrum on either side
✓ 4. The effort is in between the fulcrum and the load on the same side of the fulcrum

Question ID : **50389010704**
Status : **Answered**
Chosen Option : **1**

Q.34 For the Taylor tool life equation, $VT^n = C$, the value of n for ceramic tools is

Ans
✓ 1. 0.40 to 0.60
✗ 2. 0.20 to 0.25
✗ 3. 0.25 to 0.40
✗ 4. 0.1 to 0.2

Question ID : **50389010777**
Status : **Answered**
Chosen Option : **4**

Q.35 The water is flowing through a pipe with a mean velocity of 2 m/s. The approximate kinetic head of water flow is

Ans
✗ 1. 0.4 m
✗ 2. 2.0 m
✓ 3. 0.2 m
✗ 4. 1.0 m

Question ID : **50389010746**
Status : **Answered**
Chosen Option : **3**

Q.36 The **open**-circuit voltage range for an AC electric arc welding is

Ans
✗ 1. 220-440 V
✗ 2. 100-210 V
✗ 3. 210-440 V
✓ 4. 50-90 V

Question ID : **50389010772**
Status : **Answered**
Chosen Option : **1**

Q.37 A casting of volume V and the surface area is cooled in an **open**-air naturally. The time required for solidification of casting is

Ans
✗ 1. directly proportional to V/A
✓ 2. directly proportional to $(V/A)^2$
✗ 3. inversely proportional to V/A
✗ 4. Inversely proportional to $(V/A)^2$

Question ID : **50389010769**
Status : **Answered**
Chosen Option : **2**

Q.38 In a Diesel cycle, the heat is supplied during compression from the external source at

Ans
✓ 1. Constant pressure
✗ 2. Adiabatic process
✗ 3. Isentropic process
✗ 4. Constant volume

Question ID : **50389010754**
Status : **Answered**
Chosen Option : **1**

Q.39 A balloon is floating in the air and is in equilibrium. The relationship between the centre of gravity and the centre of buoyancy

Ans
✗ 1. the centre of buoyancy and the centre gravity at different points on the same horizontal plane
✗ 2. the centre of gravity is above the centre of buoyancy
✗ 3. the centre of gravity and the centre of buoyancy are at the same point
✓ 4. the centre of gravity is below the centre of buoyancy

Question ID : **50389010744**
Status : **Answered**
Chosen Option : **4**

Q.40 A single plate disc clutch is used to transmit torque with the axial load W. The mean radius of the surface of friction material is R, and the coefficient of friction for the clutch material is μ. The frictional torque transmitted for a case of uniform axial wear is

Ans
1. T = 2(μ W R)
2. T = π (μ W R)
3. T = μ W R
4. T = 1/2 (μ W R)

Question ID : **50389010727**
Status : **Answered**
Chosen Option : **3**

Q.41 When a tensile specimen loaded beyond the yield point, and then the load is released. The elastic strain recovery is indicated on the stress-strain curve as a line

Ans
1. Along the original elastic curve
2. Along Y- axis, origin to yield stress
3. Along X-axis, vertical line from the point of release to return point
4. Tangent to the curve at the yield point

Question ID : **50389010767**
Status : **Answered**
Chosen Option : **3**

Q.42 A wheel accelerates uniformly from a velocity of 10 rad/s to 60 rad/s in 20 seconds. What is its angular acceleration?

Ans
1. $2.5\ rad/s^2$
2. $100\ rad/s^2$
3. $3.5\ rad/s^2$
4. $5.0\ rad/s^2$

Question ID : **50389010717**
Status : **Answered**
Chosen Option : **1**

Q.43 The “etch factor” in the chemical machining process is given by the ratio

Ans
1. tool wear/ Workpiece wear
2. Depth of cut/ Undercut
3. Undercut/depth of cut
4. Workpiece wear/tool wear

Question ID : **50389010778**
Status : **Answered**
Chosen Option : **4**

Q.44 A shaft is subjected to a bending moment of 30 Nmm and a twisting moment of 40 Nmm. The equivalent twisting moment on this shaft is

Ans
✗ 1. 140 Nmm
✓ 2. 50 Nmm
✗ 3. 10 Nmm
✗ 4. 70 Nmm

Question ID : **50389010713**
Status : **Answered**
Chosen Option : **2**

Q.45 The approximate content of Carbon in the Eutectoid Steel is

Ans
✗ 1. 0.4 %
✓ 2. 0.8 %
✗ 3. 1.2 %
✗ 4. 0.25 %

Question ID : **50389010762**
Status : **Answered**
Chosen Option : **2**

Q.46 The smallest circle that can be drawn from the centre of the cam and tangent to the pitch curve of a cam with a roller follower is

