Arithmetic and Geometric Progression

1. Find the first term of an AP whose 8th and 12th terms are respectively 39 and 59.
A. 5 B. 6 C. 4 D. 3

2. The sum of the first 16 terms of an AP whose first term and third term are 5 and 15 respectively is
A. 600 B. 765 C. 640 D. 680

3. How many numbers between 1 and 100 are not divisible by 2 and 3?
A. 31 B. 32 C. 33 D. 34

4. An AP first term is 2 and the sum of the first 5 terms is one fourth of the sum of the next 5 terms. Find the 20^{th} term in AP.
A. 112 B. -112 C. 114 D. -114

5. If the sum of a certain number of terms of the AP is 25, 22, 19….. is 116, find the last term.
A. 8 B. 29 C. 4 D. 27

6. What is the sum of the first 2015 terms of the series 1,2,1,2,2,1,2,2,2,1,2,2,2,2,1,..... ?
A. 3968 B. 4680 C. 2563 D. 2978

7. What is the sum of all 3 digit numbers that leave a remainder of '2' when divided by 3?
A. 164,850 B. 164,749 C. 149,700 D. 156,720

8. How many 3 digit positive integers exist that when divided by 7 leave a remainder of 5?
A. 128 B. 142 C. 141 D. 129

9. Sum of 3 numbers in AP is 21 and their product is 231. Find the numbers.

10. If 4 times the 4th term of an A.P. is equal to 9 times the 9th term of the A.P., what is 13 times the 13th term of this A.P.?
A. 7 times the 13th term B. 0
C. 13 times the 7th term D. 4 times the 4th term + 9 times the 9th term

11. The sum of 2n terms of A.P. {1, 5, 9, 13…..} is greater than sum of n terms of A.P. = {56, 58, 60…..}. What is the smallest value n can take?
A. 9 B. 10 C. 12 D. 14

12. An arithmetic progression has 3 as its first term. Also, the sum of the first 8 terms is twice the sum of the first 5 terms. Find the common difference.

A. 3/4 B. 2/3 C. 2 D. 3

13. How many terms are there in the geometric progression 2, 4, 8, . . ., 128 ?
A. 5 B. 6 C. 7 D. 8

14. How many terms are there in the GP 5, 20, 80, 320..... 20480?
A. 5 B. 6 C. 8 D. 7

15. A boy agrees to work at the rate of one rupee on the first day, two rupees on the second day, and four rupees on third day and so on. How much will the boy get if he started working on the 1st of February and finishes on the 20th of February?
A. 2^{20} B. 2^{20-1} C. 2^{19-1} D. 2^{19}

16. After striking the floor, a rubber ball rebounds to 4/5th of the height from which it has fallen. Find the total distance that it travels before coming to rest if it has been gently dropped from a height of 120 metres.
A. 540 m B. 960 m C. 1080 m D. 1020 m

17. A bacteria gives birth to two new bacteria in each second and the life span of each bacteria is 5 seconds. The process of the reproduction is continuous until the death of the bacteria. initially there is one newly born bacteria at time t = 0, the find the total number of live bacteria just after 10 seconds :
A. $3^{10}/2$ B. $3^{10} - 2^{10}$ C. $243 * (3^5 - 1)$ D. $3^{10} - 2^5$

18. A man starts repaying a loan as first installment of Rs.100. If he increase the installment by Rs.5 every month, what amount will he pay in the 30^{th} installment.
A. 200 B. 215 C. 230 D. 245

19. The 4^{th} term of a GP is square of its 2^{nd} term, and the first term is -3. Find the 7^{th} term.
A. – 243 B. – 729 C. -2187 D. None of these

20. Find the smallest number in a GP whose sum is 38 and product 1728?
A. 12 B. 20 C. 8 D. None of these