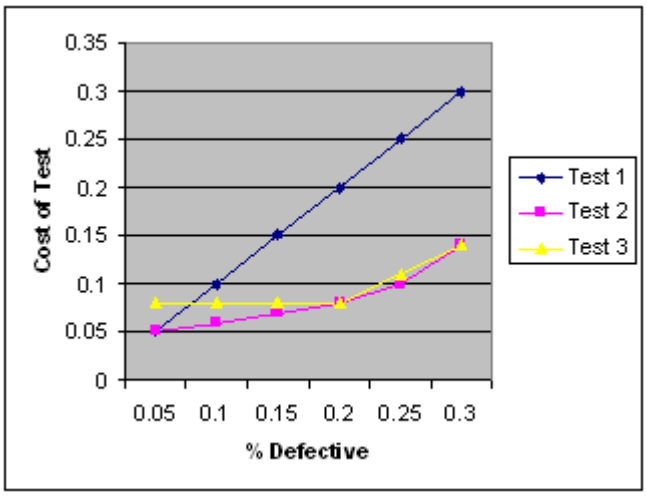
MOCK TEST PAPER -4

DIRECTIONS for Questions 1 to 9: Use the following data:

A manufacturer can choose from any of the three types of tests available for checking the quality of his product. The graph gives the relative costs for each of these tests for a given percentage of defective pieces.



1. Adopting Test-2 will be feasible if the percentage of defective pieces (p) lies between:

A. 0.10 to 0.20

B. 0.20 to 0.30

C. 0.05 to 0.20

D. 0 to 0.05

2. If p is equal to 0.2, then which test will be feasible?

A. either 1 or 2

B. 2 only

C. 3 only

D. either 2 or 3

3. When will Test-3 be feasible?

A. p > 0.2

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B. 0.1 < p < 0.2

C. 0.05 < p 0.01

D. p < 0.05

4. When is Test -1 feasible?

A. p < 0.05

B. 0.0 < p < 0.2

C. 0.1 < p < 0.2

D. 0.05 to 0.2

5. If p < 0.2, then the best alternative will be:

A. Test 2

B. Test 3

C. Test 1

D. Not Test 3

DIRECTIONS for Questions 6 to 15: The following questions are independent of each other:

6. From a circular sheet of paper with a radius of 20 cm, four circles of radius 5cm each are cut out. What is the ratio of the uncut to the cut portion?

A. 1 : 3

B. 4 : 1

C. 3 : 1

D. 4 : 3

7. Two liquids A and B are in the ratio 5 : 1 in container 1 and in container 2, they are in the ratio 1 : 3. In what ratio should the contents of the two containers be mixed so as to obtain a mixture of A and B in the ratio 1 : 1?

A. 2 : 3

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B. 4 : 3

C. 3 : 2

D. 3 : 4

8. Out of two -thirds of the total number of basket -ball matches, a team has won 17 matches and lost 3 of them. What is the maximum number of matches that the team can lose and still win three -fourths of the total number of matches, if it is true that no match can end in a tie?

A. 4

B. 6

C. 5

D. 3

9. A closed wooden box of thickness 0.5 cm and length 21 cm, width 11 cm, and height 6 cm, is panted on the inside. The cost of painting is Rs 70. What is the rate of painting in rupees per sq. cm?

A. 0.7

B. 0.5

C. 0.1

D. 0.2

10. If a number 774958A96B is to be divisible by 8 and 9, the values of A and B, respectively, will be:

A. 7, 8

B. 8, 0

C. 5, 8

D. None of these

11. Once I had been to the post-office to buy stamps of five rupees, two rupees and one rupee. I paid the clerk Rs 20, and since he did not have change, he gave me three more stamps of one rupee. If the number of stamps of each type that I had ordered initially was more than one, what was the total number of stamps that I bought

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A. 10

B. 9

C. 12

D. 8

12. Given the quadratic equation $x^2-(A-3)x-(A-2)$ for what value of A will the sum of the squares of the roots be zero?

A. -2

B. 3

C. 6

D. None of these

13. I sold two watches for Rs. 300 each, one at a loss of 10% and the other at a profit of 10%. What is the percent loss (-) or the percent profit (+) that resulted from the transaction?

A. +10

B. -1

C. +1

D. 0

14. The price of a Maruti car rises by 30% while the sales of the car came down by 20%. What is the percent change in the total revenue?