Ans
✗ 1. Pressure circle
✗ 2. Pitch circle
✗ 3. Base circle
✓ 4. Prime circle

Question ID : **50389010718**
Status : **Answered**
Chosen Option : **4**

Q.47 The coefficient of contraction C_C for an orifice can be determined using other coefficients: discharge and velocity C_v by the relation

Ans
✓ 1. $C_C = C_d / C_v$
✗ 2. $C_C = C_d . C_v$
✗ 3. $C_C = C_d + C_v$
✗ 4. $C_C = C_d - C_v$

Question ID : **50389010747**
Status : **Answered**
Chosen Option : **1**

Q.48 In the metal forming process, the value of stress required for continuous material deformation is known as

Ans
✗ 1. Ultimate stress
✓ 2. Flow Stress
✗ 3. True stress
✗ 4. Proof Stress

Question ID : **50389010771**
Status : **Answered**
Chosen Option : **2**

Q.49 **A compressive load of 2.4 kN acts on a circular bar of 200 sq. mm area and 20 mm high. It experiences a compression of 0.15 mm. Then, the Young's Modulus of the material is**

Ans

✗ 1. 3200 MPa

✗ 2. 120 MPa

✓ 3. 1600 MPa

✗ 4. 1500 MPa

Question ID : **50389010709**
Status : **Answered**
Chosen Option : **3**

Q.50 **The term (h-T.S) in deriving the maximum work done for a steady flow system is known as**

Ans

✗ 1. Van-der function

✗ 2. Rankine function

✗ 3. Helmholtz function

✓ 4. Gibbs function

Question ID : **50389010740**
Status : **Answered**
Chosen Option : **4**

Q.51 **Control charts for the attribute are concerned with**

Ans

✗ 1. Checking if the variable is out of control

✗ 2. The actual measurement of the parameter, comparing with a standard

✓ 3. Qualitative checking of defects

✗ 4. Direct measurement of the variable for control

Question ID : **50389010783**
Status : **Answered**
Chosen Option : **1**

Q.52 In under damped vibrating system, if x_1 and x_2 are the successive values of the amplitude on the same side of the mean position, then the logarithmic decrement is equal to

Ans

✗ 1. $\log(x_2 + x_1)$

✗ 2. $\log(x_2 / x_1)$

✗ 3. $\log(x_2 - x_1)$

✓ 4. $\log(x_1 / x_2)$

Question ID : **50389010724**
Status : **Answered**
Chosen Option : **4**

Q.53 Braking jets are used in turbines to

Ans

✔ 1. To bring the turbine to rest

✘ 2. Reduce the speed of turbine while running

✘ 3. To keep the speed of turbine constant

✘ 4. Used to regulate the speed according to load

Question ID : **50389010756**
Status : **Answered**
Chosen Option : **1**

Q.54 Two forces of equal magnitude 'F' acts on a particle, and the angle between these forces is θ. Then the resultant of these forces is given by

Ans

✘ 1. $2F\ Sin(\theta/2)$

✔ 2. $2F\ Cos(\theta/2)$

✘ 3. $F\ Cos^2(\theta/2)$

✘ 4. $F\ Sin^2(\theta/2)$

Question ID : **50389010702**
Status : **Answered**
Chosen Option : **2**

Q.55 A body, which can retain its shape and size, even it is subjected to external forces, is called

Ans

✘ 1. Elastic body

✘ 2. Solid-body

✘ 3. Flex ble body

✔ 4. Rigid body

Question ID : **50389010701**
Status : **Answered**
Chosen Option : **1**

Q.56 The true stress-strain relations of plastic deformation at which necking begins may be approximated. The value n for steel is $\sigma_T = K\varepsilon_T^n$ The value n for low carbon steel is

Ans

✔ 1. 0.21

✘ 2. 0.16

✘ 3. 0.44

✘ 4. 0.12

Question ID : **50389010766**
Status : **Answered**
Chosen Option : **1**

Q.57 A stone is dropped from the top of a building, which is 8 m high. The final velocity of the stone when it hit the ground is

Ans
✗ 1. 2 m/s
✓ 2. $4\sqrt{g}$ m/s
✗ 3. $2\sqrt{g}$ m/s
✗ 4. 4 m/s

Question ID : **50389010706**
Status : **Answered**
Chosen Option : **2**

Q.58 The perpetual motion machine of the first kind is impossible. This statement is the corollary of

Ans
✗ 1. Second Law of Thermodynamics
✗ 2. Thermodynamic Zeroth Law
✗ 3. Third Law of Thermodynamics
✓ 4. First Law of Thermodynamics

Question ID : **50389010737**
Status : **Answered**
Chosen Option : **4**

Q.59 The ratio of the relative lateral strain (normal to the applied load) to the relative axial strain (in the direction of applied load) is called the:

