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# **KPSC Statistical Asst**

**Previous Year Paper**  
**29 Jun, 2015**



FINAL ANSWER KEY

Question Paper Code: 11/2015/OL  
Category Code: 195/2013  
Exam: Statistical Assistant gr II  
Medium of Question: English  
Date of Test 29-06-2015  
Alphacode A

Question1:-Drafting Committee chairman of Indian Constitution

- A:-Dr. Rajendra Prasad
  - B:-Dr. B R Ambedkar
  - C:-Jawaharlal Nehru
  - D:-Sardar Vallabhbhai Patel
- Correct Answer:- Option-B

Question2:-The President of India who officially issued a state of emergency in 1975

- A:-Zakir Huzain
  - B:-V.V. Giri
  - C:-Fakruddin Ali Ahmad
  - D:-Neelam Sanjeev Reddy
- Correct Answer:- Option-C

Question3:-Right to Information Law was passed on

- A:-26 January 2005
  - B:-15 June 2005
  - C:-15 August 2005
  - D:-2 October 2005
- Correct Answer:- Option-B

Question4:-The ruler who founded the first English school in Travancore

- A:-Chithira Thirunna
  - B:-Sree Moolam Thirunna
  - C:-Swathy Thirunna
  - D:-Vishakhama Thirunna
- Correct Answer:- Option-C

Question5:-First travelogue in Malayalam

- A:-London Note Book
  - B:-Varthamana Pustakam
  - C:-Vazhiyarakazhachal
  - D:-Israel Yatra
- Correct Answer:- Option-B

Question6:-Founder of Prathyaksha Raksha Sabha

- A:-Joseph Parekkattil
  - B:-Benjamin Bailee
  - C:-Charls Mart
  - D:-Poykayil Yohannan
- Correct Answer:- Option-D

Question7:-Travancore State Congress was formed in

- A:-1932
  - B:-1936
  - C:-1938
  - D:-1939
- Correct Answer:- Option-C

Question8:-The leader of Ezhava Memorial

- A:-G.P. Pillai
  - B:-Dr. Palpu
  - C:-Nataraja Guru
  - D:-Kumaran Asan
- Correct Answer:- Option-B

Question9:-Paliyam Satyagraha was in the year

- A:-1924
  - B:-1931
  - C:-1948
  - D:-1959
- Correct Answer:- Option-C

Question10:-Who started the monthly publication Gramadeepam ?

- A:-K. Kelappan
  - B:-T.N. Gangadharan
  - C:-K.M. Mathew
  - D:-K. Balakrishnan
- Correct Answer:- Option-A

Question11:-Who among the following started a branch of Brahma Samaj at Kozhikode in 1898 ?

- A:-Ayyathan Gopalan
  - B:-K. Ayyappan
  - C:-T.K. Madhavan
  - D:-P. Narayanan Nair
- Correct Answer:- Option-A

Question12:-Seethamuthal Sathyavathivare is a work of

- A:-Balamani Amma
  - B:-Lalithambika Antharjanam
  - C:-Dr. M. Leelavathy
  - D:-Kamala Surayya
- Correct Answer:- Option-B

Question13:-The Malayali who delivered his speech in Malayalam at Oxford University in 1959

- A:-V.K. Krishna Menon
  - B:-Mannathu Padmanabhan
  - C:-K.P. Kesava Menon
  - D:-Captain Lekshmi
- Correct Answer:- Option-B

