

### 3i Infotech Sample Paper Questions

1. There are two circles, one circle is inscribed and another circle is circumscribed over a square. What is the ratio of area of inner to outer circle?      Ans: 1 : 2

2. Three types of tea the a,b,c costs Rs. 95/kg,100/kg and70/kg respectively.How many kgs of each should be blended to produce 100 kg of mixture worth Rs.90/kg, given that the quantities of band c are equal

a)70,15,15      b)50,25,25      c)60,20,20      d)40,30,30      (Ans. (b))

3. in a class, except 18 all are above 50 years.15 are below 50 years of age. How many people are there

(a) 30      (b) 33      (c) 36      (d) none of these.      (Ans. (d))

4. If a boat is moving in upstream with velocity of 14 km/hr and goes downstream with a velocity of 40 km/hr, then what is the speed of the stream ?

(a) 13 km/hr      (b) 26 km/hr      (c) 34 km/hr      (d) none of these      (Ans. A)

5. Find the value of  $(0.75 * 0.75 * 0.75 - 0.001) / (0.75 * 0.75 - 0.075 + 0.01)$

(a) 0.845      (b) 1.908      (c) 2.312      (d) 0.001      (Ans. A)

6. Perimeter of front wheel =30, back wheel = 20. If front wheel revolves 240 times. How many revolutions will the back wheel take?      Ans: 360 times

7. 20% of a 6 litre solution and 60% of 4 litre solution are mixed. What percentage of the mixture of solution (Ans: 36%)

8. City A's population is 68000, decreasing at a rate of 80 people per year. City B having population 42000 is increasing at a rate of 120 people per year. In how many years both the cities will have same population?      (Ans: 130 years)

9. Two cars are 15 kms apart. One is turning at a speed of 50kmph and the other at 40kmph . How much time will it take for the two cars to meet?(Ans: 3/2 hours)

10. A person wants to buy 3 paise and 5 paise stamps costing exactly one rupee. If he buys which of the following number of stamps he won't be able to buy 3 paise stamps. Ans: 9

11. A certain type of mixture is prepared by mixing brand A at Rs.9 a kg. with brand B at Rs.4 a kg. If the mixture is worth Rs.7 a kg., how many kgs. of brand A are needed to make 40kgs. of the mixture?      Ans. Brand A needed is 24kgs.

12. A wizard named Nepo says "I am only three times my son's age. My father is 40 years more than twice my age. Together the three of us are a mere 1240 years old." How old is Nepo?      Ans. 360 years old.

13. One dog tells the other that there are two dogs in front of me. The other one also shouts that he too had two behind him. How many are they?      Ans. Three

14. A man ate 100 bananas in five days, each day eating 6 more than the previous day. How many bananas did he eat on the first day?      Ans. Eight.

15. If it takes five minutes to boil one egg, how long will it take to boil four eggs?      Ans. Five minutes.

16. A garrison of 3300 men has provisions for 32 days, when given at a rate of 850 grams per head. At the end of 7 days a reinforcement arrives and it was found that now the provisions will last 8 days less, when given at the rate of 825 grams per head. How, many more men can it feed?      Ans. 1700 men.

17. From 5 different green balls, four different blue balls and three different red balls, how many combinations of balls can be chosen taking at least one green and one blue ball?

18. If  $A/B = 3/5$ , then  $15A = ?$       (Ans : 9B)

19. Each side of a rectangle is increased by 100% .By what percentage does the area increase?      (Ans : 300%)

20. Perimeter of the back wheel = 9 feet, front wheel = 7 feet on a certain distance, the front wheel gets 10 revolutions more than the back wheel .What is the distance?      Ans : 315 feet

21. There are 12 boys and 15 girls, How many different dancing groups can be formed with 2 boys and 3 girls.

22. Which of the following fractions is less than  $\frac{1}{3}$

23. The minute hand of a clock overtakes the hour hand at intervals of 64 minutes of correct time. How much a day does the clock gain or lose?    Ans.  $32\frac{8}{11}$  minutes.

24. Solve for x and y:  $\frac{1}{x} - \frac{1}{y} = \frac{1}{3}$ ,  $\frac{1}{x^2} + \frac{1}{y^2} = \frac{5}{9}$ .    Ans.  $x = \frac{3}{2}$  or -3 and  $y = 3$  or  $-\frac{3}{2}$ .

25. Daal is now being sold at Rs. 20 a kg. During last month its rate was Rs. 16 per kg. By how much percent should a family reduce its consumption so as to keep the expenditure fixed?                      Ans. 20 %.