Ans
✗ 1. Einstein's ratio
✗ 2. Young's ratio
✗ 3. Pareto's ratio
✓ 4. Poisson's ratio

Question ID : **50389010765**
Status : **Answered**
Chosen Option : **4**

Q.60 Water is flowing through a square pipe 100 mm side with an average velocity of 10 m/s. The rate of flow of water is

Ans
✗ 1. 1000 ltr/s
✓ 2. $0.1\ m^3/s$
✗ 3. $1000\ m^3/s$
✗ 4. 10 ltr/s

Question ID : **50389010745**
Status : **Answered**
Chosen Option : **2**

Q.61 A duel cycle is one in which the heat is supplied at

Ans
✔ 1. Constant volume and Constant pressure compression
✘ 2. Constant pressure and Isentropic compression
✘ 3. Isentropic and Adiabatic compression
✘ 4. Constant volume and Isentropic compression

Question ID : **50389010755**
Status : **Answered**
Chosen Option : **1**

Q.62 Which of the following is the usual (approximate) composition of the soft solder used in soldering?

Ans
✘ 1. Lead 80% and Tin 20%
✘ 2. Lead 63% and Tin 37%
✘ 3. Lead 90% and Tin 10%
✔ 4. Lead 37% and Tin 63%

Question ID : **50389010773**
Status : **Answered**
Chosen Option : **4**

Q.63 In a flywheel, the maximum and minimum speeds in a cycle are 180 and 120 rpm, respectively. Then, the coefficient of fluctuation of the speed is

Ans
✘ 1. 0.6
✘ 2. 0.8
✔ 3. 0.4
✘ 4. 0.9

Question ID : **50389010721**
Status : **Answered**
Chosen Option : **3**

Q.64 An impulse water turbine works under the head of 40 m, and water is supplied to the turbine is 2.5 m^3/s. Then the power available at jet is

Ans
✘ 1. 100 kW
✘ 2. 490.5 kW
✘ 3. 50 kW
✔ 4. 981 kW

Question ID : **50389010757**
Status : **Answered**
Chosen Option : **4**

Q.65 According to the law of collision of elastic bodies, the value of Coefficient of Restitution (e) for the two inelastic bodies is

Ans
✘ 1. e = ∞
✘ 2. e = 2
✘ 3. e = 1
✔ 4. e = 0

Question ID : **50389010707**
Status : **Answered**
Chosen Option : **2**

Q.66 A refrigerator absorbs the heat of 27 kJ/s at minimum temperature. The work required to run the refrigerator if the coefficient of performance is 3.

Ans

✔ 1. 9 kJ/s

✘ 2. 81 kJ/s

✘ 3. 54 kJ/s

✘ 4. 27 kJ/s

Question ID : **50389010753**
Status : **Answered**
Chosen Option : **1**

Q.67 An oil of 2.5 litre weighs 5 N at room temperature. The specific weight of the oil is

Ans

✔ 1. $2\ kN/m^3$

✘ 2. $2\ N/m^3$

✘ 3. $0.08\ N/m^3$

✘ 4. $12.5\ N/m^3$

Question ID : **50389010742**
Status : **Answered**
Chosen Option : **1**

Q.68 A reversible engine with 25% operates with a higher temperature of 127 degree C. Then the sink temperature is

Ans

✘ 1. 54 Degree C

✘ 2. 31.25 Degree C

✘ 3. 100 Degree C

✔ 4. 27 Degree C

Question ID : **50389010739**
Status : **Answered**
Chosen Option : **4**

Q.69 The relationship between Young's modulus (E) and modulus of rigidity (G) using the Poisson's ratio μ is

Ans

✔ 1. $G = \frac{E}{2(1+\mu)}$

✘ 2. $G = \frac{E}{2(1-\mu)}$

✘ 3. $E = \frac{2G}{(1+\mu)}$

✘ 4. $E = \frac{G}{2(1+\mu)}$

Question ID : **50389010711**
Status : **Answered**
Chosen Option : **1**

Q.70 The nominal thickness of the boundary layer is defined when the velocity reaches the velocity of the free stream by

Ans
1. 90 %
2. 99 %
3. 95 %
4. 97 %

Question ID : **50389010731**
Status : **Answered**
Chosen Option : **2**

Q.71 A system in which the energy or matter flows into or out of the system is called as

Ans
1. Open System
2. Adiabatic system
3. Isolated System
4. Transient System

Question ID : **50389010735**
Status : **Answered**
Chosen Option : **1**

Q.72 A tank carries an ideal gas at an absolute pressure of 4 bar at 27 degree C. If the temperature is increased to 60 degree C. the pressure inside the tank if

