Quantitative Ability

Section - I

1. Five bells begin to toll together and toll respectively at intervals of 6,7,8,9 and 12 seconds. How many times, will they toll together in one hour excluding the one at the start?

   a. 5 b. 6 c. 7 d. 4 e. None of these

2. A two digit number is such that the unit digit multiplied by 3 is equal to three more than the sum of the digits. When the digits are reversed the resulting number is 18 less than the original number. Find the units digit of the original number.

   a. 8 b. 5 c. 4 d. 2 e. 1

3. When an integer 'n' is divided by 'k', the remainder is one. When another integer 'm' is divided by 'k', the remainder is 2. What is the remainder when 'n x m' is divided by 'k'?

   a. 1 b. 2 c. 3 d. n-1 e. n/2

4. An apple seller sells to the first customer half of the total number of apples that he has and one-half of an apple. To the second customer he sells half of the remaining stock and one-half of an apple. The same thing continues with the third and the fourth customers. He then finds that he is left with 15 apples. How many apples did he have initially?

   a. 250 b. 255 c. 260 d. 200 e. 190

5. A reduction of 20% in the price of mangoes enables a man to buy 25 mangoes more for Rs.40. Find the reduced price of the basket that contains 200 mangoes.

   a. Rs. 100 b. Rs. 75 c. Rs. 60 d. Rs. 64 e. Rs. 80

6. One vessel contains milk and water in the ratio a: b. While another vessel contains milk and water in the ratio b:a. In what ratio must the contents of the first vessel be mixed with the contents of the second so that in the final sample, milk and water may be as 2:1?

   a. (2a+b): (a+2b) b. (2a-b): (a-2b) c. (a+b): (a-b)
   d. (a-b): (a+b) e. (2a + b) : (a-2b)

7. A man is 10 years older than his wife who is now 2.5 times as old as their daughter. The daughter is now 14 years old. What was the man's age when the daughter was born?

a. 29 years b. 30 years c. 31 years d. 32 years e. 24 years

8. A watch was slow by 5 minutes at 4 p.m. on Wednesday, but it was fast by 10 minutes at 4 p.m on Saturday. At what time did it show the right time?

a. 4 p.m. on Thursday b. 4 p.m. on Friday
c. 4a.m. on Friday d. 12Noon on Friday
e. 12 Noon on Thursday

9. A man sells 10 oranges for a rupee there by gaining 40%. How many oranges did he buy for a rupee?

a. 12 b. 14 c. 13 d. 15 e. 11

10. A committee of five members is to be formed from among six boys and five girls. Find the number of ways of selecting the committee, if it is to consist of at least one boy and at least one girl?

a. 455 b. 456 c. 461 d. 477 e. None of these

11. A right circular cylinder is inscribed in a sphere and the height of the cylinder is equal to the diameter of its base. Find the ratio of the volume of the sphere to that of the cylinder.

a. 4: $\sqrt{3}$ b. 4 $\sqrt{2}$:3 c. 2 $\sqrt{2}$:1 d. 1:2 e. None of these

12. A merchant mixes two varieties of rice, one costing Rs.12.75 per kg with another variety costing Rs.12 per kg in the proportion 1: r. He sells the mixture at Rs. 13.50 per kg and there by gains 10%. Find the value of r.

a. 2 b. 1.75 c. 2.5 d. 2.75 e. 1.5

13. A loan of Rs. 6000 is to be paid back in three equal installments. Find the value of each installment to the nearest whole rupee, if the interest is compounded annually at 12.5%.

a. Rs.2240 b. Rs.2519 c. Rs.2521 d. Rs. 2915 e. None of these

14. There are 15books on a shelf, 5 of which are on fiction. If five books are selected at random, find the probability that 4 of them are books on fiction.

a. 5/72 b. 5/273 c. 50/3003 d. 50/273 e. None of these

15. A swimming pool has 6 inlet pipes, each of which can fill the pool in 6 hrs. At noon, when the pool is empty, tap one is opened and after one hour the second tap is opened. After another hour, the third tap is opened and the remaining taps are opened one after the other with a gap of one hour till the pool is filled. At what

time will the pool be filled?

a. 3.00 p.m. b. 3.30 p.m. c. 4 p.m. d. 4.30 p.m e. 5.00 p.m

16. A certain number of men can complete a piece of work in 60 days. If there were 8 more men, the work could be finished in 10 days less. How many men were there originally?

