

Work Sheet- 2 for class- Nine

Chapter- Thirteen

Exercise- 13.1, Finite Series

Creative Multiplication Choice Questions

1. If the common term of a series is  $\frac{1}{3^n}$  then what is the 2<sup>nd</sup> term? [D.B.- 20]

- a)  $\frac{1}{6}$                       b)  $\frac{1}{3}$   
c)  $\frac{4}{9}$                       d)  $\frac{1}{9}$

2. What is the sum of the first n even numbers? [My.B.- 20]

- a)  $n^2$                       b)  $2n^2$   
c)  $n^2 + n$                 d)  $2n + 1$

3. In a series:  $6 + 10 + 14 + \dots$  [R.B.- 20]

- i. Common difference is 4  
ii. 20<sup>th</sup> term is 82.  
iii. Sum of 1<sup>st</sup> 10 terms is 20.

Which one of the following is correct?

- a) i and ii                      b) i and iii  
c) ii and iii                    d) i, ii and iii

4. Which one is the sum of the  $(2n + 2)$  terms of the series:  $-2 + 2 -2 + 2 -2 + \dots$ ? [Dj.B.- 20]

- a) 4                              b) 2  
c) 0                              d) -1

5. Which one is the general term of the sequence  $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \dots$ ? [C.B.- 20, 15]

- a)  $\frac{1}{n}$                               b)  $\frac{n-1}{n+1}$   
c)  $\frac{1}{2^n}$                             d)  $\frac{n}{n+1}$

6. What is the sum of 15 terms of the series:  $3 + 6 + 9 + \dots$ ? [Ctg.B.- 20]

- a) 270                          b) 315  
c) 360                          d) 405

7.  $2 + 3 + 4 + \dots + 50 =$  What? [S.B.- 20]

- a) 1274                        b) 1275  
c) 1325                        d) 2548

8. Which one is the 10<sup>th</sup> term of the series:  $3 - 3 + 3 - 3 + \dots$ ? [J.B.- 20]

- a) -30                         b) -3  
c) 3                             d) 30

9. If  $f + g + h + k + l + \dots$  is an arithmetic series then - [J.B.- 20]

- i.  $h = \frac{g+f}{2}$   
ii.  $k = \frac{h+l}{2}$

iii.  $g = \frac{f+h}{2}$

Which one of the following is correct?

- a) i and ii                      b) i and iii  
c) ii and iii                    d) i, ii and iii

10. What is the sum of first n terms of the series  $1 + 3 + 5 + 7 + \dots$ ? [D.B.- 19]

- a)  $n^2$                               b)  $\left\{\frac{n(n+1)}{2}\right\}^2$   
c)  $\frac{n(n+1)}{2}$                             d)  $\frac{n^2}{2}$

11. How many numbers of terms of the series  $1 + 3 + 5 + \dots + 101$ ?

- [C.B.- 19]  
a) 51                              b) 101  
c) 201                            d) 204

12. What is sum of first 2n terms of series:  $1 - 1 + 1 - 1 + \dots$ ? [B.B.- 19]

- a) -2                              b) -1  
c) 0                                d) 2

13. Which one of the following is 19<sup>th</sup> term of the series:  $2 - 2 + 2 - 2 + \dots$ ?

- [S.B.- 19]  
a) -2                              b) 2  
c) -38                            d) 38

14. What is the 12<sup>th</sup> term of the series:  $5 + 7 + 9 + 11 + \dots$ ? [Ctg.B.- 19]

- a) 27                              b) 29  
c) 192                            d) 194

Answer to the questions no. (15 - 16) based on:  $1 + 3 + 5 + 7 + \dots$

15. Which one is the r<sup>th</sup> term of the above series? [R.B.- 19]

- a)  $2r - 3$                         b)  $2r - 1$   
c)  $2r + 1$                         d)  $2r + 3$

16. What is the sum of 1<sup>st</sup> nine terms of the above series? [R.B.- 19]

- a) 17                              b) 81  
c) 256                            d) 511

17. What is the 9<sup>th</sup> term of the series:  $8 + 16 + 24 + \dots$ ? [All B.- 18]

- a) 72                              b) 88  
c) 360                            d) 432

18. What is the 10<sup>th</sup> term of the series:  $2 + 4 + 6 + \dots$ ? [D.B.- 17]

- a) 110                            b) 48  
c) 28                              d) 20

