1. If $\left(\sqrt[3]{x}+1\right)\left(\sqrt[3]{x^2}-\sqrt[3]{x}+1\right)=0$, then the value of x is :
   (A) 1 (B) -1
   (C) $\sqrt{8}$ (D) 8
2. The perimeter of a rectangle is numerically equal to the area of the rectangle. If the width of the rectangle is 3cm, then its length is :
   (A) 3cm (B) 4cm
   (C) 6cm (D) 8cm
3. A rectangular solid box whose side, front and bottom faces are $12cm^2$, $8cm^2$ and $6cm^2$ respectively, then its volume is :
   (A) $576cm^3$ (B) $24cm^3$
   (C) $9cm^3$ (D) $104cm^3$
4. If 6 is added to 3 times a number, it becomes 15. This statement in the form of an equation is :
   (A) $3x+6=15$ (B) $3x-6=15$
   (C) $3x+15=6$ (D) $\frac{3x}{6}=15$
5. How many non-perfect square numbers lie between the pair of numbers 500^2 and 501^2?
   (A) 999 (B) 1000
   (C) 1001 (D) 1002
6. The diagonals of a rhombus are 6cm and 8cm. The perimeter of the rhombus is :
   (A) 20cm (B) 40cm
   (C) 48cm (D) 60cm
7. Two boys Sanathoi and Chaothoi ride bicycle at the same time from Imphal to Kakching 60km away. Sanathoi rides 4km/hr slower than Chaothoi. Chaothoi reaches Kakching and at once turns back meeting Sanathoi 12km away from Kakching. The rate of speed of Sanathoi is :
   (A) 4km/hr (B) 8km/hr
   (C) 12km/hr (D) 16km/hr

SPACE FOR ROUGH WORK

43. The number of circular pipes with an inside diameter of 1 cm which will carry the same amount of water as a pipe with an inside diameter of 6cm and both 1m long is :
   (A) 6π (B) 6
   (C) 12 (D) 36
44. If the radius of a circle increased 100%, the area is increased :
   (A) 100% (B) 200%
   (C) 300% (D) 400%
45. Two equal parallel chords are drawn 8cm apart in a circle of radius 8cm. The area of the rectangle formed by joining the end points of the chords is :
   (A) $64cm^2$ (B) $64\sqrt{3}\,cm^2$
   (C) $24cm^2$ (D) $24\sqrt{3}\,cm^2$
46. A cylinderical wax is transformed into a cone without changing the radius and height. The volume of the cylinder is :
   (A) $\frac{1}{3}$ times volume of the cone
   (B) 3 times volume of the cone
   (C) 2 times volume of the cone
   (D) $\frac{1}{2}$ times the volume of the cone
47. When a transversal intersects a pair of parallel lines.Which of the following is false ?
   (A) pair of corresponding angles are equal.
   (B) pair of alternate angles are equal.
   (C) pair of vertically opposite angles are equal.
   (D) pair of co-interior angles are equal.
48. The measure of an external angle of a regular octagon is :
   (A) 360^0 (B) 90^0
   (C) 45^0 (D) 20^0

SPACE FOR ROUGH WORK

(A) $8-2=x$

(B) $\frac{1}{8}+\frac{1}{x}=\frac{1}{2}$

(C) $\frac{500}{8}+\frac{500}{x}=500$

(D) $\frac{x}{2}+\frac{x}{8}=1$

37. Successive discounts of 10% and 20% are equivalent to a single discount of :
(A) 30% (B) 28%
(C) 25% (D) 22%

38. Mr. Chinglemba bought a house worth ₹ 10000. He sold it to Mr. Tomthin at 10% profit. Mr. Tomthin sells the house back to Mr. Chinglemba at a loss of 10%. Then _ :
(A) Mr.Chinglemba is neither profit nor loss
(B) Mr.Chinglemba gets a profit of ₹ 1100
(C) Mr.Chinglemba losses ₹ 900
(D) Mr.Chinglemba losses ₹ 1100

39. The number 11111111 is :
(A) perfect square number
(B) repunit number
(C) palindrome number
(D) perfect square number

40. ABCD is a parallelogram, BD is a diagonal such that $\angle CBD = 60^0$ and $\angle DAB = 75^0$, then $\angle ADC$ is equal to
(A) 45^0 (B) 50^0
(C) 60^0 (D) 105^0

41. If $(4x-5)(5x+7)=20x^2-ax-35$, then 'a' is :
(A) 1 (B) -1
(C) -2 (D) -3

42. The cube of a number is 8 times the cube of another number. If the sum of the cubes of numbers is 243, then what is the difference of the numbers ?
(A) 3 (B) 4
(C) 6 (D) 8

