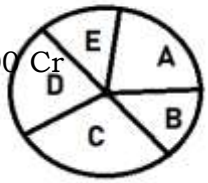
TCS NQT - 2020

1) If all father are men & some men are teacher & politician, but no teachers is a politician. Choose the correct venn diagram

2) 100 of 120 students study one of 3 languages French, German or Spanish. 60 study French, 50 study German, 45 study Spanish, 25 study French & German, 30 study German & Spanish, 15 study French & Spanish. How many study all the languages.

3) If A is 36%, B is 20 % , C is 14%, D is 34% if A is 6600 Cr Find the sum of C & E.



4) A bus from Chennai to Trichy in the between 4 Stops , 4 passengers out from each stop and no boarding at in-between stop. Find the no.of passenger boarded at Chennai, If 8 passenger left at Chennai.

5) 8 digit number formed from 1,2,3,4 & 5 (Repition allowed),the number should divisible by 4.How many no's can be formed.

6) If clock is at noon,If minute hand 10 min past 5. Find the angle,hour hand

7) 433 ml of milk is given to B by A.If 8 times of A's share = 12% of B's Share.If 12% of B's share = 6% of C's share. How many ml is C's Share?

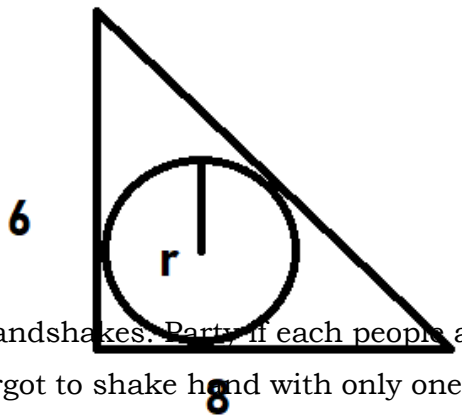
8) A machine can make 500 toys in 8 min, if another machine is bought & both the machines can make 500 toys in 2 min. How many mins required for B to make 500 toys?

9) Three – Grandson. Elder grandson 3 times older than your grandson. If the elder grandson age is 2 years greater than the sum of others two grandson. Find the age of elder grandson.

10) These are 5 consecutive integers increasing in value which of the following will give even number

11) 12ltr water is poured into 50cm*25cm*45cm tank, Find height rise of water

12) find r



13) There are 65 handshakes. Party if each people are genuine in handshakes . only one person forgot to shake hand with only one person. How many people are there in Party.

14) Amit has machine which can make 500 toys in 8 minutes. Then with the help of two machines he completed in 2 minutes. How much time will the new machine will take to complete 500 toy

15) There is a circular bookshelf under the of a govt library.The wall is 6 ft height and the base is 8.What is the radius of circular bookshelf in feet

16) A clock is started at noon. By 10 minutes past 5, the hour hand has turned through?

17) A math teacher asked his student to exhaustively list all the 8 digit that could be formed with the digit 1,2,3,4,5(repetition allowed).He then asked them to strike out all the number that were divisible by 4 from, the list.how many numbers did?

18) If a company sells A service for Rs.50 per hour then which of the following could be a revenue function for company A?

19) a, b, c, d, and e are five consecutive numbers in increasing order of size. Which of the following expression always give a even number?

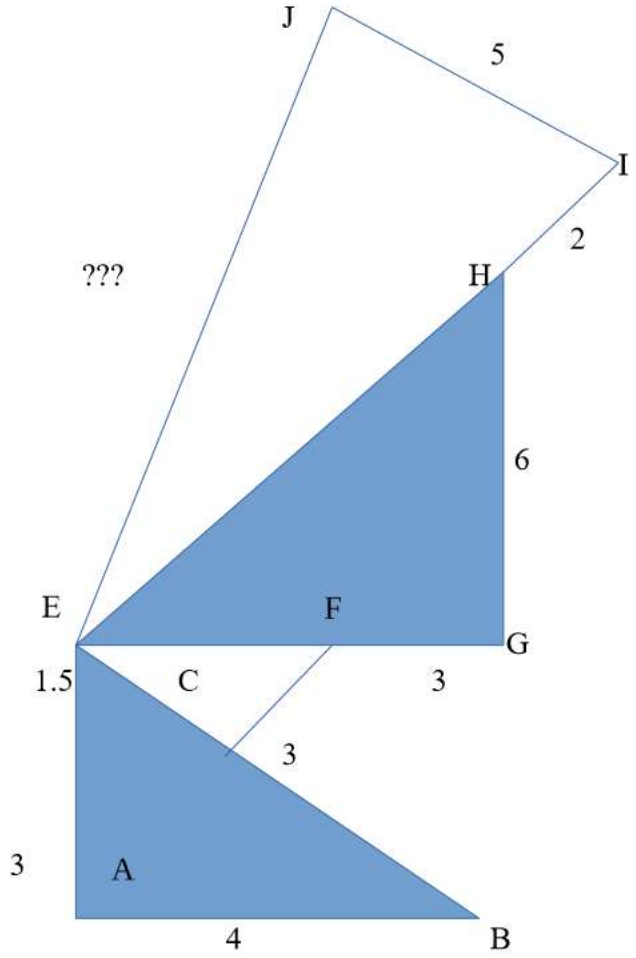
20) 100 of 120 students in a college took atleast one of the three languages, 65 choose french, 45 choose german, 20 choose spanish, 20 choose both french and german, 25 choose both french and spanish, 15 choose german and spanish. How many choose all the three languages?

21) 432 ml of the magic potion was given by Druid GETafix to Astronomix,Barbarix,Cacophonix in a such way that 8 times astronomix share is equal to 12 times.Barbarbx share.12 Barbarix is equal to 6 times .Carcophonix share .how much magic potion did Cacophonix get?

22) Priyanka gives a test with 60 multiple choice questions. Each has 5 possible answers,for correct answer each question gets 1 mark and for wrong one we get ¼. She knows 50 questions confidently and remaining 10 in guess. In that 50, 38 questions are correct and 12 are wrong. Finally how much score she will get?

23) If the incomes of Impedimenta and Phistoric are in ratio 3:5 then expenses 2:3. Who saves more money?

24) Right angled triangle are stacked up one on top of the other as shown below: If CE is 1.5, FG is 3 and Hi is 2 and what is the length of EJ?

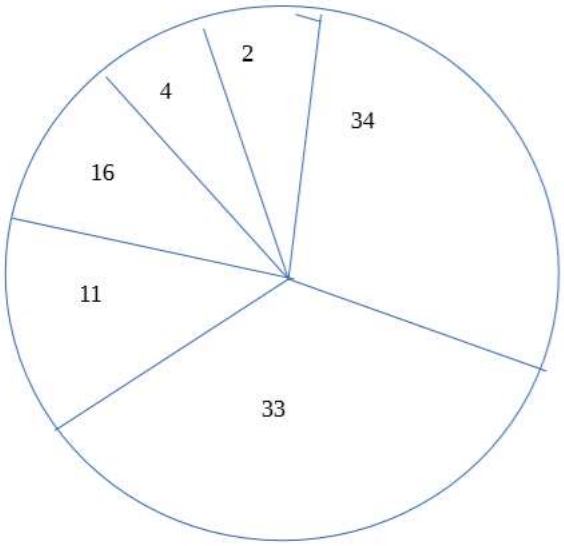


25) If the Praveen travels bus boarded from Chennai to Trichy,the bus stopped 4 times in between.Each time half of the people get down from the bus and no one else boarded.If there 8 Passengers in the bus when the bus reached trichy,How many Passengers were there in the bus when they boarded at Chennai?

26) Some scientists interpret satellite data to mean that glaciers are melting faster than in earlier centuries. In each decade since the Industrial revolution, the amount of glacier melt has doubled and some scientists predict that all the glaciers will have melted away by the year 2037. If indeed this were true, in which year would we have lost 50% of all the glaciers?

27) 12 litres of water are poured into an aquarium of dimensions 50cm length, 30cm breadth, and 40cm height. How high(in cm) will the water rise?

28) Pie chart question showing the market shares of set of banks.If the value of the market share of DEF is 6600 cr what is the market share of ABC and JKL together?



ABC-34

DEF-33

GHI-11

JKL-16

MNO-4

OTHERS-2

29) The difference between the ages of two of my three grandchildren is 3. My eldest grandchild's age is three times than age of my youngest grandchild and my eldest grandchild's age is two years more than the ages of my two youngest grandchildren added together. How old is my eldest grandchild?

30) In a party total 65 handshakes was exchanged. Assuming that each participant was equally polite to all the others and one participant missed one handshake, what is the total number of people present at the party?

31) A math teacher asked his students to exhaustively list all the 8 digit numbers that could be formed with the digits 1,2,3,4 and strike out all the numbers divisible by 4 from list. How many numbers did the students strike out?

32) Priyanka is giving a test with 60multiple choice question.Each question has 5 possible answer.Every correct response get a score of 1 and every incorrect response results in a minus of 1/4.She believes that she knows answer for 50 questions on the test.She guesses the rest of the 10 questions.If out of 50 questions that she thinks she knows,she gets 38 and 12 incorrect.What is the expected score of priyanka at the test.

33) If Company A sells a service for rs 50 per hour then which of the following could be revenue function for company A? 4.In a party total of 65 handshakes was exchanged.Assuming that each participant was equally polite to all the others and

one partcipant missed one handshake,What is the total no of people present at the party?

34) Praveen travels between chennai and trichy has of stops in between .After boarding at chennai,half the people on the bus get off at each step and no one gets on.If 8 persons were left in the bus when it reached Trichy how many were on the bus when it started off at chennai.

35) The differences between the ages of two of my three grandchildren is 3. My eldest grand child is three times older than the age of my youngest grand child and my

eldest grandchild's age is 2 years more than the ages of my two youngest grandchildren added together.How old is my eldest grand child?

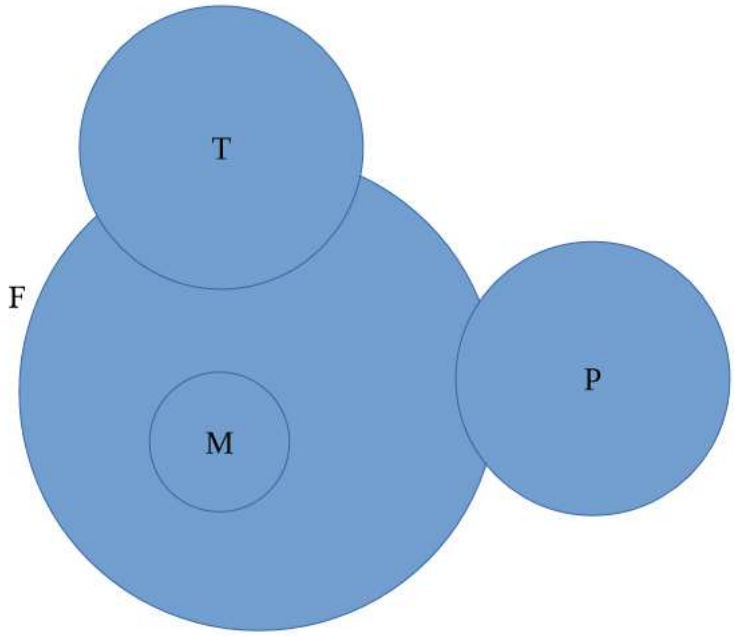
36) If the incomes of impedimenta and Justforkix are in the ratio 3:5 and their expenses are in the ratio 2:3,Who saves more?

37) Amit has a machine which can make 500 toy cars in 8minutes.He wants to buy another machine so that when both are operating together 500 toys can be made into 2 minutes ,then what could be the time taken by the second machine to make 500 toys alone?

38) 100 of the 120 students at a college take atleast one of the three languages,French German and Spanish.If 65 study French, 45 study German , 47 study Spanish,20 study French and German ,25 study French and Spanish and 15 studies German and spanish,How many study all the three languages?

39) Some Scientists interpret satellite data to mean that glaciers are melting faster than in earlier centuries.In each decade since the industrial revolution the amount of glaciers will have melted away by the year 2037.If indeed this were true,when would we have lost 50% of glaciers?

40) Given statement: syllogism: All fathers are men some are teachers or politicians but no teacher is a politician. Can be represented in Venn diagram as



41) 4.32 ml of the magic portion was given by Druid Getaflix to Astronomix,Barbarix and Cacophonix in such a way that 8 times Astronomix share is equal to 12 times Barbarix .Barbarix share is equal to 6 times Cacophonix share.How much magic portion did cacophonix get?

42) A,B,C,D,E are 5 consecutive integers in increasing order of size.Which one of the expression is not odd?

Answer: a*c+e

43) There is a circular bookshelf under of a govt library.The wall is 6ft height and base is 8.What is radius of circular bookshelf in feet?

44) The total income of santhanam in the years 2011,2012, and 2013 was Rs 36,400. His income increased by 20% each year . what was his income in 2013?

A, Rs. 10,000

B.Rs. 8,800

C,Rs.12000

D. Rs. 14,400

ANs: D. Rs. 14,400

45) A geometric box and a pencil box together cost Rs.150. the cost of the geometric box is 100 rupees more than the pencil box. What is the cost of the pencil box in rupees?

ANs:25

46) A cyclist buys a cycle for 30 pound paying with a 60 pound cheque. The seller change the cheque next door and give the cyclist change. The cheque bounces so

the seller paid his neighbour back. The cycle cost the seller paid his neighbour back . the cycle cost the seller 23 pounds. How much did the seller lose?

A.53

B.20

c. 23

D.60

Ans :53

47) you have three tuples(1,2),(2,4),(3,6). What is the shape of the function that describes these?

A . S- shaped

B. parabolic

C .Straight line

D. quadrilateral

Ans: straight line

48) the probability that there are 53 Monday in a leap year is_____

(Express answer as a ratio p/q)

ANs:2/7

49) Arun wrapped a gift for his friend in a big box, which contains 4 small boxes . Each of these small boxes again contain 3 boxes. Each of these boxes contain 3 boxes. The gift is randomly kept in one of the smallest boxes if you can open one of the smallest boxes, what is the probability that the gift is in it?

a. 1/36

b. 1/53

c.1/52

d.1/11

Ans: 1/36

50) velan and karan together can build a bridge in 5 hours. Karan works twice as long as velan does if he has to do the job alone. How long will it take velan to complete the job alone?

a. 2.5

b. 7.5

c.10

d.15

Ans:7.5

51) Udvama pradipa udarka Is a tall , lean with 24 floor its security chief lokabaya Is very popular (or notorious depending on one's math knowledge or lack thereof)

among the visitor .once a visitor asked him the ratio of people in 24th floor to those in ground floor . Lokabahya said that it four persons are added to both the floors, the ratio of fraction become 9/11. Instead, if five move out of each of the floor then the result ¾ what Is the fraction ? write your answer like 10/11 without any blank space anywhere

Ans:23/29

52) whenever a force act on a body obliquely . it's split into vertical and horizontal components for further analysis .if the force acting on a stone has the same horizontal and vertical component of value 2500/root 2 newtons, what the value of oblique force? Write your answer as a numeral without any other character

Ans: 2500

53) I,J,k,l and m positive integer in ascending order such that (8-i)(8+j)(8-k)(8-l)(8+m)= 3927. What is the value of i+j+k+l+m?

a.19

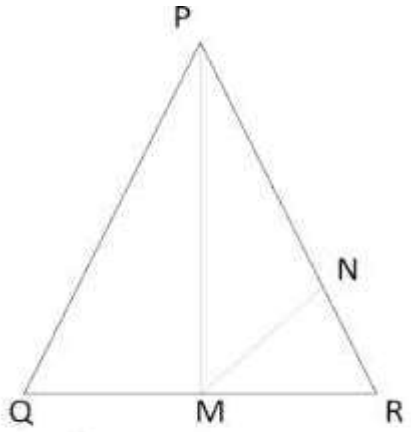
b.25

c.35

d.14

ans:25

54) triangle PQR Is isosceles with PQ=PR=20cm. A perpendicular MN is drawn from M, the midpoint of QR to the side PR dividing it the ratio 4:1 what is the length of the altitude PM?



a. 8

a.8

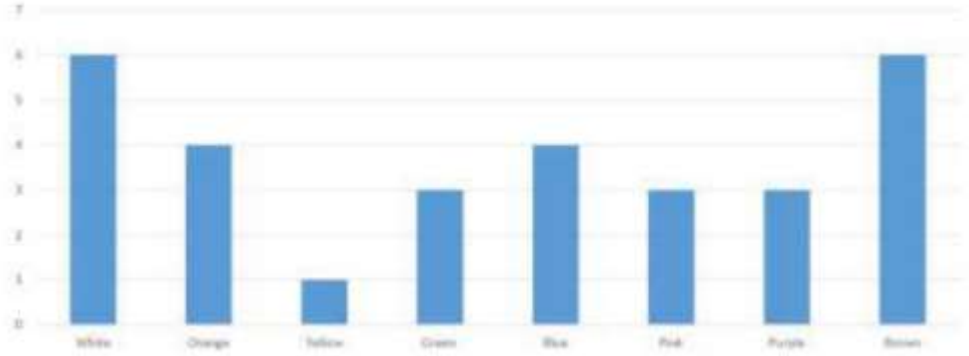
b.16

c.8 root(5)

d. 16 root(5)

ANS : 8 root(5)

55) anmol picks sweets from a bag without looking .the distribution of sweet of each colour in the bag is shown below. What is the probabaility that anmol will pick a white sweet?



Ans 0.2

56) Using principle of moments one can weigh any item using a single weighing stone .in one such experiment ,a food packet was kept hanging at a distance of 15 cm to the left of a rod's center . it was countered by a 50 gm weight of food packet? Write your answer as a numeral without any unit, space or any other character anywhere.