Question14:-The leader of the Yachana Yatra in 1931

- A:-A.K. Gopalan
- B:-M.P. Manmathan

- C:-V.T. Bhattathiripad  
D:-Ayyankali  
Correct Answer:- Option-C
- Question15:-Who organized a Misrabhojanam in 1917 at Kozhikode  
A:-K.P. Vallon  
B:-C. Krishnan  
C:-Chovvara Parameswaran  
D:-Sahodaran Ayyappan  
Correct Answer:- Option-D
- Question16:-Who is popularly known as Kerala Vyasana ?  
A:-Vallathol Narayana Menon  
B:-A.R. Rajaraja Varma  
C:-Kodungalloor Kunjikkuttan Thampuran  
D:-Keralavarma Valiyakoyi Thampuran  
Correct Answer:- Option-C
- Question17:-The birth palace of Ulloor S. Parameswara Iyer  
A:-Kilimanoor  
B:-Pattom  
C:-Mavelikkara  
D:-Changanacherry  
Correct Answer:- Option-D
- Question18:-Temple Entry Proclamation was declared on  
A:-1 November 1935  
B:-12 November 1935  
C:-1 November 1936  
D:-12 November 1936  
Correct Answer:- Option-D
- Question19:-The Pope who canonized Mar Kurikos Elias Chavara on 23 November 2014  
A:-Pope John Paul I  
B:-Pope John Paul II  
C:-Pope Francis  
D:-Pope Benedict XVI  
Correct Answer:- Option-C
- Question20:-Founder of Bachpan Bachao Andolan  
A:-Medha Padkar  
B:-Kailash Satyarthi  
C:-Sundarlal Bahuguna  
D:-Arundhati Roy  
Correct Answer:- Option-B
- Question21:-Who among the following is the real giant in the development of the theory of Statistics?  
A:-I. Fisher  
B:-Prof. R.A. Fisher  
C:-P.C. Mahalanobis  
D:-C.R. Rao  
Correct Answer:- Option-B
- Question22:-A suitable method of collecting data in cases where the informants are literate and spread over a vast area:  
A:-Direct personal interview  
B:-Mailed questionnaire method  
C:-Sample method  
D:-Primary method  
Correct Answer:- Option-B
- Question23:-The point of intersection of ogives correspond to:  
A:-Mean  
B:-Geometric mean  
C:-Mode  
D:-Median  
Correct Answer:- Option-D
- Question24:-In a ratio graph, the vertical scale starts with:  
A:-0  
B:-1  
C:-1  
D:-Any positive number  
Correct Answer:- Option-D
- Question25:-Out of 19 students appeared for a test only 10 students are qualified and their scores are respectively 36, 45, 58, 63, 39, 43, 47, 34, 41 and 50. The median mark of all students is :  
A:-45  
B:-39  
C:-34  
D:-41  
Correct Answer:- Option-C
- Question26:-The arithmetic mean and harmonic mean of certain data set are respectively 90 and 40. Then the geometric mean is :  
A:-50  
B:-60  
C:-80  
D:-Data is not sufficient  
Correct Answer:- Option-B
- Question27:-The arithmetic mean of two sample observations is greater than the smallest by their :  
A:-Standard error  
B:-Variance  
C:-Range  
D:-None of these  
Correct Answer:- Option-A
- Question28:-The harmonic mean of certain data set is 25 and if each observation is multiplied by 2. Then the harmonic mean of new data set is :  
A:-25/2  
B:-25  
C:-100  
D:-50  
Correct Answer:- Option-D
- Question29:-In Lorenz curve, the diagonal line  $y=x$  is known as:  
A:-Coefficient of determination

- B:-Line of unequal distribution
- C:-Line of equal distribution
- D:-Line of poverty

Correct Answer:- Option-C

Question30:-If 25% of the items in a distribution are less than 10 and 25% are more than 40, the quartile deviation is :

- A:-25
- B:-20
- C:-15
- D:-5

Correct Answer:- Option-C

Question31:-The standard deviation of the observations x and y is :

- A:-Absolute value of (x-y)/2
- B:-Absolute value of (x-y)
- C:-|x-y|
- D:-None of these

Correct Answer:- Option-A

Question32:-The coefficient of variation of first four natural numbers is :

- A:- $\frac{1}{5}$
- B:- $\sqrt{0.4}$
- C:- $\sqrt{0.2}$
- D:- $\sqrt{2.5}$

Correct Answer:- Option-C

Question33:-The distribution of mortality rates with respect to the age after ignoring the accidental deaths will give:

- A:-Positively skewed distribution
- B:-Negatively skewed distribution
- C:-Symmetric distribution
- D:-None of these

Correct Answer:- Option-A

Question34:-Which one of the following is true for a discrete distribution?