19. If a, b, c, d are four consecutive terms of an arithmetic series then which one is correct? [R.B.- 17]  
 a)  $b = \frac{c+d}{2}$                       b)  $a = \frac{b+c}{2}$   
 c)  $c = \frac{b+d}{2}$                       d)  $d = \frac{c+a}{2}$
20.  $\log 2 + \log 4 + \log 8 + \dots$  then which is the 8<sup>th</sup> term of the series? [R.B.- 17]  
 a)  $\log 256$                       b)  $\log 128$   
 c)  $\log 64$                       d)  $\log 32$
21. If the n<sup>th</sup> term of an arithmetic series is  $(5n + 3)$  then what is the common difference? [Dj.B.- 17]  
 a)  $-2$                       b)  $\frac{13}{8}$   
 c)  $5$                       d)  $8$
22.  $1 + 2 + 3 + 4 + \dots + 25 =$  What? [J.B.- 17]  
 a)  $35$                       b)  $150$   
 c)  $325$                       d)  $625$
23. What is the common difference of the series:  $-16 - 8 - 0 + \dots$ ? [B.B.- 17]  
 a)  $-8$                       b)  $8$   
 c)  $2$                       d)  $\frac{1}{2}$
24. What is the number of terms of the series:  $5 + 11 + 17 + \dots + 59$ ? [D.B.- 16]  
 a)  $8$                       b)  $9$   
 c)  $10$                       d)  $11$
25. What is the sum of natural numbers of first 30 numbers? [C.B.- 16]  
 a)  $405$                       b)  $435$   
 c)  $445$                       d)  $465$
26. What is the sum of first n<sup>th</sup> terms of natural numbers of the series? [n = 23] [Ctg.B.- 16]  
 a)  $138$                       b)  $184$   
 c)  $253$                       d)  $276$
27. What is common difference of the series:  $3 + 6 + 9 + 12 + \dots$ ? [S.B.- 16]  
 a)  $2$                       b)  $3$   
 c)  $4$                       d)  $6$
28.  $2 + 4 + 6 + \dots$  is a series. Find out the ratio of its common difference and n<sup>th</sup> term. [J.B.- 16]  
 a)  $2n : 2$                       b)  $2 : 2n$   
 c)  $2 : n$                       d)  $n : 1$
29. The sum of 11<sup>th</sup> terms of which series of the following is 121? [B.B.- 16]  
 a)  $1 + 2 + 3 + \dots$   
 b)  $3 + 5 + 7 + \dots$   
 c)  $1 + 4 + 9 + \dots$   
 d)  $1 + 3 + 5 + \dots$
30.  $\log 3 + \log 9 + \log 27 + \dots$  [B.B.- 16]  
 i. The next term of the series is  $\log 81$ .  
 ii. Is an arithmetic series.  
 iii. Common difference of the series is  $\log 6$ .  
 Which one of the following is correct?  
 a) i and ii                      b) i and iii  
 c) ii and iii                      d) i, ii and iii
- Read the following statement and answer the questions No. (31 – 32):  
 First term of an arithmetic series is  $-3$  and common difference is  $3$ .
31. What is its second term? [Dj.B.- 16]  
 a)  $-6$                       b)  $0$   
 c)  $3$                       d)  $6$
32. What is its n<sup>th</sup> term? [Dj.B.- 16]  
 a)  $3n$                       b)  $3n - 6$   
 c)  $3n - 3$                       d)  $n - 3$
33. Which term of the series:  $6 + 9 + 12 + \dots$  is 93? [Ctg.B.- 15]  
 a)  $30$                       b)  $29$   
 c)  $28$                       d)  $27$
34.  $1 + 2 + 3 + 4 + \dots + 100 =$  What? [S.B.- 15]  
 a)  $4750$                       b)  $4950$   
 c)  $5050$                       d)  $5150$
35. What are the n<sup>th</sup> terms of arithmetic series? [S.B.- 15]  
 a)  $ar^{n-1}$   
 b)  $a + (n - 1)d$   
 c)  $s_n = \frac{n}{2} \{2a + (n - 1)d\}$   
 d)  $s_n = \frac{a(1 - r^n)}{1 - r}$
36. What is the common difference for the series  $\log 3 + \log 9 + \log 27 + \dots$ ? [R.B.- 15]  
 a)  $2 \log 3$                       b)  $\log 6$   
 c)  $\log 3$                       d)  $\log \frac{1}{2}$