

Arithmetic Assessment

**Number of questions: 50
Time: 60 minutes**

1. What part of three fourths is one tenth?

- A. $1/8$
- B. $15/2$
- C. $2/15$
- D. $3/40$
- E. None of the above

2. One number is 2 more than 3 times another. their sum is 22. Find the numbers.

- A. 8, 14
- B. 2, 20
- C. 5, 17
- D. 4, 18
- E. 10, 12

3. What is the median of the following group of scores?

27, 27, 27, 26, 26, 26, 26, 18, 13, 36, 36, 30, 30, 30, 27, 29

- A. 30
- B. 26
- C. 25.4
- D. 27
- E. 36

4. What percent of 260 is 13?

- A. 0.05%
- B. 5%
- C. 50%
- D. 0.5%
- E. 20%

5. Subtract: $4 \frac{1}{3} - 1 \frac{5}{6}$

- A. $3 \frac{2}{3}$
- B. $2 \frac{1}{2}$
- C. $3 \frac{1}{2}$
- D. $2 \frac{1}{6}$
- E. None of the above

6. What is the product of $(\sqrt{3} + 6)$ and $(\sqrt{3} - 2)$

- A. $9 + 4\sqrt{3}$
- B. -9
- C. $-9 + 4\sqrt{3}$
- D. $-9 + 2\sqrt{3}$
- E. 9

7. The number missing in the series 2, 6, 12, 20, x, 42, 56 is:

- A. 36
- B. 24
- C. 30
- D. 38
- E. 40

8. What is the value of the following expression: $\frac{1}{1+\frac{1}{1+\frac{1}{4}}}$

- A. $\frac{9}{5}$
- B. $\frac{5}{9}$
- C. $\frac{1}{2}$
- D. 2
- E. 4

9. Which of the following has the smallest value?

- A. $\frac{1}{0.2}$
- B. $\frac{0.1}{2}$
- C. $\frac{0.2}{1}$
- D. $\frac{0.2}{0.1}$
- E. $\frac{2}{0.1}$

10. Three numbers are in the ratio 4 : 5 : 6 and their average is 25. The largest number is :

- A. 20
- B. 30
- C. 40
- D. 50
- E. 60

11. $10^3 + 10^5$

- A. 10^8
- B. 10^{15}
- C. 20^8
- D. 2^{15}
- E. 101,000

12. How many digits are in the standard numeral for $2^{31} \cdot 5^{27}$?

- A. 31
- B. 29
- C. 28
- D. 26
- E. 25

13. $475,826 \cdot 521,653 + 524,174 \cdot 521,653$

- A. 621, 592, 047, 600
- B. 519, 697, 450, 000
- C. 495, 652, 831, 520
- D. 521, 653, 000,000
- E. 524, 174, 000, 000

14. If the number $517*324$ is completely divisible by 3, then the smallest whole number in the place of * will be:

- A. 0
- B. 2
- C. 1
- D. 3
- E. None of these

15. The sixtieth digit in the decimal representation of $\frac{1}{7}$ is

- A. 1
- B. 4
- C. 2
- D. 5
- E. 7

16. What is the least prime number which is a divisor of $7^9 + 11^{25}$?

- A. 1
- B. 2
- C. 3
- D. 5
- E. $7^9 + 11^{25}$

17. Evaluate $10 - 5[2^3 + 27 / 3 - 2(8 - 10)]$

- A. -95
- B. 105
- C. 65
- D. -55
- E. -85

18. Fifteen percent of what number is 60?

- A. 9
- B. 51
- C. 69
- D. 200
- E. 400

19. Which is the largest fraction: $\frac{1}{5}, \frac{2}{9}, \frac{2}{11}, \frac{4}{19}, \frac{4}{17}$?

- A. $\frac{1}{5}$
- B. $\frac{2}{9}$
- C. $\frac{2}{11}$
- D. $\frac{4}{19}$
- E. $\frac{4}{17}$