a. 40 b. 50 c. 80 d. 100 e. 110

17. Find the cost of papering the walls of a room 10m long, 5m broad and 5 m high with paper 75 cm wide at 90 paisa per meter.

a. Rs.120 b. Rs.150 c. Rs.180 d. Rs.200 e. Rs. 220

18. The base of a triangle is increased in length by 20% and its height reduced by 20%. How does its area change?

a. reduced by 4% b. increased by 4% c. does not change d. reduced by 4.166% e. increases by 4.166 %

19. A boat which can travel at 10km/hr in still water goes 91km down a river and returns to the starting point in 20 hours. Find the speed of the flow of the river.

a. 3.5kmph b. 2.5kimph c. 2kmph d. 3kmph e. 4 kmph

20. A train 110 metres long is running with a speed of 60kmph. In what time will it pass a man who is running at 6 kmph in the direction opposite to that in which the train is going?

a. 5sec b. 6sec c.10sec d. 15sec e. 12sec

21. A garrison of 750 men has provisions for 20 weeks. If at the end of 4 weeks, the garrison is reinforced by 450 men, for how many more weeks will the provisions last now?

a. 9weeks b. 10weeks c. 6weeks d. 15weeks e. None of these

22. A cylindrical bucket 28 cm in diameter and 72 cm height is full of water. The water is emptied into a rectangular vessel 66cm long and 28 cm wide. Find the height of the water level in the tank.

a. 20cm b. 30 cm c. 24cm d. 35cm e. None of these

23. The average mark obtained by 100 students was 40. It was later realised that while calculating the average, a mark ‘53’ was wrongly read as 83. Find the correct average.

a. 39.7 b. 38.9 c. 39.3 d. 39.5 e. 37.5

24. What values of k will make $9x^2+3kx+4$ a perfect square?

a. ± 1 b. ± 2 c. ± 3 d. ± 4 e. ± 5

25. If $\log_5 x = 7$ and $\log_5 y = 3$, find the value of $\log_y x$ z.

a. 5/3 b. 7/3 c. 3/7 d. 3/5 e. None of these

26. A car dealer lost 6% on a car. Had he sold it for Rs.3600 more, he would have gained 6%. At what price did he buy the car?

a. Rs.40, 000 b. Rs.24, 000 c. Rs.30, 000 d. Rs.36, 000 e. Rs.32,000

27. A man deposits Rs.50 in a bank at the beginning of every month. If 10% simple interest is reckoned, how much money is he eligible to get at the end of 24 months?

a. Rs.1350 b. Rs.1300 c. Rs.1250 d. Rs.1325 e. Rs. 1200

28. A student scores 25% of the total marks of a paper and fails by 30 marks. Another student scores 35% of total marks and fails by 5 marks. What is the pass mark for that paper?

a. 85 b. 82.5 c. 92.5 d. 90 e. None of these

29. The length of the shadow of a pole is 12m when the angle of elevation of sun is 30^0. What would be the length of the shadow when the elevation of sun is 45^0?

a. 8m b. $6\sqrt{3}$ m c.6m d. $4\sqrt{3}$ m e. 5m

30. If a + b + c = 11 and ab + bc + ca = 35, find the value of $(a-b)^2+(b-c)^2+(c-a)^2$.

a. 30 b. 32 c. 35 d. 40 e. 25

31. Find the value of $x^2+\frac{1}{x^2}$ when it is given that $x-\frac{1}{x}=4$.

a. 16 b. 18 c. 20 d. 22 e. None of these

32. If $x= 2^{\frac{1}{3}} - 2^{-\frac{1}{3}}$, find the value of $2x^3+6x$.

a. 8 b. 3 c. 6 d. 4 e. None of these

33. If p and q are roots of equation $x^2+x-7=0$, then find the value of p^4+q^4.

a. 133 b. 129 c. 125 d. 127 e. 137

34. ABC is a triangle. BQ and CR are the bisectors of angles $\angle ABC$ and $\angle BCA$ respectively, Q and R are two points on the sides AC and AB respectively. The bisectors meet at a point O. If AQOR is a cyclic quadrilateral, find the measure of $\angle BAC$.

