8th All India RPS OLYMPIAD

Online & Offline Mega Event

QUESTION PAPER (PHASE – I)

CLASS - VI

RPS MATHS LEAGUE

Q1. The next term of the sequence 2, 3, 5, 7 is -

(A) 9 (B) 11 (C) 13 (D) 8

Q2. Hexagonal numbers are –

(A) 1, 3, 6, 10, …….. (B) 1, 4, 9, 16, ……

(C) 1, 8, 27, 64, …… (D) 1, 7, 19, 37, …….

Q3. If you start with the number 1 and keep adding 2, which sequence are you creating?

(A) Even numbers (B) Prime numbers

(C) Odd numbers (D) Square numbers

Q4. Find the 6^{th} triangular number.

(A) 21 (B) 63 (C) 49 (D) 27

Q5. Find the product of 2^{nd} cubed and 3^{rd} squared number.

(A) 108 (B) 36 (C) 72 (D) 54

Q6. How many line segments are there in 5^{th} Koch snowflake pattern?

(A) 243 (B) 768 (C) 1024 (D) 162

Q7. Find the sum of all the numbers in the super cells.

64	56	55	63	85	73	26	47

(A) 132 (B) 111 (C) 149 (D) 196

Q8. If a bicycle wheel has 36 spokes, then the angle between a pair of adjacent spokes is-

(A) 10º (B) 15º (C) 20º (D) 12º

Q9. Two right angles are …… part of revolution.

(A) $\left(\frac{1}{4}\right)^{th}$ (B) $\left(\frac{5}{8}\right)^{th}$ (C) $\left(\frac{1}{2}\right)^{th}$ (D) $\left(\frac{1}{3}\right)^{th}$

Q10. The instrument to measure an angle is a -

(A) ruler (B) protractor (C) divider (D) compass

Q11. Two supplementary angles are in the ratio of 3 : 6. Find the smaller angle.

(A) 60º (B) 120º (C) 50º (D) None of these

Q12. Two supplementary angles differ by 46º. Find the larger angle.

(A) 67º (B) 113º (C) 80º (D) 120º

Q13. If a || b and b || c, then which of the following is true ?

(A) a || c (B) a ⊥ c

(C) a and c are intersecting lines (D) None of these

Q14. How many right angles are there in one and half of revolution?

(A) 4 (B) 5 (C) 3 (D) 6

Q15. The number of common points of two parallel lines is –

(A) 2 (B) 0 (C) 1 (D) None of these

Q16. The Prime factorisation of 48 is:

(A) $2 \times 4 \times 3$ (B) $2 \times 2 \times 2 \times 2 \times 3$

(C) $3 \times 3 \times 2 \times 2 \times 2$ (D) $8 \times 3 \times 3 \times 1$

Q17. John turns right side three times, How many degrees does he turn through ?

(A) 90º (B) 45º (C) 180º (D) 270º

Q18. The value of x for which the fractions $\frac{3}{10}$ and $\frac{x}{80}$ are equal.

(A) 10 (B) 15 (C) 20 (D) 24

Q19. If the digit sum of 2715 is added to the digit sum of 1284. What is the total ?

(A) 30 (B) 21 (C) 24 (D) 22

Q20. Find the difference between a 3-digit palindrome 252 and its reverse.

(A) 0 (B) 99 (C) 252 (D) 100

Q21. What is the next number in the Collatz sequence after 7?

(A) 21 (B) 10 (C) 22 (D) 20

Q22. For what value of 'a' the number $\frac{11}{a}$ is not a fraction.

(A) 0 (B) 2 (C) 11 (D) None of these

Q23. Which of the following values cannot be obtained by adding or subtracting all the given numbers only once?

1800	**5000**	**17000**

(A) 23,800 (B) 20,200 (C) 15,400 (D) 10,200

Q24. The difference between two numbers on a number line is 12. If the smaller number is – 7. Find the larger number.

(A) 5 (B) 4 (C) 3 (D) 6

Q25. Which of the following clock timing forms a palindrome?

(A) 10:01 (B) 11:21 (C) 12:51 (D) 10:22

Q26. What is the distance between – 8 and 5 on the number line?

(A) 13 (B) 12 (C) 14 (D) 15

Q27. Find the total count of 6-digit natural numbers.

(A) 990000 (B) 99900 (C) 900000 (D) 100000

Q28. If you subtract the smallest prime number from 12. What is the result?

(A) 12 (B) 13 (C) 14 (D) 10

Q29. The statement, "sum of a 6 - digit number and a 5 - digit number is a 7 - digit even number" is …… true.

(A) always (B) sometime (C) never (D) None of these

Q30. A number is 18 units away from – 7 on the number line. What are the two possible numbers?

(A) 11 and – 25 (B) 10 and – 26 (C) 9 and – 24 (D) 8 and – 23

Q31. How many tally marks are needed to represent the number 12?

(A) 3 sets of 5 (B) 2 sets of 5 and 2 lines

(C) 1 set of 5 and 7 lines (D) 5 sets of 2 lines

Q32. A die was rolled 20 times and the outcomes recorded were.

