

TCS Testpaper- Integral University Lucknow - 11 March 2008

Paper Type : Whole Testpaper

Test Date : 11 March 2008

Test Location : Integral University Lucknow

Hi friends i am RAHUL from INTEGRAL UNIVERSITY... i have got placed with TCS , thru campus placements.....out of 207 students 98 cleared written and finally 32 selected. i am thankful to each one of u for being so informative thru this group n specially to all those who provided me with info abt TCS in last few days... thr selection procedure.

1. u need to hv first class throughout(10th,12th,grad)
2. engineering student then 60% n above
- 3.if post grad(MCA) 60% n above

Paper pattern
 1- set has three sections
 a> English(10 antonyms n 10 syno...)(32 marks 20 mins)
 b> Reading comprehension passages and comleting sentence(6 + 6)marks

2nd section is Quantitative...(40 mins 32 ques).
 3rd section is CRITICAL REASONING. (30 mins 12 ques.)

FOR ANTONYMS N SYNONYMS
 just go through the barrons 12 edition .but i think thats too much so its better not to worried about the antonyms and synonyms .they are too tough and dont waste ur time in that becuz the time allotted for this section is just 20 minutes.....and you have to complete the reading comprehension and sentence completion as well.....

REMEMBER- there is no sectional cut off and no upper or lower cut off neither any type of negative marking.....so attempt all the question.....

QUANTITATIVE SECTION
 they are just repeating these section every time some of the questions are TCS PAPER ON 19th JANUARY 2008

1) If $\log 0.317 = -0.3332$ and $\log 0.318 = -0.3364$ then find $\log 0.319$?
 Sol) $\log 0.317 = -0.3332$ and $\log 0.318 = -0.3364$, then
 $\log 0.319 = \log(0.318 + (\log(0.318 - 0.317))) = 0.3396$

2) A box of 150 packets consists of 1kg packets and 2kg packets. Total weight of box is 264kg. How many 2kg packets are there ?
 Sol) $x = 2$ kg Packs
 $y = 1$ kg packs
 $x + y = 150$ Eqn 1
 $2x + y = 264$ Eqn 2
 Solve the Simultaneous equation; $x = 114$
 so, $y = 36$
 ANS : Number of 2 kg Packs = 114.

3) My flight takes of at 2am from a place at 18N 10E and landed 10 Hrs later at a place with coordinates 36N70W. What is the local time when my plane landed?
 6:00 am b) 6:40am c) 7:40 d) 7:00 e) 8:00
 Sol) The destination place is 80 degree west to the starting place. Hence the time difference between these two places is 5 hour 20 min. (=24hr*80/360).
 When the flight landed, the time at the starting place is 12 noon (2 AM + 10 hours).
 Hence, the time at the destination place is 12 noon - 5:20 hours = 6:40 AM

4) A plane moves from 9°N40°E to 9°N40°W. If the plane starts at 10 am and takes 8 hours to reach the destination, find the local arrival time ?
 Sol) Since it is moving from east to west longitude we need to add both
 ie, 40+40=80
 multiply the ans by 4
 $\Rightarrow 80 * 4 = 320$ min
 convert this min to hours ie, 5hrs 20min
 It takes 8hrs totally . So 8-5hr 20 min=2hr 40min
 \Rightarrow ans is 10am+2hr 30 min
 \Rightarrow ans is 12:30 it will reach

5) The size of the bucket is N kb. The bucket fills at the rate of 0.1 kb per millisecond. A programmer sends a program to receiver. There it waits for 10 milliseconds. And response will be back to programmer in 20 milliseconds. How much time the program takes to get a response back to the programmer, after it is sent? Please tell me the answer with explanation. Very urgent.
 Sol) see it doesn't matter that wat the time is being taken to fill the bucket,after reaching program it waits there for 10ms and back to the programmer in 20 ms.then total time to get the response is 20ms +10 ms=30ms...it's so simple....