a. 90^0 b .45^0 c. 30^0 d. 60^0 e. None of these

35. Find the possible value of cosx, if 3 sin x = 2(1-cos x).

a. 1 b. -1 c. $\frac{1}{\sqrt{2}}$ d. $\frac{1}{\sqrt{3}}$ e. 0

36. Find the value of $\sin^2 25^0 + \sin^2 65^0$.

a. 0 b. 1 c. -1 d. $\frac{1}{\sqrt{2}}$ e. None of these

37. The second term of an A.P is 15 and the fifth term is double the first term. Find the sum of the first 20 terms of the series.

a. 750 b.810 c.800 d. 850 e. None of these

38. A person owns 150 shares (face value Rs.25) of a company which declares a dividend of 12%. He sells the share at Rs. 40 and invests the proceeds in 7% stock (par value Rs.100) at Rs.80. What is the change in his income?

a. Rs.50 less b. Rs.70 more c. Rs.60 less
d. Rs.75 more e. Cannot be determined

39. If 25000 copies of the TIMES OF INDIA be issued daily, each copy consisting of 10 sheets and each sheet measuring 75cmx50cm, how many hectares will one edition cover?

a. 9.375 hectare b.9375 hectare c. 93.75 hectares
d. 937.5 hectare e. None of these

40. If 8:x=12:30, find the value of x.

a. 18 b.20 c.25 d. 15 e. None of these

41. Which term of the series 545, 525, 505, 485…. is closest to zero?

a. 30 b. 29 c. 28 d. 37 e. None of these

42. A man invested Rs. 2375 when he bought shares of a company at Rs. 125 each, the

face value of share was Rs. 100. The company paid 13% dividend. Find the dividend earned by the man at the end of the year.

a. 273 b. 247 c. 221 d. 234 e. 324

43. If 8 men or 15 boys can do a work in 60 days. In how many days can 48 men and 10 boys complete the same work?

a. 10 b. 9 c. 12 d. 17 e. 14

44. Find the value of 97+101+105+……+221.

a. 3975 b. 4929 c. 4770 d. 5088 e. 4292

45. Find the sum of all natural numbers from 48 to 99.

a. 3822 b. 3922 c. 3969 d. 3725 e. 3229

46. A trader purchased 20 apples. Half of the stock was sold at a profit of 10% and with that money he purchased five mangoes. After that he sold his entire stock at a profit of 20% thereby gaining Rs.21. Find the cost of each mango.

a. Rs.11 b.Rs.10 c.Rs.5 d.Rs.9 e. Rs. 7

47. A can do a job in 24 days and B can do the same job in 26 days. A and B do the work in alternative days. If 'B' starts the work, find in how many days the job got completed.

a.25 b.27 c.$24\frac{12}{13}$ d.35 e. None of these

48. Eight years ago, Rajesh was half as old as Shiva. If the ratio of their ages after 4 years becomes 3 : 4, find the present age of Rajesh.

a. 14 years b. 18 years c. 24 years d. 20 years e. 12 years

49. Two trains start at the same time from two stations A and B proceeding towards B and A at 36 kmph and 42 kmph respectively. When they meet it was noticed that one train has moved 48 km more than the other. Find the distance between A and B.

a. 468 km b. 672 km c. 624 km d.684 km e. 486 km

50. A plot of land 45m * 65m is divided into four equal rectangular plots by 2 roads that are perpendicular to each other. If the width of the roads is 5 m, find the area of the crossroads.

a. 625 sq.m. b. 525 sq.m. c. 550 sq.m. d.600 sq.m. e. 652 sq.m

51. One bell rings at intervals of 40 minutes and another at intervals of 30 minutes. If they ring at 10 am together, when will they ring together again for the next time?

a. 12.30 am b. 11.30 am c. 12 Noon. d.1.30 pm e. 2.00 pm

52. What is the least number of students in a class if they can be made to stand in rows of 8, 12 or 14 each?

a. 248 b. 224 c. 196 d. 168 e. 242

53. A dealer buys an article listed as Rs.3000 at successive discounts of 15% and 20%. Find the price at which he should sell the article so as to make a profit of 25%.

a. Rs. 2448 b. Rs. 2500 c. Rs. 2550 d. Rs. 2750 e. Rs. 2844

54. A shopkeeper proposes to sell his goods at cost price but uses a weight of 850gms instead of a kilogram weight. What is his profit percentage?

a. $17\frac{14}{17}$ % b. $17\frac{11}{17}$ % c. $17\frac{16}{17}$ % d. $17\frac{12}{17}$ % e. None of these