SPACE FOR ROUGH WORK

8. The number of diagonals that can be drawn in a polygon of 20 sides is :
(A) 10 (B) 18
(C) 170 (D) 400

9. Tomba alone can complete a work in 12 days while Tomba and Chaoba together can complete the same work in 8 days. The number of days that Chaoba will take to complete the work alone is :
(A) 10 (B) 24
(C) 20 (D) 9

10. By what least number by which 3600 be divided to make it a perfect cube?
(A) 9 (B) 60
(C) 300 (D) 450

11. The quotient when $\sqrt[3]{36}$ is divided by $\sqrt[3]{48}$ is :
(A) $\sqrt[3]{\frac{3}{4}}$ (B) $\sqrt[3]{\frac{6}{8}}$
(C) $\frac{\sqrt[3]{6}}{2}$ (D) All the above

12. For an internal study tour the school committee selected 50 students from classes VIII and IX. The students of class VIII contributed ₹ 20 each and the students of class IX contributed ₹ 45 each and the committee contributed ₹ 2000. The total contribution was ₹ 4000. How many students were there from class VIII ?
(A) 7 (B) 10
(C) 12 (D) 15

13. Which of the following statements is true about consecutive natural numbers ?
(A) There are 2n + 1 natural numbers between the difference of square of consecutive numbers.
(B) There are 2n non perfect square numbers between the square of consecutive numbers.
(C) The sum of the square of two consecutive numbers is not a perfect square.
(D) $n^2 - 1$ is the standard form of the difference between two consecutive numbers.

SPACE FOR ROUGH WORK

14. As the number of sides of a polygon increases from 3 to n, the sum of the exterior angles formed by extending each side in succession is :
(A) increase
(B) decrease
(C) remain constant
(D) become (n - 3) straight angle

15. Tomba sold a pair of shoes for ₹ 704 at a discount of 12% on the marked price. The marked price is
(A) ₹ 800 (B) ₹ 802
(C) ₹ 804 (D) ₹ 806

16. An insect climbs up 10 metres high pole. It climbs up 3 metres in first minute but slips down 2 metres in the second minute again climbs up 3 metres in the third minutes and slips down 2 metres in the fourth minute and so on. It reaches the top of the pole in :
(A) 15 mins (B) 17 mins
(C) 19 mins (D) 20 mins

17. The least number which is divisible by 5, 7, 9 & 12 and is a perfect square is :
(A) 1260 (B) 90000
(C) 19600 (D) 44100

18. 12608 is divided into three parts such that the ratio of the cube roots of the parts are 2:4:5. The cube roots of the parts are :
(A) 8, 16, 20 (B) 14, 21, 28
(C) 4, 16, 18 (D) 2, 4, 5

19. The population of Non-Manipuri increased at the rate of 10% per year in Manipur. The population of Non-Manupuri in the year 2011 was 5.2×10^6, then the population of Non-Manipuri in the year 2014 will be :
(A) 6.9212×10^6 (B) 69212000
(C) 6.292×10^6 (D) 62920000

20. The diameter of a football is 4 times the diameter of tennis ball. The ratio of their volume is :
(A) 1:64 (B) 1:4
(C) 4:16 (D) 1:28

SPACE FOR ROUGH WORK

31. The product of the polynomials $(x^4 + y^4)(x^2 + y^2)(x + y)(x - y)$ is :
(A) $x^8 - y^8$ (B) $x^{10} - y^{10}$
(C) $x^6 - y^6$ (D) $x^{12} - y^{12}$

32. Consider the statements.
1) The diagonals of a parallelogram are equal.
2) The diagonals of a square are perpendicular to each other.
3) If the diagonals of a quadrilateral intersect at right angle, it is not necessarily a rhombus.
4) Every quadrilateral is either a trapezium or a parallelogram or a kite.
Which of the following statement(s) is/are correct ?
(A) Only 2 (B) Only 3
(C) Both 2 and 3 (D) 1, 2, 3 are correct

33. While selling 265 plastic toys a man gains the selling price of 15 plastic toys. Then his gain percent is :
(A) 5% (B) 6%
(C) 8% (D) 10%

34. The digit in the one's place of the cube root of 6859 is :
(A) 7 (B) 8
(C) 9 (D) 6

35. If $16x^4 = x^6$ then x^3 is :
(A) $\frac{1}{4}x^6$ (B) $4x^4$
(C) $\frac{1}{4}x^2$ (D) $4x^2$

36. A printer can print 200 pages in 8 minutes. And another printer when both are printing together, they will print 200 pages in 2 minutes. The equation used to find how many minutes (taking as x) would require the second printer to print 200 pages alone is :

SPACE FOR ROUGH WORK

21. At compound interest if a certain sum of money doubles in 'n' years, then the amount will be four fold in :

(A) $2n^2$ years (B) n^2 years

(C) 4n years (D) 2n years

22. A glass in the form of a right circular cylinder is half full of water. Its base radius is 3cm and height is 8 cm. The volume of water is :

(A) $18\pi cm^3$ (B) $36\pi cm^3$

(C) $9\pi cm^2$ (D) $72\pi cm^3$

23. Which of the following is the reciprocal of $x^{\frac{-p}{q}}$?

(A) $x^{\frac{p}{q}}$ (B) $\left(\frac{1}{x}\right)^{\frac{-p}{q}}$

(C) $\sqrt[p]{x^q}$ (D) All the above.

