# \* गणित ( Maths ) \*

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\* Part :- 4 \*

## \* गणित ( Maths ) Q-A \*

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# गणित ( Maths ) Q-A PDF :- Click Here

1. The ratio of monthly incomes of A, B is 6 : 5 and their monthly expenditures are in the ratio 4 : 3. If each of them saves Rs. 400 per month, find the sum of their monthly incomes :

(A) 2300 (B) 2400

(C) 2200 (D) 2500

Ans: (C)

2. A and B have together three times what B and C have while A, B, C together have thirty rupees more than that of A. If B has 5 times that of C, then A has:

(A) Rs. 60 (B) Rs. 65

(C) Rs. 75 (D) Rs. 45

Ans : (B)

3. If the arcs of square length in two circles subtend angles of 60° and 75° at their centres, the ratio of their radii is :

(A) 3:4(B) 4:5

(C) 5:4(D) 3:5

Ans: (C)

4. A circular wire of diameter 112 cm is cut and bent in the form of a rectangle whose sides are in the ratio of 9 : 7. The smaller side of the rectangle is :

- (A) 77 cm (B) 97 cm
- (C) 67 cm (D) 87 cm

Ans : (A)

5. A piece of cloth measured with a metre stick. one cm short, is 100 metres long. Reckoning the metre stick as being right, the actual length of the cloth (in cm) is :

- (A) 3,900 (B) 9,900
- (C) 8,00 (D) 6,100

Ans : (B)

6. In an election, a candidate who gets 84% of the votes is elected by a majority of 476 votes. What is the total number of votes polled?

(A) 900 (B) 810

(C) 600 (D) 700

Ans : (D)

7. A man having height 169 cm is standing near a pole. He casts a shadow 130 cm long. What is the length of the pole if it gives a shadow 420 cm long?

- (A) 550 cm (B) 589 cm
- (C) 323 cm (D) 546 cm

Ans : (D)

- 8. The categories of qualitative variables are represented by bars where the height of each bar is:
- (A) Class frequency
- (B) Class percentage
- (C) Class relative frequency
- (D) All of the above

Ans : (1)

- 9. A thief steals a car at 1.30 p.m. and drives it off at 40 km/hr. The theft is discovered at 2 p.m. and the owner sets off in another car at 50 km/hr. He will overtake the thief at :
- (A) 5 p.m. (B) 4 p.m.

(C) 4.30 p.m. (D) 6 p.m.

Ans: (B)

10. The ratio of weights of two spheres of different materials is 8:

17 and the ratio of weights per 1 cc of materials of each is 289:

64. The ratio of radii of the two spheres is:

(A) 8:17 (B) 4:17

(C) 17:4 (D) 17:8

Ans: (A)

11. The compound interest on a certain sum of money at a certain rate per annum for two years is Rs. 2,050 and the simple interest on the same amount of money at the same rate for 3 years is Rs. 3,000. Then the sum of money is :

(A) Rs. 20,000 (B) Rs. 18,000

(C) Rs. 21,000 (D) Rs. 25,000

Ans : (A)

12. In a triangle ABC, median is AD and centroid is O. AO = 10 cm. The length of OD (in cm) is :

(A) 6 (B) 4

(C) 5 (D) 3.3

Ans: (C)

13. The ratio of two numbers is 3 : 4 and their LCM is 180. the second number is :

(A) 30 (B) 60

(C) 45 (D) 90

Ans : (B)

14. What is a better investment,4% stock at Rs. 120 or 3% stock at Rs. 80?

(A) first (B) second

(C) Both (D) None of these

Ans: (B)

15. 20% raise of price followed by adiscount of 25% of the raised portion will:

(A) decrease the price by 15%

(B) increase the price by 10%

(C) decreasetehprice by 5%

(D) increase the price by 15%

Ans: (D)

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16. The value of 204 × 197 is:

- (A) 40218 (B) 40188
- (C) 40212 (D) 39812

Ans: (B)

17. The volumes of a right circular cylinder and a sphere are equal. The radius of the cylinder and the diameter of the sphere are equal. Theratio of height and radius of the cylinder is:

(A) 3:1(B) 1:3

(C) 6:1(D) 1:6

Ans: (D)

18. A man spends 75% of his income. His income increases by 20% and his expenditure also increases by 10% The percentage of increase in his savings is :

(A) 40% (B) 30%

(C) 50% (D) 25%

Ans: (C)

19. A trader buys goods at 20% discount on marked price, ILf he wants to make a profit of 25% allowing a discount of 20% by what percent should his marked price be greater than the original greater than the original marked price?

