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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:-Vishakham Thirunna

Correct Answer:- Option-C

Question5:-First travelogue in Malayalam

- A:-London Note Book
- B:-Varthamana Pustakam
- C:-Vazhiyarakazchakal
- 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 Suraya

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 Vyasan ?

A:-Vallathol Narayana Menon

B:-A.R. Rajaraja Varma

C:-Kodungalloor Kunjikkuttan Thampuran

D:-Keralavarma Valiyakoyi Thampuran

Correct Answer:- Option-C

Question17:-The birth place 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 Patkar

B:-Kailash Satyarthi

C:-Sundarlal Bahuguna

D:-Arundhathi 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: $5\frac{1}{2}$
- 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 Θ 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 Θ^2 in a Poisson distribution with parameter θ 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:- ≥ 1
- B:-Lies between 1 and 2
- C:- ≥ 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 $Var(1-X)$ 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 aboutwithin 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:- χ^2

Correct Answer:- Option-A

Question83:-If T_1 and T_2 are two unbiased estimates of parameter θ , then $(2T_1+5T_2)/(7)$ is :A:-Unbiased for θ B:-Biased for θ C:-Consistent for θ

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 $H_1:\mu\neq 1$ 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 ∞

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:- $F\left(\frac{x+3}{2}\right)$ C:- $F(2x+3)$ D:- $F\left(\frac{x-3}{2}\right)$

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 $\frac{\sum_{i=1}^n F_i}{N}$ gives:

A:-3rd 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