24. A merchant buys goods at 25% off the list price. He desires to mark the goods so that he can give a discount of 20% on the marked price and still clear a profit of 25% on the selling price. What percent of the list price must he mark the goods :

(A) 125% (B) 120%

(C) 100% (D) 80%

25. " If three or more parallel lines make equal intercepts on a transversal then they make equal intercepts on any other transversal". This property is known as :

(A) Perpendicular transversal intercept property.

(B) Equal intercept property.

(C) Proportional intercept property.

(D) There is no such property.

SPACE FOR ROUGH WORK

26. If the radius of a right circular cone be doubled, then the ratio of the squares of the curved surfaces of cones will be :

(A) $\frac{r^2+h^2}{4\left(4r^2+h^2\right)}$ (B) $\frac{4\left(r^2+h^2\right)}{4r^2+h^2}$

(C) $\frac{4r^2+h^2}{r^2+h^2}$ (D) None of these

27. A rectangular tank has a capacity of 24 litres. If its length is twice its breadth and its height is $\frac{3}{4}^{th}$ of its length then the length of the tank is :

(A) 25cm (B) 30cm

(C) 40cm (D) 45cm

28. If $\frac{x+c}{x+1}=c+1$, then $x=$ ___ :

(A) $\frac{1}{c}$ (B) $\frac{-1}{c}$

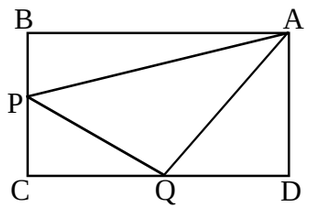
(C) $\frac{c-1}{c}$ (D) $\frac{c-1}{c+1}$

29. Which of the following is the greatest $\sqrt[4]{3},\sqrt[8]{10},\sqrt[12]{25},\sqrt[6]{7}$?

(A) $\sqrt[4]{3}$ (B) $\sqrt[6]{7}$

(C) $\sqrt[8]{10}$ (D) $\sqrt[12]{25}$

30. In the given figure ABCD is a rectangle and APQ is a triangle whose vertices lie on the sides of ABCD such that P is the mid point of BC Q is the mid point of CD. AB = 22cm and BC = 8 cm. Find the area of ΔAPQ .

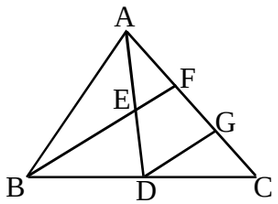


(A) 176cm² (B) 110cm²

(C) 66cm² (D) 44cm²

SPACE FOR ROUGH WORK

49. In Δ ABC, a median AD is drawn from A and E is the mid point of AD on producing BE, it cuts AC at F and DG is parallel to EF and DG cuts AC at G. If AC = 4.5cm, then the length of AF is equal to :



(A) 1.5 cm (B) 2.2cm

(C) 4.5cm (D) None of these

50. How much will ₹ 25000 amount to in 2 years at compound interest if the rate for the successive years be 4 and 5 percent per year :

(A) ₹ 26600 (B) ₹ 27300

(C) ₹ 27100 (D) ₹ 28050

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SPACE FOR ROUGH WORK

24thMVIII

(MATHEMATICS)

Time Allowed 1 hour Maximum Marks : 100

Read the following instructions carefully before you begin to answer the questions.

1. This booklet contains 50 questions in all.
2. All questions are compulsory and each question carries 2 marks.
3. Before you start to answer the questions you must check up this booklet and ensure that it contains all the pages 9 (Nine) and see that no page is missing or repeated. If you find any defect in this Booklet, you must replace it immediately.
4. There will **NOT** be any negative marking for wrong answers.
5. You are required to fill the information on the answer sheet which you will get in the examination hall by **H.B. pencil or BALL point pen.**
6. **Answer Sheet** and **Question Paper** will be supplied in examination hall. After the test is over, you should hand over the answer sheet to the invigilator before leaving the room.
7. You should write your **Name, Roll No.,** carefully on the space provided in the answer sheet. Otherwise you will be awarded **ZERO** mark.
8. If you wish to change your answer, **ERASE** completely the darkened circle by using an **ERASER** and then blacken the new circle. If not erased completely, smudges will be left on the erased circle and the question will be read as having two answer and will be ignored for giving any credit.
9. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any question.
10. You are not allowed to leave the examination hall until you are advised to do so by the invigilator.