(A) 15% (B) 65%

(C) 25% (D) 20%

Ans: (C)

20. A train is running at a uniform speed of 60 km/hr. If the length of the train is 73 m, then the time taken by the train to cross a bridge 87 metre long is:

(A) 4.8 sec (B) 2.67 sec

(C) 9.6 sec (D) 2.51 sec

Ans: (C)

21. A shopkeeper allows a discount of 10% on the marked price of an item but charges a sales tax of 8% on the discounted price. If the customer pays Rs. 3,402 as the price including the sales tax, then the marked price is:

(A) Rs. 3,400 (B) Rs. 3,500

(C) Rs. 3,600 (D) Rs. 3,800

Ans: (B)

22. The average marks abtained by 22 candidates in an examination are 45. The average marks of the first 10 candidates are 55 and those of the last eleven are 40. The number of marks obtained by the eleventh candidate is:

(A) 45 (B) 0

(C) 50 (D) 47.5

Ans: (B)

23. A man had 7 children. When their average age was 12 years, a child aged 6 years died. The average age of ramaining six children is:

(A) 13 years (B) 10 years

(C) 11 years (D) 14 years

Ans : (A)

24. The true discount on Rs. 1,860 due after a certain time at 5% is 60. Find the time after which it is due:

- (A) 10 months (B) 8 months
- (C) 9 months (D) 1 year

Ans: (B)

25. Two successive discounts of 10% and 5%, in this order, are given on a bill of Rs. 110. Find the net amount of money payable to clear the bill :

(answer to the nearest rupee)

- (A) Rs. 94 (B) Rs. 95
- (C) Rs. 96 (D) Rs. 97

Ans: (A)

- 26. A merchant offers 8% discount on all his goods and still makes a profit of 15%. If an item is marked Rs. 250, then its cost price is :
- (A) Rs. 230 (B) Rs. 187
- (C) Rs. 180 (D) Rs. 200

Ans : (1)

- 27. If the radius of a sphere be doubled, then the percentage of increase in volume is:
- (A) 600% (B) 800%

(C) 500% (D) 700%

Ans: (D)

28. Yogita sold a Plasma TV at 20% gain to Shyamla. Shyamla sold it to Deepa at 10% profit. If Deepa had to pay Rs. 33,000 for the plasma TV, find the cost price of the plasma TV for Yogita:

- (A) Rs. 35000 (B) Rs. 40000
- (C) Rs. 30000 (D) Rs. 25000

Ans: (D)

- 29. A merchant loses 10% by selling an article. If the cost price of the article is Rs. 15, then the selling price of the article is:
- (A) Rs. 12.30 (B) Rs. 13.50
- (C) Rs. 13.20 (D) Rs. 16.50

Ans: (D)

- 30. A got 30% concession on the label price of an Article sold for Rs. 8750 with 25% profit on the price he bought. The label price was:
- (A) Rs. 16000 (B) Rs. 12000
- (C) Rs. 10000 (D) Rs. 13000

Ans: (C)

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31. The cost price of a books is Rs. 150. At what price should it be sold to gain 20%?

- (A) Rs. 180 (B) Rs. 100
- (C) Rs. 80 (D) Rs. 120

Ans : (A)

32. 'a' divides 228 leaving a remainder 18. The biggest two-digit value of 'a' is :

- (A) 21 (B) 35
- (C) 30 (D) 70

Ans : (D)

- 33. If the sum of the digits of any integer lying between 100 and 1000 is subtracted from the number, the result always is :
- (A) divisible by 2 (B) divisible by 9
- (C) divisible by 5 (D) divisible by 6

Ans: (B)

34. The volumes of a cylinder and a cone are in the ratio 3:1. Find their diameters and then compare them when their heights are equal:

- (A) Diameter of cylinder = Diameter of cone
- (B) Diameter of cylinder > Diameter of cone
- (C) Diameter of cylinder < Diameter of cone
- (D) Diameter of cylinder = 2 times of diameter of cone

Ans: (A)

- 35. What is the height of a cylinder that has the same volume and radius as a sphere of diameter 12 cm?
- (A) 10 cm (B) 9 cm
- (C) 8 cm (D) 7 cm

Ans: (C)

- 36. The speed of a bus is 72 km/h. The distance covered by the bus in 5s is :
- (A) 50 m (B) 74.5 m
- (C) 100 m (D) 60 m

#### Ans: (C)

37. Two men start together to walk a certain distance, one at 4 km/h and another at 3 km/h. The former arrives half an hour before the latter. Find the distance :

- (A) 6 km (B) 9 km
- (C) 8 km (D) 7 km

Ans: (A)

38. The marked price is 20% higher than cost price. A discount of 20% is given on the marked price. By this type of sale, there is:

- (A) no loss no gain (B) 4% gain
- (C) 4% loss (D) 2% loss

Ans: (C)

39. A chair listed at Rs. 350 is available at successive discounts of 25% and 10%. The selling price of the chair is:

- (A) Rs. 240.25 (B) Rs. 242.25
- (C) Rs. 236.25 (D) Rs. 230.25

Ans: (C)

40. A cricketer has a mean score of 60 runs in 10 innings. Find out how many runs are to be scored in the eleventh innings to raise the mean score to 62?

- (A) 80 (B) 81
- (C) 83 (D) 82

Ans: (D)

41. ABC is a right angled triangle, B being the right angle. Midpoints of BC and AC are respectively B¢ and A¢. The ratio of the area of the quadrilateral AA¢ B¢B to the area of the triangles ABC is:

- (A) 1:2(B) 2:3
- (C) 3:4 (D) None of the above

Ans: (C)

42. In a 20 over match, the required run rate to win is 7.2. If the run rate is 6 at the end of the 15th over, the required run rate to win the match is :

- (A) 1.2 (B) 13.2
- (C) 10.8 (D) 12

Ans : (C)

43. The mean of 11 numbers is 35. If the mean of first 6 numbers is 32 and that of the last 6 numbers is 37, find the sixth number :

- (A) 28 (B) 29
- (C) 30 (D) 27

Ans: (B)

44. 18 boys can do a piece of work in 24 days. In how many days can 27 boys do the same work?

- (A) 16 (B) 32
- (C) 23 (D) 48

Ans: (A)

45. A fan is listed at Rs. 150 and a discount of 20% is given. Then the selling price is:

- (A) Rs. 180 (B) Rs. 150
- (C) Rs. 120 (D) Rs. 110

Ans : (C)

46. The distance between the centres of two equal circles each of radius 3 cm is 10 cm. The length of a transverse tangent is :

(A) 4 cm (B) 6 cm

(C) 8 cm (D) 10 cm

Ans : (C)

47. The graph of the equation 2x - 3y = 6 intersects the y-axis at the point :

$$(A) (-2, 0) (B) (0, -2)$$

(C) 
$$(2, 3)$$
 (D)  $(2, -3)$ 

Ans: (B)

48. The Banker's discount on a bill due 6 months hence at 16% per annum is Rs. 216. The true discount is :

(A) Rs. 212 (B) Rs. 180

(C) Rs. 210 (D) Rs. 200

Ans: (D)

49. In a school, the ratio of boys to girls is 4 : 3 and the ratio of girls to teachers is 8 : 1. The ratio of students to teachers is :

(A) 56:3 (B) 55:1

(C) 49:3 (D) 56:1

Ans: (A)

50. The length of a minute hand of a clock is 7 cm. The area swept bythe minute hand in 30 minutes is :

- (A) 216 sq.cm (B) 154 sq.cm
- (C) 77 sq.cm (D) 147 sq.cm

Ans: (C)

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- Q. What fraction of a millimeter is a nanome-ter?
- (a) One thousandth
- (b) One millionth
- (c) One hundredth
- (d) One ten thousandth

Ans. (b)

- Q. Who is considered the father of Mathematics?
- (a) Pythagorus
- (b) Euclid
- (c) Lao Tzu

