Popular Past Paper One Questions Part 1

Instructions

Please answer **all 55 multiple-choice questions** in this quiz.

When you are finished, click **Submit**. Your results will appear immediately, along with the **correct answers** so you can review your work and learn from any mistakes.

Good luck!

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Not shared

* Indicates required question

Name of Student *

Your answer

Name of School * 1 point

Your answer

Region *

- Region 1
- Region 2
- Region 3
- Region 4
- Region 5
- Region 6
- Region 7
- Region 8
- Region 9
- Region 10
- Georgetown

1. * 1 point

What percentage of 40 is 8?

(A) 5
(B) 20
(C) 32
(D) 150

- A
- B
- C
- D

2. * 1 point

2. What percentage of 50 is 10?

(A) 5%
(B) 20%
(C) 32%
(D) 150%

- A
- B
- C
- D

3. * 1 point

There are 40 students in a class. Girls make up 60% of the class. 25% of the girls wear glasses. How many girls in the class wear glasses?

(A) 6
(B) 8
(C) 10
(D) 15

- A
- B
- C
- D

4. * 1 point

4. In a school the ratio of the number of pupils to the number of teachers is 20:1. If the number of pupils is 840, how many teachers are there?

(A) 40
(B) 42
(C) 820
(D) 840

- A
- B
- C
- D

5. * 1 point

$\left[\frac{2}{3}\right]^2$ is equal to

(A) $\frac{4}{6}$
(B) $\frac{4}{3}$
(C) $\frac{2}{9}$
(D) $\frac{4}{9}$

- A
- B
- C
- D

6. * 1 point

$\left[\frac{2}{3}\right]^{-2}$ is equal to

(A) $\frac{4}{9}$

(B) $\frac{4}{6}$

(C) $\frac{6}{4}$

(D) $\frac{9}{4}$

- A
- B
- C
- D

7. * 1 point

The square root of 181 lies between

(A) 13 and 14
(B) 45 and 46
(C) 9 and 11
(D) 11 and 13

- A
- B
- C
- D

8. * 1 point

The square root of 191 lies between

(A) 11 and 13
(B) 12 and 13
(C) 13 and 14
(D) 45 and 46

- A
- B
- C
- D

9. * 1 point

$(-3)^2 + (-2)^2$ is equal to

(A) −13
(B) −10
(C) 13
(D) 25

- A
- B
- C
- D

10. * 1 point

The number 3.14063 written correct to 3 decimal places is

(A) 3.140
(B) 3.141
(C) 3.146
(D) 3.150

- A
- B
- C
- D

11. * 1 point

What is the value of the digit 2 in the number 48.621?

(A) $\frac{2}{100}$

(B) $\frac{2}{10}$

(C) 2

(D) 200

- A
- B
- C
- D

12. * 1 point

What is the value of the digit 6 in the number 48.621?

(A) $\frac{6}{100}$

(B) $\frac{6}{10}$

(C) 6

(D) 600

- A
- B
- C
- D

13. * 1 point

What is the value of the digit 6 in the number 48.061?

(A) $\frac{6}{100}$

(B) $\frac{6}{10}$

(C) 6

(D) 600

- A
- B
- C
- D

14. * 1 point

The value of the digit 5 in the number 537 is

(A) 5
(B) 100
(C) 500
(D) 5 000

- A
- B
- C
- D

15. * 1 point

If $4.3 \times 0.37 = 1.591$, then 0.43×370 is

(A) 1.591
(B) 15.91
(C) 159.1
(D) 1591.0

- A
- B
- C
- D

16. * 1 point

If $4.3 \times 0.37 = 1.591$, then 43×0.37 is

(A) 1.591
(B) 15.91
(C) 159.1
(D) 1591.0

- A
- B
- C
- D

17. * 1 point

If $235 \times 48.7 = 11\,444.5$, then

$23.5 \times 0.487 =$

(A) 11.4445
(B) 114.445
(C) 1 144.45
(D) 11 444.4

- A
- B
- C
- D

18. * 1 point

By the distributive law $49 \times 17 + 49 \times 3 =$

(A) $52 + 66$
(B) 52×66
(C) $49 + 20$
(D) 49×20

- A
- B
- C
- D

19. * 1 point

If $Q = \{a, b, c\}$ how many subsets can be obtained from the set Q?

(A) $2 + 3$
(B) 2×3
(C) 3^2
(D) 2^3

- A
- B
- C
- D

20. * 1 point

If $A = \{3, 6, 9\}$, then the number of subsets of A is

(A) 2
(B) 3
(C) 4
(D) 8

- A
- B
- C
- D

21. * 1 point

If $n(A) = m$, then the number of subsets of A can be expressed as

(A) 2^m
(B) m^2
(C) 2^{2m}
(D) $2m^2$

- A
- B
- C
- D

22. * 1 point

$P = \{\text{prime numbers}\}$
$Q = \{\text{odd numbers}\}$
$R = \{\text{even numbers}\}$

Which of the following sets is empty?