Ans:150 gm

57) some scientists interpret satellite data to mean that glaciers are melting faster than in earlier centuries . in each decade since the industrial revolution the amount of glacier melt has doubled and some scientists predict that all the glaciers will have melted away by the year 2037 . if needed this were true . in which year . would we have lost 50% of all the glaciers ?

Ans 2027

58) A very crowded street in T.Nagar contains 100 buildings. The building are numbered from 1 to 100.how many 9's ar used by the Chennai corporation in numbering these buildings?

A. 21

B.19

c.20

D.9

Ans: 20

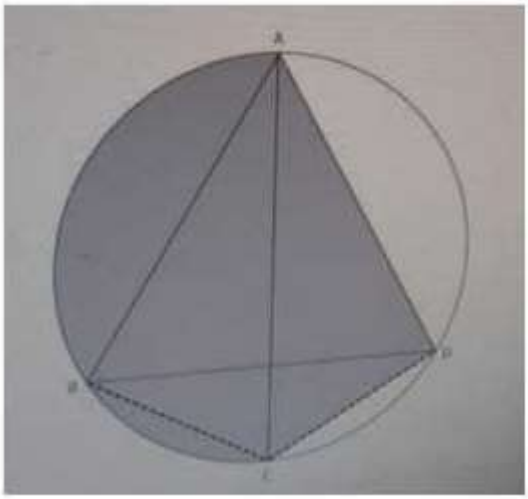
59) An equilateral triangle ABD is inscribed in a circle as shown in the figure. AC is a diameter of the circle. If the radius of the circle is 10 cm. what is the area of the shaded portion?

a. 243.7sq.cm

b. 192.4sq.cm

c. 221.4sq.cm

d. 273.1sq.cm



Answer:243.7sq.cm

60) I have a two digit number. The unit's digit is twice as ten's digit. If reverse the number and subtract 36 from it, I get the intial number started with?

Please write your answer as a numeral, without any leading or trailing space.

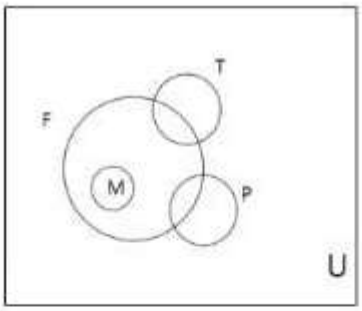
Answer :48

61) The statement:

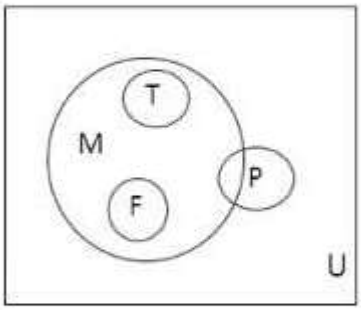
"All fathers are men some are teachers or politicians but no teachers is a politician"

Can be represented in Venn diagram as (M-Men F-Father T-Teacher P-Politician)Which of the following options?

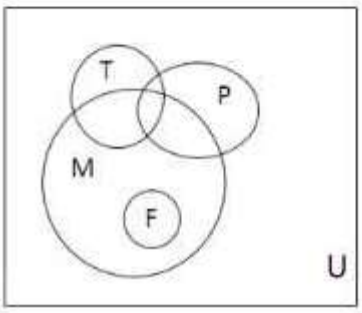
a.



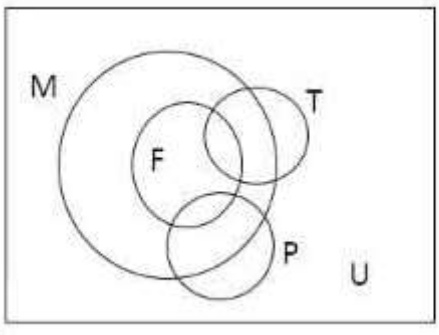
b.



c.



d.



Answer: D

62) From the above table, the function f(n) is:

n	f(n)
8	3
32	5
128	7
512	9

a. n log2(n)

b. log2(n)

c. exp(n)

d. 2n

Answer: log2(n)

63) Mary Meeker in her annual internet Trends Report said that Americans are spending even more time digital media. “6.3 hours a day in 2018, up 5 percent from the year before”. How much time did Americans spend with digital media in 2017?

a. 5hours and 53 minutes

b. 6 hours

c. 6 hours and 10 minutes

d.5 hours

Answer: 6 hours

64) Two alloys A and B are both made of iron and zinc. The ratios of iron to zinc in the two alloys are 5:3 and 1:2 respectively. A and B are combined in the ratio 4:3 to yield a new alloy C.What is the ratio of iron and zinc in C?

a. 4:3

b. 2:3

c. 1:1

d. 5:2

Answer: 1:1

65) Your friend places 100 cards in a row, one of which contains the Jack of clubs that you need to guess. You pick the card at position 12. The host removes all the cards except the card chosen by you at position 12 and another card at position 61.He now says, “One of these two cards is the Jack of Clubs”. What is the probability that the card is at position 61?

a. 99%

b. 50%

c. 98%

d. 1%

Answer: 99%

66) If f(x)=x^2 , what is the shape of f(x)?

a. Quadrilateral

b. S-Shaped

c. Parabolic

d. Circular

Answer: Parabolic

67) A race horse starts chasing a wild pony bolts the stable. The race horse finally catches up with the pony after 3 hours. If the average speed of the race horse is 49 kmph, then the average speed of the wild pony is _____kmph

a. 29.4

b. 30.4

c. 19.6

d. 32.67

Answer: 29.4

68) Twin brothers Lava and Kusha wrote the TCS NQT test. While Lava scored 45% and got 4 marks below the cut off, Kusha scored 60% and got 8 marks above cut – off and got selected for interview. What was the maximum marks in the test?

Answer: 80

69) We live and work in a time of rapidly advancing technology. A social media start up is doubling the number of users each weeks. It took just 47 weeks to acquire a million users.How long did it take to acquire half-a-million users?

Answer: 46

70) The kids Phalaa and Adhiphalaa (don't confuse with Balaa and Adhibalaa the abracadabra that sage Vishwamitra taught to Raama and Lakshmana to successfully stay the demoness Taadaka) carry some fruits.Adhiphala has three times the fruit that phalaa has. If the digits corresponding to Phalaa's and

Adhiphalaa's fruits are written in that order the resulting two digit number is a multiple of three.How many fruits does Adhiphalaa have?
Answer:39

71) Rajesh has Rs.850 in his purse made up entirely of notes of Rs.50 denomination. His wife Latha, on the other hand, has only notes of Rs.20 denomination in her purse and they amount to Rs.460. Rajesh and Latha redistribute the notes between the two purses so that if one were to choose one of the two puress at random and then randomly draw a note from it, the probability of the note being of Rs.50 denomination is maximized. After this redistribution there will be a total of Rs._____ in the purse with the larger amount of money.
Answer: 700

72) Sura, a strongly distilledalcoholic drink was use in ancient India as an anaesthetic by surgeons. A 15 litres cask initially contains pure Sura up to the brim. The Sura is diluted by removing 5 litres and replacing that quantity with water. If Sura is diluted twice, what is the ration of Sura to water in the cask?
a.2:1
b.1:1
c.1:2
d.4:5
Answer: 4:5

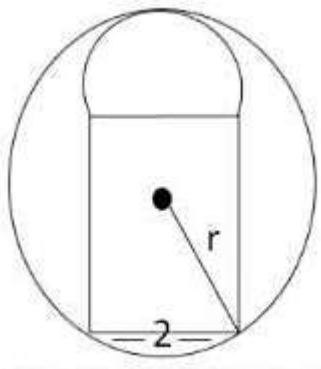
73) The speed of a common snail is about 1mm per second. I t secrets a bit of mucus that coats the ground beneath and helps it to move along. This snail we are interested in now has a problem with this secretion and so it moves one mm in the first second and in the subsequent seconds it moves only half the distance covered in the prev second. Algae, the good it cherishes, is at 3 mm distance from this snail. In how much time it will reach its food.
a. It will never reach its food
b. 2.5 seconds
c. 2.7685 seconds
d. 3 seconds
Answer: It will never reach its food

74) The muzzle velocity of a bullet in 5.56 INSAS rifle (Indian version of AK47) is 882 meters/sec .A sergeant holds this riffle facing the sky and shoots a bullet. What's the bullet's maximum reachable altitude? Assume g=9.8m/sec/sec. Write your answer as numeral without any other character.
Hint v^2=u^2+2gs
Answer: 39690

75) Ahilyanagari Express running at as peed of 60kmph and Cholan Express at 120 kmph take 10 seconds to cross each other, when they are running in opposite directions(these two trains operate in the same route only as a mathematical fantasy and not in reality).If Cholan express is 120 meters longer than Ahilyanagari Express , what's the length in meters of the latter?
Answer: 190

76) A police car starts chasing a fugitive in a BMW 4 hours after the BMW escapes from the scene of crime at 10 AM. The BMW drives for 10 km through crowded roads of Shanghai and then drives into a highway where the traffic allows vehicles to move twice as fast .After a while, the police car finally catches up with the BMW after a chase that lasted 5 hours. By this time the moon was up in the sky for 4 hours. If the average speed of the police car is 50kmph , then the average speed of the BMW is _____kmph
Answer:27.79

77) A semicircle is drawn on one of the sides of the square with the side of the square as the diameter of the circle. If the length of the side of the square is 2 cm. what is the radius of the smallest circle that can contain this figure?



Write your answer in fractions.
Answer: 17/8

78) Bhaskar and Shakuntala challenge each other in math and are at loggerheads always.At the end of a milestone in their project the team had a dinner and were seated in a circular table. If there were 16 people for dinner, what are the odds against the event that Bhaskar and Shakuntala will sit together (Give the answer as a:b)
Answer:13:2

79) The expression 3(x^2)-mx+0 leaves a remainder of -2 when divided by x-3. What's the value of m?
Answer: 13

80) 12 litres of water is poured into an aquarium of dimensions 50 cm length, 30 cm breadth and 40 cm height . By what height (in cm) will the water rise?
a. 10
b. 8
c. 20
d. 6
Answer: 8

81) Two finals are scheduled – The Wimbledon match and the world cup cricket at the same time. Anu wants to watch the Wimbledon finals and her brother Vinu wants to watch WCC final. They decide to roll a tetrahedral dice twice.The tetrahedral is numbered 1,2,2,4 on its four sides and all the numbers are equally likely to appear. Anu rolls first and then vinu rolls. If the number on the first roll is strictly greater than the number on the second roll.Anu wins and gets to watch Wimbledon. What is the probability that Anu will get to watch Wimbledon?
a.7/16
b.9/16
c.3/8
d.1/2

82) An electric circuit has:
- A power source
- A resistor R and;
- Three parallel connected resistors each of value 3R

All these connected in series. If the current flowing through the circuit is five amperes. What will be its value if R is doubled and each of 3R is halved?
Answer: 4 amps

83) Twin brothers Lava and Kusha wrote the TCS NQT test. While Lava scored 45% and got 4 marks below the cut off, kusha scored 60% and got 8 marks above cut off and got selected for interview. What was the maximum marks in the test?
Answer: 80

84) Ms Trikonapriya wants to decorate her abode's frontage with a triangular lawn. The two sides of this lawn are of five and six meters, subtending an angle of 30 degrees. If the lawn maintainer charges Rs.10 per square meter, how much would Trikonapriya pay to him for the entire lawn? You answer should contain only the numeric value.
Answer: 75

85) Bhaskar wanted to send some documents to Shakuntala. He had her address without the 6-digit pin code. He didn't want to risk sending documents without pin code. So, he called Shakuntala. She did not give the pin code directly, she said,"The first four digits are 1910 in hexadecimal and the last four digits are 3177 in octal".Bhaskar could courier the documents now. What is her pin code?
Answer: 641663

86) If it takes 10 3D printers 10 minutes to print 10 models. How long will it take 100 printers to print 100 models?
Fill the correct answer in minutes_____
Answer: 10minutes.

87) Eighty cricket balls have been packed equally into two bags A and B. 20 of these balls have been signed by Kapil Dev- some of the signed balls are in bag A and the rest in bag B. One bag is selected and a ball is randomly picked from that. Given that the ball is signed, the probability that is from Bag B is computed to be 2/3, If bag A is twice more likely to be selected then bag B, how many of this signed balls are in bag B?
Answer: 16

88) In the normal course, Ravi, Sanjay and Mukund can each individually build a wall in 5, 8 and 10 days respectively. Due to difficult terrain and slushy conditions at the site, the individual time required for each to complete the work has increased by 20%, 25% and 50% respectively. How long will they take to build the wall if they work together?

a. 3 days

b. 4days

c. 6 days

d. 2 and 6/17days

Answer: 3 days

89) The difference between the ages of two of my three grandchildren is 3. My elder grandchild is three times older than the age of my youngest grandchild and my eldest grandchild's age is two years more than the ages of my two youngest grandchild added together. How old is my eldest grandchild?

a.10

b.12

c.15

d.13

Answer: 15

90) If company A sells a service for Rs.50 per hour then which of the following could be a revenue function for company A?

a. R(t)=50*t

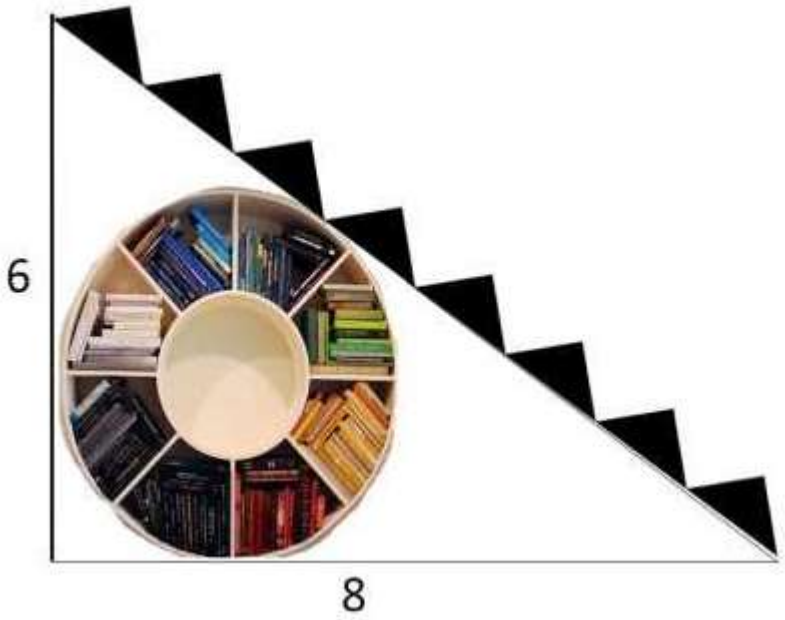
b.R(50)=50+t

c.R(t)=50+t*t

d.R (t) =50+t

Answer: 50*t

91) There is a circular bookshelf under a stair in a Govt library. The wall is 6ft. height, the distance of the base of the stairs from the corner of the room is 8ft. What is the radius of the circular bookshelf in feet?



a. 1

b. 3

c. 2

Answer: 3

92) Your friend places 100 cards in a row, one of which contains the jack of clubs that you need to guess. You pick the card at position 15 and another card at position 87. He now says, “One of these two cards is the jack of clubs”. What is the probability that the card is position 87?

a.0.01

b.0.5

c.0.98

d.0.99

Answer: 0.99

93) The difference between the ages of two of my three grandchildren is 3. My elder grandchild is three times older than the age of my youngest grandchild and my eldest grandchild’s age is two years more than the ages of my two youngest grandchild added together. How old is my eldest grandchild?

a.10

b.12

c.15

d.13
Answer: 15

94) In a country, 60% of the male citizen and 70% of the female citizen are eligible to vote. 70% of male citizens eligible to vote voted, and 60% of female citizens eligible to voted. What fraction of the citizens voted during the election?
a) 0.54
b) 0.42
c) 0.49
d) 0.48
Answer: 0.42

95) 51. A lady had some socks and hats in her closet- 17 blue, 47 red, and 24 yellow. The light are out and its totally dark. In spite of the darkness, she can make out the difference between the hat and the socks. She takes out an item out of the closet only if she is sure that is a sock. How many socks must she take put to make sure she has two socks of each colour?
a.73
b.64
c.57
d.55
Answer: 73

96) In function p(x,y) = 85x – (50y+150000). What value indicates the increase in P that corresponds to increase in x, when y is kept as a constanr?
a.85
b.135
c.35
d.50
Answer: 85

97) A clock is started at noon. By 10 minutes past 5, the hour hand was turned through.
a.155 degree
b.145 degree
c.160 degree

d.150 degree
Answer: 155 degree

98) If ram speaks truth 40% of time and Laxman speaks truth 60%of time then percentage of case the are going to contradict each other.
Answer: 52%

99) Dimensional analysis plays an important and useful role in physics. Mass is denoted by M, length by L and time by T. So, momentum of particle, which is a product of its mass and velocity has a dimension of MLT-1 (velocity is distance/time which is length/time). In a given physical equation, the left hand side and right hand side must have the same dimensions.
Kinematic viscosity (k) of a fluid is a measure of its resistive flow under gravity's influence. It's given by the equation:
K= n/d, where
n is dynamic viscosity; its dimension is Force Time/Area
Also density (mass volume).
What's the dimension of kinematic viscosity?
a. L^-2T^-2
b. L^-2T
c. LT^-2
d. L^2T^-1
Answer: L^2T^-1

100) uma has 50 red and 50 blue balls. she has two bowls with her. She has to distribute the balls in these bowls in such a way that none of the bouls are left empty. If one were to choose one of the two bowls at random and then randomly draw a Ball from it, the probability of the ball being red is maximized. After this distribution, there will be a total of _____ balls in the bowl with a larger number of balls.
Answer: 99