- (d) Kapil Dev
- Ans. (a)
- Q. One fathom is equal to
- (a) 6 feet
- (b) 6 meters
- (c) 60 feet
- (d) 100 cm
- Ans. (a)
- Q. Which Scottish mathematician invented logarithms?
- (a) Srinivasa Ramanujan
- (b) Paul Erdos
- (c) John Napier
- (d) Georg Ferdinand Cantor
- Ans. (c)
- Q. If P(n) is the statement "n (n+1) (n+2) is divisible by 12", then what is P(3)?
- (a) 12 is divisible by 12

- (b) 24 is divisible by 12
- (c) 48 is divisible by 12
- (d) 60 is divisible by 12

Ans. (d)

- Q. What is the name for the longest side of a right angled triangle?
- (a) Hypotenuse
- (b) Hypothesis
- (c) Hypocrite
- (d) Hypnosis

Ans. (a)

- Q. Which of these does not represent a unit of
- (a) Line
- (b) Rye seed
- (c) Barleycorn
- (d) Poppyseed

Ans. (b)

- Q. Arithmetic Operations:
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- (a) involve matching one data item to another to determine if the first item is greater than, equal to, or less than the other item
- (b) sort data items according to standard, predefined criteria in ascending order or descending order
- (c) use conditions with operators such as AND, OR and NOT
- (d) include addition, subtraction, multiplication and division Ans. (d)
- Q. What does 2 squared, plus the circumference of a circle, minus twice the product of the circle's radius and pi, minus the cube root of 8, equal?
- (a) 8
- (b) 4
- (c) 2
- (d) 6
- Ans. (c)
- Q. How many hours are there in a week?
- (a) 60
- (b) 3,600

- (c) 24
- (d) 168
- Ans. (d)

Q. If the sides of a triangle measure 5, 13 and 12, what is the angle defined by the sides which are 5 and 12?

- (a) 60o
- (b) 45o
- (c) 30o
- (d) 90o
- Ans. (d)

Q. Who invented infinitesimal calculus independently of Newton, invented the binary system?

- (a) Gottfried Leibniz
- (b) Hermann Grassmann
- (c) Johannes Kepler
- (d) Heinrich Weber
- Ans. (a)

- Q. Who among the Following was a great Mathematician and astronomer?
- (a) Aryabhatta
- (b) Banabhatta
- (c) Dhanvantari
- (d) Vetalbatiya
- Ans. (a)
- Q. In Euclidean geometry what is the definition of a triangle?
- (a) Quarter of a square
- (b) A polygon
- (c) A two-dimensional plane determined by any three points
- (d) Ashape containing atleast three angles
- Ans. (c)
- Q. How many feet are there in a fathom?
- (a) 500
- (b) 100
- (c) 6

(d) 12

Ans. (c)

- Q. Which 3rd century Greek mathematician wrote Elements of Geometry?
- (a) Archimedes
- (b) Eratosthenes
- (c) Euclid
- (d) Pythagoras

Ans. (c)

- Q. The basic shape of the North American continent on a map is best described as which?
- (a) Square
- (b) Triangular
- (c) Circular
- (d) Hexagonal

Ans. (b)

- Q. Four prime numbers are arranged in ascending order. The product of first three is 385 and that of last three is 1001. The largest prime number is—
- (a) 11
- (b) 13
- (c) 17
- (d) 9
- Ans. (b)
- Q. In an A.P the sum of terms equidistant from the beginning and end is equal to \_\_\_\_\_.
- (a) First term
- (b) Second term
- (c) sum of first and last terms
- (d) last term
- Ans. (c)
- Q. Which of these states of the USA is a rect-angle?
- (a) Arkansas
- (b) Wyoming

- (c) Utah
- (d) Iowa

Ans. (b)

- Q. What is the radius of a circle whose area is 154 square inches?
- (a) 22 inches
- (b) 7 inches
- (c) 44 inches
- (d) 5 inches

Ans. (b)

- Q. Which branch of mathematics uses symbols to represent unknown quantities?
- (a) Statistics
- (b) Geometry
- (c) Algebra
- (d) Calculus

