Brihan Mumbai Ganit Adhyapak Mandal, Mumbai

Date : 25–7–2015 **MATHS CONCEPT EXAMINATION 2015** Time : 3 am. to 5 pm.

STD. : VIII MAX. MARKS : 100

Instructions : 1) Question paper and answersheet are seperate.
2) Rough work is to be done in the space provided in each page of the question paper.
3) Do not fold the answersheet.
4) Colour the correct alternative with the ballpen as follows.
Ex. 1) What is the sum of all angles of a quadrilateral ?
A) 180° B) 360° C) 120° D) none of these
On Answer Sheet - A) ● C) D)
(Correct answer is B) ∴ B) is coloured as shown above)

1) Solve : $a^5 + a^8 = ?$
A) a^3 B) a^{-3} C) $\frac{1}{a^{-3}}$ D) a^{13}

2) If $(75)^2 = 5625$ then find $(0.75)^2$.
A) 0.5625 B) 56.75 C) 562500 D) 0.005625

3) Solve : $(99990)^2 + (9999)^2 = ?$
A) 1 B) 10 C) 100 D) 1000

4) Largest chord in a circle is ..... and it is double of .....
A) diameter, radius B) radius, diameter
C) radius, secant D) diameter, secant

5) $\sqrt{9 + 5 \times 8} = ?$
A) $\sqrt{112}$ B) 7 C) 112 D) $\sqrt{7}$

6) $100 - (83 + 17.9) + 54.90 = ?$
A) 65 B) 54 C) 55 D) 54.1

7) Simplify : $(5x^2 - 3x^3 + 4x^4 + 7x + 5) - (7x + 5 - 3x^3 + 5x^2 - 4x^4)$
A) $8x^4 + 6x^3 + 10$ B) $-6x^3 + 10x^2$ C) $8x^4$ D) $-6x^3 + 10x^2 - 14x + 10$

8) $x + 10000 = 0.0653$ then find x.
A) 653 B) 6.53 C) 65.3 D) 0.653

9) Simplify : $\frac{x^2 + 4x + 4}{(x - 2)} \times \frac{x^2 - 4}{(x + 2)^2} = ?$
A) $x - 2$ B) $x + 2$ C) $4x$ D) None of these

Rough work

10) Sachin scored 90, 95, 72, 22, 56 in five matches. Find his avarage score.

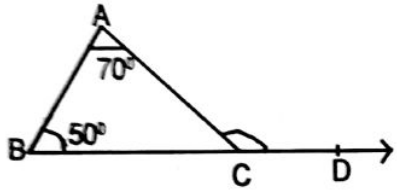
A) 72 B) 76 C) 67 D) 95

11) $\left(x+\frac{1}{x}\right)^2$ = ?

A) $X^2+\frac{1}{x^2}$ B) $X^2+2X+\frac{1}{x^2}$ C) x^2+2x+1 D) $X^2+2+\frac{1}{x^2}$

12) If 47 * 42 is divisible by 22 then find the digit at the place of * .

A) 2 B) 0 C) 3 D) 5

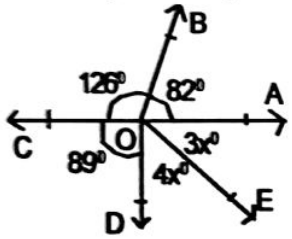
13) 

In the adjoining figure, ∠ACD is exterior angle of ΔABC. Find m∠ACD.

A) 60^0 B) 70^0 C) 125^0 D) 120^0

14) Simplify : $\frac{3}{2}\left(\frac{1}{3}+\frac{5}{3}-\frac{4}{3}\right)\times 6\div 3$

A) 1 B) 0 C) 2 D) 5

15) 

Observe adjoining figure and find ∠AOD.

A) 36^0 B) 27^0 C) 63^0 D) 90^0

16) 70,70,707 + 90,90,909 = ?

A) 1616166 B) 16161616 C) 16160016 D) 161616166

17) Prime factors of 2222 are.