6) A file is transferred from one location to another in 'buckets'. The size of the bucket is 10 kilobytes. Each bucket gets filled at the rate of 0.0001 kilobytes per millisecond. The transmission time from sender to receiver is 10 milliseconds per bucket. After the receipt of the bucket the receiver sends an acknowledgement that reaches sender in 100 milliseconds. Assuming no error during transmission, write a formula to calculate the time taken in seconds to successfully complete the transfer of a file of size N kilobytes.
 $(n/1000)*(n/10)*10+(n/100)$...as i hv calculated...~Not 100% sure

7) A fisherman's day is rated as good if he catches 9 fishes, fair if 7 fishes and bad if 5 fishes. He catches 53 fishes in a week n had all good, fair n bad days in the week. So how many good, fair n bad days did the fisherman had in the week
 Ans:4 good, 1 fair n 2 bad days
 Sol) Go to river catch fish
 $4*9=36$
 $7*1=7$
 $36+7+10=53$...
 take what is given 53
 good days means --- 9 fishes so $53/9=4$ (remainder=17) if u assume 5 then there is no chance for bad days.
 bad days means -----5 fishes so remaining 17 --- $17/7=1$ (remainder=10) if u assume 2 then there is no chance for bad days.
 Ans: 4 good, 1 fair, 2bad. ===== total 7 days.
 $x+y+z=7$ ----- eq1
 $9*x+7*y+5*z=53$ -----eq2
 multiply eq 1 by 9,
 $9*x+9*y+9*z=35$ -----eq3
 from eq2 and eq3
 $2*y+4*z=10$ -----eq4
 since all x,y and z are integer i sud put a integer value of y such that z sud be integer in eq 4and ther will be two value y=1 or 3 then z = 2 or 1 from eq 4
 for first y=1,z=2 then from eq 1 x= 4
 so $9*4+1*7+2*5=53$... satisfied
 now for second y=3,z=1 then from eq 1 x=3
 so $9*3+3*7+1*5=53$ satisfied
 so finally there are two solution of this question
 $(x,y,z)=(4,1,2)$ and $(3,3,1)$...

8) Y catches 5 times more fishes than X. If total number of fishes caught by X and Y is 42, then number of fishes caught by X?
 Sol) Let no. of fish x catches=p
 no. caught by y=r
 $r=5p$
 $p+5p=42$
 then $p=7,r=35$

9) Three companies are working independently and receiving the savings 20%, 30%, 40%. If the companies work combinely, what will be their net savings?
 suppose total income is 100
 so amount x is getting is 80
 y is 70
 z =60
 total=210
 but total money is 300
 $300-210=90$
 so they are getting 90 rs less
 90 is 30% of 300 so they r getting 30% discount

10) The ratio of incomes of C and D is 3:4.the ratio of their expenditures is 4:5. Find the ratio of their savings if the savings of C is one fourths of his income?
 Sol) incomes:3:4
 expenditures:4:5
 $3x-4y=1/4(3x)$
 $12x-16y=3x$
 $9x=16y$
 $y=9x/16$
 $(3x-4(9x/16))/((4x-5(9x/16)))$
 ans:12/19

11) If $G(0) = -1$, $G(1) = 1$ and $G(N) = G(N-1) - G(N-2)$ then what is the value of $G(6)$?
 ans: -1
 bcoz $g(2)=g(1)-g(0)=1+1=2$
 $g(3)=1$
 $g(4)=-1$
 $g(5)=-2$
 $g(6)=-1$

12) If A can copy 50 pages in 10 hours and A and B together can copy 70 pages in 10 hours, how much time does B takes to copy 26 pages?
 Sol) A can copy 50 pages in 10 hrs.
 A can copy 5 pages in 1hr.(50/10)
 now A & B can copy 70 pages in 10hrs.
 thus, B can copy 90 pages in 10 hrs.[eqn. is (50+x)/2=70, where x--> no. of pages B can copy in 10 hrs.]
 so, B can copy 9 pages in 1hr.
 therefore, to copy 26 pages B will need almost 3hrs.
 since in 3hrs B can copy 27 pages.

13) what's the answer for that :
 A, B and C are 8 bit no's. They are as follows:
 A -> 1 0 0 0 1 0 1
 B -> 1 0 1 1 0 0 1
 C -> 0 0 1 1 0 1 0 (- = minus, u=union)
 Find (A - C) u B) = ?
 To find A-C, We will find 2's compliment of C and them add it with A,
 That will give us (A-C)
 2's compliment of C=1's compliment of C+1
 $=11000101+1=11000110$
 $A-C=11000101+11000110$
 $=10001001$
 Now (A-C) u B is .OR. logic operation on (A-C) and B
 10001001 .OR . 00110011
 The answer is = 10111011,
 Whose decimal equivalent is 187.