Ans. (c)

Q. How many words can be formed using the letter A thrice, the letter B twice and the letter C once?

- (a) 50
- (b) 60
- (c) 55
- (d) 40

Ans. (b)

- Q. What form of art is characterised by depict-ing objects by a rectangular or geometric treatment of their forms?
- (a) Poster art
- (b) Impressionism
- (c) Surrealism
- (d) Cubsim

Ans. (d)

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- Q. What number do the numbers on opposite sides of a standard cube-shaped die always add up to?
- (a) 9

- (b) 6
- (c) 8
- (d) 7

Ans. (d)

- Q. With which branch of mathematics is Euclid chiefly associated?
- (a) Trigonometry
- (b) Probability
- (c) Geometry
- (d) Calculus

Ans. (c)

- Q. Pi, a mathematical constant whose value is the ratio of a circle's circumference to its diameter, is the same value as what other ratio?
- (a) GDP to GNP in a balanced economy
- (b) The hypotenuse to the sum of the other sides
- (c) The sum of the sides of a dodecahedron to one side
- (d) A circle's area to the square of its radius

Ans. (d)

- Q. The angles of a triangle are in the ratio 1: 2: 3. The greatest angle will be
- (a) 60°
- (b) 30°
- (c) 90°
- (d) 75°

Ans. (c)

- Q. Which least number should be added to 2600 to make it a perfect square?
- (a) 3
- (b) 9
- (c) 1
- (d) 5

Ans. (c)

- Q. The vertices of a triangle are (0, 0), (3, 0) and (0, 4). The centroid of the triangle is
- (a) (1/2, 2)
- (b) (1, 4/3)

- (c)(0,0)
- (d) None of these

Ans. (b)

- Q. The equation of the normal to the curve  $y = \sin x$  at (0, 0) is
- (a) x = 0
- (b) y = 0
- (c) x + y = 0
- (d) x y = 0

Ans. (c)

- Q. What shape are honeycomb cells?
- (a) Triangles
- (b) Pentagons
- (c) Squares
- (d) Hexagons

Ans. (d)

Q. Which is the 17th century German mathematician and astronomer whose works, including " Epitome of Copernican

Astronomy", provided one of the foundations for Isaac Newton's theory of universal gravitation?

- (a) Heinrich Decimator
- (b) Christiaan Huygens
- (c) John Flamsteed
- (d) Johannes Kepler

Ans. (d)

- Q. What is a natural number called if it has exactly two distinct divisors?
- (a) Integer
- (b) Prime number
- (c) Composite number
- (d) Perfect number

Ans. (b)

- Q. When did Polish code breaker Marian Rejewski first break the code of the Enigma Machines used by German military?
- (a) 1962
- (b) 1950

- (c) 1932
- (d) 1910
- Ans. (c)
- Q. Which of these numbers is not a square?
- (a) 169
- (b) 186
- (c) 144
- (d) 225
- Ans. (b)
- Q. What does "differential" measure in the mathematical discipline of calculus?
- (a) Steps in an equation
- (b) Difference between two known quantities
- (c) Rate of increase
- (d) A tiny or infinitesimal change in the value of a variable
- Ans. (d)
- Q. Two pipes can fill a tank in 10 minutes and 30 minutes respectively and a third pipe can empty the full tank in 20
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minutes. If all the three pipes are opened simultaneously, the tank will be

- (a) 10 minutes
- (b) 8 minutes
- (c) 7 minutes
- (d) None of these
- Ans. (d)
- Q. Which of the following Invented Algebra?
- (a) Meghat
- (b) Bhaskar
- (c) Apastamb
- (d) Aryabhatta
- Ans. (b)
- Q. If + means  $\div$ ,  $\div$  means -, means x and x means +, then:
- $9 + 3 \div 5 3 \times 7 = ?$
- (a) 5
- (b) 15

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(c) 25 (d) None of these Ans. (d) Q. Which is the greatest five digit number exactly divisible by 279? (a) 99603 (b) 99882 (c) 99550 (d) None of these Ans. (b) Q. All natural numbers and 0 are called the \_\_\_\_\_ numbers. (a) whole (b) prime (c) integer (d) rational Ans. (a)

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