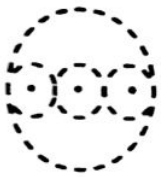
A) 2 × 11 × 111 B) 2 × 11 × 11 C) 2 × 11 × 101 D) 2 × 22 × 11

18) If a = 3, b = –1, c = 2 then find the value of 2a + 3b – c.

A) –1 B) 1 C) –3 D) 2

19) G. C. D. of two numbers is 37 and their L. C. M. is 222, if one of these numbers is 74 find the other number.

A) 444 B) 111 C) 222 D) 74

20) 

In adjoining figure, radius of each small circle is 4 cm. Find the length of radius of large circle.

A) 6 cm B) 8 cm C) 12 cm D) 24 cm

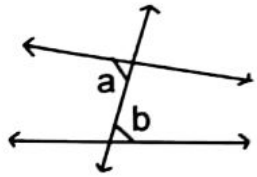
21) Sheela is 2 years younger than Leela. Sum of their ages at present is 24 years. What is the sum of their ages after three years.

A) 27 years B) 30 years C) 25 years D) 29 years

Rough work

22) Solve : $3x + 8 = 2x - 5$

A) -13 B) 3 C) -3 D) $\frac{3}{5}$

23) 

In adjoining figure what is relation between a and b.

A) Corrosponding angles B) alternate angles

C) Interior angles D) none of the above

24) Ratio of number of sheeps and goats is 5 : 7. If total number of goats are 56 then what is the number of sheeps ?

A) 12 B) 65 C) 40 D) 48

25) Factorise : $128 - 98n^2$

A) $2(8 + 7n)(8 + 7n)$ B) $2(8 - 7n)(8 - 7n)$

C) $2(8 - 7n)(8 + 7n)$ D) $2(7n - 8)(7n + 8)$

26) Solve : 300% of 300 = ...% of 3000.

A) 10 B) $\frac{3}{10}$ C) 30 D) 3000

27) If - i) I am a quadrilateral.

ii) I have two pairs of adjascent sides congruent.

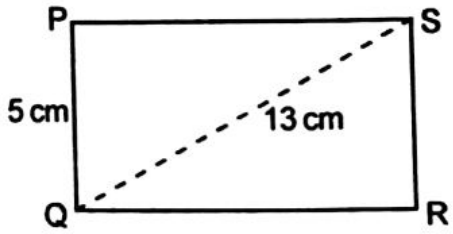
iii) My larger diagonal is perpendicular bisector of smaller diagonal

then who am I ?

A) Square B) kite C) trapezium D) rectangle

28) If $\frac{x+5}{x-3}$ is a rational number then value of x should not be equal to .....

A) -5 B) 0 C) 3 D) -3 & 5

29) 

□PQRS is a rectangle ℓ(PQ) = 5 cm; ℓ(QS) = 13cm, Then find perimeter of ΔPSR.

A) 34 cm B) 17cm

C) 30 cm D) None of the above

30) In a class there are 75 students, out of them 15 students are absent. Find the percentage of students present in the class.

A) 15% B) 60% C) 20% D) 80%

31) Solve : $(x + 3)(x - 5) = ?$

A) $x^2 + 8x - 15$ B) $x^2 + 2x - 15$ C) $x^2 - 2x - 15$ D) $x^2 - 2x + 15$

32) Convert $\frac{19}{11}$ in in decimal form.

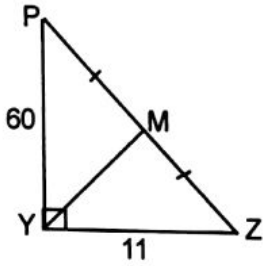
A) $1.\overline{9}$ B) $1.\overline{72}$ C) $1.\overline{8}$ D) $1.\overline{7}$

33) A large bottle of oil contains 2550 ml of oil. This oil is to be put in smaller bottles of volume 25 cm^3; how many such bottles will be required ?

A) 100 B) 20 C) 102 D) 12

34) Which of the following number is product of two consecutive whole numbers ?

A) 597 B) 598 C) 599 D) 600

35) 

In the rt. ΔXYZ seg YM is median of the triangle. Find area of ΔXYM using given information.