A. -4

B. -2

C. +4

D. 0

15.In triangle ABC, angle B is a right angle. If AC is 6 cm, and D is the mid -point of side AC, the length of BD is:

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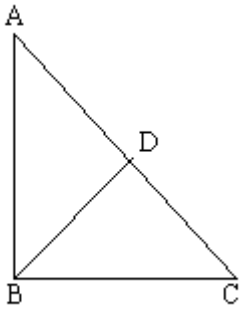

A. 4 cm

B. 6 cm

C. 3 cm

D. 3.5 cm

DIRECTIONS for Questions 16 and 17: Answer the questions based on the following information:-

A, S, M and D are functions of x and y, and they are defined as follows:

A(x, y) + x + y

S(x, y) = x - y

M(x, y) = xy

D(x, y) = x/y

16. What is the value of M(M(A(M(x, y), S(y,x)), x), A(y, x)) for x = 2, y = 3

A. 50

B. 140

C. 25

D. 70

17. What is the value of S(M(D(A(a, b), 2), D(A(a, b),2)), M(D(S(a, b), 2), D(S(a, b),2)))

A. $a^2 + b^2$

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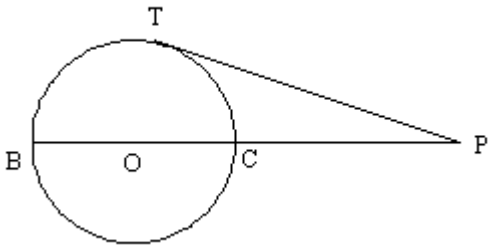
B. ab

C. a^2-b^2

D. a/b

DIRECTIONS for Questions 18 to 20: The following questions are independent of each other:

18. In the figure 'O' is the center of the circle and PT is the tangent to the circle at T. If PC = 4 cm and PT = 8 cm, find the radius of the circle.



A. 5.5 cm

B. 6.5 cm

C. 6 cm

D. 7 cm

19. Which of the following value of x do not satisfy the inequality (x^2 - 3x + 2 > 0) at all?

A. 1 < x < 2

B. -1 > x > 2

C. 0 < x < 2

D. 0 > x > -2

20. A man travels three -fifths of distance AB at a speed of 3a, and the remaining at a speed of 2b. If he goes from B to A and back at a speed of 5c in the same time, then:

A. 1/a + 1/b = 1/c

B. a + b = c

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C. 1/a + a/b = 2/c

D. None of these

DIRECTIONS for Questions 21 to 22: Answer the questions based on the following data: A salesman enters the quantity sold and the price into the computer. Both the numbers are two-digit numbers. Once, by mistake, both the numbers were entered with their digits interchanged. The total sales value remained the same, i.e. Rs. 1148, but the inventory reduced by 54.

21. What is the actual price per piece?

A. 82

B. 41

C. 56

D. 28

22. What is the actual quantity sold?

A. 28

B. 14

C. 82

D. 41

DIRECTIONS for Questions 23 and 24: In a locality, there are five small towns, A, B, C, D and E. The distances of these towns from each other are as follows:

AB = 2km, AC = 2 km, AD > 2 km, AE > 3 km, BC = 2km, BD = 4 km, BE = 3 km, CD = 2 km, CE = 3km, DE > 3 km

23. If a ration shop is to be set up within 2 km of each city, how many ration shops will be required?

A. 2

B. 3

C. 4

D. 5

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24. If a ration shop is to be set up within 3 km of each city, how many ratio shops will be required?

A. 1

B. 2

C. 3

D. 4

25. The cost of a diamond varies directly as the square of its weight. Once, this diamond broke into four pieces with weights in the ratio 1 : 2 : 3 : 4. When the pieces were sold, the merchant got Rs. 70,000 less. Find the original price of the diamond.

A. Rs. 1.4 laks

B. Rs. 2 lakh

C. Rs. 1 lakh

D. Rs. 2.1 lakh

26. A cube of side 12 cm is painted red on all the faces and then cut into smaller cubes, each of side 3 cm. What is the total number of smaller cubes having none of their faces painted?

A. 16

B. 8

C. 12

D. 24

27. The points of intersection of three lines, 2X + 3Y - 5 = 0, 5X - 7Y + 2 = 0, and 9X - 5Y - 4 = 0:

A. form a triangle.

B. are on lines perpendicular to each other.

C. are on lines parallel to each other.

D. are coincident.

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28. If n is any odd number greater t han 1, then $n(n^2 - 1)$ is

A. always divisible by 48

B. always divisible by 24

C. always divisible by 6

D. None of these

DIRECTIONS for Questions 29 to 33: Each item has a questions followed by two statements.

- Mark [1] if the question can be answered with the help of statement 1 alone
- Mark [2] if the question can be answered with the help of statement 2 alone.
- Mark [3] if the question can be answered with the help of both statements but not with the help of either statement alone.
- Mark [4] if the question cannot be answered even with the help of both the given statements.