- A:- $\beta_2 > 1$
- B:- $\beta_2 > 3$
- C:- $\beta_2 < 3$
- D:- $\beta_2 > 2$

Correct Answer:- Option-A

Question35:-The sum of squares of deviations is least when measured from :

- A:-Median
- B:-Mean
- C:-Mode
- D:-None of these

Correct Answer:- Option-B

Question36:-The axiomatic approach to probability was proposed by:

- A:-Karl Pearson
- B:-Laplace
- C:-A. Kolmogorov
- D:-A.N. Kolmogorov

Correct Answer:- Option-D

Question37:-10 persons are seated on 10 chairs at a round table. The probability that two specified persons are sitting next to each other is:

- A:- $\frac{2}{10}$
- B:- $\frac{1}{10}$
- C:- $\frac{2}{9}$
- D:- $\frac{1}{9}$

Correct Answer:- Option-C

Question38:-Which of the following statement is most correct:

- A:- $P(AB) \leq P(A)$
- B:- $P(AB) \leq P(B)$
- C:- $P(AB) \leq \min(P(A), P(B))$
- D:- $P(AB) \leq \max(P(A), P(B))$

Correct Answer:- Option-C

Question39:-A random sample of 10 different observations is given. How many samples of  $\{(x, y): x < y\}$  can be formed is:

- A:-45
- B:-90
- C:-60
- D:-30

Correct Answer:- Option-A

Question40:-If  $P(A)=P(B)=P(C)=0.5$ ,  $P(AB)=P(AC)=P(BC)=0.2$  and  $P(ABC)=0.1$ , then  $P(A-B-C)$  is :

- A:-0.15
- B:-0.20
- C:-0.10
- D:-0

Correct Answer:- Option-B

Question41:-The probability of choosing a square of dimension 2 from a chess board of dimension 8 is:

- A:- $\frac{1}{64}$
- B:- $\frac{2}{64}$
- C:- $\frac{4}{64}$
- D:-None of these

Correct Answer:- Option-D

Question42:-If A and B are exhaustive and equally likely events with  $P(AB)=0.2$ , then  $P(A)$  is:

- A:-0.6
- B:-0.4
- C:-0.8

- D:-None of these  
Correct Answer:- Option-B
- Question43:-A problem in statistics is given to 3 students A, B and C whose chances of solving it are  $\frac{1}{2}$ ,  $\frac{3}{4}$  and  $\frac{1}{4}$  respectively. The probability that exactly one solves the problem is:  
A:- $\frac{19}{32}$   
B:- $\frac{29}{32}$   
C:- $\frac{3}{32}$   
D:- $\frac{13}{32}$   
Correct Answer:- Option-D
- Question44:-Which of the following statement is true ?  
A:-Disjoint events are independent  
B:-Independent events may be disjoint  
C:-Both options 1 and 2  
D:-None of these  
Correct Answer:- Option-B
- Question45:-Five events are said to be mutually independent if they have to satisfy ..... conditions:  
A:-26  
B:-30  
C:-28  
D:-32  
Correct Answer:- Option-A
- Question46:-Two friends decided to meet between 2pm and 3pm with the proviso that one waits the other for at most 20 minutes. The chance of their meeting is:  
A:- $\frac{1}{9}$   
B:- $\frac{2}{9}$   
C:- $\frac{4}{9}$   
D:- $\frac{5}{9}$   
Correct Answer:- Option-D
- Question47:-Bayes' formula is used to obtain the probabilities of:  
A:-Posterior events  
B:-Likelihood events  
C:-Prior events  
D:-None of these  
Correct Answer:- Option-A
- Question48:-The distribution which holds the property non correlation of random variables implies independence is:  
A:-Bivariate normal  
B:-Bivariate exponential  
C:-Bivariate Cauchy  
D:-None of these  
Correct Answer:- Option-A
- Question49:-The Union Minister of Statistics and Program Implementation is:  
A:-Dr. V. K. Singh  
B:-Rajnath Singh  
C:-Smriti Irani  
D:-Venkia Naidu  
Correct Answer:- Option-A
- Question50:-The mean sum of squares is obtained by dividing the sum of squares by:  
A:-Size of the sample  
B:-Degrees of freedom  
C:-Squared degrees of freedom  
D:-Squared sample size  
Correct Answer:- Option-B
- Question51:-The method of moment estimator for  $\Theta$  in a uniform distribution over  $[-\Theta, \Theta]$  with sample mean 10 and sample variance 4 is:  
A:- $2\sqrt{3}$   
B:-24  
C:-10  
D:-0  
Correct Answer:- Option-A
- Question52:-A consistent estimator of  $\Theta^2$  in a Poisson distribution with parameter  $\theta$  is:  
A:-Square of sample mean  
B:-Sample mean  
C:-Sample variance  
D:-Sample mean- sample variance  
Correct Answer:- Option-A
- Question53:-The degrees of freedom associated to error sum of squares in one-way ANOVA having n observations and k treatments is:  
A:-n-1  
B:-k-1  
C:-n-k  
D:-k+1  
Correct Answer:- Option-C
- Question54:-The sum of all two digit numbers formed using the digits 1, 2, 3 and 4 if each digit is used exactly once is:  
A:-110  
B:-284  
C:-330  
D:-None of these  
Correct Answer:- Option-C
- Question55:-The moment generating function M(t) of a random variable X exists at:  
A:-Any real value of t  
B:-t=0  
C:-Neighborhood of zero  
D:-Deleted neighborhood of zero  
Correct Answer:- Option-C