A) 330 cm^2 B) 660 cm^2

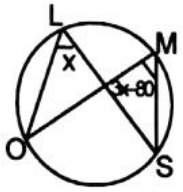
C) 165 cm^2 D) None of the above

36) An angle is twice its complement, what is the measure of its supplementary angle ?

A) 90^0 B) 45^0 C) 60^0 D) 120^0

37) $(123 \times 8) + (123 \times 9) + (123 \times 10) + (123 \times 11)$ is divisible by -

A) 9 B) 8 C) 7 D) 6

38) 

In adjoining figure if $m\angle OLS = x^0$ and $m\angle OMS = (3x - 80)^0$ then find the measure of $\angle OLS$.

A) 60^0 B) 120^0 C) 40^0 D) 140^0

39) A television company charges advertisers Rs. 1,59000 for 30 seconds. How much will the company charge for 7 seconds ?

A) Rs. 5300 B) Rs. 53000 C) Rs. 37100 D) 3710

40) 5743 decigrams = ... decagrams.

A) 574.3 B) 57430 C) 57.43 D) 5.473

41) Which of the following triangle is impossible to construct ? (length of sides given)

A) 2, 3, 4 B) 2, 2, 2 C) 1, 2, 2 D) 2, 2, 4

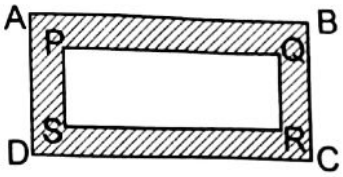
42) Ram invested Rs. 20000 for 5 years at some rate of interest and earned Rs. 8000 as interest, What was the rate of the interest ?

A) 10% p.a. B) 12% p. a. C) 8% p.a. D) 9% p.a.

43) A paneer cuboid of sides 20 cm, 12 cm and 8 cm is cut into cubes of side 4 cm. Find the number of cubes that are cut.

A) 30 B) 18 C) 4 D) 20

Rough work

44) 

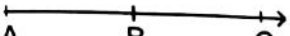
□ABCD and □PQRS are rectangles ℓ(PQ) = 18 cm; ℓ(QR) = 6 cm; ℓ(AB) = 22 cm; ℓ(BC) = 10 cm. Find the area of shaded region.

A) 112 cm² B) 112 cm C) 16 cm D) 52 cm²

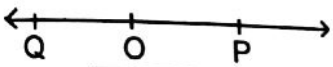
45) Which of the following statements are true ?

i) 

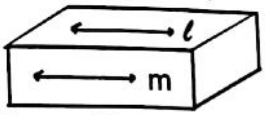
seg PQ = seg QP

ii) 

Ray AB = Ray AC

iii) 

Ray OP = Ray OQ

iv) 

Line ℓ II Line m

A)i, ii B) i, iv C) i, ii, iv D) iii, iv

46) A bicycle is bought for Rs. 13500 and sold at a loss of 10%. Find selling price of bicycle.

A)Rs. 15000 B) Rs. 12150 C) Rs. 13000 D) Rs. 1350

47) Find cost of painting a cuboid box measusing 8m, 6m and 4m externally if the rate of painting is Rs. 3 per m².

A) Rs. 216 B) Rs. 624 C) Rs. 576 D) Rs. 312

48) Which of the following statement is not true for a triangle ?

A)Angle bisectors of a triangle are concurrent.

B) A perpendicalar segment passing through mid-point of a side of a triangle is always a median.

C) All three altitudes of a triangle are concurrent.

D) All three perpendicular bisector of a triangle are concurrent.

49) Solve : $\left(1+\frac{3}{4}\right)\left(2+\frac{1}{7}\right)\left(4+\frac{4}{5}\right) = ?$

A) 18 B) $7\frac{1}{2}$ C) $1\frac{1}{5}$ D) 5

50) The average of 48 different numbers is 64. If one of these numbers is 64, What will be the sum of remaining numbers ?

A) 47 × 64 B) 48 × 63 C) 47 × 63 D) 63 × 64

Rough work