**ALVA’S PRE UNIVERSITY COLLEGE, MOODBIDRI**

**CRASH COURSE CLASSES (MATHEMATICS) 2019-20**

**M -05 BINOMIAL THEOREM AND STATISTICS**

**Solutions**

1. Ans : (d)

Required ratio 

1. Ans : (b)

Given  

1. Ans : (a)

The term from the end

term from the beginning

term the beginning 

1. Ans : (b)

If term is independent of x is then 



1. Ans : (a)

If xm is term in then 



1. Ans : (c)

The coefficients of x7 and x8 are equal.



1. Ans : (c)

By data and 

 and 

 and  

1. Ans : (c)

The number of terms in the expansion of if n is odd

1. Ans : (c)



1. Ans : (b)

If  and term in the expansion of are in AP then . Take r = 2 and solve for n.

1. Ans : (a)

Take x = 1,  ----------(1)

x = - 1 ,  -----------(2)

adding (1) and (2), we have



12.Ans : (b)



13.Ans: (c)

When each observation is multiplied by 2, then variance is also multiplied by 2.

14.Ans: (a)

If each observation is increased by a constant k, then S.D. is unchanged.

15.Ans: (a)

S.D =  =

16.Ans: (c)



17.Ans: (c)

If each observation is multiplied by a constant k, then S.D is also multiplied by k.

18.Ans: (a)



19.Ans: (d)

Variance = 

20.Ans: (c)

Median M = 50

M.D(M) = .

21.Ans: (a)

The variance of first n natural numbers =

22.Ans : (c)

We know that 



It is a polynomial of degree 7.

23.Ans : (b)

We know that 



= a real number.

24.Ans : (d)



25.Ans : (d)

Middle term = 

26.Ans : (a)

27.Ans : (c)

Coefficient of T7 = coefficient of T13



28.Ans : (d)

Take 



29.Ans : (c)

Take 



30.Ans : (a)

Take 



31.Ans : (b)

Required sum = 



32.Ans : (d)

The number of terms in the expansion  is 

33.Ans : (a)



34.Ans : (a)



By inspection method, we get n = 7

35.Ans : (a)



36.Ans : (c)

In middle term = 

In  middle term =  

37.Ans : (b)





38.Ans : (b)



39.Ans : (d)



Coefficient of x7 is = 



40.Ans : (c)





41.Ans : (c)



Required terms are 5th and 6th .

42.Ans : (d)



By inspection method 

43.Ans : (b)

Middle term 



44.Ans : (c)

If is expanded the powers of y goes on decreases.



45.Ans : (b)

If rth term contains in , then



46.Ans : (d)



47.Ans : (d)



48.Ans : (c)

Middle term = 

49..Ans : (b)

Coefficient of coefficient of 



50.Ans : (a)



By inspection method n = 4

51.Ans : (b)

6th term from the end = term from the beginning.



52.Ans : (c)

The middle term = 



53.Ans : (c)

term is independent of x.



54.Ans : (a)

Use 

Take n = 14, 



55.Ans : (b)

The number of terms in is if n is odd.

For terms.

56.Ans: (b)

Corrected . Corrected mean = 170-20+30 = 180.

Corrected variance = 

57.Ans: (b)

 and

corrected 

58.Ans: (d)

S.D =  and variance = 9

59.Ans: (a)



60.Ans: (d)

Here S.D = 4 and mean = 2 and 

Key Answers:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1)d | 2)b | 3)a | 4)b | 5)a | 6)c | 7)c | 8)c | 9)c | 10)b |
| 11)a | 12)b | 13)c | 14)a | 15)a | 16)c | 17)c | 18)a | 19)d | 20)c |
| 21)a | 22)c | 23)b | 24)d | 25)d | 26)a | 27)c | 28)d | 29)c | 30)c |
| 31)a | 32)b | 33)d | 34)a | 35)a | 36)b | 37)c | 38)b | 39)b | 40)d |
| 41)c | 42)c | 43)d | 44)b | 45)c | 46)b | 47)d | 48)d | 49)c | 50)b |
| 51)a | 52)b | 53)c | 54)c | 55)a | 56)b | 57)b | 58)d | 59)a | 60)d |