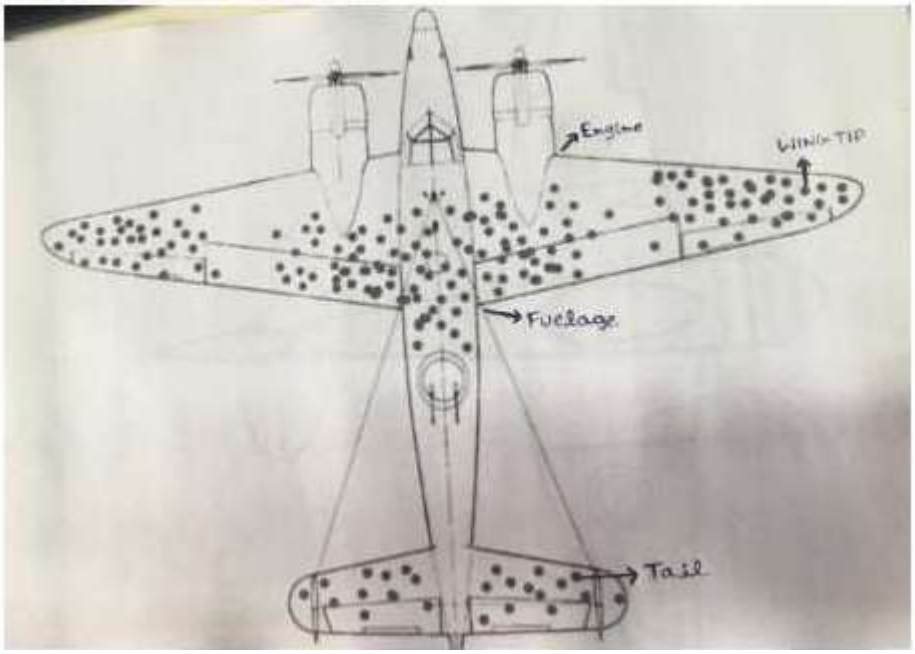
101) Bhaskar called his friend Shakuntala for dinner to celebrate his wedding anniversary. Shakuntala reached the street where he was but forgot the door number. She called Bhaskar for his door number. Being a geek in maths, he didn't give the door number directly buttold this " It is the middle number of three

numbers, where the difference between first and second number is same as that betweensecond and third. The product of the first and last is 273 and the sum of all three is 51". Shakuntala reached his house on time. His door number is?
Answer: 17

102) A Volvo bus from Chennai to Bangalore ,it contains five stops inbetween . In every stops half of the passengers are getting down, at last only 2 remains in the bus in Bangalore stop. How many passengers were in the bus at the starting?
Answer: 64

103) There is a horse and a saddle. the sum of their cost is 1100. The sum of their cost is Rs.1100. The cost of the horse is Rs. 1000 greater than saddle. What is the cost of the saddle?
Answer: Rs.50

104) The figure below depicts the damage done to aircraft that had returned their base from mission in world war 2.the bullet holes per square foot in the tail,wingtips, fuselage , and engine are 1.1,1.5,1.8,and0.2respectively.where does the airforce need to primarily reinforce the aircraft to minimize losses to enemy fire and to maximize their return home ?



105) All the nonempty S of (1,2,3,4,5,6,7), how many do not contain the number[S],where [s] denote the number of element in S?for example ,{3,4} is one such subset, since it does not contain the number 2.

106) The sum of 18 consecutive positive integers is a perfect square what is tha smaliest posstive valu of this sum?

- 441
- 225
- 289
- 169

107) A shop sells chocolates it used to sell chocolates for rs. 450 each. But there were no sales at that price. When it reduced the price all the chocolates were solid out enabling the shopkeeper to release rs. 316.32 from the chocolates alone. If the new price was not less then half the original price quoted how many chocolates were sold (at the reduced price)?

- 62
- 72
- 65
- 73

108) A cat makes 20 leaps in the same time as a dog makes 10 but each leap of the dog is 2.5 m while the cat leaps only 1 m at a time. How many leaps will the dog make before catching up with the cat on a straight food. Shopping the cat was 30m ahead of the dog. When both started?

- 120
- 50
- 13
- 30

109) In ten years the product of aged of arun and what will be 400 more than it is now. The same of their ages six years from now is consume will the ages are in who number of years.

- 40
- 42.
- Can not be uniquely determine

- 36

110) At standard hospital during one year, multiple –birth statistics were as following : sets of twins, triplets and quadruplets accounted for 1000 of the babes born. There were four times as many sets. Of triplets as set of quadruplets and there was three times as many sets of twins as sets of triplets. How many of these 1000babies were in sets of quadruplets?

- 64
- 160
- 100
- 40

111) Consider integersP,q such that

$-7 < p < 6$ and

$-6 < q < 5$

If n is the maximum possible value of $p^2 + pq + q^2$, what is the remainder if n is divided by?

- 5
- 1
- 2
- 4

112) A Passenger train takes five hours less for a journey of 252 Km if its speed is increased by 35 Kmph from its normal speed. The normal speed in Kmph (to the nearest integer) is

- 42
- 28
- None of these answers
- 35

113) There are two bags containing white and black balls. In the first bag there are 8 white and 6 black balls and in the second bag there are 4 white and 7 black balls. One of the bags is chosen at random and a ball is drawn at random from it. Find the probability of this ball being black.

- 21/308

- 41/308
- 8/77
- 41/77

114) An airplane has four emergency exits. In an emergency , it requires 8 seconds per passenger to evacuate the plane if no hand baggage is carried by the passenger . How long will it take to evacuate 53 passengers in an emergency (when hand baggage is not allowed to carried)?

- 7 min 4 secs
- None of the other 3 choices
- 1 min 44 secs
- 1 min 52 secs

115) 8 year old Easha visited her grandpa. He gave her this riddle:
I started working at 18. I spent 1/6 of my working life in factory. I spent 1/3 of my Working life in an office and I spent 1/3 of my working life as a school caretaker. For the last 9 years of my working life I have been doing social service. How old am I?.

- 60
- 72
- 69
- 75

116) Given that 0< a < b < c < d, which of the following is the largest?

- (b+c) / (a+d)
- (c+d) / (a+ b)
- (a+d) / (b+c)
- (b+d) / (a+b)

117) Which is the largest amongst the numbers?

- 380
- 460
- 550
- 1140

- 2
- 4
- 3
- 1

118) In this question A^B means A raised to the power of B. What is the remainder when 48 ^ 565 is divided by?

- 5
- 1
- 6
- 4

119) There are five boxes in the cargo. The weight of the first box is 200 kg and the second box is 20% heavier than the third box, which 25 % heavier than the first box. The fourth box weighs 350 kg is 30% higher than the fifth box. Find the difference in the average weight of the four heaviest boxes and four lightest boxes.

- 65 kg
- 37.5 kg
- 75 kg
- 51.5 kg

120) Jack can dig a well in 16 days. Paul can dig the well in 24 days. Jack, Paul and Hari dig the well in 8 days. Hari alone can dig the well in

- 48 days
- 96 days
- 24 days
- 32 days

121) Easha bought two varieties of rice costing, 50 Rs per kg and 60 Rs per kg each and mixed them in the same ratio. She sold the mixture at 70 Rs per kg making a profit of 20 percent. What was the ratio of the mixture?

- 1 : 5
- 3 : 8
- 1 : 10
- 2 : 7

122) In a single throw with the two dice, Find the probability that their sum is a multiple of 4 or 5.

- 4 / 9
- 1 / 2
- 1 / 3
- 17 / 36

123) Three blocks of Cheese weigh 690 kg, 710 kg and 750 kg . For packing, the cheese is cut into pieces of equal weight with no waste. What will be the minimum number of pieces?

- 128
- 430
- 215
- None of the others

124) 100 books are distributed to 30 people so that each receives atleast one book. The least number of people that would receive the same number of books is?

125) When Asha and Usha stand on a weighing scale together , the reading shows 151 kgs , when Usha and Isha stand together the reading is 132 kgs and when Aasha and Isha stand together the reading is 115 kgs . What is the weight of Usha in kgs?

126) Six bags of marbles contain 18, 21, 23, 25 and 34 marbles respectively. All the marbles in one of the bags are chipped. The other five bags contain no chipped marbles. Ria takes three bags and Ruhi takes two of the others. Only the bag of chipped marbles remains. If Ria gets as many marbles as Ruhi , how many chipped marbles are there?

127) Brinda and shanthi run in opposite directions on a circular track, starting at diametrically opposite points. They first meet after Brinda has run 100 meters . They next meet after shanthi has run 150 meters past their first meeting point. Each girl runs at constant speed what is the length of the track in meters?

128) Easha leaves home for school (which is a long distance away), riding her bicycle at a rate of 7 kilometers per hour . Her mother discovers that she has

not taken her maths homework fifteen minutes after Easha left. She immediately leaves home to take it to her by car. If her mother drives at 56 kilometers per hour. How far (in terms of Kilometers) must she drive before she reaches Easha?

- 3
- 4
- 2
- 1

129) In class A the ratio of boys to girls is 4 : 5 , In class B the ratio of boys to girls is 8 : 5, if the ratio of the boys to the girls in both classes put together is 6 : 5, what is the ratio of number of girls in class A to number of girls in class B?

- 3 : 1
- 28 : 35
- 1 : 1
- 2 : 1

130) The remainder when m + n is divided by 12 is 8, and the remainder when m-n is divided by 12 is 6 , if m > n , then what the remainder when mn is divided by 6?

- 1
- 2
- 4
- 3

131) The five tyres of car (four road tyres and one spare) were used equally in a journey of 40000 kms. The number of kms of use of each tyre was

- 32000
- 10000
- 40000
- 8000

132) If n is positive real number, which of the following is the largest?

1. 3n / (3n + 56)
2. 5n / (5n + 93)
3. 7n / (7n + 131)

- 3
- 1
- 2

133) In two years Raj's father will be twice Raj's then; whereas four years ago , his mother was twice his age then, if Raj is going to be 27 years old four years from now, then what is the sum is his parent' s age now?

- 88
- 86
- 92
- 90

134) A vendor of electronic gadgets priced his gadgets at Rs. 85 per gadget but found that there were no takers at all. Thereafter he reduced the price of the gadgets (repricing it to the whole number of rupees) and managed to sell all of them, realizing Rs. 7728. Which of the following was a possible number of gadgets he had?

- 92
- 97
- 89
- 95

135) Raju can do a piece of work in 10days. Vicky in 12 days and Tinku in 15 days . They all start the work together but Raju leaves after 2 days and Vikky leaves 3 days before the work is completed. In how many days is the work completed?

- 6
- 7
- 5
- 9

136) The length, breadth and height of the room are in the ratio 3 : 2: 1. If the breadth and height are halved while the length is doubled. Then the total area of the four walls of the room will

- decrease by 18.75 %
- decrease by 13.6 %
- decrease by 15 %

- decrease by 30 %

137) A series of books was published at seven year intervals. When the seventh book was issued the sum of the publication years was 13, 524 .when was the first book published?

- 1800
- 1911
- 1811
- 1900

138) According to the stock policy of a company, each employee in the technical division is given 15 shares of the company and each employee in the recruitment division is given 10 shares, employees belonging to the both communities get 25 shares each. There are 20 employees in the company and each one belongs to at least one division. The cost of each share is Rs.10. If the technical division has 15 employees and the recruitment division has 10 employees. Then what is the total cost (in rupees) of the shares given by the company?

- 3250
- 3120
- 3180
- 2650

139) Raj travels as part of his journey by taxi paying Rs.15 per km and the rest by train paying Rs. 21 per km. If he travels total of 450 km and pays Rs. 8130. The distance traveled by Raj is:

- 230 km
- 190 km
- 180 km
- 260 km

140) In the sequence 2001, 2002, 2003, each term after the third is found by subtracting the previous term from the sum of the two terms that precede that term. For the example the fourth term is 2000 - 2001 – 2003 = 2000 what is the 2018th term in this sequence?

141) Asha is taking group of eight children of different ages (all of whom have celebrated a birthday) on a picnic. During the trip, the oldest child who is 9, spots a license plate with the 4 digit number ,each of two digits disappears two times, " look, Miss" she exclaims. "That number is evenly divisible by the age of each of us kids". " That's right" replies Asha and the last two digits just happen to be my age. " Which integer from 1 to 9 is not the age of one of the children.?

142) Ria is playing with the calculator . She enters an integer and takes its square root, then she repeats the process with the integer part of the answer. After the third repetition the integer 1 following first time. What is the difference between the largest and the smallest number Ria could have started with?

143) Latha is going to build a tower by stacking Lego – like bricks atop one another. The tower is to be 20 units tall, Latha has some bricks that are 2 units tall and other bricks that are 5 units tall. In how many different ways can she build the tower?

144) The product 8 x 888……8, where the second factor has n digits, is an integer whose digits have a sum of 1000 what is n?

145) The first term of a sequence is 2005. Each succeeding term is the sum of the cubes of digits of the previous term. What is the 2018^{th} term of sequence?

146) Let a(1) =2 and for n>=1, a(n+1) = (a(n) -1) / (a(n) + 1). The value of a (100)is

147) Consider integers p , q such that

$-7 < p < 6$ and

$-8 < q < 5$

If n is the maximum possible value of $p^2 + pq + q^2$, what is the remainder if n is divided by 7 ?

- 1
- 4
- 5
- 2

148) David drives from his home to the airport to catch a filght. He drives 35 kms in the first hour but realizes that he will be 1 hour late if he continues at this speed. He increases his speed by 15 kms per hour for the rest of the way to the airport and arrives 30 minutes early. How many kms is the airport from his home?

- 280
- 175
- 210
- 245

149) In binary code all numbers are written in base 2. The value of X (in decimal) in the equation (all in binary)

$X = 100^{10} + 1100 - 10011$ is

- 16
- 9
- 1097
- -3

150) In a library 20% of books are in english 33.33% are in german and the remaining books are in French . among the german books 75% are fiction books and the rest are non- fiction among the nonfiction books 10% are biographies and are auto biographies the rest are books on society , arts and culture . among the auto – biographies there are 20 books written by women which comprises 40% of the auto – biographical novels. How many books are there in the library in total?

- 3000
- 4000
- 1500
- 2000

151) A shop sells chocolates it used to sell chocolates for rs 450 each. But there were no sales at that price. When it reduced the price all the chocolates were solid out enabling the shopkeeper to release rs 316.32 from the chocolates alone. If the new price was not less then half the original price quoted how many chocolates were sold (at the reduced price)?

- 62

- 72
- 65
- 73

152) In this question a^b means A raised to the power B. if two positive integers a and b are written as a = (x^3)(y^2) and b = x(y^3),(x,y are distinct prime numbers) then HCF(A,b)is:

- (x^2)(y^2)
- Xy
- X(y^2)
- (x^3)(y^3)

153) A got 20 out of 50 in history 30 out of 60 in English and x out of 40 in chemistry . what should be the value of x such that the average of the percentages in various subjects is 60%?

- 38
- 30
- 34
- 36

154) Suppose that the function f is defined on natural numbers (integers > 0) such that F (1) = 2 and f(x+y) = f(x)+ f (y) +9xy – 3 for all x,y. what is the value of f(2) + f(6) ?

- 120
- 157
- 72
- 142

155) Three trpists athos, porthos and aramis , working simultaneously can type 360 pages in hours. In one hour aramis can type as many pages more than porthos as porthos can type more than athos . in 3 hours aramis can type as many pages as a those can in 13 hour. How many pages does each of them type per hour?

- 9, 24. 39
- 3, 8, 13
- 45, 120, 195

- 11, 26, 41

156) Six distinct integers are picked at random from(1,2,3,.....10). what is the probability that among those selected the second smslier is 3?

- 1/6
- 1/60
- 1/2
- **1/3**

157) Consider has table with 100 slots. Collisions are resolved using changing. Assuming a simple uniform hashing, what is the probability that the first 3 slots are unfilled after the first 3 insertions? (NOTE: 100^ 3 means 100 raised to the power?

- (99x98x97)/100^3
- (97x96x95)/(6x100^3)
- (97x96x95)/100^3
- (97x97x97)/100^3

158) It is known that in the A, X,B,C,D,Y,11 the sum of any 3 consecutive term is 19. The value A+B+C+D is

11

None of these

21

30

159) Question No: 15

In the questions, x^y stands for x raised for the power y. For example, 2^3=8 and 4^1.5=8 if a,b are real numbers such that a+b = 3 a ^2+b^2=7, the value of a "4+b" is

* 51
* 47
* 49
* 45

160) Easha's father was 34 years of when she was born, Her younger brother, Shashank, now that he is 13, is very proud of the fact that he is as tail as her,

even though he is three years younger then her Esha's mother, who is shorter than Easha's, was only 29 when shanshank was born. What is the some of the ages of Easha's parents now?

* 29
* 92
* 66
* 76

161) The Air conditioned bus service from Sirserf Industry park runs at regular intervals throughout the day. It is now 3:12 pm and last bus arrived 1 minute arrived but ago but it was 2 minute late. The next bus is due at 3:18. When is the bus after that due?

* 3:24pm
* 3:29pm
* 3:25pm
* 3:27pm

162) Sixteen football teams play in a tournament. They are first divided into four groups, each are four teams. In each group each team plays each other once. The best two teams from each group than play in a knockout tournament (when a team loses a game it is eliminated) to decide the overall winner. How many matches must be played?

*16
*15
*31
*25

163) A and B completed a together in 5 days. Had a worked at twice his own speed, it would have taken them 4 days to complete the job. How much time would it take for A alone to do work?