1, 3, 5, 6, 6, 3, 5, 4, 1, 6, 2, 5, 1, 4, 6, 1, 6, 4, 1, 1

Based on the above data which pair of number appeared the same number of times?

(A) 1 and 4 (B) 3 and 5 (C) 4 and 5 (D) 2 and 3

Q33. What is a data called when it is collected in its initial, unorganized from?

(A) raw data (B) arrayed data

(C) secondary data (D) None of these

Q34. What term is used to describe how often a particular value appears in a data set ?

(A) range (B) median (C) frequency (D) None of these

Q35. Production of cars in a factory in different years is shown here.

Years	**1991**	**1992**	**1993**	**1994**	**1995**
No. of Cars	**1500**	**1000**	**3000**	**2000**	**3500**

The ratio of production in the years 1991 to 1995.

(A) 3 : 7 (B) 1 : 2 (C) 2 : 3 (D) 2 : 1

Direction 36 to 39 – The final marks in Mathematics at 30 students are as follows : 53, 60, 61, 48, 78, 68, 55, 100, 67, 90, 75, 88, 77, 37, 84, 58, 60, 48, 62, 56, 44, 58, 52, 64, 98, 59, 70, 39, 50, 60

Now answer the following.

Q36. The highest score is -

(A) 98 (B) 95 (C) 99 (D) None of these

Q37. The lowest score is –

(A) 44 (B) 37 (C) 31 (D) 29

Q38. The range of data is –

(A) 61 (B) 62 (C) 63 (D) 64

Q39. If 40 is the pass mark, how many have failed.

(A) 2 (B) 4 (C) 5 (D) 7

Q40. If the height of 5 persons are 144 cm, 152 cm, 151 cm, 158 cm and 155 cm respectively. Find the mean height.

(A) 151 cm (B) 152 cm (C) 158 cm (D) 155 cm

Q41. Find the mean of the first five whole numbers.

(A) 10 (B) 5 (C) 2 (D) 3

Q42. Number of composite numbers less than 35 is –

(A) 23 (B) 22 (C) 27 (D) 19

Q43. Among the following numbers which one is not prime?

(A) 161 (B) 137 (C) 353 (D) 127

Q44. The sum of the number of primes between 16 to 80 and 90 to 100 is –

(A) 20 (B) 18 (C) 17 (D) 16

Q45. The length and the breadth of a rectangular piece of land are 400 m and 250 m respectively, what is the cost of the land at Rs. 1000 per square meter?

(A) Rs. 10 Lakhs (B) Rs. 1 Crore (C) Rs. 10 Crores (D) Rs. 10 thousands

Q46. I am the smallest number having four different odd prime factors can you find me?

(A) 1155 (B) 1000 (C) 1150 (D) 1165

Q47. The sum of common factors of 27, 45 and 90 is _____.

(A) 20 (B) 25 (C) 15 (D) 13

Q48. A number for which the sum of all its factors is equal to twice the number is called …… .

(A) perfect (B) prime (C) consecutive (D) None of these

Q49. The number of factors of 1080 is -

(A) 32 (B) 36 (C) 28 (D) 24

Q50. The largest 3-digit number which is exactly divisible by 3 is –

(A) 998 (B) 992 (C) 999 (D) None of these

Q51. If A = [x : x is a multiple of 12]. Then which one of the following numbers is for x does not belongs to A?

(A) 64 (B) 96 (C) 48 (D) 60

Q52. If the number 245a60b is exactly divisible by 3 and 5, then the maximum value at a + b is –

(A) 12 (B) 13 (C) 14 (D) 15

Q53. A lawn is in the shape of a rectangle of length 80 m and width 40 m outside the lawn, there is a footpath of uniform width 3 m. Find the area of the path.

(A) 756 m^2 (B) 706 m^2 (C) 736 m^2 (D) 726 m^2

Q54. The cost of cultivating a square field at Rs. 17 per m^2 is Rs. 612. Find the side of the field.

(A) 9 m (B) 8 m (C) 6 m (D) 10 m

Q55. Find the number of envelopes that can be made out of a sheet at paper 384 cm by 168 cm if each envelope requires a piece of paper of size 16 cm by 12 cm.

(A) 345 (B) 340 (C) 336 (D) 348

Q56. The perimeter of a square whose each side is 1 m 30 cm 10 mm is :

(A) 5.24 m (B) 5.14 m (C) 5.4 m (D) 5.04 m

Q57. How many lines of symmetry are there in a rhombus?

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

Q58. A rectangle has an order of rotational symmetry.

(A) Two (B) One (C) Three (D) None of these

Q59. If an angle of measure 80º is reflected in a line of symmetry then the reflection is an angle of measure?

(A) 80º (B) 60º (C) 90º (D) 45º

Q60. A line that divides a figure into two equal mirror halves is called.

(A) Refraction line (B) Axis of symmetry

(C) Rotational Axis (D) None at the above