Percentage - 1

Career Launcher

QA - 01

CEX-Q-0202/18

Contents

Number of Questions : 35

Multiplication based

1. $57 \times 59 = ?$
2. $63 \times 72 = ?$
3. $84 \times 86 = ?$
4. $88 \times 93 = ?$
5. $94 \times 112 = ?$
6. $108 \times 114 = ?$
7. $345 \times 543 = ?$
8. $524 \times 368 = ?$
9. $525 \times 84 = ?$
10. $538 \times 999 = ?$

Square / Cube based

11. $(92)^2 = ?$
12. $(108)^2 = ?$
13. $(993)^2 = ?$
14. $(1008)^2 = ?$
15. $(1012)^2 = ?$
16. $(31)^3 = ?$
17. $(91)^3 = ?$
18. $(112)^3 = ?$
19. $(1005)^3 = ?$
20. $(997)^3 = ?$

Fraction based

Directions for questions 21 to 27: Find the approximate value of the following fractions.

21. $\frac{338}{473}$

(1) 70.4 (2) 69.4
(3) 71.2 (4) 74.3

22. $\frac{3}{7}$

(1) 42.84 (2) 43.76
(3) 44.78 (4) 41.76

23. $\frac{443}{898}$

(1) 48.5 (2) 49.8
(3) 49.4 (4) 47.9

24. $\frac{8}{19}$

(1) 41.02 (2) 40.08
(3) 41.08 (4) 42.08

25. $\frac{547}{1973}$

(1) 29.82 (2) 27.72
(3) 28.92 (4) 26.92

26. $\frac{1.6 \times 1.12}{6.63}$

(1) 27.63% (2) 27.02%
(3) 28.11% (4) 26.53%

27. $\frac{5}{19}$

(1) 24.3% (2) 25.7%
(3) 26.3% (4) 24.7%

Miscellaneous

28. (i) 20% of x is equal to 10.
(ii) 8% of x is equal to 90.
(iii) 15% of x is equal to 15.
(iv) 17.5% of x is equal to 35.

Which one of the above gives greatest value of x?

(1) (i) (2) (ii)
(3) (iii) (4) (iv)

29. If 30% of A is added to 40% of B, the answer is 80% of B. What percentage of A is B?

(1) 30% (2) 40%
(3) 70% (4) 75%

30. If 90% of A = 30% of B and B = 2x% of A, then the value of x is

(1) 450 (2) 400
(3) 300 (4) 150

31. If X = 37.5% of 20% of 48 and Y = 14.28% of 27.27% of 77, then

(1) X >Y (2) X = Y
(3) X < Y (4) X – Y = 1.4

32. A student obtained 95 marks out of 250 in mathematics. If passing percentage is 42%, then by how many marks did he fail?

(1) 10 (2) 15
(3) 20 (4) 12

33. If 74% of a number is 555, then what will be 44% of that number?

(1) 750 (2) 330
(3) 290 (4) 310

34. If $\sqrt{4096} = 64$, then the value of $\sqrt{40.96} + \sqrt{0.4096} + \sqrt{0.004096} + \sqrt{0.00004096}$ will be

(1) 7.09 (2) 7.1014
(3) 7.1104 (4) 7.12

35. If $\frac{1}{a+b} = \frac{1}{a} + \frac{1}{b}$, then the value of $a^3 - b^3$ will be

(1) 0 (2) 5
(3) $\frac{3}{2}$ (4) 1

QA - 01 : Percentage - 1
Answers and Explanations

CEX-Q-0202/18

21	3	**22**	1	**23**	3	**24**	4	**25**	2	**26**	2	**27**	3	**28**	2	**29**	4	**30**	4
31	1	**32**	1	**33**	2	**34**	3	**35**	1										

1. 3363.

2. 4536.

3. 7224.

4. 8184.

5. 10528.

6. 12312.

7. 187335

8. 192832.

9. 44100.

10. 537462.

11. Here, base = 100

Therefore, $(92)^2 = 100 + 2 \times (-8) \mid (-8)^2$

= 84 | 64
= 8464.

12. Here, base = 100
Therefore, $(108)^2$ = (100 + 2 × 8) | 8^2
= 116 | 64 = 11664.

13. Here, base = 1000

Therefore, $(993)^2 = 1000 - 2 \times 7 \mid (-7)^2 = 986 \mid 049$

= 986049.

14. Here, base = 1000
Therefore,

$(1008)^2 = 1000 + 2 \times 8 \mid (8)^2 = 1016 \mid 064 = 1016064.$

15. Here, base = 1000
Therefore, $(1012)^2$ = 1000 + 2 × 12 | $(12)^2$
= 1024 | 144 = 1024144.

16. $(30+1)^3 = (30)^3 + (1)^3 + 3.30.1(30+1)$

= 27000 + 1 + 2790 = 29791.

