PROVISIONAL ANSWER KEY

Question Paper Code:	16/2017/OL
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Question1:-Quorum of Rajyasabha
A:-25
B:-50
C:-100
D:-250
Correct Answer:- Option-A
Question2:-State which offers highest wages for unskilled workers under MGNREG Scheme
A:-Kerala
B:-Karnataka
C:-West Bengal
D:-Haryana
Correct Answer:- Option-D
Question3:-National Bank for Agriculture and Rural Development was founded in
A:-1935
B:-1950
C:-1982
D:-1991
Correct Answer:- Option-C
Question4:-Spiritual leader who inspired the Channar Rebellion
A:-Sri Narayana Guru
B:-Chattambi Swami
C:-Vaikunda Swami
D:-Ayyavu Swami
Correct Answer:- Option-C
Question5:-Social reformer who founded Kerala Kaumudi
A:-Sahodaran Ayyappan
B:-Dr. Palpu
C:-Kumaran Asan
D:-C.V. Kunhiraman
Correct Answer:- Option-D
Question6:-Vayalar Garjjikkunnu is a poem by
A:-Vayalar Ramavarma
B:-P. Bhaskaran
C:-T.S. Thirumunpu
D:-O.N.V. Kurup
Correct Answer:- Option-B
Question7:-District Collector of Malabar who was murdered in connection with Mappila Rebellion
A:-William Logan
B:-H.V. Conolly
C:-William Mclyod
D:-Thomas Warden
Correct Answer:- Option-B
Question8:-Akkamma Cheriyan was hailed ''Jhansi Rani of Travancore'' by
A:-Mahatma Gandhi
B:-Jawaharlal Nehru
C:-G.P. Pillai
D:-Pattam Thanu Pillai
Correct Answer:- Option-A
Question9:-Mukul Mudgal Committee looked into
A:-IPL Spot Fixing

B:-2G Scam
C:-Coal Scam
D:-Common Wealth Games Scam
Correct Answer:- Option-A

Question10:-Pradhan Mantri Jan Dhan Yojana was launched in
A:-January 2014
B:-April 2014
C:-August 2014
D:-January 2015
Correct Answer:- Option-C

Question11:-The best method of teaching is
A:-Lecturing
B:-Demonstrating
C:-Discussing
D:-All of the above
Correct Answer:- Option-D

Question12:-Classroom learning becomes lively when the teacher
A:-Allows a short break
B:-Entertains students
C:-Allows discussion
D:-None of the above
Correct Answer:- Option-C

Question13:-A teacher should be
A:-Friendly
B:-Humorous
C:-Approachable
D:-All of the above
Correct Answer:- Option-D

Question14:-Students with problems should be
A:-Ignored
B:-Guided
C:-Exposed
D:-Avoided
Correct Answer:- Option-B

Question15:-Most educational research is
A:-Fundamental Research
B:-Applied Research
C:-Action Research
D:-None of the above
Correct Answer:- Option-B

Question16:-In Experimental research, variables are controlled or manipulated so as to
A:-ensure validity of results
B:-arrive at sound conclusions
C:-enable predictions
D:-all of the above
Correct Answer:- Option-D

Question17:-Qualitative Research describes
A:-'what was'
B:-'what is'
C:-'what could be'
D:-'what will be'
Correct Answer:- Option-B

Question18:-Which is a criterion of a good Case Study?
A:-Validity of data
B:-Reliability of data
C:-Objectivity of data
D:-None of the above
Correct Answer:- Option-A

Question19:-When the investigator takes effort to preserve the dignity of the subjects during research, it implies that the researcher has

A:-Credibility

B:-Integrity

C:-Ethics

D:-All of the above

Correct Answer:- Option-C

Question20:-A publication manual that is generally adhered to in the preparation of a research report in Education is

A:-Indian Research Publication Manual

B:-British Publication Manual

C:-American Psychological Association Manual

D:-Research Publication Manual

Correct Answer:- Option-C

Question21:-The word 'Secularism' is added to the preamble of the constitution by the _____ amendment.

A:-42`"^{nd}"`

B:-`24"^{th}"`

C:-`44"^{th}"`

D:-`46"^{th}"`

Correct Answer:- Option-A

Question22:-The freedom to form association does not include

A:-Right to form trade union

B:-Right to form partnership

C:-Right to form political party

D:-Right to strike

Correct Answer:- Option-D

Question23:-Article 43 requires the state to secure by suitable legislation, _____ to all workers.

A:-Minimum wages

B:-Statutory minimum wages

C:-Fair wages

D:-Living wages

Correct Answer:- Option-D

Question24:-Which Article of the Constitution envisages a common civil code for the citizens throughout the territory of India?

A:-Art 42

B:-Art 43

C:-Art 44

D:-Art 48

Correct Answer:- Option-C

Question25:-Indian Constitution was amended for the first time in the year

A:-1953

B:-1950

C:-1951

D:-1952

Correct Answer:- Option-C

Question26:-Which one among the following is the first of the major Environmental Protection Act promulgated in India?