14) One circular array is given(means memory allocation takes place in circular fashion) dimension(9X7) and sarrting add. is 3000. What is the address of (2,3).....
 Sol) it's a 9x7 int array so it require a 126 bytes for storing b'z'e integer value need 2 bytes of memory allocation. and starting add is 3000
 so starting add of 2x3 will be 3012.

15) In a two-dimensional array, X (9, 7), with each element occupying 4 bytes of memory, with the address of the first element X (1, 1) is 3000, find the address of X (8, 5).
 Sol) odele discovered that there are 1/2 of x plus x/2 i.e. $x/6+x/2$
 fair low temp=1/3 of x of 1/2 of x plus x/2 i.e. $x/6+x/2$
 total temp= $x+x/6+x/2=100$
 therefore, $x=60$
 Lowest temp is 40

16) Which of the following is power of 3 a) 2345 b) 9875 c) 6504 d) 9833

17) The size of a program is N. And the memory occupied by the program is given by $M = \text{square root of } (100N)$. If the size of the program is increased by 1% then how much memory now occupied ?
 Sol) $M = \text{sqrt}(100N)$
 N is increased by 1%
 therefore new value of $N = N + (N/100)$
 $= 101N/100$
 $M = \text{sqrt}(100 * (101N/100))$
 Hence, we get $M = \text{sqrt}(101 * N)$

18) 1)SCOOTER ----- AUTOMOBILE--- A. PART OF
 2.OXYGEN----- WATER ----- B. A Type of
 3.SHOP STAFF----- FITTERS----- C. NOT A TYPE OF
 4. BUG ----- REPTILE----- D. A SUPERSET OF
 1)B 2)A 3)D 4)C

19) A bus started from bustand at 8.00a m and after 30 min staying at destination, it returned back to the bustand. the destination is 27 miles from the bustand. the speed of the bus 50 percent fast speed. at what time it returns to the bustand this is the step by step solution:
 a bus cover 27 mile with 18 mph in =27/18= 1 hour 30 min. and it wait at stand =30 min.
 after this speed of return increase by 50% so 50%of 18 mph=9mph
 Total speed of return=18+9=27
 Then in return it take 27/27=1 hour
 then total time in joureny=1+1:30+00:30 =3 hour
 so it will come at 8+3 hour=11 a.m.
 So Ans==11 a.m

20) In two dimensional array X(7,9) each element occupies 2 bytes of memory.If the address of first element X(1,1)is 1258 then what will be the address of the element X(5,8) ?
 Sol) Here, the address of first element x[1][1] is 1258 and also 2 byte of memory is given. now, we have to solve the address of element x[5][8], therefore, $1258 + 5*8*2 = 1258 + 80 = 1338$ so the answer is 1338.

21) The temperature at Mumbai is given by the function $-t^2/6+4t+12$ where t is the elapsed time since midnight. What is the percentage rise (or fall) in temperature between 5.00PM and 8.00PM?
 22) Low temperature at the night in a city is 1/3 more than 1/2 high as higher temperature in a day. Sum of the low temperature and highest temp. is 100 degrees. Then what is the low temp?
 Sol) Let highest temp be x
 fair low temp=1/3 of x of 1/2 of x plus x/2 i.e. $x/6+x/2$
 total temp= $x+x/6+x/2=100$
 therefore, $x=60$
 Lowest temp is 40

23) In Madras, temperature at noon varies according to $-t^2/2 + 8t + 3$, where t is elapsed time. Find how much temperature more or less in 4pm to 9pm. Ans. At 9pm 7.5 more
 Sol) In equation first put t=9,
 we will get 34.5.....(1)
 now put t=4,
 we will get 27.....(2)
 so ans=34.5-27
 =7.5

24) A person had to multiply two numbers. Instead of multiplying by 35, he multiplied by 53 and the product went up by 540. What was the raised product?
 a) 780 b) 1040 c) 1590 d) 1720
 Sol) $x*53-x*35=540 \Rightarrow x=30$ therefore, $53*30=1590$ Ans