17. Base 100. Answer is (100 – 27) | 3 × $(-9)^2$ | $(-9)^3$

= 73 | 243 | – 729
= 73 | 235 | 800 – 729 {Taking borrow 8 from the other side}
= 73 | 235 | 71 = 73 + 2(= 75) | 35 | 71 = 753571.

18. Base 100. Answer is (100 + 36) | 3 × 144 | 1728
= 1404928.

19. Base 1000. Answer is (1000 + 15) | 3 × 25 | 125
= 1015075125.

20. Base 1000. Answer is (1000 – 9) | 3 × $(-3)^2$ | $(-3)^3$

= 991 | 27 | – 27
= 991 | 026 | 1000 – 27 = 991026973.

21. 3 Since $\frac{338}{473} \approx \frac{2}{3}$

$\therefore \frac{338}{473} = \frac{338 + 27 \times \frac{2}{3}}{473 + 27} = \frac{356}{500}$ = 0.712 i.e. 71.2%.

22. 1 Since $\frac{1}{7} = 14.28\%$

$\therefore \frac{3}{7} = 14.28 \times 3 = 42.84\%$.

23. 3 Since $\frac{443}{898} \approx \frac{1}{2}$

Therefore, $\frac{443}{898} = \frac{443 + 102 \times \frac{1}{2}}{898 + 102} = \frac{494}{1000}$

$= 0.494$ i.e, 49.4%.

24. 4 Since $\frac{1}{19} \approx 5.26\%$

$\therefore \frac{8}{19} = 8 \times 5.26 = 42.08\%.$

25. 2 Since $\frac{547}{1973} \approx \frac{3}{11}$

Therefore, $\frac{547}{1973} = \frac{547 + \frac{3}{11} \times 27}{1973 + 27} = \frac{547 + 7.36}{2000}$

$= \frac{554.36}{2000} = 0.27718 \approx 27.72\%$.

26. 2 $1.6 \times 1.12 = 1.792$

$\frac{1.792}{6.63} = 25\% + \frac{0.13}{6.63} = 25\% + \frac{13}{663}, \frac{13}{663} \simeq 2\%.$

Thus, the answer = 27.02%

27. 3 Since $\frac{1}{19} = 5.26\%$

$\Rightarrow \frac{5}{19} = 5 \times 5.26 = 26.3\%.$

28. 2 (i) 20% of x = 10

$\Rightarrow \frac{20}{100} \times x = 10 \Rightarrow x = 50$.

(ii) 8% of x = 90

$\Rightarrow \frac{8}{100} \times x = 90 \Rightarrow x = 1125$

(iii) 15% of x = 15

$\Rightarrow \frac{15}{100} \times x = 15 \Rightarrow x = 100$

(iv) 17.5% of x = 35

$\Rightarrow \frac{17.5}{100} \times x = 35 \Rightarrow x = 200.$

29. 4 $\frac{30}{100} \times A + \frac{40}{100} \times B = \frac{80}{100} \times B$

$\Rightarrow$ 30A + 40B = 80B

$\Rightarrow$ 30A = 40B

Percentage of A is B $= \frac{30}{40} \times 100 = 75\%.$

30. 4 $\frac{90}{100} \times A = \frac{30}{100} \times B$

$\Rightarrow \frac{B}{A} = \frac{90}{30} = 3$

$\frac{B}{A} = \frac{2x}{100}$

$\therefore 3 = \frac{2x}{100}$

$\Rightarrow 2x = 300 \Rightarrow x = 150.$

31. 1 X = 37.5% of 20% of 48 $= \frac{3}{8} \times \frac{1}{5} \times 48 = 3.6$

Y = 14.28% of 27.27% of 77 = $\frac{1}{7} \times \frac{3}{11} \times 77 = 3$

$\therefore$ X > Y.

32. 1 Passing marks = $\frac{42}{100} \times 250 = 105$

He is failed by 105 – 95 = 10 marks.

33. 2 Let x be the number. Then,

$\frac{74}{100} \times x = 555 \Rightarrow x = 750$

$\therefore$ 44% of 750 = $\frac{44}{100} \times 750 = 330.$

34. 3 $\sqrt{40.96} + \sqrt{0.4096} + \sqrt{0.004096} + \sqrt{0.00004096}$

= 6.4 + 0.64 + 0.064 + 0.0064

= 7.1104.

35. 1 $\frac{1}{(a+b)} = \frac{a+b}{ab}$

$\Rightarrow (a+b)^2 - ab = 0$

$\Rightarrow a^2 + b^2 + ab = 0$