CA Foundation
Mathematics Test
Arithmetic & Geometric Progressions

All the questions are compulsory.
Each question carries 1 mark however, ¼ marks will be deducted for wrong answer.

1. If pth term of an AP is q and its qth term is p, then what will be the value of (p+q)th term?
   (a) 0 (b) 1
   (c) p +q –1 (d) 2 (p+q –1)

2. If Arithmetic Mean and Geometric Mean between two number are 5 and 4 respectively, then these numbers are
   (a) 2 & 3 (b) 2 & 8
   (c) 4 & 6 (d) 1 & 16

3. In a GP 5th term is 27 and 8th term is 729. Find its 11th term.
   (a) 729 (b) 6061
   (c) 2187 (d) 19683

4. If 20 AMs. are inserted between 3 and 66 then sum of these 20 A.M.s is
   (a) 690 (b) 759
   (c) 870 (d) None of these

5. The sum upto infinity of the series $S = \frac{1}{2} + \frac{1}{6} + \frac{1}{18} + \ldots$ is
   A $\frac{5}{4}$ **B** $\frac{3}{4}$
   C $\frac{7}{3}$ **D** None of these

6. Find the sum to n terms of the series: 7 + 77 + 777 + …. to n terms:
   A $\frac{7}{9}\left(10^{n+1} - 10\right) - \frac{7}{9}n$ **B** $\frac{7}{9}\left(10^{n+1} - 10\right) + \frac{7}{9}n$
   C $\frac{7}{9}\left[\frac{10\left(10^{n} - 1\right)}{9} - n\right]$ **D** $\frac{7}{81}\left(10^{n+1} - 10\right) + \frac{7}{9}n$

7. In the series 25, 5, 1, …….., 1/3125 which term is 1/3125?
   (a) 8th term (b) 9th term
   (c) 15th term (d) None of these

8. The sum of five terms of AP is 75 find the 3rd term is.
   (a) 20 (b) 30
   (c) 15 (d) None of these

9. (c+a-b)/b, (a+b-c)/c, (b+c-a)/a are in AP then a,b,c are in
   (a) AP (b) GP
   (c) HP (d) None of these

10. The sum of series 1/2+1/32+1/23+1/34.....up to infinity is
(a) 25/24 (b) 19/24
(c) 1/12 (d) None of these

11. If the p^{th} term of an A.P. is q and the q^{th} term is p, then its r^{th} term is
(a) $p + q + r$ (b) $p + q – r$
(c) $p – q – r$ (d) $p + q$

12. The 3rd term of a G.P. is $\frac{2}{3}$ and the 6th term is $\frac{2}{81}$, then the 1st term is
(a) 2 (b) 6
(c) 9 (d) 1/3

13. The sum of the series –8, –6, –4,... n terms is 52. The number of terms (n) is
A 10 **B** 11
C 12 **D** 13

14. The value of k for which the terms $7k + 3$, $4k – 5$, $2k + 10$ are in A.P.,is
(a) –13 (b) –23
(c) 13 (d) 23

15. If $y = 1 + x + x^2 + \ldots\ldots \infty$, then x =
A $\frac{y-1}{y}$ **B** $\frac{y+1}{y}$
C $\frac{y}{y+1}$ **D** $\frac{y}{y-1}$

16. If $2 + 6 + 10 + 14 + 18 + \ldots x = 882$, then the value of x is
A 72 **B** 80
C 82 **D** 86

17. In a G. P., if the fourth term is 3, then the product of first seven terms is:
A 3^5 **B** 3^6
C 3^7 **D** 3^8

18. The ratio of sum of n terms of two APs is: $(n + 1) : (n – 1)$, then the ratio of their m^{th} terms is:
A $(m + 1) : 2m$ **B** $(m + 1) : (m – 1)$
C $(2m – 1) : (m+ 1)$ **C** $m : (m – 1)$

19. If a, –3, b, 5, c are in AP, then the value of c is:
A –7 **B** 1
C 9 **D** 13

20. The sum of first 20 terms of a G.P. is 1025 times the sum of first 10 terms, then the common ratio is:
A 2 **B** $2\sqrt{2}$
C $\frac{1}{2}$ **D** $\sqrt{2}$

21. The sum of all natural numbers between 100 and 1000 which are divisible by 11 is:

A 44,550 **B** 66,770
C 55,440 **D** 77,660

22. The number of terms of the series 50 + 45 + 40 + …. needed for the sum of the series to become zero:
A 22 **B** 21
C 20 **D** None

23. In an AP, if the 3^{rd} term is 18, 7^{th} term is 30, then the sum of first 20 terms is:
A 810 **B** 520
C 180 **D** 250

24. The 5^{th} and 8^{th} terms of a GP is 27 and 729. Then the 10^{th} term is:
A 729 **B** 243
C 81863 **D** 6561

25. Four geometric means between 4 and 972 are:
A 12, 30, 100, 324 **B** 12, 24, 108, 320
C 10, 36, 108, 320 **D** 12, 36, 108, 324