CAT Sample Papers

Q.1) The total cost of 2 pencils, 5 erasers and 7 sharpeners is Rs.30, while 3 pencils and 5 sharpeners cost Rs.15 more than 6 erasers. By what amount (in Rs.) does the cost of 39 erasers and 1 sharpener exceed the cost of 6 pencils?

(1) 20

(2) 30

(3) It does not exceed

(4) Cannot be determined

Q.2) What is the remainder when 7700 is divided by 100?

(1) 1

(2) 61

(3) 41

(4) 21

Q.3) Balram, the local shoe shop owner, sells four types of footwear – Slippers (S), Canvas Shoes (C), Leather Shoes (L) and Joggers (J). The following information is known regarding the cost prices andselling prices of these four types of footwear:

(i) L sells for Rs.500 less than J, which costs Rs.300 more than S, Which , in turn, sells for Rs.200 more than L.

(ii) L costs Rs.300 less than C, which sells for Rs.100 more than S, Which , in turn, costs Rs.100 less than C. If it is known that Balram never sells any item at a loss, then which of the following is true regarding the profit percentages earned by Balram on the items L, S, C and J represented by l, s, c and j respectively?

(1) $l \geq c \geq s \geq j$

(2) $c \geq s \geq l \geq j$

(3) $l \geq s \geq c \geq j$

(4) $s \geq l \geq j \geq c$

Q.4) Some friends planned to contribute equally to jointly buy a CD player. However, two of them decided to withdraw at the last minute. As a result, each of the others had to shell out one rupee more than what they had planned for. If the price (in Rs.) of the CD player is an integer between 1000 and 1100, find the number of friends who actually contributed?

(1) 21

(2) 23

(3) 44

(4) 46

Q.5) What is the minimum value of the expression $2x2 + 3y2 – 4x – 12y+ 18$?

(1) 18

(2) 10

(3) 4

(4) 0

Q.6) Thirty-six equally spaced points – P1 through P36 – are plotted on a circle, and some of these points are joined successively to form a regular polygon. How many distinct such regular polygons are possible?

(1) 7

(2) 23

(3) 37

(4) 27

(5) None of these

Q.7) The function $f(x) = |x – 1| + |2.8 – x| + |x – 3|$, where x is a real number, can attain a minimum value of

(1) 1

(2) 2

(3) 3

(4) 2.8

Q.8) If [log101] + [log102] + [log103] + [log104] + ... + [log10n] = n, where [x] denotes the greatest integer less than or equal to x, then

(1) 96 ≤ n < 104

(2) 104 ≤ n < 107

(3) 107 ≤ n < 111

(4) 111 ≤ n < 116

Q.9) A tank can be filled by two taps – Tap I and Tap II. The volume of the tank is 5000 liters. Tap I fills the tank at a rate of 1 litre /second. Tap II fills the tank at a rate of 3 litres in 2 seconds. On a particular day, Tap II is opened minutes after the time at which Tap I is opened. If after 45 minutes from the time when Tap I was opened, the tank develops a hole which empties the tank at the rate of 2.5 liters/second, how full is the tank in 2 hours from the time when Tap I opened?

(1) 1/10

(2) Full

(3) 3/4

(4) 4218/5000

Q.10) A mathematics teacher asked each of her students to think of a natural number which was a perfect square and then converts it to a number system to the base of any natural number of their choice, where the base is not more than 9. The teacher later observed that though no two students took the same base, all the students in the class ended up with the same result of 12321. Find the maximum, possible number of students in the class.

(1)9

(2) 8

(3) 7

(4) 6

(5) 5

DIRECTIONS for questions 11 to 13:

Answer the questions on the basis of the information given below.