(A) $P \cap R$
(B) $P \cup Q$
(C) $P \cap Q$
(D) $Q \cap R$

- A
- B
- C
- D

23. * 1 point

If $3n$ is an odd number, which of the following is an even number?

(A) $3n-1$
(B) $3n+2$
(C) $3n-2$
(D) $3n+2n$

- A
- B
- C
- D

24. * 1 point

If X and Y are two finite sets such that $n(X) = 9$, $n(X \cap Y) = 4$ and $n(X \cup Y) = 15$, then $n(Y)$ is

(A) 5
(B) 6
(C) 10
(D) 12

- A
- B
- C
- D

25. * 1 point

Of a class of 32 students, 17 study Music and 20 study Art. What is the LEAST possible number of students who study BOTH Music and Art?

(A) 3
(B) 5
(C) 12
(D) 15

- A
- B
- C
- D

26. * 1 point

In a group of 40 students, 28 play tennis and 22 play chess. What is the LEAST number of students who play BOTH tennis and chess?

(A) 6
(B) 10
(C) 12
(D) 18

- A
- B
- C
- D

27. * 1 point

Which of the following pairs of sets is an example of disjoint sets?

(A) E = {even numbers} and F = {odd numbers}
(B) P = {multiples of 2} and Q = {multiples of 3}
(C) G = {multiples of five} and H = {factors of 20}
(D) X = {whole numbers} and Y = {rational numbers}

- A
- B
- C
- D

28. * 1 point

The set of positive integers that is divisible by 6 is an example of

(A) a finite set
(B) an empty set
(C) an infinite set
(D) an improper set

- A
- B
- C
- D

29. *

1 point

The set of two-digit positive integers that are divisible by 7 is an example of

(A) an improper set
(B) an infinite set
(C) an empty set
(D) a finite set

- A
- B
- C
- D

*

1 point

If 30% of a number is 45. What is $\frac{4}{5}$ of the number?

(A) 36
(B) 120
(C) 150
(D) 180

- A
- B
- C
- D

*

1 point

If 60% of a number is 90, what is $\frac{4}{5}$ of the number?

(A) 54
(B) 72
(C) 120
(D) 150

- A
- B
- C
- D

30. * 1 point

Susan bought a calculator for $120. She paid a sales tax of 10% on the price. How much change should she receive from $140?

(A) $ 8.00
(B) $12.00
(C) $28.00
(D) $32.00

- A
- B
- C
- D

31. * 1 point

The cash price of a television set is $350. When bought on hire-purchase, a deposit of $35 is required, followed by 12 monthly payments of $30. How much money is saved by paying cash?

(A) $10
(B) $25
(C) $40
(D) $45

- A
- B
- C
- D

32. * 1 point

At the end of any year a car is worth 5% less than what it was worth at the beginning of the year. If a car was worth $10 000 in January 2011, then its value in December 2011 was

(A) $9 995
(B) $9 500
(C) $9 025
(D) $9 000

- A
- B
- C
- D

33. * 1 point

A car presently valued at $12 000 depreciates at the rate of 10% per annum. What will be the value of the car one year later?

(A) $10 800
(B) $11 800
(C) $11 880
(D) $13 200

- A
- B
- C
- D

34. *

1 point

At the end of any year a car is worth 5% less than what it was worth at the beginning of the year. If a car was worth $9500 in December 2016, then its value in January 2016 was

(A) $ 9 995
(B) $10 000
(C) $10 025
(D) $12 000

- A
- B
- C
- D

35. *

1 point

The cash price of a television set is $350. When bought on hire-purchase, a deposit of $35 is required, followed by 12 monthly payments of $30. How much money is saved by paying cash?

(A) $10
(B) $25
(C) $40
(D) $45

- A
- B
- C
- D

36. * 1 point

If the simple interest on \$800 for 3 years is \$54, what is the rate of interest per annum?

(A) $\frac{4}{9}\%$

(B) $2\frac{1}{4}\%$

(C) 5%

(D) 44%

- A
- B
- C
- D

37. * 1 point

If the simple interest on \$900 for 3 years was \$108, what was the rate of interest?

(A) 3%
(B) 4%
(C) 12%
(D) 25%

- A
- B
- C
- D

38. * 1 point

If the simple interest on \$800 for 3 years is \$60, what is the rate of interest per annum?

(A) 2%
(B) 2.5%
(C) 4%
(D) 5%

- A
- B
- C
- D

39. *

1 point

The simple interest on a loan of $6 000 for 3 years was $900. What was the rate of interest per annum?