*10days
*15days
*25days
*20days

164) Overfishing is a serious environment Issue. It has been determined by the scientist that if a net of a trawler has mesh size x cm (a square mesh), then the percentage of fish entering the net that are caught in the net is (109-9.0^-0.05x), For example the mash size is zero, 100% of the fish that enter the net will be caught.

A trawler with net with a square mesh, that was suspected of using an illegal size a net, dropped its net to the ocean near the Andaman's and the cost guard officials arrested the crew. The scientist later looked at the size of the fish caught, and estimated that for the net used by the trawler, at least 97.93% of the fish entering the net would be caught. What is the maximum value of x for the net used by the trawler?

*11

*8.5

*9

*None of the other answers

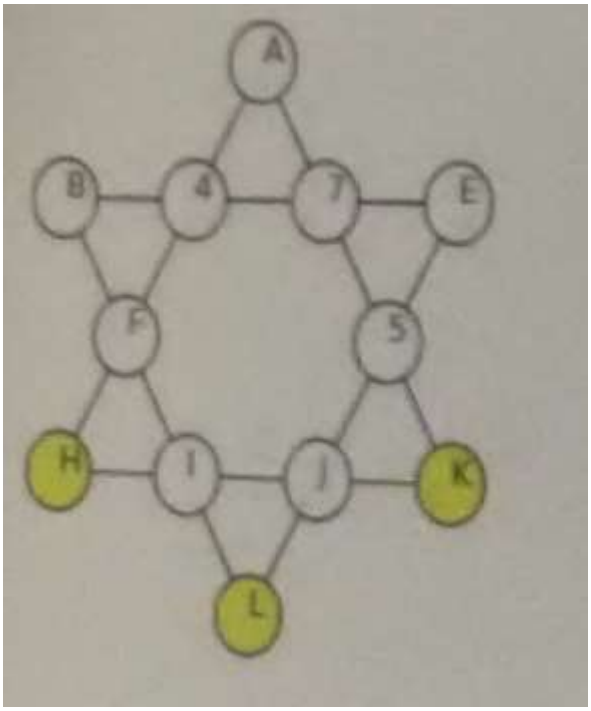
165) A road network covers some cities.Cky C can be reached only from city A or city B.The distance from A to C is 65 kms and that from B to C is 30 kms. The shortest distance from A to B is 58 kms.The shorest distance from city P to A is 420 kms and the shortcut distance from city P to B is 345 kms. The shortest distance from city P to city C in kms is

* 403
* 153
* 478
* 375

166) Two jars having the capacity of 3 and 5 liters respectively are filled with the mixture of milk and water . In the smaller jar 25% of the mixture is milk and the larger 25% of mixture is water. The jars are emptied into a cask whose remaining capacity is filled up with water. Find the percentage of the milk in the cask.

- 55%
- None of these
- 50%
- 45%

167) In the following star , the number on each straight line are in Arithmetic progression . what is H+K+L?



168) P, Q, R, S four cities on a straight highway, not necessarily in that order. The distance between the pairs of these cities are shown in the following table;

Distance	P	Q	R	S
P		2 km	3 km	3 km
Q	2 km		5 km	1 km
R	3 km	5 km		6 km
S	3 km	1 km		6 km

What is the order of the cities in the high way?

- S, P, Q, R
- R, S, P, Q
- Q, P, R, S
- S, Q, P, R

169) Pizza restaurant has a tradition of creating specialty pizzas all of the same thickness and in the shape of perfect Circle. It also divides them up into exactly equal sizes even if the number of slices per Pizza is sometime unusual. It sells small, medium, large and extra large pizzas. The diameters are 8, 11, 13 and 15 inches respectively. They are each divided into 4, 9, 12 and 13 respectively, which Pizza has the largest slice?

- Medium
- Extra large
- Large
- Small

170) If A, B and C are three positive integers such that A is greater than B and B is greater than C, then which of the following is Definitely true?

1. A % of B is greater than B % of C
2. B % of A is greater than C % of B
3. C % of A is greater than B % of C

- 1 and 2
- 2 and 3
- 1, 2 and 3
- 1 only

171) The savings of an employee equals income minus expenditure. If the incomes of the A, B, C are in the ratio 1 : 2 : 3 and their expenses ratio is 3 : 2 : 1 then what is the order of the employees A, B and C in the increasing order of their savings?

- C > B > A
- B > A > C
- A > C > B
- B > C > A

172) A foot pole stands vertically in the horizontal plane supported by three 490 foot wires ,all attached to the top if the poles, pulled taut, and anchored to three equally spaced points in the plane. How many feet apart any to of those anchor points?

173) A lady has some socks and hats in her closest 17blue,47 red, an 24 yellow . the light are out and it totally dark .in spite of the dark ,she ca make out the difference between a hat and a sock . she takes out an item out of the closest only if she is sure that it I a socks . how many sock must she takes out to make sure she has two socks of each colour ?

- 55
- 64
- 57
- 73

174) Together a horse and saddle cost RS. 1100. The horse costs a thousand rupees more than the saddle. The cost of saddle is rupees

175) ABC public school, shadhol has a circular athletics track with a diameter of 52m. the grounds man marks a straight line 48m long connecting two points on the circumference of the track. He then crosses over to the other half of the circle and draws a second line that is parallel the first. Whose endpointd also lie on the circumference. He measures this line and finds it is 20 m long. The perpendicular distance between the two lines is__m.

176) In the city kalpi, 60% of the male citizens and 70% of the female citizens are eligible to vote.70% of male citizens eligible to vote voted. And 60% 0f female citizens eligible to vote voted. What fraction of the citizens voted during the elections?

- 0.84
- 0.42
- 0.21
- 0.48

177) A clock is started at noon. By 10 minutes past 5, the hour hand has turned through:

- 145 degree
- 150 degree
- 155 degree
- 160 degree

178) Dimensional analysis play on important and useful roles in physics. Mass is denoted by M,length by L and time by T. o momemtum of a particle which is a product of it mass and velocity has a dimensional of MLT^1 , in a given physical equation the left hand side and right hand side must have the dimensions

Kinematic viscosity (k) of fluid Is a measure of its resistive flow under gravity influence its given by the equation:

K=n/d where

N Is dynamic viscosity ; it dimenion is force time/area

D Is density (mass/volume)

What's the dimension of kinematic viscosity?

A // L^2T^-1

B// LT^-2

c// L^-2 T^-2

d// L^-2 T

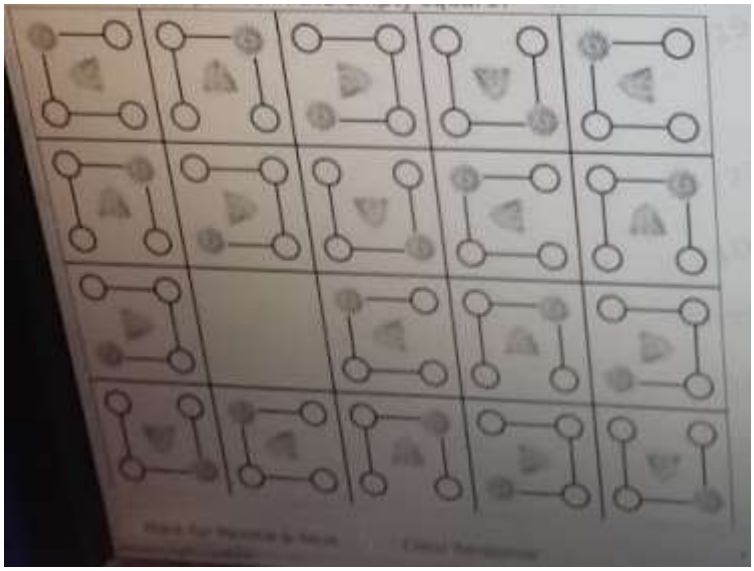
179) Laksha and akshara are the renowned pair of friends for their vocabulary. Together they have an active knowledge of 25,000 words. Fortune would have it, once laksha was hit by a speeding vehicle that resulted in partial loss of memory. Her vocabulary was reduced by half and the current joint figure for the pair is only 2000 words. What's the number of words that akshara has knowledge of? Write your answer as a numeral, without any extra characters.

180) The Volvo a/c bus between Chennai and bengaluru has 5 stops in between. After boarding at Chennai. Half the people on the bus get at each stop and no one gets on. If only two persons were laft in the bus when it reached bengaluru, how many were on the bus when it started off at Chennai?

181) In function p(x,y) = 85x –(50y + 150000). What value indicates the increase in p that corresponds to a unit increase in x, when y is kept a constant?

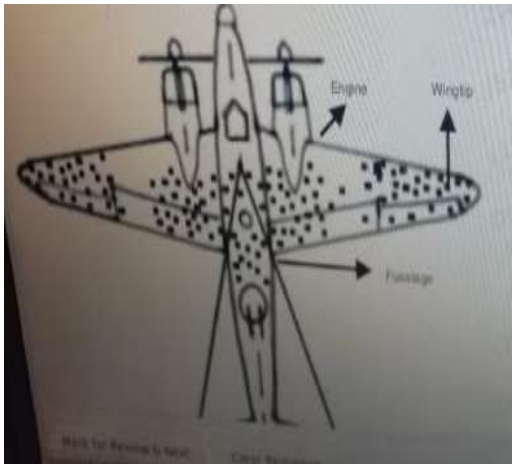
- 50
- 85
- 135
- 35

182) Among the many things that have been built at TCS is a software that generate motifs for handloom textiles. In the image below what is the motify to be placed in the empty square?



183) The Kids phalaa and adhiphalaa (don't confuse with balaa and adhibalaa, the abracadabra that sage vishwamitra taught to raama and lakshmana to successfully slay the demoness taadaka) carry some fruits. Being tender and small, each could carry only a single digit number of fruits. Adhiphalaahas three times the fruits that phalaa has . if the digits corresponding to phalaa's and adhiphalaa's fruits are written in that order , the resulting two digit number is a multiple of three.How many fruits dose adhiphalaa have?

184) The figure below depicts the damage done to aircraft that had returned to their base from mission in world war 2. The bullet holes per square foot in the Tall wingtips Fuselage and engine are 1.1,1.5,1.8, and 0.2 respectively . where does the air force neede to primitily reinforce their aircraft to minimize losses to enemy fire and to maximize their return home?



A// wingtips

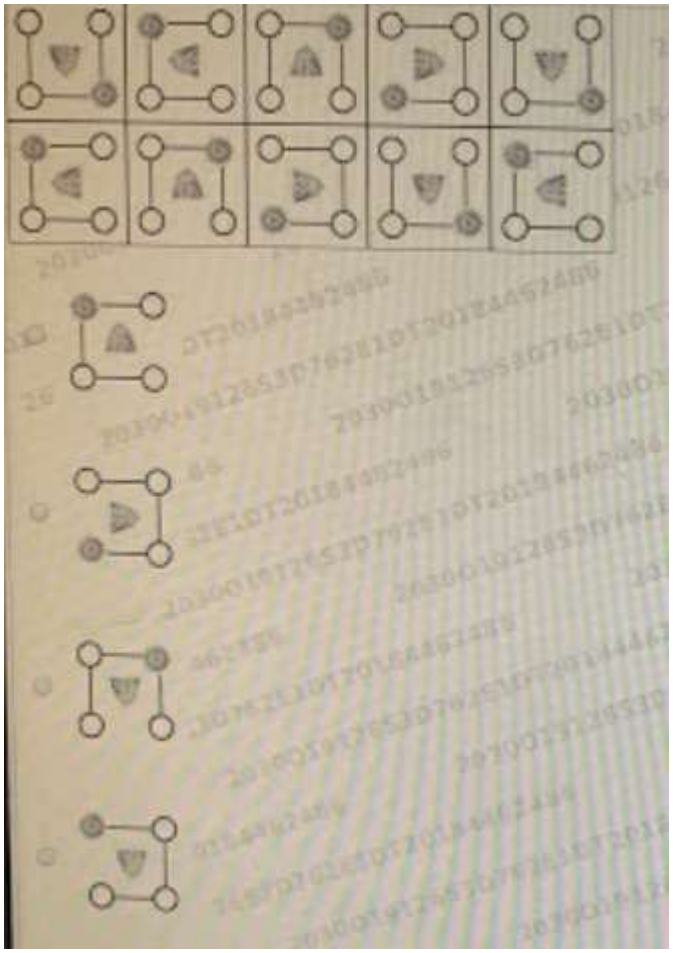
b// tail

c// fuselage

d// engine

185) Ram speaks truth 40% of the time and laxman speaks truth 60% of the time. Percentage of cases ram and laxman are likely to contradict each other in stating the same fact is

186)



187) Bhasker and shakuntala challenge each other in math and are at loggerheads always. At the end of a milestone in their project , the team had a dinner party and were seated in a circular table . if there were 16 people for dinner that day , what are the odds against the event that bhasker and shakuntala will sit together (give the answer as a : b)

188) A police car starts chasing a fugitive in a BMW 4 hours after the BMW escapes from the scene of crime at 10 AM. The BMW drives for 10 km through the crowded roads of shanghai and then drives into a highway , where the traffic allows vehicle to move twice as fast . after a while, the police car finally catches up with the BMW after a chase that lasted 5 hours. By this time moon was up in the sky for 4 hours. If the average speed of the police car is 50kmph . the average speedof the BMW is _ kmph.

- 22.22
- 27.79
- 40

- 28.78

189) If f(x) =x^2, what is the shape of f (x)?

- Circular
- Parabolic
- Quadrilateral
- S.shaped

190) The muzzie veloity of a bullet in 5.56 INSAS rifle (indian version of AK47) is 882 meters/sec. A sergeant holds this rifle facing the sky and shoots a bullet. What's the bullet's maximum reachable altitude?

Assume g = 9.8m/sec/sec. write your answer as numeral without any other character.

Hint: **$V^2 = U^2 + 2gs$**

191) Sura , a strongly distilled alcoholic drink was used in ancient india as an anaesthetic bt surgrons.A 15 litre cask initially contains pure sura up to the brim. The sura is diluted by removing 5 litres and replacing that quantity with water .if sura is diluted twice, What is the ratio of sura to water in the cask?

- 1:1
- 2:1
- 1:2
- 4:5

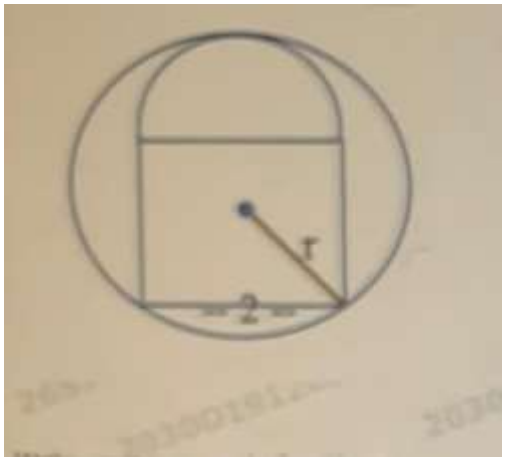
192) A race horse starts chasing a wild pony 2hours after the pony bolt the stable .the races horse finally catches up with the pony after 3hours . if the average speed of the race horse is 49kmph then the average speed of the wild pony is _____kmph

A 29.4

B . 32.67

c. 19.6

193) A semicircle is drawn on one of the sides of the square with the side of the s square as the diameter of the circle .if the length of the side of the square is 2cm, what is the radius of the smallest circle the can contain this figure ?



Write your answer in fractions

194) we live and work in a time of rapidly advancing technology . A social media start up is doubling the number of user each weeks. It took just 47 weeks to acquire a million user , how long did it take it to.acquire half-a-million users?

Fill the answer in weeks

195) 2 Litres of water is poured into aquarium of dimesions 50cm length , 30cm breadth and 40cm height. By what height (in cm) will the water rise?

- 20
- 6
- 10
- 8

196) The difference between the ages of two of my three grandchildren is 3. My eldest grandchild is three times older than the age of my youngest grandchild and my eldest grandchild's age is two years more than the ages of my two youngest grandchildren added together. How old is my eldest grandchild?

- 10
- 12
- 13
- 15

197) Your friend palces 100 cards in a row, one of which contains the jack of clubs that you need to guess. You pick the card at position 15. The host removes all the cards except the card chosen by you at position 15 and another

card at position 87: He now says, “One of these two cards is the jack of clubs”. What is the probability that the card is at position 87?

- 0.5
- 0.99
- 0.98
- 0.01

198) An electrical circuit has:

a power source

a resistor R and:

three parallelly connected resistors each of value 3R

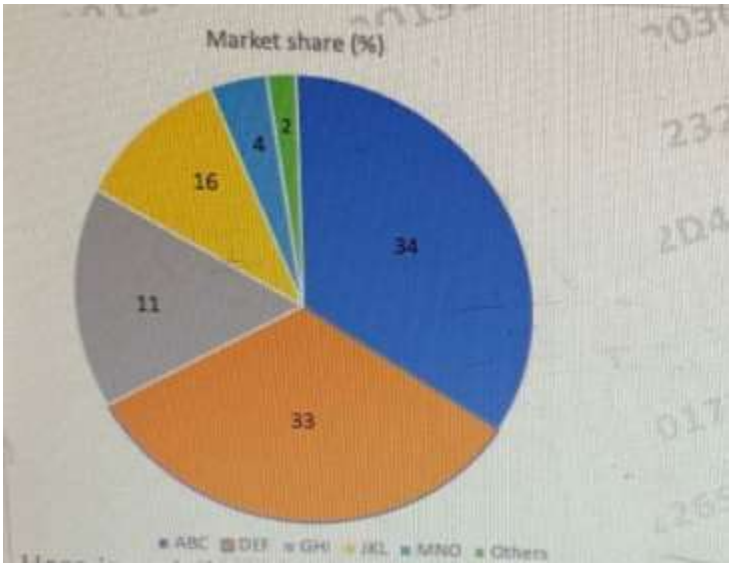
All these are connected in series. If the current flowing through the circuit is five amperes, what will be its be its value, if R is doubled and each of 3R is halved?