29. What is the radius of the inscribed circle of triangle ABC?

I. The area of the triangle is 20 cm^2

II. The perimeter of the triangle is 20 cm.

30. What is the value of K?

I. $9x^2 + kx + 25$ is the perfect square.

II. $|k| = - k$

31. Is the area of triangle ABC equal to that of triangle DEF? The triangles are inscribed in the same circle

I. Their perimeters are equal.

II. The angles of triangles ABC are respectively equal to the angles of triangle DEF.

32. ABC is a right triangle, with the right angle at B. BD is the bisector of angle B. Is AD > DC?

I. C = 40°

II. Hypotenuse AC = 15 cm.

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33. Which has the greater area: rhombus ABCD or square PQRS?

I. Perimeter of rhombus = 8 and one angle measures 30°.

II. Perimeter of square = 4.

34. The figures shows a circle of diameter AB and radius 6.5 cm. If chord CA is 5 cm long, find the area of triangle ABC.

A. 60 sq cm

B. 30 sq cm

C. 40 sq cm

D. 52 sq cm

35. In a locality, two -thirds of the people have cable-TV, one-fifth have VCR, and one -tenth have both, what is the fraction of people having either cable TV or VCR?

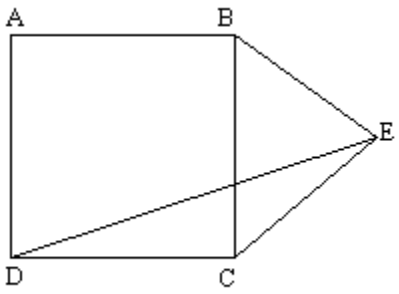
A. 19/30

B. 3/5

C. 17/30

D. 23/30

36. If ABCD is a square and BCE is an equilateral triangle, what is the measure of the angle DEC?



A. 15^o

B. 30^o

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C. 20^o

D. 45^o

37. I 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 I had paid. What percent of the total amount paid by me was paid for the pens?

A. 37.5%

B. 62.5%

C. 50%

D. None of these

38. Distance between A and B is 72 km. Two men started walking from A and B at the same time towards each other. The person who started from A travelled uniformly with average speed 4 kmph. While the other man travelled with varying speeds as follows: In first hour his speed was 2 kmph, in the second hour it was 2.5 kmph, in the third hour it was 3 kmph, and so on. When will they meet each other?

A. 7 hours

B. 10 hours

C. 35 kms from A

D. midway between A and B

DIRECTIONS for Questions 39 and 40: Use the following information:

A watch dealer incurs an expense of Rs 150 for producing every watch. He also incurs an additional expenditure of Rs. 30,000, which is independent of the number of watches produced. If he is able to sell a watch during the season, he sells it for Rs. 250. If he fails to do so, he has to sell each watch for Rs. 100.

39. If he is able to sell only 1200 out of the 1500 watches he has made in the season, then in the season he has made a profit of:

A. Rs. 90,000

B. Rs. 75,000

C. Rs. 45,000

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D. Rs. 60,000

40. If he produces 1500 watches, what is the number of watches that he must sell during the season in order to break even, given that he is able to sell all the watchesproduced?

A. 500

B. 700

C. 800

D. 1,000

DIRECTIONS for Questions 41 to 45: The following questions are independent of each other:

41. A man travels form A to B at a speed of x kmph. He then rests at B or x hours. He then travels from B to C at a speed of 2x kmph and rests at C for 2x hours. He moves further to D at a speed twice as that between B and C. He thus reaches D in 16 hours. If distances A-B, B-C, C-D are all equal to 12 km, the

A. 3 hrs

B. 6 hrs

C. 2 hrs

D. 4 hrs

42. Instead of a metre scale, a cloth merchant uses a 120 cm scale while buying, but uses an 80 cm scale while selling the same cloth. If he offers a discount of 20 percent on cash payment, what is his overall percent profit?

A. 20%

B. 25%

C. 40%

D. 15%

43. A man has nine friends, four boys and five girls. In how many ways can he invite them, if there have to be exactly three girls in the invitees?

A. 320

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B. 160

C. 80

D. 200

44. In a watch, the minute hand crosses the hour hand for the third time exactly after every 3 hrs 18 min 15 seconds of watch time. What is the time gained or lost by this watch in one day?

A. 14 min 10 seconds lost

B. 13 min 50 seconds lost

C. 13 min 20 second gained

D. 14 min 40 second gained.

45. In a mile race Akshay can be given a start of 128 metres by Bhairav. If Bhairav can given Chinmay a start of 4 metres in a 100 metres dash, then who out of Akshay and Chinmay will win a race of one and half mile, and what will be the final lead given by the winner to the loser? (One mile is 1600 metres).

A. Akshay 1/12 miles

B. Chinmay 1/32 miles

C. Akshay 1/24 miles

D. Chinmay 1/16 miles

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