(A) 2%
(B) 3%
(C) 5%
(D) 18%

- A
- B
- C
- D

40. *

1 point

A loan of $8 000 was repaid in 24 equal monthly instalments of $400. The rate of interest on the loan was

(A) 5%

(B) $8\frac{1}{3}\%$

(C) $16\frac{1}{3}\%$

(D) 20%

- A
- B
- C
- D

41. * 1 point

If $7 000 is borrowed at the rate of 5% per annum for 3 years, the simple interest is

(A) $ 105
(B) $ 210
(C) $ 370
(D) $1 050

- A
- B
- C
- D

42. * 1 point

The simple interest on $600 for 4 years at 5 percent per annum is

(A) $\$\frac{600 \times 5 \times 4}{100}$

(B) $\$\frac{100 \times 5 \times 4}{600}$

(C) $\$\frac{600 \times 5}{100 \times 4}$

(D) $\$\frac{100 \times 4}{600 \times 5}$

- A
- B
- C
- D

43. * 1 point

The simple interest on \$600 for t years at 5 per cent per annum is \$120. The value of t is

(A) $\$\frac{100 \times 120}{600 \times 5}$

(B) $\$\frac{600 \times 5}{100 \times 120}$

(C) $\$\frac{100 \times 5 \times 120}{600}$

(D) $\$\frac{600 \times 5 \times 120}{100}$

- A
- B
- C
- D

44. * 1 point

$\frac{1}{5x} + \frac{2}{3x}$ is equal to

(A) $\frac{3}{8x^2}$

(B) $\frac{3}{8x}$

(C) $\frac{13}{15x^2}$

(D) $\frac{13}{15x}$

- A
- B
- C
- D

45. * 1 point

$\frac{4}{5x} + \frac{2}{5x} =$

(A) $\frac{6}{5x}$

(B) $\frac{6}{10x}$

(C) $\frac{8}{25x}$

(D) $\frac{6}{25x}$

- A
- B
- C
- D

46. * 1 point

Given that $3 * 6 = 12$ and $2 * 5 = 9$, then $a * b$ may be defined as

(A) $4(b-a)$
(B) $a^2 - b$
(C) $6a - b$
(D) $2a + b$

- A
- B
- C
- D

47. * 1 point

If $5(2x - 1) = 35$, then $x =$

(A) -4

(B) $\frac{1}{4}$

(C) 3

(D) 4

- A
- B
- C
- D

48. * 1 point

John has x marbles and Max has twice as many marbles as John. Max gives John 5 of his marbles. How many marbles does John now have?

(A) $x - 5$
(B) $x + 5$
(C) $2x - 5$
(D) $2x + 5$

- A
- B
- C
- D

49. * 1 point

Seven times the product of two numbers, a and b, may be written as

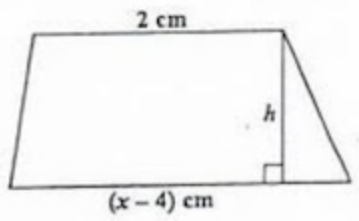
(A) $7ab$
(B) $49ab$
(C) $7a + b$
(D) $7(a + b)$

- A
- B
- C
- D

50. *

1 point

Item 50. refers to the following diagram of a trapezium.



50. The trapezium with height, h, has an area of x^2 cm^2. The equation that may be used to find the value of x is

(A) $x^2 = \frac{h}{2}(x-2)$

(B) $x^2 = h(x-1)$

(C) $x^2 = \frac{h}{2}(x-6)$

(D) $x^2 = h(x-4)(x+2)$

- A
- B
- C
- D

51. *

1 point

The determinant of the identity matrix is

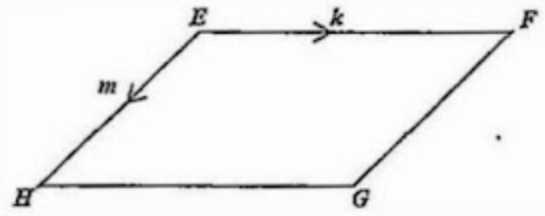
(A) one
(B) zero
(C) undefined
(D) negative one

- A
- B
- C
- D

52. *

1 point

Item 52 refers to the following diagram of a parallelogram, in which EF is parallel to HG, EH is parallel to FG, $\overrightarrow{EF} = k$ and $\overrightarrow{EH} = m$.



52. $\overrightarrow{EG}$ expressed in terms of k and m is

(A) $k + m$
(B) $k - m$
(C) $m - k$
(D) $-m - k$

- A
- B
- C
- D

53. *

1 point

If the vectors $\mathbf{p}$ and $\mathbf{q}$ are $\begin{bmatrix} 3 \\ 2 \end{bmatrix}$ and $\begin{bmatrix} -1 \\ 4 \end{bmatrix}$ respectively, then $\mathbf{p} - 2\mathbf{q}$ is

(A) $\begin{bmatrix} 1 \\ 10 \end{bmatrix}$

(B) $\begin{bmatrix} 1 \\ -6 \end{bmatrix}$

(C) $\begin{bmatrix} 5 \\ 10 \end{bmatrix}$

(D) $\begin{bmatrix} 5 \\ -6 \end{bmatrix}$

- A
- B
- C
- D

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