199) Here is a pi-chart showing the market share of a setof bank

If the value of the market share of DEF is 6600cr,what is the market share of ABC and JKL together ?

8000cr

10000cr



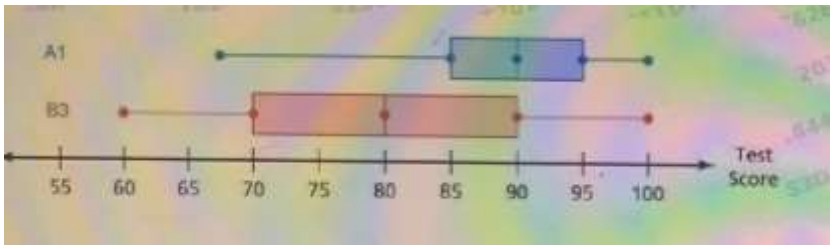
200) In a class diagram, there is an arrow that starts at A and points at B. it means:

- B is the parent class of A
- A and B are tightly coupled

- A and B are loosely coupled
- A is the parent class of B

201) A hilyanagari express running at a speed of 60 kmph and cholan express at 120 kmph take 10 seconds to cross each other ,when they are running in opposite directions (these two trains operate in the same route only as a mathematical fantasy and not in reality). If cholan express is 120meters longer than Ahilyanagari express, what's the length in meters of the latter?

202) **A** box- and – whisker plot or boxplot is a graphical rendition of statistical data based on the five-number summary of the data set,namely the minimum first quartile and maximum .A boxplot may also have outliers which will be plotted as individual points which of the following is FALSE about the double box and whisker plot.



Half of the test scores inA1 is between 90 and 100.
Only 25% of the test score in A1 is less that 85
25% of the test scores in B3 is 80 and above
the test score in B3 is more spread out than scores of A1 associate

203) Rajesh has RS.850 in has purse made up entirely of notes of RS.50 denomination. His wife latha, on the other hand, has only notes of RS.20 denomination in her purse and they amount to RS.460.rajesh and latha redistribute the note between the two purses so that if one were to choose one of the two purses at random and then randomly draw a note from it, the probability of the note being of RS. 50 denomination is maximized.
After this redistribution , there will be a total of RS._ in the purse with the larger amount of money.

204) Twin brothers, lava and kusha . wrote the TCS TNQT test. While secored 45% and got 4 markd below the cut –off, kusha scored 60% and got 8 marks above

cut-off and got selected for interview. What was the maximum marks in the test?

205) The speed of a common snail is about 1mm per second. It secretes a bit of mucus that coats the ground beneath and helps it to move along . this snail that we are interestedin now has a problem with this secretion and so it moves one mmin first second and in tha subsequent secondsit moves only half of the distance covered in the prev second. Algae, the food it cherishes, is at 3 mm disrance from this snail. In how much time it will reach its food.

- 3 seconds
- It will never reach its food
- 2.5 seconds
- 2.7685 seconds

206) Uma has 50 red and 50 blue balls. She has two bowis with her. She has to distributr the balls in these two bowls in such a way that no of the bowls are left empty. If one were to choose one of the two bowls at random and then randomly draw a ball from it, the probability of the ball being red is maximized. After thid distribution, there will be a total of __balls in the bowl with a larger number of balls.

Verbal

1) Oxymoron is a special language device,where
    - Two contrasting elements are placed side by side for reinforcing an ides
    - A tough idea is simplified by bringing a simple parallel to it
    - A brilliant objest isused in place of a dull entity
    - An abstract entity is compared to an exact entity for emphassing simifarity/difference

2) Any team with two bowlers sharing the reguired traits is:
    - Hard to defest
    - Arrogant to its opponents
    - Insignificant in its contribution
    - Vulnerable to choke

3) Compared to brian statham fred trueman is considered to be:
    - More predictable
    - Loss impressive
    - More erratic
    - More accurate

4) The future of cloud computing will **most** likely represent a combination of cloud beesed software **products** in the current cloud market. The **benefits** of jeveraging the infrastructure of a large cloud provider can be beneficial in **many** ways. The cost structure works like a utility , which provides for an operating expense model, with no **upfront** infrastructure costd.the ablity to scale rapidly **works** well for companies with high grouth demants . with these benfits **come** some limitation. Data privacy is **increasingly** vulnerable.

5) One way to enable intelligent operations is by using automation to take over ___ manual tasks and processes.
    - Difficult
    - Creative
    - Routine
    - Dangerous

6) TCS leader Ashok Pai wrote in his blog:

"Most enterprises that try digital transformation achieve only ---**Select option**--- success. Why? Because digital business transformation is far more than a technology ---**Select option**--- for an enterprise to ---**Select option**--- digitally, it must transform its operation model with the help of technology . changing an enterprise's operating model is challenging but the rewards are ---**Select option**--- how to succeed digitally managing digital transformation to realize successful outcomes is not easy. The secret to success lies in carefully ---**Select option**--- the tight rope between technology upgrate and changes in the operating model,"

7) on the last day of the financial year, he declared his company bankrupt now the company was taken---**Select option**--- by the government ,his father also did the same with a sister concern. He taken---**Select option**---his father . the government is looking to appoint a CEO for the company. The best candidates sould be appointed ---**Select option**---the post Mr.Ram has

An appointment---**Select option**---the finance minister . he has good chances of being selected.

8) india has the potential to become a cybar-security powerhouse. We must taken advantage of the fact that india is entering the demorgraphic dividend phase provided adequate training opportunity for youth. The ---**Select option**--- the future cyber security workforce and it is important to ---**Select option**--- cyber security courses from ground up in the curriculum of middle – school high school and college students. Other countries notable israel have already taken step to educate the youth on cyber threats and attack and effective ---**Select option**---against such threats. The National skills development council (NSDC) has several qualification packs in cyber security that will create a skilled workforce . As a ---**Select option**---a course on cyber security covering areas like cryptography network security application development ---**Select option**--- in TCS for 500 fresh science graduates

9) 5. Trikonapriya wants to decorate her abode's frontage with a triangular lawn. The two sides of lawn are of five and six meters. Subtending an angle of 30 degrees. If the lawn maintainer charges rs.10 per square meter , how much

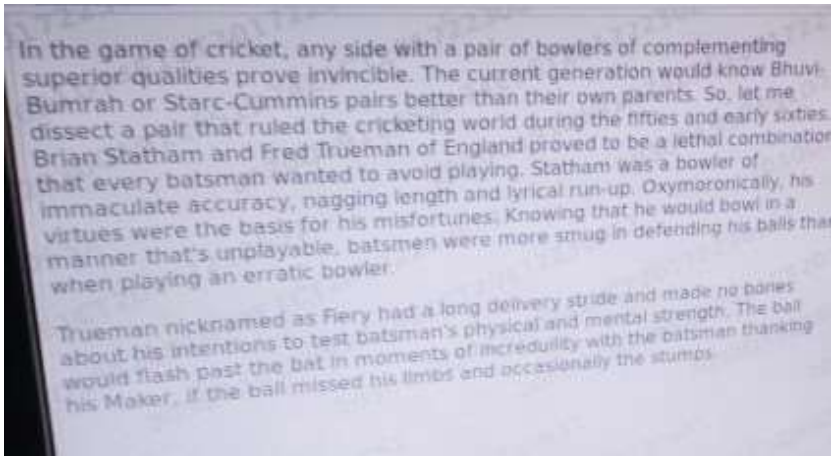
would trikonapriya pay to him for the entire lawn ? your answer should contain only the numeric value.

10) Fill in the blanks in the passage below with suitable prepositions:
After I met with an accident. I was looked _ select option_ by my uncle. I gave a complaint to the police and they said they will look _ select option_ it. while Convalescing I read oliver twist. This book runs _ select option_ two hundred pages. I also attended a program on yoga. The program ran _ select option_ three hours.

11) One way to enable intelligent operations is to extract __ insights from data generated by automated processes.
   - Assignable
   - Achievable
   - Actable
   - Actionable

12) TCS' journal of innovation and transformation (IIT) is our **-- select option—** thought leadership**-- select option—**wherein **-- select option—**industry practitioners from TCS bring powerful insights and open up the windows for a waveof creative ideas in the new world of manusacturing. In the previous editions of JIT, we have focused on key themes such as customer experience, digital disruption , digital forces in automotive industry,etc.

The theme of the latest edition is "new product innovation in the digital world" through which we explore how digitization has **-- select option--** new product development process. From product design and development to product improvement. A key highlight for this edition is a special article titled **-- select option--** the future with digital thread – a TCScollaboration with our esteemed partner- CIMdata.



13) Any team with two bowler sharing the required traits is :

- vulnerable to choke
- hard to defeat
- arrogant to its opponents
- insignificant in its contribution

14) It is a good rule in life never to apologise.The right sort of people_____(do not want/does not want/did not want) apologies,and the wrong sort _____ a mean advantage of them.

15) The_____of Sacred games television serial was released on ad0.This digital show was_____ different from the typical soap operas or thrillers that our _____running at critical points.Mixing the present with the _____average videophile.For there should be in normal lightening and color while the flashback glory details of torturing or murdering somebody could have been shown in a suggestive manner leaving the final details of chopped body.

16) The Sanskirit professor resigned recently.The school steering comiittee discussed _____ to reduce when the professor is left?

a.whether the no of students studying sanskirit were likely.

b.if the students sttudying sanskirit were likely.

c.Whether the number of students sttudying sanskirit were likely

d.Whether the number of students sttudying sanskirit were liable.

17) Rearrange the order:

1.Identify the right order:

A.Anybody treating us like an ordinary mortal stands the peril of committing blasphemy.
B.Our vicked memory with a crafty glean it in eyes remains fresh inserting 1000 blunt needles into our ego to suffer a slow and an ever lasting death.
C.But it does not take much time for the genuine expert to smash our over confidence.
D.Its not very rare that sometimes we rate ourselves the head of the rest and assume an invisible halo around our head.
E.Whenever we call such occassions to our chargin,we find they are dime a dozen.

18) TCS business leader ashok pai recently wrote on his blog :
Foster ownership experimentation and collaboration An ownership –driven culture with focus on experimental is needed .it requires leadership buy-in for cross – stakeholder aliment and to overcome resistance and inertia ;achieve collaborative innovation across silos and iterative improvements
The Right transformations approach
Enterprise can become digital natives through an enterprise –level transformations .the right or right mix of approach depends on factor such as business health industry disruption and availability of digital talent
Wheather your business model is at risk of disruption or you would like to elevate your enterprise to the next level. the prescription is the same :digital transformations And Business 4.0 technology are at would get you there .But you have to reengineer your experience ?which change have got you the best results ? what has been the biggest learning in your transformations journey?

19) Systems supporting a _--------- operation provide alerts that predict problem before they occurs and give executive insights to perform tasks that machines cannot .

a.cognate
b. cognitive
c. cognition
d. cogitate
Ans: cognitive

20) fill up with the right prepositions

Like the rest of chennai,our apartment has a water crisis .When the secretary suggested installing another bore well the president did not agree **with** him ,last week the executive committee failed to agree **on** a common plan of action .the contactors needed the approval of the executive committee **before** he could start installing another bore well .as he had misappropriated the funds on an earlier occasion the president did not approve of his proposal .

21) managing digital transformations to realize successful outcome is not easy .the secret to success lise in carefully treading the tight rope between technology upgrade and change in the operating model will ,after initial success land the enterprise in the middle of a digital dip.such a digital dip is typically caused by siloed approach confusion over KPIs . conflicting stakeholder view and poor user adoption operating model change without adequate technology upgrade will constrain the efficiency of the enterprise.

Remember that digital Success across the breadth and depth of the enterprise is the real objectives .it is much easier to succeed with smaller project . for lasting results technology transformations must be driven by a comprehensive IT and operations frameworks that leverages agility , analytics , automation and cloud

22) fill up the blanks

Last week I went to mumbai the Airport security officers wanted me take **out** every single object from my suitcase . I was in a hurry my connecting fight was scheduled to take **off** in 15 minutes . I was visiting Mr. kapadia . he had been living in mumbai **since** 1985 and I had been living in chennai **for** thirty years. It was my practice to visit him every year on his birthday.

6, to create_____ operation TCS Machine First^TM delivery model is _____ .

a.intelligensia/essentially

b. intelligently/inessential

c. intelligent/essential

d. intelligent/eventual

Ans intelligent/essential

23) fill up with the right preposition:

On the last day of the financial year he directed his company bankrupt .now the company was taken over by the government , his father also did the same with a sisters concern , he taken after his father , the government I looking to appoint a

CEO for the company . The best candidate should be appointed with the post. MR.Ram has an appointment with the finance master. He has good chances of being selected.

24) cloze passage sources :

TCS leader Ashok Pal wrote in his blogs “Most enterprise that try digital transformation achieve only partial success,why? Because digital business transformation is far more than a technology upgrade.For an enterprise to scale digitally, it must transform its operating model with the help of technology changing an enterprise’s operating model is challenging but the reward are commensurate . how to succeed Digitally? Managing digital transformation to realize successful outcome is not easy. The secret to success lies in carefully treading the tight rope between technology upgrade and changes in the operating model.”

25) one way to enable intelligent operations is by using automation to take over _____manual tasks and processes.

A.routine

B. creative

c. dangerous

d.difficult

Ans: A.routine

26) Fill in blank with the appropriate preposition – (ANser in bold)

After I met with an accident , I was looked ____my uncle , I gave a complaint to the police and they will look ____it. While convalescing I read Oliver Twist This book runs ___ to hundred pages .I also attended a program on yoga . The program ran ____ three hours.

Ans:after,into,upto,for

27) TCS’ journal of innovation and transformation (JIT) is our _____Thought Leadership_____ where in _____ industry practioners from TCS bring powerful insights and open up the window for a wave of creative idea in the new worlds of manufacturing , in the previous edition of JIT we have focused on key themes such as customer experience , digital disruptions , digital forces in automotive industry etc..,

The theme of the latest edition is" New product innovation in the Digital world" through which we explore how digitization has _____new product development process. From product design and development to product improvement . A key highlight for this edition is a special article titled"_____the future with Digital thread"—a TCS collaboration with our esteemed partner – CIMdata.
Ans: flagship artifact, seasoned, revolutionized, weaving

28) Fill in the blank with the right option.
One way to enable intelligent operation Is to extract_____ insights from data generated by automated processes.
a. assignable
b. achievable
c. actable
d. actionable
Ans: d. actionable

29) PASSAGE: in the game of cricket any side with a pair of bowler of complementing superior qualities prove invincible, The current generation would know Bhuvvi, bumrah or starc – Cummins pair that ruled the cricketing world during the fifties and early sixties .brian statham and fred trueman of England proved to be a lethal combination that every batman wanted to avoid playing . stantham was a bowler of immaculate accuracy, nagging length and lyrical run-up Oxymoronically his virtues were the basis for his misfortunes . Knowing that he would bowl in a manner that unplayable batsmen were more smug in defending his ball than when playing an erratic bowler

Trueman nicknamed as Fiery had a long delivery stride and made no bones about his intention to test batsman physical and mental strength .the ball would flash past the bat in moment of increadibility with the batsman thanking his maker if the ball missed his limbs and occasionally the stumps
1.which one of the following sentences has an appropriate bold part that can be replaced with lethal ?
A,the series of never ending bubbles rejoiced the children to any end
b.the never says die team won the tournament for the tenth time
c. "mount Vesuvius " eruptions proved to be completely ruinous to Pompeii
d. the life – saving drug administered to the patient brought him back to his element

Ans : C

2. Any team with two bowler sharing the required traits is:

a. Arrogant to its opponents

b, vulnerable to choke

c. hard to defeat

d. insignificant in its contributions

Ans:C

3.Oxymoron Is a special language device , where

A. A tough idea is simplification by bringing a simple parallel to it.

B. Two contrasting element are placed side by side reinforcing an idea

C. A brilliant object issued in placed of a dull entrance

D. An abstract entity Is compared to an exact entity emphasising similarity/ difference

Ans: B

PASSAGE:

30) Digital twin in automotive industry presents an opportunity to pair virtual and physical worlds leveraging different technologies such as IoT , big data analytics, and simulation techniques to re-engineer critical processes as below.

Vehicle development : integrates data across the product lifecycle to enable data-driven vehicle concept informed design through rapid assessment of change impact and early detection of issues and accurate and accelerated design verification

Vehicle manufacturing : Factory's digital twin in manufacturing enables real time data gathering from machine sensors facilitating flexible cell manufacturing IoT-driven maintenance strategies and leveraging beacon data to ensure workers safety

Vehicle sales and services : Captures real - time field insight on driver preferences product features uptake vehicle performance and services history to create an interactive user experience on the sales floor and enable proactive and predictive after – sales service

Programming Logic

1) What is the output of the following Java program.

```
Class Super
{
   Static String greeting()
    {
return “Goodnight”;
    }
     String name()
     {
return “Ram”;
     }
}
Class Sub extends Super
{
   Static String greeting ()
     {
return “Hello”;
     }
     String name()
     {
return “Bheem”;
     }
}
Public class Test
{
     Public static void main {String[]args}
       {
            Super s=new Sub();
System.outprintln(s.greeting()+”,”+s.name());
       }
}
```

Answer : Good night Bheem

2) Consider the following recursive function that returns the LCM of the two given number.

```
intFindlcm(int a, int b){  // line1
int x=1; //line 2
        if (x%b== 0 && x %a== 0 ) //line3
        return x; //line 4
        x++; //line 5
        Findlcm(a,b); //line 6
        Return x; // line 7
} //line 8
```

If there is no error in the above code enter 0 else enter the line number which is wrong.