26. Find the least value of  $3x + 4y$  if  $x^2y^3 = 6$ .                      Ans. 10.

27. Can you find out what day of the week was January 12, 1979?    Ans. Friday.

a)  $\frac{22}{62}$       (b)  $\frac{15}{46}$     (c)  $\frac{2}{3}$                       (d) 1                      (Ans: (b))

28. If  $\log_2 x - 5 \log x + 6 = 0$ , then what would the value / values of x be?

Ans.  $x = e^2$  or  $e^3$ .

29. In June a baseball team that played 60 games had won 30% of its game played. After a phenomenal winning streak this team raised its average to 50% .How many games must the team have won in a row to attain this average?

A. 12    B. 20                      C. 24                      D. 30                      (Ans. C)

30. Can you tender a one rupee note in such a manner that there shall be total 50 coins but none of them would be 2 paise coins.?      Ans. 45 one paisa coins, 2 five paise coins, 2 ten paise coins, and 1 twenty-five paise coins.

31. A monkey starts climbing up a tree 20ft. tall. Each hour, it hops 3ft. and slips back 2ft. How much time would it take the monkey to reach the top?      Ans. 18 hours.

32. What is the missing number in this series? 8 2 14 6 11 ? 14 6 18 12      Ans. 9

33. A student gets 70% in one subject, 80% in the other. To get an overall of 75% how much should get in third subject.

34. A man shows his friend a woman sitting in a park and says that she the daughter of my grandmother's only son. What is the relation between the two

Ans. Daughter

35 How many squares with sides  $\frac{1}{2}$  inch long are needed to cover a rectangle that is 4 ft long and 6 ft wide

(a) 24      (b) 96      (c) 3456      (d) 13824      (e) 14266

36. If  $a = \frac{2}{3}b$ ,  $b = \frac{2}{3}c$ , and  $c = \frac{2}{3}d$  what part of d is b/

(a)  $\frac{8}{27}$       (b)  $\frac{4}{9}$       (c)  $\frac{2}{3}$       (d) 75%      (e)  $\frac{4}{3}$       Ans. (b)

37 2598 Successive discounts of 20% and 15% are equal to a single discount of

(a) 30%      (b) 32%      (c) 34%      (d) 35%      (e) 36      Ans. (b)

38 The petrol tank of an automobile can hold g liters. If a liters was removed when the tank was full, what part of the full tank was removed?

(a)  $g-a$       (b)  $\frac{g}{a}$       (c)  $\frac{a}{g}$       (d)  $\frac{(g-a)}{a}$       (e)  $\frac{(g-a)}{g}$       (Ans. (c))

39 5 men or 8 women do equal amount of work in a day. a job requires 3 men and 5 women to finish the job in 10 days how many woman are required to finish the job in 14 days.

a) 10   b) 7                      c) 6                      d) 12                      (Ans 7)

40 A simple interest amount of rs 5000 for six month is rs 200. what is the anual rate of interest?

a) 10%                      b) 6%                      c) 8%                      d) 9%                      (Ans 8%)

41In objective test a correct ans score 4 marks and on a wrong ans 2 marks are ---. a student score 480 marks from                      150 question. how many ans were correct?

a) 120   b) 130                      c) 110                      d) 150                      (Ans130)

42An artical sold at amount of 50% the net sale price is rs 425 .what is the list price of the artical?

a) 500                      b) 488                      c) 480                      d) 510                      (Ans 500)

43 A man leaves office daily at 7pm A driver with car comes from his home to pick him from office and bring back home. One day he gets free at 5:30 and instead of waiting for driver he starts walking towards home. In the way he meets the car and returns home on car He reaches home 20 minutes earlier than usual. In how much time does the man reach home usually??  
(Ans. 1hr 20min)

44 A cylinder is 6 cms in diameter and 6 cms in height. If spheres of the same size are made from the material obtained, what is the diameter of each sphere?

(a) 5 cms                      (b) 2 cms                      (c) 3 cms                      (d) 4 cms                      (Ans C)

45 A rectangular plank  $(2\frac{1}{2})$  meters wide can be placed so that it is on either side of the diagonal of a square shown below.(Figure is not available)What is the area of the plank?  
( Ans :  $7 \times (2\frac{1}{2})$  )

46 What is the smallest number by which 2880 must be divided in order to make it into a perfect square ?

(a) 3 (b) 4 (c) 5 (d) 6 (Ans. C)

47 A father is 30 years older than his son however he will be only thrice as old as the son after 5 years what is father's present age ?

(a) 40 yrs (b) 30 yrs (c) 50 yrs (d) none of these (Ans. A)

48 An article sold at a profit of 20% if both the cost price and selling price would be Rs.20/- the profit would be 10% more. What is the cost price of that article?