55. If the profit on the selling price is 20%, find the actual profit percentage.

a. 15% b. 25% c. 30% d. 20 % e. None of these

56. The total age of a group of 20 children is 160 years. If the average age of 8 of the children of the group is 12 years, find the average age of the remaining group.

a. 5years b. 5years and 3months c. 5years and 4months
d. 5 years and 6months e. None of these

57. A train crossed a platform of 1200 m long in 15seconds and a bridge 3 km long in 35 seconds. Find the length of the train.

a. 250m b.150m c. 200m d. 190m e. None of these

58. If the lines 7x+6y+9=0 and ax+14y+8=0 are perpendicular to each other, find the value of a.

a. 12 b. -12 c. 6 d. -6 e. None of these

59. A and B started a business with Rs.1200 and Rs.1500. After some time C joined with Rs.2400. C and A got equal amount as their share of profit at the end of the year. After how many months did C join the firm?

a. 9months b. 4months c. 6months d. 10 months e. None of these

60. The salaries of Sudhakar, Sekhar and Subhash are in the ratio 2:3:4 and they got

increments in the ratio 1:2:1 and finally their salaries were in the ratio of 5:8:9. If Sudhakar got Rs.1500 as increment then, find the ratio of percentage of increments with respect to their salaries.

a. 5 : 7 : 3 b. 6 : 8 : 3 c. 7 : 8 : 5 d. 5 : 8 :3 e. None of these

Directions for the questions 61 to 64

In each of the following questions a number series is given with one missing (?) term. The term is given as one of the alternatives among the five numbers given in the answer choice. Find the term.

61. 1, 27, 125, ? , 729, 1331

a. 241 b. 343 c. 289 d. 641 e. 214

62. 81, 9, 64, 8, 49, ?

a. 10 b. 7 c. 5 d. 4 e. 36

63. 1, 3, 4, 8, 15, 27, ?

a. 37 b. 44 c. 50 d. 55 e. 22

64. 2, 5,11,23,47, ?

a. 49 b. 52 c. 95 d. 106 e. None of these

65. What is the length of the longest rod that can be put on the floor of a rectangular room measuring 45 m in length and 28 m in breadth?

a. 45 m b. 50 m c. 53 m d. 35m e. None of these

66. The sides of a rectangular field are in the ratio of 3:5 and its area is 2535 m^2. Calculate the cost of fencing it at the rate of Rs.2.50/m.

a. Rs.250 b. Rs.260 c. Rs.324 d. Rs.423 e. None of these

Directions for the questions 67 to 75:

Each of the following problems has a question and two statements which are labeled I and II. Use the data given in I and II together with other available information to decide whether the statements are sufficient to answer the question. Then chose

a. If statement I by itself is sufficient to answer the question, but statement II

by itself is not sufficient.

b. If statement II by itself is sufficient to answer the question, but statement I by itself is not sufficient.

c. If statements I and II taken together are sufficient to answer the question, even though neither statement by itself is sufficient.

d. If either statement by itself is sufficient to answer the question.

e. If statements I and II together are not sufficient to answer the question, meaning that further information would be needed to answer the question.

67. Is Narayan a relative of Ashok?

I. None, but the relatives of Ashok help him

II. Narayan helps Ashok.

68. Is Vinayak a relative of Shekhar?

I. None of the relatives of Shekhar helps him.

II. Vinayak does not help him.

69. Does Prasad a student of our college come to the college by bus?

I. None of the students of our college comes on foot or by car.

II. All the students of our college come by cycle.

70. Is Lakshman a relative of Babu?

I. Babu helps only his relatives.

II. Lakshman helps Babu.

71. One of the three candidates (A, B and C) won the election with a clear majority. Was it A?

I. B got 5000 votes more than C

II. A and C got the same number of votes.

72. Is $x-y>1$

I. $x = 4y$

II. $x+y = 5$

73. What is the relation between Uma and Tilak?

I. Tilak is the brother of Sudhakar and he is doing his graduation.

II. Uma is the sister of Sudhakar

74. Did Satya go to the temple yesterday?

I. If Satya goes to temple, Ramesh also go along with him.

II. Ramesh went to the market yesterday.

75. Who is the tallest among A,B,C and D?

I. A is taller than C and D.

II. B is taller than C and shorter than D.