Answer : line 2

3) In the class declaration given below, which keyword attached to variable foo, boo and coo will ensure that the compiler will NOT optimize their storage and access?

```
Class A{
intfoo,boo,coo;
//other declaration
};
```

a. Static
b. Volatile
c. Strict
d. Register.

Answer: Volatile.

4) The function pallap[] defined below takes a string as an argument and returns boolean value.

```
Bool pallap(string pinput)
{
ispal = true
        i=0
        j= length(pinput) – 1
        while (i<j)
```

```
{
If (pinput(i) != pinput(j))
{
        Ispal = false
}
i = i + 1
 j = j -1 }
returnispal
}
```

In the above function!= indicates “is not equal to”.

If spacecaps = pallap(“spacecaps”), lived= pallap(“lived”) and we_sew = pallap(“we_saw”) then

A. Spacecaps is true, lived is false and we_sew is true

B. Spacecaps is false, lived is ttrue and we_sew is true

C. Spacecaps is true, lived is false and we_sew is false

D. Spacecaps is true, lived is true and we_sew is true

Answer: Spacecaps is true, lived is false and we_sew is false

5) Multiplication is repeated addition. Exponentiation, represented by a single up-arrow is repeated multiplication. So the next operation is repeated exponentiation. Donald Knuth thereby developed an ingenious system that allows this process of compounding the better known arithmetic operations defining many more levels of arithmetic operations.

If a single arrow (^) represents iterated multiplication(exponentiation)

2^4 = 2*(2*(2*2)) = 16

Double arrow represents iterated exponentiation(tetration)

2^^4 = 2 ^(2^(2^2)) = 65536

Triple arrow represents iterated titration (pentation)

2^^^4 = 2^^(2^^(2^^2))

What is 5^^2?

a. 3125

b. 9765625

c. 25

d. 625

Answer : 9765625

6) Find the output .

```
#include<stdio.h>
#include<string.h>
Inthow_are_you(const char *s, const char *t){
        Const char *s1=s;
        While (*s)
{
If(strcmp(s,t,strlen(t)) ==0) return s-s1;
S++;
}
Return -1;
}
Intmain(){
Char *s = “How many apples?”;
Printf(“%d”, how_are_you(s,”many”));
}
```

Answer: 4

7) What is the total number of non- zero elements in **combined**, if the following program runs to completion? Write your answer as **a numeralwithoutany leading or trailing blank spaces.**

```
#include<vestor>
#include<algorithm>
#include<iostream>
Using namespace std:
Intmain(){
        Inta[] = {5,7,8,10,12,14,16};
        Intb[] = {8,10,12,14,20,24,26};
        Vector<int>combined(15);
        Set_union(a,a+7,b,b+7, begin(combined));
}
```

Answer: 10

8) How many elements would be present in **my_elements**, after the following program runs to completion? Write your answer as a numeral without any **leading or trailing blank spaces.**

```
#include<deque>
#include<iostream>
Using namespace std:
Intmain(){
        Deque<int>my_elements = {10,20,30};
        Deque<int>:: iterator it = my_elements.emplace(begin(my_elements)+1.100);
My_elemntsemplace(end(my_elements),300);
}
```

Answer: 6

9) What is the total number of integers that are duplicates in the array results? Write your answer as a numeric value.

```
IntI,j, results[20];
For(i=1,j=0;i++){
        If((i%3)==0) results[j++]=i;
        If((i%6)==0) results[j++]=i;
}
```

Answer : 3

10) What must be the output if the following program?

```
#include<vestor>
#include<algorithm>
#include<iterator>
#include<iostream>
Using namespace std:
Intmain(){
Vector<string> list 1 = {“five”,”four”,”one”,”three”,”two”};
Vector<string> list 1 = {“Five”,”one”,”four”,”three”,”two”};
Set_intersection(list1.begin(), list1.end(), list2.end(),
ostream_iterator<string>(cout””))
}
```

Answer:four three two

11) In the class declaration given below, which keyword attached to variable foo, boo and coo will ensure that the compiler will NOT optimize their storage and access?

```
Class A{
intfoo,boo,coo;
//other declaration
};
Class B: public A{
//Declarations
};
```

a. Static
b. Volatile
c. Strict
d. Private

Answer: Private

12) Given the following function definition

```
Intmystery1(int x, int y){
        If(x<=y) return x;
        Else return mystery1(x-y,y);
}
```

What would be the return value of this function call mystery1(15,5)?

a. 10
b. 5
c. 15
d. 0

Answer: 5

13) What is the output of the following program?

```
#include<iostream>
using namespace std;
class PM
{
public:
void designation()
   {
```

```
cout<< “PM”;
   }
};
class CEO
{
public:
CEO()
        {
pmPtr = new PM;
        }
        PM* operator -> ()
        {
returnpmPtr;
        }
void designation()
        {
cout<< “CEO”;
        }
private: PM* pmPtr;
};
int main()
{
CEO* ceoPtr;
ceoPtr = new CEO;
ceoPtr ->designation();
deleteceoPtr;
}
```

Answer : CEO

14) What is the output of the following program?

```
#include<stdio.h>
int main()
{
int x=2;
if(x--, --x, x)
printf(“TCS TNQT exam”);
```

else

printf(“TCS Ninja exam”);

return 0;

}

a. Compilation error – invalid if statement

b. TCS ninja exam

c. Run time error

d. TCS TNQT exam

Answer : TCS Ninja exam

15) What is the equivalent while loop for the for loop given below?

```
for(inti=0,j=5, k=10; i<10; i++,j+=5)
 {
printf(“%d”,j);
  }
```

a)

```
I=0;
J=5;k=10;
While(i<k)
{
J= j+5;
I= i+1;
Printf(j);
}
```

b)

```
I=0;
J=5;k=10;
While(i<j+5)
{
Printf(j);
J= j+5;
I= i+1;
}
```

c)

```
I=0;
J=5;k=10;
While(i<10)
```

{
Printf(j);
J= j+5;
I= i+1;
}

d) I=0;
J=5;k=10;
While(i<10)
{
J= j+5;
I= i+1;
Printf(j);
}
Answer: C

16) What is the value of result in the following C Program?
int a-17,b=5,flag=1,result;
int x=abs(a),int y=abs(b);
for(result=0bc>y:result++)
x=y;
if((a>0&&b<0)//(a>0&&b>=0))
flag=1;
result*=flag;
ANSWER : 3

17) The function pallap() defined below takes a string as an argument and returns a Boolean value
boolpallap(string pinput)
{
Ispal=true
i=0
j=length(pinput)-1
While(i<j>
{
If(pinput(i)!=pinput(j))

{

ispal = false

}

i=i+1

j=j+!

}

returnispal

}

In the above function !=indicates”is not equal to”

Ifredder=pallap(“redder),stressed=pallap(“stressed=pallap(“stressed”) and party_trap=pallap(“party_trap”)then

ANSWER : Redder is true stressed is false party_trap is false

18) #include<algorithm>

using namespace std:

classSubfunction

{

public:

bool operator()(const string &a,const string &b){return a>b:}

}:

int main()

{

vector <string> v={“abc”,”def”,”ghi”,”jki”,”mno”,”pqr”,

“stu”,”vwx”,”yz”}:

sort{begin(v),end(v),SubFunction()}:

copy(begin(v),end(v),ostream_iterator<string>(count,”\n”));

}

ANSWER

yz

vwx

stu

pqr

mno

jkl

ghi

def
abc

19) What is the value of minimum, if the following segment runs to completion?

```
#include<limits.h>
int main()
{
inti=0,minimum = INT_MIN;
int number[]={23,48,98,1,6,8,200,10},
while(i<sizeof(numbers)/sizeof(numbers[0])){
if(minimum>numbers[i])minimum=numbers[i];i++;
}
}
```

ANSWER : Minimum value is INT_MIN = -2147483647

20) What is the fourth line of output in the following C++ Programme?

```
#include<vector>
#include<iterator>
#include<iostream>
#include<algorithm>
using namespace std;
Class SubFunction
{
public:
bool operator()(const string &a,const string &b){return a>b:}
};
int main()
{
vector<string>v={“abc”,”def”,”ghi”,”jkl”,”mno”,”pqr”,”stu”,”vwx”,yz”};
sort(begin(v),end(v),SubFunction());
copy(begin(v),end(v),ostream_iterator<string>(count,”\n”));
}
```

ANSWER : Fourth line of the output is pqr

21)

```
{
//in the following initialization sequence,Englishcharacter'O'is not used
String s[]={"1234","56789","234a""189b1","089*3"};
for(inti=0;i<sizeof(s)/sizeof(s[0]));i++{
autopos=s[i].find_first_not_of("0123456789"):0 is numerical zero
if(s[i].length()==4&&pos==string::npos)continue:
  else cout<<"Invalid guess!\n";
  }
}
```

ANSWER:

Invalid Guess!

Invalid Guess!

Invalid Guess!

Invalid Guess!

22) What is the total number of integers that are duplicates in the array results? Write your answer as a numeric value.

```
Int I,j, results[20];
For(i=1,j=0;i++){
        If((i%3)==0) results[j++]=i;
        If((i%6)==0) results[j++]=i;
}
```

Answer : 3

23) What must be the output if the following program?

```
#include<vestor>
#include<algorithm>
#include<iterator>
#include<iostream>
Using namespace std:
Int main(){
Vector<string> list 1 = {"five","four","one","three","two"};
Vector<string> list 1 = {"Five","one","four","three","two"};
Set_intersection(list1.begin(), list1.end(), list2.end(),
ostream_iterator<string>(cout""))
}
```

Answer:four three two

24) In the class declaration given below, which keyword attached to variable foo, boo and coo will ensure that the compiler will NOT optimize their storage and access?

```
Class A{
int foo,boo,coo;
//other declaration
};
Class B: public A{
//Declarations
};
```

e. Static
f. Volatile
g. Strict
h. Private

Answer: Private

25) Given the following function definition

```
Int mystery1(int x, int y){
        If(x<=y) return x;
        Else return mystery1(x-y,y);
}
```

What would be the return value of this function call mystery1(15,5)?

e. 10
f. 5
g. 15
h. 0

Answer: 5

26) What is the output of the following program?

```
#include<iostream>
using namespace std;
class PM
{
  public:
```

```
   void designation()
    {
cout<< “PM”;
   }
};
class CEO
{
        public:
         CEO()
          {
pmPtr = new PM;
          }
         PM* operator -> ()
          {
             return pmPtr;
          }
         void designation()
          {
cout<< “CEO”;
          }
          private: PM* pmPtr;
};

int main()
{
    CEO* ceoPtr;
ceoPtr = new CEO;
ceoPtr ->designation();
    delete ceoPtr;
}
```

Answer : CEO

27) What is the output of the following program?

```
#include<stdio.h>
int main()
{
```

```
    int x=2;
    if(x--, --x, x)
printf("TCS TNQT exam");
     else
printf("TCS Ninja exam");
    return 0;
}
```

Compilation error – invalid if statement

TCS ninja exam

Run time error

TCS TNQT exam

Answer : TCS Ninja exam

28) What is the equivalent while loop for the for loop given below?

```
for(int i=0,j=5, k=10; i<10; i++,j+=5)
{
printf("%d",j);
 }
I=0;
J=5;k=10;
While(i<k)
{
J= j+5;
I= i+1;
Printf(j);
}

I=0;
J=5;k=10;
While(i<j+5)
{
Printf(j);
J= j+5;
I= i+1;
}
I=0;
```

```
J=5;k=10;
While(i<10)
{
Printf(j);
J= j+5;
I= i+1;
}

I=0;
J=5;k=10;
While(i<10)
{
J= j+5;
I= i+1;
Printf(j);
}
```

Answer: C

29) What is the length of the string displayed by the following program?

```
#include<iostream>
using namespace std;
string do_something(string s)
{
        char char_array[]
        size_t p1=s.find_first_not_of(char.array);
        size_t p2=s.find_first_of(char_array,p1);
        return s.substr(p1.p2-p1-1);
}
```

ANSWER : 13

30) What is the value of maximum, if the following segment runs to completion?

```
#include<limits.h>
int main()
{
int i=0,maximum=INT_MAX;
        int numbers[]={923,948,988,981,167,899,200,910,999};
```

```
        while(i<sizeof(numbers)/sizeof(numbers[0]))
        {
If(maximum<numbers[i]) maximum=numbers[i]:i++;
}
}
```

ANSWER : 2147483647

31) The for loop below computes 97+94+91+.....+4.

Replace the question mark (???) appropriately to complete the code snippet.

```
int i=97,sum;
for (sum=0;i<=4;i=???)sum +=i;
```

Your answer should not contain any blank space

ANSWER : i-3

32) What is the output of the following program?

```
#include<cctype>
#include<iostream>
#include<algorithm>
using namespace std;
bool which (char c){return isspace(c):}
int main()
{
char s[]=”How far is Chennai?”;
char *p1=s;
char *p2=s+sizeof(s)/sizeof(char);
p2=remove_if(p1,p2,which);
for(char*p=p1;p1=p2:p++)
count<<*p;
}
```

ANSWER : Howfarischennai?

33) The pseudo code below sorts an array using bubble sort. Here A is the array n is the number of element in it. Function swap exchanges the value of 2 given variables.

```
1.      function bubble sort (A,n)
2.      {
```

```
3.          For I = 0 to n-2 step 1
4.            For  j = 0 to n-1-2 step 1
5.                If (A (j) > A(j+1))
6.                    Swap(a(j),A(j+1))
7.      }
```

34) Assuming the array A initially contains the element 14,53,25,22,72,63,4 what will be the value of the outer loop.

- 14 22 4 25 53 63 72
- 14 22 25 4 53 63 72
- 14 22 25 53 4 63 72
- 14 25 22 53 63 4 72

35) Which of the below is NOT a predefined file stream in “c” language?

- Stdin
- Stdio
- Stdout
- Stderr

Pleases do not add white space around the answer.

36)
```
#include <stdio.j>
Int counter()
{
  Int I = 0;
  I++;
  Return  I;
}
Main()
{
    Int j, count;
     For (j=0; j<18; j++)
          Count = counter();
       Print f (“d\n”,count);
        Return 0;
}
```

37) Int main(int ac, char *av[i)

In the above declaration of main function, what do the variables av and ac indicate respectively?

- o None of the other three options as the declaration is incorrect
- o Argument vector, argument control
- o Argument count, argument vaeiables
- o Argument vector, argument count

38) Let a(1) = 2 and for n>=1, a(n+1) = (a(n) – 1) / (a(n) + 1). The value of a (100) is

39) Which of the following is TRUE about binary trees

● Number of nodes on the last level is equal to the sum of the number of nodes on all other levels.

●The total number of nodes is one less than a power of 2

●A node may have one child

●Every node must have two children

40) What will be the output of the below program, assuming the data type sizes mentioned as part of the program?

Ignore any data alignment , padding and data packing requirements.

```
#include <stdio . h>
/*
Size of int  = 4
Size of char = 1
Size of float = 4
Size of short = 2
*/
Main ()

{
    Struct student {
      int   rollno;
      Chart  name [ 30];
      Short  age;
      Float weight ;
```

```
        Float height ;
        Char gender ;
} ;
 Printf (" %d\ n" ,  sizeof ( struct  student ) ) ;
 return 0 ;
}
```

41) In below code what concept is used;

```
# include  <stdio . h>
long  int  fact ( int  n ) ;
int main ()
{
       int  n ;
     printf ( * Enter a positive integer:  *) ;
     scanf ( " %d" , &n ) ;
     printf ( "factorial  of  %d =  %ld" ,  n,  fact (n)) ;
    return 0 ;
}
 long  int  fact ( int n)
{
    if ( n >= 1)
  return n * fact ( n – 1) ;
else
     return  1;
}
```

- recursion
- segmentation
- iteration
- Polymorphism

42) The recommended data structure to represent the below arithmetic expression (after it is parsed) is; 2 + ((8 + 1) * 4)

- Array
- Stack

Circular Queue

- Binary tree

43) In the below code the program expects user to enter two numbers. If the user enters the two numbers as 6 and 15 . What is the output value printed?

```
#include<stdio.h>
int  fg( int  int);
int main () {
  int  n1, n2, g ;
printf ( * \ n Enter two numbers : “);
scanf  ( “ %d   %d” , &n1 , &n2) ;
g = fg ( n1 - n2 ) ;
printf ( %d ,  g ) ;
return 0 ;
}
int  fg ( int x ,   Int y) {
        while ( x ! = y ) {
              if ( x > y )
                  return  fg ( x -y, y);
               else
                    return  fg ( x, y – x );
          }
            return x ;
}
```

44) Which of the following is not core function of operating system?

●Virus protection

●File management

●Memory handling

●Multi tasking

45) Easha wrote a C program to calculate permutations and combinations. For this she decided to code a factorial function fact(). She evoked this function in her permutations and combinations calculation. However she forgot to implement the fact[] function and went ahead and compiled the program. What error message she would have got ?

