

## Placement paper of CTS at GCT

### CTS Questions 28th May 2003:

There are 60 questions to be answered in 60 minutes

1) In a club there are certain no. of males and females. If 15 females are absent then no. of males will be twice that of females. If 45 males are absent then female strength will be 5 times that of males. Find no. of males actually present.

2) Three men A, B, C plays Cards. If one loses the game he have to give Rs.3. If he wins the game he will gain Rs.6. If A has won 3 Games, B loses Rs.3, C wins Rs.12.What is the total no. of games played?

3) A can swim & cross 50m(the length of swimming pool) in 2 min. B can swim & cross 50m in 2min 15sec. Every time when they meet a bell gong is struck. For 2000m how many bell sounds might be produced?

4) When I was married 10 years ago my wife is the 6th member of the family. Today my father died and a baby born to me. The average age of my family during my marriage is same as today. What is the age of Father when he died?ans:70.

5) There are 9 balls of equal size and same weight(they look similar) except 1. How may weighs required to find the dissimilar ball using a weighing balance?

6) Product of Prime no. between 1 to 20?

7) Find out the total numbers between 1 to 999 that are neither divisible by 8 nor by 12?

8) Find out the distinct numbers that can be formed by 2, 3, 7, 6(don't now exactly) that should be divided by 4?

9) Two trains at speed 60 km/hr comes in the opposite direction. At a particular time the distance between the two trains is 18km. A shuttle flies between the trains at the speed of 80 km/hr. At the time the two trains crashes what is the distance traveled by shuttle?

10) There are n urns and m balls. If we put 3 balls in each urn 3 balls will be excess. If we put 4 balls in each urn 1 urn will be excess. Find no. of Urns (or) Balls?

11) Find the area not occupied by circles:

Given length = y breadth = x (Answer:  $3x^2(1 - \pi/4)$ )

12) A man gets x/y of Rs.10 and y/x of Rs.10. He returns Rs.20. The Answer choices are

a) He may not lose

b) He may lose

c) He always loses

d) Cannot be Determined

13) Three men A,B,C can complete a work separately in some specified days(may be 6,7,8).

If they do the work together by alternate days. Then how many days need to complete the work?

14) Four Members A,B,C,D are playing a game. A person losing a game should double the amount of others. B,C,D are losing in order after three games. The amount after 3 games are A&B having 40,D is having 16&C 80.

#### Each questions carry one mark:

a) who started with small amount of money?

Ans)A

15) who started with greatest amount of money?

Ans)B

16) what amount did B have?

Ans)93

Hint: I solved and found the answers to be A->5,B->93

17) There are some houses in a street back to back. And they that house behind 10 was 23.

How many houses in the street?

Ans)32

18) There are 1997 doors in an auditorium and as many as people as the no of doors open enter the auditorium. A door was closed and as many as people as no of doors open leave the auditorium. The process was repeated till the no of doors is equal to 1. find the total no of peoples enter the auditorium?

19) A batsman average was 15. at last innings he took 23 runs then his average became

16. how much run he should take to make his average 18?

20) Find the number WXYZ divisible by 36?

i) let the digits be 5,4,3,6 –not in that order

ii) sum of last two digits is 9

iii) sum of middle two digits is 7

-> if one is sufficient then ans as A || if two is sufficient then ans as B || if all are necessary then ans as C || if nothing is needed then ans as D

21) X and Y live in a North-South parallel street. X travels 10 km towards North to reach the east-west street. Y travels 6 km towards south to reach the east –west street. X travels now 4km towards east and y travels 8km towards west and they met each other. What is the distance between x and y?

22) The houses are numbered 1,2,3,... and reach the end of the street and backtracks toward s the starting point. The house numbered 10 is opposite to 23. there are even no of houses. Find the total no of houses.

23) A seller has a set of apples out of which he sells one half of it and half an apple to his first customer. then he sells half of the remaining apples and a half apple to his second customer. Then he sells half of the remaining apple and 1/2 apple to his third customer and so on. This repeats upto 7th customer and no more apples are remaining. Find the total no of apples he had.