Question56:-If  $x=r\cos\theta$  and  $y=r\sin\theta$  with  $r>0$ ,  $0<\theta<\frac{\pi}{2}$ , then  $dx dy$  is:

- A:- $r^2 dr d\theta$
- B:- $\theta dr d\theta$
- C:- $dr d\theta$
- D:- $r dr d\theta$

Correct Answer:- Option-D

Question57:-The characteristic function of a standard normal variate is:

- A:- $e^{-\frac{t^2}{2}}$
- B:- $e^{\frac{t^2}{2}}$
- C:- $e^{-\frac{|t|}{2}}$
- D:-1

Correct Answer:- Option-A

Question58:-Francis Galton is pioneered in the study of:

- A:-Biometry
- B:-Genetics
- C:-Regression
- D:-Correlation

Correct Answer:- Option-C

Question59:-The correlation coefficient of the bi variate data: (1,10), (2,9), (3,8) and (4,7) is

- A:-1
- B:-1
- C:-0.6
- D:-None of these

Correct Answer:- Option-B

Question60:-Let  $r(x,y)=0.8$ . Then the explained variation in  $y$  due to  $x$  is:

- A:-80%
- B:-64%
- C:-81%
- D:-70%

Correct Answer:- Option-B

Question61:-If both regression coefficients are positive, then their sum is always:

- A:- $\geq 1$
- B:-Lies between 1 and 2
- C:- $\geq 2$
- D:-None of these

Correct Answer:- Option-D

Question62:-The line of best fit can be obtained by the principle of:

- A:-Least squares
- B:-Moments
- C:-Mixed moments
- D:-Minimum chi-square

Correct Answer:- Option-A

Question63:-The coefficients of determination is the square of:

- A:- $r$
- B:- $1-r$
- C:- $1+r$
- D:- $\frac{1-r}{1+r}$

Correct Answer:- Option-A

Question64:-If  $r(x,y)=0.6$ , then  $r(\frac{-x+3}{2}, \frac{y-5}{8})$  is:

- A:-1
- B:-0.6
- C:-+0.6
- D:-0.36

Correct Answer:- Option-B

Question65:-Probable error is used to test:

- A:-Observed correlation coefficient
- B:-Regression coefficients
- C:-Rank correlation
- D:-Consistency

Correct Answer:- Option-A

Question66:-Let  $X$  be the number of successes follow  $B(n,p)$ , then the distribution of failures follow:

- A:- $B(n,p)$
- B:- $B(n, 1-p)$
- C:- $B(2n, 1-p)$
- D:-None of these

Correct Answer:- Option-B

Question67:-Let  $X$  follows  $B(n,p)$  is positively skewed if :

- A:- $p < \frac{1}{2}$
- B:- $p > \frac{1}{2}$
- C:- $p = \frac{1}{2}$
- D:- $0 < p < 1$

Correct Answer:- Option-A

Question68:-Correlation coefficient between the number of successes and failures in  $B(n,p)$  is:

- A:-1
- B:-1
- C:-0
- D:-None of these

Correct Answer:- Option-B

Question69:-Let  $X$  follows  $B(n,p)$  and define  $Y = \frac{X - np}{\sqrt{npq}}$ . Then  $\text{Var}(Y)$  is:

- A:- $npq$

B:- $\frac{q}{p^2}$

C:-1

D:- $\frac{p^2}{q}$

Correct Answer:- Option-C

Question70:-If X and Y are two independent Poisson variates with parameters 2 and 3 respectively and let  $U=X+Y$ . Then  $P(U=0)$  is:

A:- $e^{-5}$

B:- $e^{-3}$

C:- $e^{-2}$

D:- $e^{-2} + e^{-3}$

Correct Answer:- Option-A

Question71:-Referring to Question 50,  $E(X/U=3)$  is:

A:-1

B:- $\frac{2}{3}$

C:- $\frac{5}{3}$

D:- $\frac{6}{5}$

Correct Answer:- Option-D

Question72:- $\lim_{n \rightarrow \infty} \left(1 - \frac{x^2}{n^2}\right)^n$  is:

A:- $e^{-x}$

B:- $e^x$

C:-1

D:-None of these

Correct Answer:- Option-D

Question73:-Which of the following statement about  $B(n,p)$  is always true?

A:-It is under dispersed

B:-It is over dispersed

C:-Neither option1 nor option 2

D:-Both options 1 and 2 depend on values of p

Correct Answer:- Option-A

Question74:-If X follows  $N(10, \sigma^2 = 4)$ , then the standard deviation of aX is:

A:-2a

B:-4a

C:- $2a^2$

D:-None of these

Correct Answer:- Option-D

Question75:-If X follows  $U(0,1)$ , then  $\text{Var}(1-X)$  is:

A:- $\frac{1}{12}$

B:- $\frac{1}{6}$

C:- $\frac{1}{2}$

D:- $\frac{1}{4}$

Correct Answer:- Option-A

Question76:-The maximum height of  $N(0,1)$  curve is :

A:-e

B:- $\sqrt{e}$

C:- $\frac{1}{\sqrt{\pi}}$

D:- $\frac{1}{\sqrt{2\pi}}$

Correct Answer:- Option-D

Question77:-As the scale parameter of normal curve increases, the distribution retains symmetry and becomes:

A:-Flatter

B:-Peaked

C:-Neither 1 nor 2

D:-None of these

Correct Answer:- Option-A

Question78:-If X and Y are independent  $N(0,1)$  random variates, then  $P(X<Y)$  is :

A:- $\frac{1}{2}$

B:-0

C:-1.96

D:-1.65

Correct Answer:- Option-A

Question79:-The Normal curve has an area about .....within one unit of SD from mean:

A:-65%

B:-68%

C:-33%

D:-67%

Correct Answer:- Option-B

Question80:-The mgf of a random variable X is  $M(t) = \frac{1}{1-2t}$ ,  $|t| < \frac{1}{2}$ . Then  $E(X)$  is :

A:-2

B:-6

C:-8

D:-4

Correct Answer:- Option-A

Question81:-The square of t distribution is an F distribution for:

A:-2 df

B:-1 df



C:-n df

D:-None of these

Correct Answer:- Option-B

Question82:-The ratio of two independent  $N(0,1)$  variates is a:

A:- $t_1$

B:- $t_2$

C:- $t_n$

D:- $\chi^2$

Correct Answer:- Option-A

Question83:-If  $T_1$  and  $T_2$  are two unbiased estimates of parameter  $\theta$ , then  $(2T_1 + 5T_2)/7$  is :

A:-Unbiased for  $\theta$

B:-Biased for  $\theta$

C:-Consistent for  $\theta$

D:-None of these

Correct Answer:- Option-A

Question84:-The random variable X has mean 5 and variance 9. Then  $P[|X-5| > 4]$  is:

A:- $> \frac{9}{16}$

B:- $> \frac{4}{9}$

C:- $< \frac{9}{16}$

D:- $< \frac{4}{9}$

Correct Answer:- Option-C

Question85:-The statistical error associated to the statement "An innocent person is proved as guilty" is :

A:-Type 1 error

B:-Type 2 error

C:-Power

D:-Critical region

Correct Answer:- Option-A

Question86:-To test  $H_0: \mu = 1$  against  $H_0: \mu \neq 1$  based on large sample, the test statistic Z has a value 2. Then p-value associated to the test is:

A:- $P[|Z| < 2]$

B:- $P[|Z| > 2]$

C:- $P[Z < 2]$

D:- $P[Z > 2]$

Correct Answer:- Option-B

Question87:-Let X and Y be random variables with  $\text{Cov}(X,Y) = -0.25$ , then which of the following is true:

A:- $\text{Var}(X+Y) > \text{Var}(X-Y)$

B:- $\text{Var}(X+Y) < \text{Var}(X-Y)$

C:- $\text{Var}(X+Y) = \text{Var}(X-Y)$

D:-None of these

Correct Answer:- Option-B

Question88:-The degrees of freedom associated to t-test for the difference of the means of two samples having sizes m, n based on large sample is:

A:- $m+n-1$

B:- $m+n-mn$

C:- $m+n$

D:- $m+n-2$

Correct Answer:- Option-D

Question89:-If F follows  $F(7,8)$ , then  $1/F$  follows:

A:- $F(7,8)$

B:- $F(1,8)$

C:- $F(7,1)$

D:- $F(8,7)$

Correct Answer:- Option-D

Question90:-The distribution function  $F(x)$  of a random variable X lies between:

A:-0 and 1

B:-1 and 1

C:-0 and  $\infty$

D:-None of these

Correct Answer:- Option-A

Question91:-The probability mass function of a discrete random variable X is  $f(x) = \frac{x}{10}$  for  $x=1,2,3,4$  and 0 for other values of X. Let  $F(x)$  denote the distribution function of X. Then  $F(4)-F(3)$  is:

A:- $\frac{4}{10}$

B:- $\frac{2}{10}$

C:- $\frac{3}{10}$

D:- $\frac{1}{10}$

Correct Answer:- Option-A

Question92:-let X be a random variable with distribution function  $F(x)$ . The distribution function of  $2X+3$  is:

A:- $F(x)$

B:- $F(\frac{x+3}{2})$

C:- $F(2x+3)$

D:- $F(\frac{x-3}{2})$

Correct Answer:- Option-D

Question93:-A continuous random variable X is symmetric about a real number a ( $a \in \mathbb{R}$ ) if the distribution function  $X-a$  is same as the distribution function of:

A:-a-X

B:-X+a

C:-X-a

D:-X+a

Correct Answer:- Option-A

Question94:-Let X be a random variable with pdf  $f(x) = \frac{e^{-|x|}}{2}$ ,  $-\infty < x < \infty$ . The median of the distribution is at:

A:-X=1

- B:-X=10
  - C:-X=0
  - D:-Any number greater than zero
- Correct Answer:- Option-C

Question95:-Let X be a random variable for which E(X) exists and A is any real number. Then E|X-A| is minimum if:

- A:-A=E(X)
  - B:-A=Med(X)
  - C:-A=Mod(X)
  - D:-None of these
- Correct Answer:- Option-B

Question96:-The joint distribution function of (X,Y) is given by  $F(x,y)=(1-e^{-x})(1-e^{-y})$ ,  $x>0,y>0$ . The marginal distribution function of Y is:

- A:-Exp(1)
  - B:-Exp(2)
  - C:-Gamma(2)
  - D:-None of these
- Correct Answer:- Option-A

Question97:-The function  $f(x)=x^2$ ,  $x \in R$  is:

- A:-Increasing
  - B:-Decreasing
  - C:-Neither increasing nor decreasing
  - D:-Constant
- Correct Answer:- Option-C

Question98:- $\lim_{n \rightarrow \infty} \sum_{k=0}^n \frac{n^k e^{-n}}{k!}$  is:

- A:- $\frac{1}{3}$
  - B:- $\frac{1}{5}$
  - C:- $\frac{1}{4}$
  - D:- $\frac{1}{2}$
- Correct Answer:- Option-D

Question99:-Let  $x_1, x_2, \dots, x_n$  be n discrete values with corresponding frequencies  $f_1, f_2, \dots, f_n$ . Also let  $F_1, F_2, \dots, F_n$  be the corresponding greater than cumulative frequencies. Then  $\frac{\sum_{j=1}^n F_j}{N}$  gives:

- A:-3<sup>rd</sup> quartile
  - B:-Median
  - C:-Mode
  - D:-Mean
- Correct Answer:- Option-D

Question100:-According to Prof. Sturge's rule, the relation between the number of classes (k) and total number of observations in the data (N) is:

- A:- $k=1+3.322\log_{10} N$
  - B:- $k=1+2.333\log_{10} N$
  - C:- $k=1+2.333\log_e N$
  - D:- $k=1+3.223\log_e N$
- Correct Answer:- Option-A