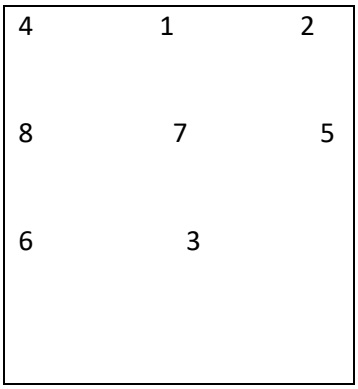
●unresolved external

●file not found

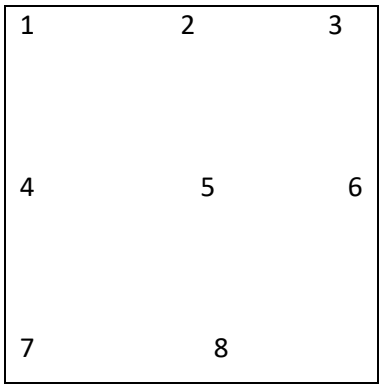
●syntax error

●No error message as the compiler would have automatically build – in fact() Math library of C language

46) The famous 8-puzzle problem is described as follows. You are given a 3x3 board with 8 tiles (every tile has one number form 1 and one empty space in a certain configuration (start state). The objective is to place the numbers on this to match final configuration (goal state) using the empty space. We can slied up to four adjacent (left, right, above and below) tiles into the empty space.



Start state



goal state

Given the start state and goal state as per the diagram what would be the minimum number of moves required to bring tiles 1 and 2 to their correct positions in the goal state?

47) Int ac, av – argument vector, argument count 14 22 25 4 53 63 72 union – user defined datatype there is to pointer

Free

Stdio

4

48) Which of the following operations is not 0(1) for an array of sorted data? You may assume that array elements are distinct.

- Find the ith smallest element
- Find the ith largest element
- Delete an element
- All of the other three options.

49) Consider the below statements:

A) For depth first search algorithm (dfs), the space requirement grows linearly with depth

B) Breadth first search (BFS) algorithm always finds the shortest path from state to goal state

C) DFS algorithm uses stack data structure

D) BFS algorithm uses queue data structure

Which of the above statements is/are TRUE? If multiple statements are TRUE, mention all of them in thealphabetical order, separated by a comma . for example , if statements D and B are true. Then your answer will be B,D

50) Sizeof operator is used to get the size of

- o Program file in memory
- o Data type only
- o Data type or variable
- o Available free memory

51) In the context of c language , where are the local variables that are defined inside any user – defined function stored?

- o As specified by the programmer
- o Heap memory
- o Hard disk
- o Stack memory

52) Eesha is developing an internet browser application. She wants to incorate " history " feahure by which when the user presses the " go back button . the user should be abie go back 1 page ans visit the previous page that he/she visited, what date structury will you recommend to eesha to incorporate this feature?

- o Stack
- o Queue
- o Tree
- o Array

53) #defined is used to

- Define a constant

- Define a variable
- Define a function
- Define a macro

54) Question No: 7

```
#include studio < stdio, h>
Main (int argc, char “argv)
{
        Printf (“ss/n”, argv (..argc));
       Return;
}
```

The above programme was fun with the following command line parameters:
Asha, Usha, Nisha, Esha
What was the output?

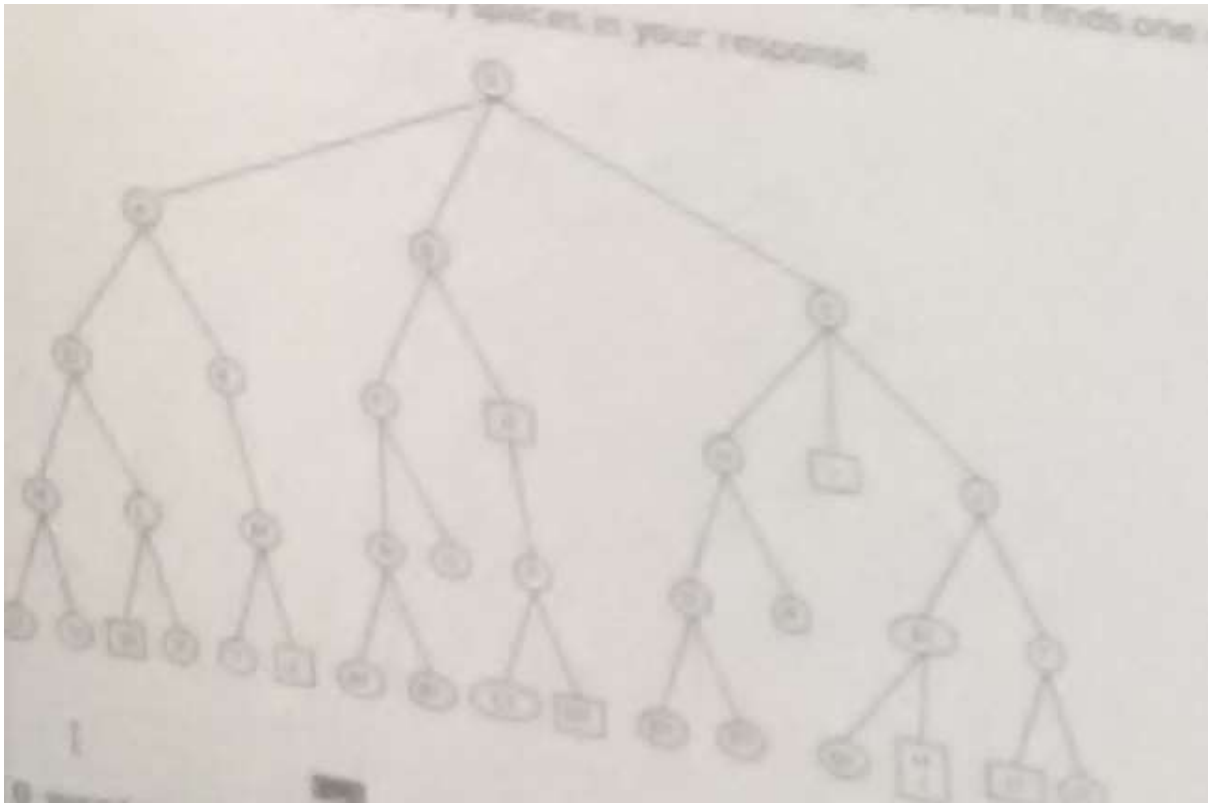
- No output, run time offer
- Nisha
- Unable to run due to competition error
- Easha

55) Which of the below of the NOT a valid storage class in “C” language?

* extern
* auto
* dynamic
* register

56) Depth first search (DFS) in an algorithm for searching a group or tree data structure . The algorithm starts at the root (top) of a tree and goes as for as it can down a given branch (path) and the backtracks until it finds an unexplored path, and then explores it. The algorithm does this until the entire graph has been explored. The main strategy of the depth – first search is to explore deeper into the graph when ever possible.
Figure below depicts a search space in which the nodes are labelled with the names like A, B , A1 ,B1 node S is the start node. The goal nodes are drawn as square boxes and the other nodes in circles.
List the order in which the DFS algorithm explores the graph till it finds one of the goal nodes searching from the left to right. Type the code names starting with the

root node till the goal node common between nodes. Do not type any spaces in your resource.



57) A hash table of length 10 uses open addressing with hash function h (k) = k mod 10 , and linear probing . How many different insertion sequences of the key values using the same hash function and linear probing will result in the hash table shown below?

0	
1	42
3	23
4	34
5	52
6	46
7	33
8	
9	

58) Which of the following operations is not 0 (1) for an array of sorted data ? You may assume that array elements are distinct.

- Find the i th smallest element
- Find the i th largest element
- All of the other three options
- Delete an element

59) In the context of C language where are the local variables that are defined inside any user – defined function stored?

- hard disk
- heap memory
- as specified by the programmer
- stack memory

60) Consider the below statements:

A. For Depth first search Algorithm (DFS) the space requirement grows linearly with depth
B. Breadth first search Algorithm (BFS) always finds the shortest path from start state to goal state
C. DFS algorithm uses stack data structure
D. BFS algorithm uses queue data structure

Which of the above statements is/ are TRUE? If multiple statements are TRUE, mention all of them in the alphabetical order separated by a comma, for example if the statements D and B are TRUE then your answer will be B, D.

61) Size of operator is used to set the size of ?

- available free memory
- data type or variable
- data type only
- program file in memory

62) A cryptographic code is designed as follows, The message is first converted to lower case (all the capital letters are replaced by the corresponding small letters – thus ‘A' is replaced by ‘a')

The first time letter appears in the message ,it is replaced by the letter that is 1 place to its right in the alphabet (assuming that the letter 'a' is one place to the right of the letter 'z'. The second time this same letter appears in the message. It is replaced by the letter that is 1+ 1 that places to the right ,

the third time it is replaced by the letter that is 1 + 2 + 3 places to the right and so on. For example with this code the word “banana” becomes “cdbodqg”. What letter will replace the last ' 5 ' in the message “ Lee's sis is Mississippi miss Chriss”?

63) Eesha is developing a word processor in which she wants to implement “auto complete” feature. With this feature, as and when we start typing a word processor will suggest the rest of the word. To implement this , what data structure is most suitable?

- Tree
- Stack
- List
- Array

64) Consider a hash table of size seven, with staeting index zero, and afunction (3x+4) mod 7. Assuming the hash table is initially emply. Witch of the following is the contensts of the table when the sequence 1,3,8,10 is inserted into the table using closed hashing?

Note that: denotes an emply location in the table.

Note : in closed hashing all keyd are stored in the hash table itself without the use of linked lists.

- 1,-,-,-,-,-,3
- 8,-,-,-,-,-,10
- 1.8,10,-,-,-,3
- 1,10,8,-,-,-,3

65) The product 8 x 888 .....8, where the second factor has n did its, is an integer whose digits have a sum of 1000. What is n?

66) N = 999, 999, 999, 999, 999, 999. How many 9s are there in the decimal expansion of N “ 2?

67) Suppose that the function is defined on natural number (integers > 0) such that f (1)= 2and f (x+y) = f(x)+f (y)+2xy – 3 for as x, y what is the value of f(2) + f(6)?

- 120
- 157
- 142
- 72

68) In binary code all numbers are written in base 2. The value of x (in decimal) in the equation (all in binary)

$X = 100^{10} + 1100 + 1001$

- -3
- 16
- 1097
- 9

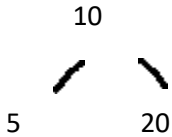
69) Easha works for ISRO where she is involved in a mission to intercept a comet that is likely to collide with the earth within 1 month. She is developing a 'C' Program to calculate the trajectory of the missile to be launched to intercept and destroy the approaching comet. In order to achieve highest accurency of the missile trajectory, what data type should she use for the variables in her equations?

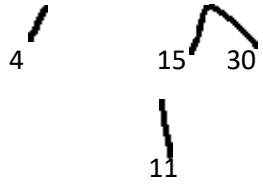
- long int
- int
- float
- double

70) There are 8 houses built in a line , and they contain valuables worth 6, 7, 3, 8 , 2, 4, 5 lakh rupees respectively. A thief is going to steal the maximum value in these houses, but he can not steal in the adjacent houses because the owner of the stolen house will tell his two. Neighbors on the left and right side. What is the maximum value (in lakhs) that can be stolen?

71) Consider the following binary tree. If we randomly search for one of the keys present in this tree, what would be the expected number of comparisons?

Provide your answer accurate to 2 decimal places.





72) A program reads in 500 integers in the range [0..100] representing the scores of 500 students. It then prints the frequency of each score above 50 . What would be the best way for the program to store frequencies.?

- An array of 500 numbers
- An array of 50 numbers
- A dynamically allocated array of 550 numbers
- An array of 101 numbers

73) Consider a hash table of size seven . with starting index zero , and a hash function (3x +4) mod 7 . assuming the hash table is initially empty. Which of the following is the contents of the table when the sequence 1,3,8,10 is inserted into the table using closed hashing?

Note that '–' denotes an empty location in the table.

Note : in closed hashing. All keys are stored in the hash table itself without the use of linked lists.

- 1, 10, 8, -, - ,- 3
- 1, 8, 10, -, -, -, 3
- 8, -, -, -, -, -, 10
- 1, -, -, -, -, -, 3

74) What is the greater common divisor (the largest number that will divide both number with he remainder) of the following two numbers?

X = 111111…(23690 times)

Y = 11111111…..(1470 times)

- 11111111111111111111 (21 times)
- 1111111111 (10 times)
- 1111 (4 times)
- 11111111111 (11 times)

75) The following are some statements about the array datatype:

A. The count of terms is known aprion
B. The items are of the same datatype
C. Suitable if you need flexibility to change the size at run time

D. The items are located sequentially

Which of the statements are correct?

- A, B, C , D
- A, B
- A, D
- A, B, D

76) What is correct about circular linked list ?

- Doubly linked circular list is NOT possibleto implement
- A node can be inserted but cannot be deleted
- There is no pointer that points to NULL
- Can be used to implement undo feature in word processing

77) The following program is supposed to find the number of terms in the array **num_array.** What should be written in the missing last line before the while loop's closing brace? Write you answer **Without any leading, trailling, interspersed blank spaces or semlcolons.**

```
Int num _ array [] = {17, 20 , 23; 26 , 29 , 32 , 35 } ;
Int count = 0;
While { count < sizeof(num_array/num_array[0]) {
    Print f ("% d ", num_array [count]);
     // Replace this commented line with the required C statemend. No
semicolon
}
Print f ("There are %d elements in the array\n", count);
```

207) What is the value of **text,** if the following program runs to completion?

```
#include < stdio.h >
#include <string.h>
Void what_is_this (const char *s, char *t, int n) {
    Int I = 0;
    If (strien(s) < n) {
      *t = 0; return;
}
While (*s)
```

```
{
     *t++ = *s++;
      I++;
      If (I == n) break;
}
    *t = 0;
}
Int main() {
     Char *s = “How many characters are found in this query? ” ;
     Char text[10];
     What_is_this(s, text, 3);
}
```

208) The output when the following code is executed is

```
#include <stdio.h>

Int main (){
Int  x = 2;
If(x--,--x,x)
Printf(“TCS Ninja exam”);
Return 0;
}
```

- ○ Run time error
- ○ Compilation error – invalid if statement
- ○ TCS Ninja exam
- ○ TCS TNQT exam

209) What is the value of **result** in the following C program?

```
Int a = -10, b =-5, flag = 1, result = 0, I;
Int x = abs (a); int y = abs (b);
For(I = 1; I <= x; i++)
    result  += y;
if ((a >=0 && b < 0) || (a < 0 && b >=0)
```

```
    flag = -1;
result *= flag;
```

210) In C there are function like putchar(int c), fputc(int, FILE *), Write(int, const void *, size_t), … in an object oriented programming language like C++, all these functions can have the same name like weite(int c), write(int,FLIE *) and write(int, coust void *,size_t).This feature is called:

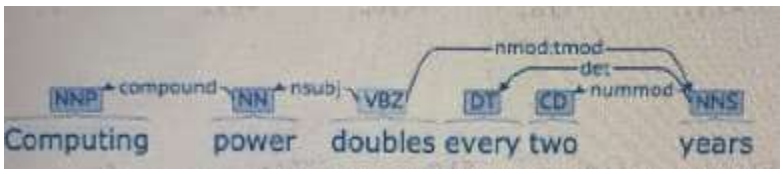
- ○ Function prototyping
- ○ Function modularizing
- ○ Function overloading
- ○ Function grouping

211) The output when the code is executed is

```
#include <stdio.h>
enum food {
  buritos = 3,
  Pizza =-1,
  Pasta,
  Burger
};
int main(){
Enum food a=0;
Switch (a) {
     Case buritos: printf("Little ltaly");
       break;
     Case pizza: printf("pizza Hut");
      break;
      case pasta : printf("pasta Bar veneto");
     break;
     case burger : printf("Burker King");
}
return 0;
}
```

- ○ Compilation error
- ○ Burger King
- ○ Pasta Bar veneto
- ○ Pizza Hut

212) The picture represent a parse tree generated according to a specified grammar for the following sentence “Computing power double every two years”



How many leaf node are there for this tree?

A,3

B, 5

C, 6

D,4

213) What is the equivalent while loop for the for loop given below

```
for (int i =0,j=5;k=10;i<10;i++,j+=5 )
 {
Printf(j);
}
```

```
i=0;
j=5;k=10;
while(i<j+5)
{
Printf(j);
j=j+5;
i=i+1;
}
i=0;
```

```
j=5;k=10;
while(i<10)
{
Printf(j);
J=j+5;
I=i+1;
}
i=0;
j=5;k=10;
while(i<10)
{
J=j+5;
I=i+1;
Printf(j);

}
i=0;
j=5;k=10;
while(i<k)
{
J=j+5;
I=i+1;
Printf(j);

}
```

214) If the user input to the following program is “a b c .99” (without quotes),what,s the output?

```
#include <queue>
#include <string>
#include <iostream>
Using namespace std;
Int main()
{
  Priority_queue<string> q;
```

```
   String word,end = “-99”;
   While (cin >> word) { //a b c -99
     If (word == end) break;
     q.push(word);
}
    While (q.size()) {
    Cout << q.top();
    q.pop();
     }
}
```

215) What is the output of the following program?

```
#include <iostream>
Using namespace std;
Class PM{
Public: void desidnation() { cout << “PM”; }
};
Class CEO {
Public:
   CEO() { pmPtr = new  PM;}
   PM *operator ->() { return pmPtr; }
   Void designation() {cout << “ CEO”; }
Private: PM *pmPtr;
};
Int main() {
   CEO *ceoPtr;
   ceoPtr = new CEO;
   ceoPtr->designation();
   delete ceoPtr;
}
```

216) What’s the output of the following java program?

```
Public class MyThread extends Thread
{
     Public void run()
```

```
        {
          System.out. printin("Before");
          This.stop();
          System.out.printin("After");
        }
Public static viod main(String[] args)
        {
            MyTherad a = new  MyTherad();
             a.start();
        }
}
```

217) What's the value of **count, if** the following program runs to completion?

```
#include<stdio.h>
int tell_me(const char *s1, const char s2)
{
    While (*s1 && *s1 == *s2) {
    S1 ++; s2 ++ ;
    }
     Return *s1 - *s2;
}
int  main(void)
{
    Char s[][6] = { "One", "Two", "three", "FIVE" } ;
    Char t[][6] = { "one", "two", "Three", " FIVE" } ;
     Int I, j, count;
     For (i = 0, count = 0; I <size of (s)/sizeof(s[0]); i++)
      {
        I = tell_me(s[i],t[i];
        If (j == 0) count++;
        }
}
```

218) What is the length of string displayed by the following program?

```
#include <iostream>
Using namespace std;

String do_something (string.s)
{
    Char char_array[] = " ;.;'";
     Size_t p1 = s.find_first_not_of(char_array);
     Size_t p2 = s.find_fiest_of(char_array ,p1);
     Return s.substr(p1 , p2 – p1 -1);
}

Int main()
{
    Cout << do_something("No, its wrong ");
}
```

219) What's the value of m, after the following program is fully executed?

```
#include <stdio.h>
Int what(const char*s)
{
    Int a1 = 0;
    While (*s++) a1++;
     Return a1;
}
Int main()
{
   Char t[][20] = { "HELLO WORLD", "How are you?", "Are you from USA?",
"AN INDIAN" };
    Int m = 100, i, j;
    For (i = 0; i < sizeof(t)/sizeof(t[0]); i++)
    If (m > (J = what(t[i]))) m = j;
}
```

220) What's the output of the following program?

```
#include < cctype>
```

```
#include < iostream>
#include <algorithm>
Using namespace std;
Bool whith ( char c) { return isspace(c); }

Int main()
{
   Char s[] = “How far is Chennai?;
   Char *p1 = s;
   Char *p2 = s + sizeof(s)/sizeof(char);
   P2 = remove_if(p1,p2,which);
  For (char * p = p1; p != p2; p++)
  Cout << * P;
}
```

221) The for loop below computes **97+94+91+.....+4.**

Replace the question mark (???) appropriately to complete the code snippet.

```
int i = 97, sum;
For (sum = 0;i > =4; I i= ???) sum + i;
```

Your answer should not contain any blank space.