49 If an item costs Rs.3 in '99 and Rs.203 in '00. What is the % increase in price?

(a) 200/3 % (b) 200/6 % (c) 100% (d) none of these (Ans. A)

50 A works thrice as much as B. If A takes 60 days less than B to do a work then find the number of days it would take to complete the work if both work together?

Ans. 22½ days

51 How many 1's are there in the binary form of  $8 \times 1024 + 3 \times 64 + 3$  Ans. 4

19. In a digital circuit which was to implement  $(A \oplus B) + (A \oplus B)$ , the designer implements  $(A \oplus B) (A \oplus B)$  What is the probability of error in it ?

52 A boy has Rs 2. He wins or loses Re 1 at a time. If he wins he gets Re 1 and if he loses the game he loses Re 1. He can lose only 5 times. He is out of the game if he earns Rs 5. Find the number of ways in which this is possible? (Ans. 16)

53 If there are  $1024 \times 1280$  pixels on a screen and each pixel can have around 16 million colors. Find the memory required for this? (Ans. 4MB)

54 On a particular day A and B decide that they would either speak the truth or will lie. C asks A whether he is speaking truth or lying? He answers and B listens to what he said. C then asks B what A has said B says "A says that he is a liar" What is B speaking ? (a) Truth (b) Lie (c) Truth when A lies (d) Cannot be determined

Ans. (b)

55 What is the angle between the two hands of a clock when time is 8:30

Ans. 75(approx)

56 A student is ranked 13th from right and 8th from left. How many students are there in totality ?

57 A man walks east and turns right and then from there to his left and then 45 degrees to his right. In which direction did he go (Ans. North west)

58 The price of sugar increases by 20%, by what % should a housewife reduce the consumption of sugar so that expenditure on sugar can be same as before ?

(a) 15% (b) 16.66% (c) 12% (d) 9% (Ans B)

59 A man spends half of his salary on household expenses,  $\frac{1}{4}$ th for rent,  $\frac{1}{5}$ th for travel expenses, the man deposits the rest in a bank. If his monthly deposits in the bank amount 50, what is his monthly salary ?

(a) Rs.500 (b) Rs.1500 (c) Rs.1000 (d) Rs. 900 (Ans C)

60 The population of a city increases @ 4% p.a. There is an additional annual increase of 4% of the population due to the influx of job seekers, find the % increase in population after 2 years ?

61 The ratio of the number of boys and girls in a school is 3:2. Out of these 10% the boys and 25% of girls are scholarship holders. % of students who are not scholarship holders.?

62 15 men take 21 days of 8 hrs. each to do a piece of work. How many days of 6 hrs. each would it take for 21 women if 3 women do as much work as 2 men?

63 In a class composed of  $x$  girls and  $y$  boys what part of the class is composed of girls

- A.  $y/(x + y)$                       B.  $x/xy$                       C.  $x/(x + y)$                       D.  $y/xy$

(Ans. C)

64 What is the maximum number of half-pint bottles of cream that can be filled with a 4-gallon can of cream (2 pt.=1 qt. and 4 qt.=1 gal)

- A.16                      B.24                      C.30                      D.64

(Ans. D)

65 If the operation,  $\wedge$  is defined by the equation  $x \wedge y = 2x + y$ , what is the value of  $a$  in  $2 \wedge a = a \wedge 3$

- A.0                      B.1                      C.-1                      D.4

(Ans. B)

66 A coffee shop blends 2 kinds of coffee, putting in 2 parts of a 33p. a gm. grade to 1 part of a 24p. a gm. If the mixture is changed to 1 part of the 33p. a gm. to 2 parts of the less expensive grade, how much will the shop save in blending 100 gms.

- A.Rs.90                      B.Rs.1.00                      C.Rs.3.00                      D.Rs.8.00

(Ans. C)

67 There are 200 questions on a 3 hr examination. Among these questions are 50 mathematics problems. It is suggested that twice as much time be spent on each math's problem as for each other question. How many minutes should be spent on mathematics problems

- A.36                      B.72                      C.60                      D.100

(Ans. B)



68 In a group of 15, 7 have studied Latin, 8 have studied Greek, and 3 have not studied either. How many of these studied both Latin and Greek

- A.0                  B.3                  C.4                  D.5

(Ans. B)

69 If  $13 = 13w/(1-w)$ , then  $(2w)^2 =$

- A.  $1/4$                   B.  $1/2$                   C.1                  D.2

(Ans. C)

70 If a and b are positive integers and  $(a-b)/3.5 = 4/7$ , then

- (A)  $b < a$                   (B)  $b > a$                   (C)  $b = a$                   (D)  $b \geq a$