24) A hollow cube of size 5cm is taken, with the thickness of 1cm. it is made of smaller cubes of size 1cm. if the outer surface of the cube is painted how many faces of the smaller cubes remain unpainted?

25) if a 36 cm thread is used to wrap a book, lengthwise twice and breadthwise once, what is the size of the book?

27) if 4 circles of equal radius are drawn with vertices of a square as the centre, the side of the square being 7 cm, find the area of the circles outside the square?

28) A bus has 40 seats and the passengers agree to share the total bus fare among themselves equally. If the total fair is 80.67, find the total no of the seats unoccupied.

29) A 4 digit no may consist of the digits 6,2,7,5 where none of the nos are repeated. Find the possible no of combinations divisible by 36?

30) if u r traveling from Mumbai to banglore and return back. To find the speed of the car which of the following r needed.

a) the distance between them.

b) time taken

c) avg speed towards Mumbai and the avg speed towards banglore.

Choices:

1) a only. 2) a and b 3) a,b,c 4) b only 5) c only (ans not in order)

2) A secret can be told only 2 persons in 5 minutes. the same person tells to 2 more persons and so on. How long will take to tell it to 768 persons?

a) 47.5 min b) 50 min c) 500 min d).... Ans: 47.5 min

33) Three birds cross a point in a same st. line and of that 2 fly in opposite directions. If a triangle is formed with the position of the birds what kind of the triangle will be formed?

a) isosceles b) right angle c) equilateral d) right angle and isosceles.

35) One question is given for explaining the working of cornea (in eyes) & the window

ans: drawing analogy

36)  $m < n$ , &  $x < y$  which of the following is definitely false

a)  $m - n < x - y$  b)  $m + n < x + y$

c) & d) Similar options using all 4 variables

37) Four circles are drawn from the corners of a square of area 49 cm<sup>2</sup>. Find the area of 4 circles outside the square

(they didn't mention that circles have radius = 1/2 side of a square)

ans: intermediate

38) In a pond ecosystem, large fishes and small fishes will be there. If we want to remove small amount of pollutants, small fishes are to be employed. In a food-chain food passes through a number of mouths and en route the mouth of the superfeeder- the eagle. The size of the ecosystem is determined by its population. But this has been proved false.

What can you infer from above?

(4 choices)

39) In Bangalore, during income tax deduction for a single person, the percentage increased by 3% and for middle house-holders, it decreased by 3%. What can you infer?

40) In China, Mao-Tse -Tung was responsible for organizing its people and taking China into success path. It evolved into a great economic power by improved industrial and economical statistics. China prospered in those years, but \_\_\_\_\_

Which of the following best completes the sentence? (4 choices)

41) A ridge formed over Pacific Ocean was because of the intersection of two volcanoes. But in history it was written that it was not due to those volcanoes. It proves a contradictory to form the view that history will be proved wrong in the future.

Inference?

42) In a poultry farm because of cloning a large breed of hens were produced. This increased the production but the maintenance was very difficult because of the large number. This does not mean that cloning is a disaster in the scientific world but it is a tool which in some ways is constructive but in other ways, it is destructive. Inference?

#### (The remaining verbal questions are easy and they can be answered by seeing the question carefully)

1. Product of prime number between 1 and 20.

2. Number of terms between 1 and 999 not divisible by 8 or 12.

3. There are number of hours on both sides of a road. On one side houses are numbered in increasing order (1,2,3,...). On other sides houses are numbered in down order. It house number 10, opposite house is house no.23. Find no of houses (Even number of houses are provided);

4. What is the area of the shaded region?

Ans.  $3\pi^2 X(1 - (\pi^2/4))$ .

5. An apple seller is having some apples. He is selling half of the apple what he has plus half the apple to the first customer. In the same way he sells the remaining apple to 7 customers. After selling to 7 customer, he has no apples with him.

Ans. 127

6. In the combinations of 2,3,6,7 how many possible combinations divisible by 4?

Ans. 8

7. If  $x > y$  &  $n > m$  which of the following data is false.

8. There are no of urns & no of balls. If three balls are placed in each urn then 3 balls is left. If 4 balls are placed in each urn then 1 urn is left. What is the total no of balls?