222) What's the value returned by the following function, if it is invoked as **what_calue(“123”)?**

```
Int what_value(const char *s)
{
    Int value = 0, factor = 1, c;
    While (c = *s++) {
            Value +=(c – ‘0’) * factor;
             Factor *= 10;
              }
             Return value;
}
```

223) What is the value of **result** in the following C program?

```
Int a = -17, b =5, flag = 1 , result;
```

```
Int x = abs(a); int y = abs(b);
for (result =0; x > y; result++)
    x - = y;
if ((a >=0 && b < 0) || (a < 0 && b >=0))
   flag = -1;
result *= flag;
```

224) What is the value of **minimum**, if the following segment runs to completion?

```
#include <limts.h>
int main()
{
  int I = 0, minimum = INT_MIN;
  int numbers[] = {23,48,98,1,6,8,200,10, };
  while (I < sizeof(numbers)/sizeof(number[0])) {
If (minimum < numbers[i]) minimum = number[i]:  i++;
  }
}
```

225) How many times is the message invalid guess! printed by the following c++ program?

```
#include <iostream>
Using namespace std;
int main()
{
        // In the following initialization sequence, English 'o' is not used
         Strinh s[] = {"1234","56789","234a","189b1","089*3" };
         For  (int I =0; I <sizeof(s)/sizeof(s[0]); i++) {
                Auto pos = s[i] find_first_not_of("0123456789"); // 0 is number
zero
                 If (s[i].leangth() == 4 && pos == string::npos)continue;
                 Else cout <<"Invalid guess!\n";
          }
}
```

226) The function pallap()defined below takes a string as an argument and return a boolean value. Bool pallap(string pinput)

```
{
Ispal = true
        i=0
        j= length(pinput)-1
        while(i<j)
        {
        If(pinput(i)!=pinput(j))
        {
        Ispal = false
        }
        i= i+1
        j =j-1
        }
        Return ipal
        }
```

In the above function, !=indicates"is not equal to"

If redder = pallap("redder") stressed = pallap("party_trap")then

A . redder. Stressed and party trap are all true

B. redder is true. Stressed is false and party trap is true

C. redder is false Stressed is true and party trap is true

D. redder is true Stressed is false and party trap true

227) What is the fourth line of output in the following C++ program?

```
#include <vector>
#include <iterator>
#include <iostream>
#include <algorithm>
Using namespace std;
{
Public:
        Bool operator ()(const string & a, const string & b) {return a > b: }
};
Int main()
```

```
{
        Vector<string> v = {“abc”,”def”,”ghi”,”jkl”,”mno”,”pqr”,”stu”,”vwx”,”yz”};
         Sort(begin(v), end(v), subfunction());
          Copy(begin(v), end(v), ostream_iterator<string>(cout. “\n”));
}
```

228) What is the value of **maximum**, if the following segment runs to completion?

```
#include <limits.h>
int main()
{
   int I = 0, maximum = INT_MAX;
   int numbers[] = {923,948,988,981,167,899,200,910,999 };
   while (I < sizeof(numbers)/sizeof(number[0]))
    {
If (maximum < numbers[i]) maximum = number[i]:  i++;
   }
}
```

229) What is the value of results in the following C programs ?

```
int a =10,b=-5,flag=1, result =0,I;
int x = ab(a);int y = abs(b);
for (i=1;i<=x;i++)
result +=y;
if((a>=0&&b<0)||(a<0&&b>=0)
flag=-1;
result*flag;
```

CODING

1) Once you have selected you programming language, click on the checkbox beside it to start codind.

Word is key

Problem Statement

One programming language has the following keywords that cannot be used as identifiers:

Break, case, continue, default, defer, else, for, func, goto, if, map, range, return, struct, type, var

Write a program to find if the given words is a keyword or not

Example -1

Input

defer

Expected output

Defer is a keyword

Example -2

Input

while

Expected output

While is not a keyword

2) once you have selected you programming language, click on the checkbox beside it to start codind.

Sweet Seventeen

Problem Statement

Given a maximum of four digit integer to the base 17 (10->A, 11->B , 12->C, … 16->G) as input, output its decimal value

Input – 1

1A

Expected output

27

Input – 2

23GF

Expected output

10980

3) See this example of string transformation . Given an input string aaaabbBccdee. It can be written as a4b2B1c2de2.

Based on the above example , write a program that accepts the input string through STDIN and writes the transformed string STDOUT.

Other than the transformed string , no other characters / string or message should be written to STDOUT

You can assume that the input string length will not exceed 20 characters.

```
#include < stdio . h >
        int main ()
```

```
{
    char  a[ 20] ;
    int i, count [1000] = { 0 };
   scanf ( "%s", a ) ;
   for ( i = 0 ; a [ i ] ! = '\ 0 ' , i++)
   {
     count [ a[ i ] ] ++;
  }
   for ( i=0; a [ i ] ! = '\ 0 ' , i++)
     if (count [ a[ i ] ]! = -1)
     printf( " %c %d" , a [ i ] , count [ a[ i ] ] ) ;
      count [ a[ i ] ] = - 1;
      }
}
  return  0 ;
}
```

4) Write a program that will replace multiple consecutive occurrences of a character with single occurrence, and print the result in the reverse order.
For example, if the input string is a . the ouput should be The input string of characters should be read form STDIN and the result should be written to STDOUT.
Other than the required output.no other characters / string or message should be written to STDOUT.
You can assume that the input string length will not exceed 30 characters.

5) A Sober Walk
Problem Statement
Our hoary culture had several great persons since time immemorial and king vikramaditya's nava ratnas belongs to this ilk. They are named in the following shloka
Among these , Varahamihira was an astrologer of emimemce and his book , Brihat Jatakais reckoned as the ultimate authority in astrology. He was once talking with Amarasimha, another gem among the nava ratnas and the author of Sanskrit thesaurus, Amarakosha. Amarasimha wanted to know the final position of a person , who starts from the origin 0 0 and travels per following scheme.

He first turns right and travels 10 units of distance
His second turn is upward for 20 units
Third turn is to the left for 30 units
Fourth is downward for 40 units
Fifth turn is to right(again) for 50 units
……And thus he travels every time increasing the travel distance by 10 units
While Varahamitra could use his astrology skills to predict movement based on planetry positions , use your programming expertise to print the final position use your programming expertise to print the final position , given the number of turns (n) : 2<=n<= 1000
Input – 1
3
Expected output
-20 20

Input –2
4
Expected output
-20 20

Correct code in C

```
#include<stdio.h>
#include<stdlib.h>
Int main()
{
    int n;
    scanf("%d",&n):
   char c = 'R';
   int x=0,y=0;
while(n){
   switch(c){
   case 'R':
      x = abs(x) +10;
      y= abs(y):
      c = 'U':
       break;
```

```
    case 'U':
        y = y+20;
        c = 'L';
         break;
      case 'D':
         y = -(y);
         c = 'R':
         break:
}
n--;
}
printf("%d%d",x,y);
}
```

6) Sweet seventeen

Problem Statement

Given a maximum of four digit to the base 17(10 ->A, 11->B,12->C, 16->G) as input, output its decimal value

Input 1

1A

Expected output

27

Input 2

23GF

Expected output

10980

Correct code in C :

```
#include<stdio.h>
#include<math.h>
#include<string.h>

int main(){
     Char hex[17];
      long long decimal,place:
      int i=0,val,len;
```

```
    decimal =0;
    place=1;
    scanf("%s",hex);
    len = strien(hex);
    len--;
    for(i=0;hex[i]!='\0':i++)
    {
        If(hex[i]>='0'&&hex[i]<='9')
        {
            val = hex[i] – 48;
         }
        else if(hex[i]>='a' && hex[i]<='g')
          {
              val = hex[i] -97 +10;
          }
          else if(hex[i]>='A'&&hex[i]<='G')
          {
             val = hex[i] – 65+10;
          }

          decimal+=val*pow(17,len);
          len--;
}
printf("%||d",decimal);
return 0;
}

Correct code in python
def val(c):

if c>='0' and c<='9':
        return ord(c) –ord('0')
else:
       return ord(c) – ord('A')+10;
def toDeci(str,base):
    llen = len(str)
```

```
    power=1
    num=0
for i in range(llen – 1,-1,-1):
          if val(str[i] >= base:
          print('Invalid Number')
          return-1
   num+=val(str[i])*power
   power=power*base
return num
strr = input()
base = 17
print(toDeci(strr,base))
```

7) Oddly even

Given a maximum of 100 digit numbers as input , find the difference between the sum of odd and even position digits.

Input #1:

4567

Expected output:

2

Explanation

Sum of odd position digits 4 and 6 is 10 . Sum of even position digits 5 and 7 is 12. The difference is 12-10 = 2

Input #2:

9834698765123

Expected output

1

Input #3:

5476

Expected output

2

Correct code using java

```
import java.util.Scanner:
public class Ex2{
public static void main(String[]args){
          Scanner s=new Scanner(System.in);
```

```
  long a=s nextLong();
  long temp=a;
  int flag=0,even=0,odd=0;
  String aa=String.valueOf(temp):
  int len = aa.length():
while(a>0)
{
        long rem=a%10;
        a/=10;
        if(len%2==0)
        {
            If(flag==0)
            {
                even+=rem;flag=1;
             }
             else if(flag==1)
             {
                 odd+=rem;flag=0;
             }

}
else
{
        if(flag==0)
        {
                odd+=rem;flag=1;
         }
          else if(flag==1)
          {
                even+=rem:flag=0;
           }
    }
}
int sum=odd-even;
if(sum<0)
{
        sum=-sum;
}
    System.out.println(sum);
}
}
```

8) Word is key

Problem statement

One programming language has the following keywords that cannot be used as identifiers :
break, case, continue, default, defer else, for, func , goto, if , map, range, return, struct, type, var

write a program to find if the given word is a keyword or not
Example 1
Input
defer
Expected output
defer is a keyword

Example 2
Input
while
Expected output
while is not a keyword

Correct code using C

```
#include<stdio.h>
#include<string.h>
int main()
{
   char
str[16][10]={"break","case"."continue","default","defer","else","for","func","goto","if","
map","range","return","struct","type","var"};

      char input[1][20];
      int flag=0:
      scanf("%s",input);
      for(int i = 0:i<strlen(str):i++)
      {
                  If(strcmp(input,str[i])==0)
                  {
                        flag = 1;
                        break;
```

```
                    }
}
if (flag ==1)
{
            printf("%s is a keyword",input);
}
else
{
            printf("%s is not a keyword",input);
}
}
Correct code using java
import java.util.Scanner:

public class Ex1{
public static void main(String[] args){
        String[]
a={"break","case"."continue","default","defer","else","for","func","goto","if","map","ra
nge","return","struct","type","var"};

        String b;int flag=0;
        Scanner s=new Scanner(System.in):
        b=s.next();
        for(int i=0;i<10;i++)
        {
            If(a[i].equalsignoreCase(b))
            {
                flag=1;
             }
}
if(flag==1)
{
        System.out.println(b+" is a keyword");
}
else{
            System.out.println(b+" is not a keyword");
```

```
    }
}
}
```

Correct code using Python

```
keyword={"if","else","break","case","goto","continue"."return", "range"}

inp=input()
if inp in keyword;
    print("Given string is keyword")
else:
print("not a keyword")
```

9) To zero or not to zero

Problem Statement

Given a pair of positive integers m and n(m<n;0<m<999;1<n<=999),

Write a program to smarty affix zeroes, while printing the numbers

From m to n :

Example 1 :

Input

5 10

Expected Output

05 06 07 08 09 10

Example 2

9 100

Expected output

009 010 011 012 013 014 015 016 017 018 019 020 021 022 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037 038 039 040 041 042 043 044 045 046 047 048 049 050 051 052 053 054 055 056 057 058 059 060 061 062 063 064 065 066 067 068 069 070 071 072 073 074 075 076 077 078 079 080 081 082 083 084 085 086 087 088 089 090 091 092 093 094 095 096 097 098 099 100

Example 3

Input

1 9

Expected output

1 2 3 4 5 6 7 8 9

Correct Code in C

```
#include<stdio.h>
int main()
{
intm,n,i;
scanf("%d %d",&m,&n);
if(n>=100)
   {
for(i=m;i<=n;i++)
printf("%03d ",i);
   }
else if(n>=10)
   {
for(i=m;i<=n;i++)
printf("%02d ",i);
   }
else
   {
for(i=m;i<=n;i++)
printf("%d ",i);
   }
return 0;
}
```

10) One programming language has the following keywords that cannot be used as identifiers:

break, case, continue, default, defer, else, for,

func, goto, if, map, range, return, struct, type, var

Write a program to find if the given word is a keyword or not Sample

Input1: defer

Output1: defer is a keyword

Input2: While

Output2: While is not a keyword

```
key = {'break', 'case', 'continue', 'default', 'defer', 'else', 'for', 'func', 'goto', 'if', 'map',
'range', 'return', 'struct', 'type', 'var'}

instr = input()

if instr in key:
print(instr + " is a key")
else:
print(instr + " is not a key")
```

11) Given a maximum of 100 digit numbers as input, find the difference between the sum of odd and even position digits.
Input #1: 4567
Expected Output: 2
Explanation: Sum of odd position digits 4 and 6 is 10. Sum of even position digits 5 and 7 is 12. The difference is 12 – 10 = 2.
Input #2: 9834698765123
Expected Output: 1
Input #3: 5476
Expected Output: 2

```
def digit(num):
X = num
digi = []
while(X>0):
digi.append(X%10)
X = X//10
    return digi
num = int(input())
digi = digit(num)

odd = 0
even = 0
 for i in range(len(digi)):
if (i%2==0):
odd+=digi[i]
```

```
else:
even+=digi[i]
print(abs(odd-even))
```

12) Given a maximum of four digit to the base 17 (10 – A, 11 – B, 12 – C, 13 – D … 16 – G} as input, output its decimal value.

Input1: 1A

Output1: 27

Input2: 23GF

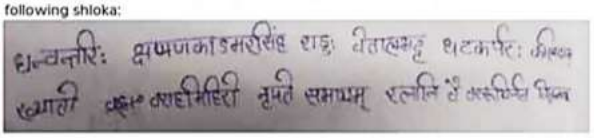
Output2: 10980

```
num = input()

base17 = {'A':10, 'B':11, 'C':12, 'D':13, 'E':14, 'F':15, 'G':16}

n=int(len(num)-1)

dec = 0

for i in num:
if i.upper() in base17:
dec+=base17[i]*17**n
else:
dec+=int(i)*17**n
n-=1
print(dec)
```

13)

Problem statement

Our hoary culture had several great persons since time immemorial and king vikramaditya's nava ratnas (nine gems) belongs to this ilk. They are named in the following shloka:



Among these, Varahamihira was an astrologer of eminence and his book Brihat Jataka is reckoned as the ultimate authority in astrology. He was once talking with Amarasimha, another gem among the nava ratnas and the author of Sanskrit thesaurus, Amarakosha. Amarasimha wanted to know the final position of a person, who starts from the origin 0 0 and travels per following scheme.

He first turns right and travels 10 units of distance
His second turn is upward for 20 units
Third turn is to the left for 30 units
Fourth is downward for 40 units
Fifth turn is to the right (again) for 50 units
.... And thus he travels, every time increasing the travel distance by 10 units.

While Varahamitra could use his astrology skills to predict movement based on planetary positions, use your programming expertise to print the final position, given the nu,mber of turns (n); **2<=n<=1000**

Input-1
3
Expected output
-20 20

Input -2
4
Expected ouput
-20 -20

```
turn = int(input())
x=0
y=0
j=0
for i in range(1, turn+1):
 j+=10
  if(i%4==1):
   x+=j
elif(i%4==2):
   y+=j
elif(i%4==3):
   x-=j
elif(i%4==0):
    y-=j
print(x, y)
```