

PROVISIONAL ANSWER KEY

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Question1:-Drafting Committee chairman of Indian Constitution

- A:-Dr. Rajendra Prasad
- B:-Dr. B R Ambedkar
- C:-Jawaharlal Nehru
- D:-Sardar Vallabhai 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 Thirunnaal
- B:-Sree Moolam Thirunnaal
- C:-Swathy Thirunnaal
- D:-Vishakham Thirunnaal

Correct Answer:- Option-C

Question5:-First travelogue in Malayalam

- A:-London Note Book
- B:-Varthamana Pustakam
- C:-Vazhiyarakazhakkal
- 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 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 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:- $5\frac{1}{2}$

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 $r\left(\frac{-x+3}{2}, \frac{y-5}{8}\right)$ 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 option 1 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: $\frac{1}{\sqrt{e}}$

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 $H_0: \mu \neq 1$ 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 ∞

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