Ans
1. 4.44 bar
2. 2.22 bar
3. 8.88 bar
4. 5.55 bar

Question ID : **50389010741**
Status : **Answered**
Chosen Option : **1**

Q.73 The end fixity coefficient is used in the Crippling load equation based on Euler's theory for buckling of columns. The value of this coefficient for the case; one end is fixed, and the other end is hinged, is

Ans
1. 1
2. 4
3. 0.25
4. 2

Question ID : **50389010715**
Status : **Answered**
Chosen Option : **1**

Q.74 The expression for Notch Sensitivity Factor q, in cyclic loading, using fatigue stress concentration factor K_f and Theoretical stress concentration factor K_t, is

Ans

✗ 1. $q = \dfrac{K_f + 1}{K_t + 1}$

✓ 2. $q = \dfrac{K_f - 1}{K_t - 1}$

✗ 3. $q = \dfrac{K_f + 1}{K_t - 1}$

✗ 4. $q = \dfrac{K_t - 1}{K_f - 1}$

Question ID : **50389010725**
Status : **Answered**
Chosen Option : **2**

Q.75 **The pressure ratio per stage for a centrifugal compressor is**

Ans

✗ 1. 16:1

✗ 2. 8:1

✓ 3. 4:1

✗ 4. 10:1

Question ID : **50389010751**
Status : **Answered**
Chosen Option : **3**

Q.76 **A double fillet weld is used to join the steel plates of 5 mm thick for a length of 20 mm. The allowable tensile stress for the weld metal is 100 MPa. The tensile strength of the joint is**

Ans

✗ 1. 7.07 kN

✗ 2. 20 kN

✓ 3. 14.14 kN

✗ 4. 10 kN

Question ID : **50389010726**
Status : **Answered**
Chosen Option : **3**

Q.77 An oil having kinematic viscosity 15×10^{-4} m^2/s is flowing through a pipe of 300mm diameter. For the velocity of oil flow 25 m/s, the Reynold's number is

Ans

✗ 1. 15000

✗ 2. 180

✓ 3. 5000

✗ 4. 1800

Question ID : **50389010749**
Status : **Answered**
Chosen Option : **3**

Q.78 The minimum number of teeth on the pinion which will mesh with any gear without interference for a 14 ½ ^{O} Full-depth involute gear teeth is

Ans

✗ 1. 18

✗ 2. 14

✓ 3. 32

✗ 4. 12

Question ID : **50389010720**
Status : **Answered**
Chosen Option : **2**

Q.79 The critical radius of insulation for asbestos with k=0.125 W/mK surrounding a pipe exposed to room air with h=2.5 W/m^2K is

Ans

✗ 1. 20 mm

✗ 2. 312.5 mm

✓ 3. 50 mm

✗ 4. 5 mm

Question ID : **50389010730**
Status : **Answered**
Chosen Option : **3**

Q.80 A unit cell of Face centred cubical crystal structure has ___ atoms per unit cell.

Ans

✓ 1. 4

✗ 2. 2

✗ 3. 8

✗ 4. 12

Question ID : **50389010759**
Status : **Answered**
Chosen Option : **1**

Q.81 The analogy of conductivity in heat transfer to fluid flow is

Ans

✗ 1. Density of fluid

✓ 2. Viscosity of fluid

✗ 3. Velocity of fluid

✗ 4. Pressure of fluid

Question ID : **50389010732**
Status : **Answered**
Chosen Option : **4**

Q.82 The logarithmic mean temperature difference for parallel flow heat exchangers is

Ans

1. $\frac{\theta_1 - \theta_2}{ln(\theta_1 - \theta_2)}$

2. $\frac{\theta_2 - \theta_1}{ln(\theta_1/\theta_2)}$

3. $\frac{\theta_1 - \theta_2}{ln(\theta_1 + \theta_2)}$

4. $\frac{\theta_1 - \theta_2}{ln(\theta_1/\theta_2)}$

Question ID : **50389010733**
Status : **Answered**
Chosen Option : **4**

Q.83 The oxy-acetylene gas used in gas welding produces a flame temperature of

Ans

1. 1800 degree C
2. 2100 degree C
3. 3200 degree C
4. 2400 degree C

Question ID : **50389010776**
Status : **Answered**
Chosen Option : **3**

Q.84 A gear tooth profile generated using a curve traced by a point on the circumference of a circle that rolls without slipping on a fixed straight line is knowns as

Ans

1. Epi-Cycloid
2. Hypo- Cycloid
3. Involute
4. Cycloid

Question ID : **50389010719**
Status : **Answered**
Chosen Option : **4**

Q.85 The Mercury does not wet the glass tube. This is due to the property of liquid known as

Ans

1. Density
2. Compressibility
3. Surface tension
4. Viscosity

Question ID : **50389010743**
Status : **Answered**
Chosen Option : **3**