20. How many of the scores 10, 20, 30, 35, 55 are larger than their arithmetic mean score?

- A. None
- B. One
- C. Two
- D. Three
- E. Four

21. Evaluate $(2^{1-\sqrt{3}})^{1+\sqrt{3}}$

- A. 4
- B. -4
- C. 16
- D. $\frac{1}{2}$
- E. $\frac{1}{4}$

22. $\frac{2^{100} + 2^{98}}{2^{100} - 2^{98}}$

- A. 2^{198}
- B. 2^{99}
- C. 64
- D. 4°
- E. $5/3$

23. What is the least natural number which is a multiple of each number from 1 to 10?

- A. 3,628,800
- B. 5040
- C. 840
- D. 1,260
- E. 2,520

24. If in $\triangle ABC$, $AB = BC$ and angle A has measure 46° , then angle B has measure

- A. 46°
- B. 92°
- C. 88°
- D. 56°
- E. 23°

25. What is the last digit in the number 3^{2000} ?

- A. 0
- B. 1
- C. 3
- D. 7
- E. 9

26. In the set of integers 1000, 1001, 1002, 9998, 9999, how many of the numbers do not contain the digit 5?

- A. 6,561
- B. 5,000
- C. 9,000
- D. 4,500
- E. 5,832

27. $15,561 \div 25 + 9,439 \div 25 =$

- A. 997
- B. 1,000
- C. 1,002
- D. 1,005
- E. 1,005.08

28. What is the units digit for 4^{891} ?

- A. 4
- B. 6
- C. 8
- D. 0
- E. 1

29. How many 2 digit numbers are divisible by 6 till 90?

- A. 14
- B. 13
- C. 16
- D. 17
- E. 15

30. $1 + 2 + 3 + 4 + \dots + 99 =$

- A. 4,700
- B. 4,750
- C. 4,850
- D. 4,900
- E. 4,950

31. The decimal $0.24\overline{24}$ expressed as a fraction is

- A. $\frac{8}{33}$
- B. $\frac{6}{25}$
- C. $\frac{1}{4}$
- D. $\frac{303}{1250}$
- E. $\frac{121}{500}$

32. $\frac{2^{-4} + 2^{-1}}{2^{-3}}$

- A. $\frac{9}{2^7}$
- B. $\frac{9}{2^{-1}}$
- C. $\frac{1}{2}$
- D. 2^{-3}
- E. $\frac{9}{2}$

33. What is the smallest positive number $N > 2$, that leaves a remainder of 2 when the number is divided by 3, 4 or 5?

- A. 22
- B. 42
- C. 62
- D. 122
- E. 182

34. What part of three eights is one tenth?

- A. $\frac{1}{8}$
- B. $\frac{15}{2}$
- C. $\frac{4}{15}$
- D. $\frac{3}{40}$
- E. None of the above

35. $(\frac{2}{3}) + (\frac{5}{9}) =$

- A. $\frac{7}{12}$
- B. $\frac{11}{9}$
- C. $\frac{7}{3}$
- D. $\frac{7}{9}$
- E. $\frac{11}{3}$

36. Add $\frac{3}{6} + \frac{2}{6}$

- A. $\frac{1}{12}$
- B. $\frac{5}{6}$
- C. $\frac{5}{12}$
- D. $\frac{8}{9}$
- E. $\frac{9}{8}$

37. Which of the following is not a prime number?

- A. 31
- B. 61
- C. 81
- D. 29
- E. 71

38. Change 125.937% to a decimal

- A. 1.25937
- B. 12.5937
- C. 125.937
- D. 1259.37
- E. 12593.7

39. What is the ratio of 8 feet to 28 inches?

- A. $\frac{1}{7}$
- B. $\frac{7}{1}$
- C. $\frac{24}{7}$
- D. $\frac{6}{7}$
- E. $\frac{7}{2}$

40. Which of the following is a prime number?

- A. 33
- B. 93
- C. 81
- D. 97
- E. 72

41. Change $4\frac{5}{6}$ to an improper fraction

- A. $\frac{5}{24}$
- B. $\frac{9}{6}$
- C. $\frac{29}{6}$
- D. $\frac{30}{4}$
- E. $\frac{120}{6}$

42. If the sum of four consecutive integers is 226, then the smallest of these numbers is

- A. 55
- B. 56
- C. 57
- D. 58
- E. 59

43. $4\% \cdot 4\% =$

- A. 0.0016%
- B. 0.16%
- C. 1.6%

- D. 16%
- E. 160%

44. (#) - 19657 - 33994 = 9999. What can come in place of #?

- A. 63650
- B. 53760
- C. 59640
- D. 61560
- E. None of these

45. How many prime numbers are less than 50?

- A. 14
- B. 13
- C. 16
- D. 17
- E. 15

46. What is the units digit of $2^{50} \cdot 5^{51}$?

- A. 2
- B. 5
- C. 0
- D. 1
- E. 7

47. Change the fraction $\frac{7}{8}$ to a decimal

- A. 0.666
- B. 0.75
- C. 0.777
- D. 0.875
- E. 1.142

48. $\sqrt{75} - 3\sqrt{48} + \sqrt{147} =$

- A. $3\sqrt{3}$
- B. $7\sqrt{3}$
- C. 0
- D. 3
- E. $\sqrt{3}$

49. How many numbers are there between 1 to 100 which have 5 as a digit?

- A. 16
- B. 18
- C. 19
- D. 17
- E. 15

50. The following ratio: 40 seconds: 1 $\frac{1}{2}$ minutes: $\frac{1}{6}$ hour, can be expressed in lowest terms as:

- A. 4 : 9 : 60
- B. 4 : 9 : 6
- C. 40 : 90 : 60
- D. $\frac{2}{3}$: 1 $\frac{1}{2}$: 10
- E. 60 : 9 : 4