25) How many positive integer solutions does the equation $2x+3y = 100$ have?
 a) 50 b) 33 c) 16 d) 35
 Sol) There is a simple way to answer the kind of Q's given $2x+3y=100$, take 1c.m of 'x' coeff and 1c.m of 'y' coeff i.e. 2,3 ==6then divide 100 with 6 , which turns out 16 hence answer is 16 hence answer is 16short cut formula-- constant / (y of x coeff and y coeff)

26) The total expense of a boarding house are partly fixed and partly variable with the number of boarders. The charge is Rs.70 per head when there are 25 boarders and Rs.60 when there are 50 boarders. Find the charge per head when there are 100 boarders.
 a) 65 b) 55 c) 50 d) 45
 Sol)
 Let a = fixed cost and k = variable cost and n = number of boarders
 total cost when 25 boarders $c = 25*70 = 1750$ i.e. $1750 = a + 25k$
 total cost when 50 boarders $c = 50*60 = 3000$ i.e. $3000 = a + 50k$
 solving above 2 eqns, $3000-1750 = 25k$ i.e. $1250 = 25k$ i.e. $k = 50$
 therefore, substituting this value of k in either of above 2 eqns we get
 $a = 500$ ($a = 3000-50*50 = 500$ or $a = 1750 - 25*50 = 500$)
 so total cost when 100 boarders = $c = a + 100k = 500 + 100*50 = 5500$
 so cost per head = $5500/100 = 55$

27) Amal bought 5 pens, 7 pencils and 4 erasers. Rajan bought 6 pens, 8 erasers and 14 pencils for an amount which was half more than what Amal had paid. What % of the total amount paid by Amal was paid for pens?
 a) 37.5% b) 62.5% c) 50% d) None of these
 Sol)
 Let, 5 pens + 7 pencils + 4 erasers = x rupees
 so 10 pens + 14 pencils + 8 erasers = 2*x rupees
 also mentioned, 6 pens + 14 pencils + 8 erasers = 1.5*x rupees
 so $(10-6) = 4$ pens = $(2-1.5)x$ rupees
 so 4 pens = 0.5x rupees \Rightarrow 8 pens = x rupees
 so 5 pens = 5x/8 rupees = 5/8 of total (note x rupees is total amt paid byamal)
 i.e. $5/8 = 500/8\% = 62.5\%$ is the answer

28) I lost Rs.68 in two races. My second race loss is Rs.6 more than the first race. My friend lost Rs.4 more than me in the second race. What is the amount lost by my friend in the second race?
 Sol)
 $x + x+6 = rs 68$
 $2x + 6 = 68$
 $2x = 68-6$
 $2x = 62$
 $x=31$
 x is the amt lost in 1 race
 $x+ 6 = 31+6=37$ is lost in second race
 then my friend lost $37 + 4 = 41$ Rs

29) Ten boxes are there. Each ball weighs 100 gms. One ball is weighing 90 gms. i) If there are 3 balls (n=3) in each box, how many times will it take to find 90 gms ball? ii) Same question with n=10 iii) Same question with n=9
 to me the chances are
 when n=3
 (i) nC1 = 3C1 =3 for 10 boxes ... $10*3=30$
 (ii) 10C1=10 for 10 boxes $10*10=100$
 (iii)9C1=9 for 10 boxes $10*9=90$

30) $(1-1/6)(1-1/7)....(1-1/(n+4))(1-1/(n+5)) = ?$
 leaving the first numerator and last denominator, all the numerator and denominator will cancelled out one another. Ans. $5/(n+5)$

31) A face of the clock is divided into three parts. First part hours total is equal to the sum of the second and third part. What is the total of hours in the bigger part?
 Sol) the clock normally has 12 hr
 three parts x,y,z
 $x+y+z=12$
 $x=y+z$
 $2x=12$
 $x=6$
 so the largest part is 6 hrs

32) With 4/5 full tank vehicle travels 12 miles, with 1/3 full tank how much distance travels
 Sol) 4/5 full tank= 12 mile
 1 full tank= 12/(4/5)
 1/3 full tank= $12/(4/5)*(1/3) = 5$ miles

33) wind blows 160 miles in 330min.for 80 miles how much time required
 Sol) 160 miles= 330 min
 1 mile = 330/160
 80 miles=(330*80)/160=165 min.