After facing yet another World Cup debacle, the Board of Cricket Control in India (BCCI) is in search of a new coach for the team. It shortlisted five persons – Anshuman, Buchanen, John, Whatmore and Chappel. Each of them is from a different country among Australia, India, Japan, Pakistan and Canada, not necessarily in that order. At present, each of them is coaching the team of a different country among Australia, Bangladesh, China, Wales and Bermuda, not necessarily in that order. The following details were also observed about their particulars:

(i) For any person, each of his three particulars – his name, the name of the country from which he is and the name of the country that he is coaching at present, starts with a different letter.

(ii) Whatmore is coaching Australia and John is from neitherAustralia nor Pakistan.

(iii) Buchanen is not coaching China and the person who iscoaching Bermuda is from Canada.

(iv) Anshuman is neither from Canada nor from Pakistan and also the person from Pakistan is coaching Bangladesh.

Q.11) What more is from which country?

(1) India

(2) Japan

(3) Canada

(4) Cannot be determined

Q.12) Who is the person from Australia?

(1) Buchanen

(2) John

(3) Whatmore

(4) Cannot be determined

Q.13) The person from Japan is definitely not coaching

(1) China.

(2) Wales.

(3) Australia.

(4) More than one of the above

DIRECTIONS for questions 14 to 17:

Answer the questions on the basis of the information given below.

Mr Suzuki, a car dealer, sold cars of only two brands, A and B, in the previous year. This year, he introduced a new brand, C. The number of cars of brand A and brand B sold in the previous year were in the ratio 3 : 2, and the ratio of the number of cars sold in the previous year to that sold in this year is 2 : 3 for brand A and 2 : 5 for brand B. Further, the number of cars of brand C sold this year forms 81% of the total number of cars sold this year.

Q.14) Find the number of cars of brand C sold this year, given that a total of 24 cars of brand A were sold in the previous year.

(1) 324

(2) 648

(3) 162

(4) 243

Q.15) What is the percentage increase in the total number of cars sold this year when compared to the total number of cars sold in the previous year?

(1) 400%

(2) 600%

(3) 900%

(4) 1000%

Q.16) In the next year, Mr.Suzuki wants to increase the total sales by 80%, compared to the total sales this year, by keeping the sales of each of A, B and C at the same level as that in this year and introducing a new brand D. By what percent will the number of cars of brand D (to be sold next year) be more than the total number of cars sold last year?

(1) 400%

(2) 600%

(3) 900%

(4) 700%

Q.17) If a total of 380 cars were sold this year, and the sales of C this year were nil, instead of 81% of total sales, then how many cars of brand A were sold in the previous year?

(1) 140

(2) 120

(3) 100

(4) 160

DIRECTIONS for questions 18 to 20:

The question given below is followed by two statements, I and II. Study the information given in the two statements and assess whether the statements are sufficient to answer the question and choose the appropriate option from among the choices given below:

Q.18) Two of the three cricketers Pavan, Rajan and Tarun are selected to the national team. Each of these three persons scored a different number of centuries and a different number of runs. Further, among these three, Tarun scored the highest number of centuries. Who among Pavan, Rajan and Tarun is not selected to thenational team?

I. The person with the higher number of runs between Tarun and Pavan, is the person who scored the lesser number of centuries between the two persons selected.

II. The person with the least number of runs between Rajan and Tarun, is the person who scored the higher number of centuries between the two persons selected.

(1) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(2) The question can be answered by using either statement alone.

(3) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(4) The question cannot be answered even by using both statements together.

Q.19) Triangle ABC is right angled at B. What is the value of AB +BC?

I. Diameter of the circle inscribed in the triangle ABC is 10 cm.

II. Diameter of the circle circumscribing the triangle ABC is 27 cm.

(1) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(2) The question can be answered by using either statement alone

(3) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(4) The question cannot be answered even by using both statements together.

Q.20) The first n natural numbers, 1 to n, have to be arranged in a row from left to right. The n numbers are arranged such that there are an odd number of numbers between any two even numbers as well as between any two odd numbers. If the number of ways in which this can be done is 72, then find the value of n.

(1) 6

(2) 7

(3) 8

(4) More than 8