Ans. None of these.

9. There are 1997 doors in the courts. 1997 people came out from each door. One door is closed. That many people came out from each door. This continues till a single person come out of the single open door. Find the no of people inside the court.?

There dare four teams A,B,C, D playing game. If any one team loses, it will play twice the money to all other teams. They play 3 games B,C,D loses one game each in the final. Finally A&B has Rs. 40 each & C has Rs. 80 & D has Rs. 16.

10. Which team has started with minimum money?

i) A ii) B iii) C iv) D

ans. I) A

11. Which team has started with maximum money?

i) A ii) B iii) C iv) D

Ans. ii) B

12. Two trains are traveling in 60 kmph on same trace, towards each other. When the distance between them is 18 km, a fly is going to start, flying between them in 80 kmph speed. Find the traveling path distance of the fly upto when it is going to crash by the 2 trains?

Ans. 12 km

13. A batsman outs for 23 runs in one inning which increases his average 15 to 16. If he has to got 18 as average, what score is to made by him in the same innings?

Ans. 39

14. There are 4 numbers as 5,8,2,1

Form 4, four digit numbers as A ,B and find the sum?

15. A,B,C,D,E,F,G,H,I are all of squares which are combined in a square. Area of B is 81 cm<sup>2</sup>. Side of A is 1 cm. Then find area of 'I'?

Ans. 324 cm<sup>2</sup>.

16. Death rate in a village (drought ridden) decreases. Naidu Govt claims it free health camps. This goes in valid when

Ans. i Two water supply tanks were built supplying clean water.

17. In 1996, income after tax deduction of upper classes increases by 3% than in 1995.

Choices:

1) No of upper class population increases

2) ,, ,, decreases

18. A Man gets x/y of Rs. 10 & y/x of Rs. 10. He gives out Rs. 20.

i) He loses always ii) May or maynot less

iii) cannot always lose.

19. Petrol prices increased by 40% expected hike in taxi & auto charges so, people may use public transport systems. What do you infer?

20. All people use a bus paid equally. 40 seats in the bus. Bus charge is Rs. 70.37 How

many seats we left unfilled.

21. 4 men can cross a bridge in 3,7,13, 17 minutes. Only two can cross the bridge at a time. The time taken by the two to cross the bridge is equal to the time taken by the slowest person of the two. Find the minimum time to all of them cross the bridge.

Ans. 47

22. 1000 doors

I man open all

II man 2 multiples close

III man 3 multiples open

IV man 4 multiples close

How many doors are open?

23. I was married 10 years before my wife was sixth member of my family and now I have a baby and today father died and the average age of my family was same as it was 10 years before. Find my fathers age when I was married.

Ans. 60

24. Square side 7 cm

Find the area 4 equal circles of the circle lying drawn at the .....

25. It takes five minutes to pass a rumour from one person to two other persons. The tree of rumour continues. Find how many minutes does it take spread the rumour to 768 persons.

26. There are 9 coins. One of 9 is less weighted and others have equal weighteds. Find the minimum no of balances to find the defective coin?

Ans. 2

27. (Train did not stop at Calcutta)

28. 2500 km distance between Mumbai & Calcutta. Calculate the average speed. 1) from Mumbai to calculate 25 hrs 2) speed during the return journey was 150 km/hr. 3) speed during the forward journey is 100 km/hr. a) if it can be answered using each of the given above. Mark b) if it can be answered using two of them. Mark c) if it can be answered using non of them. Mark d) if non of them is required to answer.

Ans. (b)

29. Three birds cross a point at the same instant with equal speed. Two of the birds fly exactly in opposite direction. After they cross the point at any instant of time. The three birds are joined by straight lines to form a triangle. The nature of the triangle is

i) isosceles ii) equilateral iii) Right angled iv) right angle isosceles

30. There are two parallel streets in North-South direction. A lives in street 1, B lives in street 2, A goes 10 km north and B goes south 8 km to meet the east – west road. A moves 4 km east and B moves 6 km west to meet each other. Find distance between houses owned by A & B.

31. A question on eco system.

Inference: Food energy in the eco system dependson the type of population.

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