34) A person was fined for exceeding the speed limit by 10mph.another person was also fined for exceeding the same speed limit by twice the same if the second person was travelling at a speed of 35 mph. find the speed limit
 Sol) $(x+10)=(x+35)/2$
 solving the eqn we get $x=15$

35) A sales person multiplied a number and get the answer is 3 instead of that number divided by 3. what is the answer he actually has to get.
 Sol) Assume 1
 $1 * 3 = 3$
 $1 * 1/3 = 1/3$
 so he has to got 1/3
 this is the exact answer

36) A person who decided to go weekend trip should not exceed 8 hours driving in a day average speed of forward journey is 40 mph due to traffic in Sundays the return journey average speed is 30 mph. How far he can select a picnic spot.
 37) Low temperature at the night in a city is 1/3 more than 1/2 hinge as higher temperature in a day. Sum of the low temp and high temp is 100 c. then what is the low temp.
 ans is 40 c.
 Sol) let x be the highest temp. then,
 $x+x/2+x/6=100$.
 therefore, $x=60$ which is the highest temp
 and $100-x=40$ which is the lowest temp.

38) car is filled with four and half gallons of oil for full round trip. Fuel is taken 1/4 gallons more times in going than coming. What is the fuel consumed in coming up.
 Sol) let fuel consumed in coming up is x. thus equation is: $x+1.25x=4.5$ ans 2gallons

39) A work is done by the people in 24 min. One of them can do this work alone in 40 min. How much time required to do the same work for the second person
 Sol) Two people work together in 24 mins.
 So, their one day work is
 $(1/A)+(1/B)=(1/24)$
 One man can complete the work in 40mins
 one man's one day work $(1/B)=(1/40)$
 Now,
 $(1/A)=(1/24)-(1/40)$
 $(1/A)=(1/60)$
 So, A can complete the work in 60 mins.

40) In a company 30% are supervisors and 40% employees are male if 60% of supervisors are male. What is the probability? That a randomly chosen employee is a male or female?
 Sol) 40% employees are male if 60% of supervisors are male so for 100% is 26.4%so the probability is 0.264

41) 80 coins one coin is counterfeit what is minimum number of weighing to find out counterfeit coin
 Sol) the minimum number of weightings needed is just 5.as shown below
 (1) 80->30-30
 (2) 15-15
 (3) 7-7
 (4) 3-3
 (5) 1-1

42) 2 oranges, 3 bananas and 4 apples cost Rs.15. 3 oranges, 2 bananas, and 1 apple costs Rs 10. What is the cost of 3 oranges, 3 bananas and 3 apples?
 $2x+3y+4z=15$
 $3x+2y+z=10$ adding
 $5x+5y+5z=25$
 $x+y+z=5$ that is for 1 orange, 1 banana and 1 apple requires 5Rs.
 so for 3 orange, 3 banana and 3 apple requires 15Rs.
 i.e. $3x+3y+3z=15$

43) In 8*8 chess board what is the total number of squares refers
 Sol) odele discovered that there are 204 squares on the board We found that you would add the different squares - $1 + 4 + 9 + 16 + 25 + 36 + 49 + 64$.
 Also in 3*3 tic tac toe board what is the total no of squares
 Ans 14 ie $9+4$ (bigger ones)+1 (biggest one)
 If you get 100*100 board just use the formula
 the formula for the sum of the first n perfect squares is
 $\frac{n \times (n + 1) \times (2n + 1)}{6}$
 if in this formula if you put n=8 you get your answer 204

44) One fast typist type some matter in 2hr and another slow typist type the same matter in 3hr. If both do combinely in how much time they will finish.
 Sol) Faster one can do 1/2 of work in one hourslow one can do 1/3 of work in one hourboth they do $(1/2+1/3=5/6)$ th work in one hour.so work will b finished in $6/5=1.2$ hour i.e 1 hour 12 min.

45) If Rs.20/- is available to pay for typing a research report & typist A produces 42 pages and typist B produces 28 pages. How much should typist A receive?
 Here is the answer Find of 42 % of 20 rs with respect to 70 (ie 28 + 42) ==> $(42 * 20) / 70$ ==> 12 Rs

46) An officer kept files on his table at various times in the order 1,2,3,4,5,6. Typist can take file from top whenever she has time and type it.What order she can

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