A:-Water Act

B:-Air Act

C:-Forest Conservation Act

D:-Noise Pollution Rule

Correct Answer:- Option-A

Question27:-In order to be eligible for gratuity under the Payment of Gratuity Act, 1972, an employee should have a minimum continuous service of

A:-10 years

B:-5 years

C:-7 years

D:-3 years

Correct Answer:- Option-B

Question28:-Under the provisions of prevention of sexual harassment (at work place) Act, the term aggrieved woman means

A:-a woman employee belong to govt. sector

B:-a woman employee belong to private sector

C:-a domestic worker

D:-all of the above

Correct Answer:- Option-D

Question29:-According to Right to Information Act, within what time should the information be provided to an applicant in normal cases

A:-45 days

B:-90 days

C:-60 days

D:-30 days

Correct Answer:- Option-D

Question30:-Who is an adolescent as per Factories Act 1948?

A:-who has completed 17 years of age

B:-who is less than 18 years

C:-who has completed 15 years but less than 18 years

D:-none of the above

Correct Answer:- Option-C

Question31:-If `A_n={(A if n "is odd"),(B if n "is even"):}`

then lim inf `A_n=`` `

A:-`AuuB`

B:-`quadAnnB`

C:-`quadA` Δ`quadB`

D:-`phi`

Correct Answer:- Option-B

Question32:-Which of the following statement(s) is/are wrong?

I : A monotone field in not a sigma field

II : A sigma field is a monotone field

A:-I alone

B:-II alone

C:-Neither I nor II

D:-Both I and II

Correct Answer:- Option-A

Question33:-If `quadmu_1` is a measure defined on a sigma field `quadfrA_1` and `quadmu_2` is a measure defined on a sigma field `quadfrA_2` , then `quadmu_1+mu_2` is a measure only when

A:-`quadfrA_1subfrA_2`

B:-`quadfrA_1supfrA_2`

C:- `quadfrA_1=frA_2`

D:-`quadfrA_1!=frA_2`

Correct Answer:- Option-C

Question34:-Which of the following statement(s) is/are true?

A : Every subsets of $\mathfrak{R}$ are Borel sets

B : Every Borel set in measurable

A:-A alone

B:-B alone

C:-Neither A nor B

D:-Both A and B

Correct Answer:- Option-B

Question35:-Let `quadI = (0, 1)` , $\mathcal{B}$ be the Borel field of subsets of `quadI` and `mu` is the Lebesgue measure on $\mathcal{B}$. For `quadn = 1, 2,....,` if `quadA_n=(0,1/n), mu(lim "sup" A_n)=`

A:-0

B:-0.5

C:-1

D:-`1/n`

Correct Answer:- Option-A

Question36:-Let `quadW` be the subspace of $\mathfrak{R}^4$ generated by the vectors (1, -2, 5, -3), (2, 3, 1, -4) and (3, 8, -3, -5). Then the dimension of `quadW` is

A:-4

B:-3

C:-2

D:-1

Correct Answer:- Option-C

Question37:-For any arbitrary matrices `quadA` and `quadB` , the sum of ranks of `quadA` and `quadB` is always

A:-less than rank `quad(A+B)`

B:-less than or equal to rank`quad(A+B)`

C:-greater than rank`quad(A+B)`

D:-greater than or equal to rank`quad(A+B)`

Correct Answer:- Option-D

Question38:-Let `quadA` and `quadB` are `quadnxxn` square matrices. Then the eigen values of `quadAB` are same as the eigen values of

A:-`quadA+B`

B:-`quadA-B`

C:-`quadB-A`

D:-`quadBA`

Correct Answer:- Option-D

Question39:-The quadratic polynomial corresponds to the matrix `quadA=((1,0,1/2),(0,0,-1),(1/2,-1,0))` ` ` is

A:-`quadx^2+1/2xz-xy`

B:-`quadx^2-2yz+xz`

C:-`quadx^2+1/2yz-xy`

D:-`quadx^2+yz-2xz`

Correct Answer:- Option-B

Question40:-Let `quadP` be an `quadmxxm` orthogonal matrix, `quadQ` be an `quadnxxn` orthogonal matrix and `quadA` any `quadmxxn` matrix. If `quadA^T` denote the transpose of `quadA` and `quadA^-` denote the generalized inverse of `A` , then the generalized inverse of `quadPAQ` is

A:-`quadP^TA^{-}Q^T`

B:-`quadQ^TA^{-}P^T`

C:-`quadPA^{-}Q`

D:-`quadQA^{-}P`

Correct Answer:- Option-B

Question41:-If `quad{A_n}` is a sequence of events on a probability space (Ω,`quadA,P)` such that `quadA_n->A` as `quadn->oo` , then what is the value of lim`quadP(A_n)` ?

A:-zero

B:-one

C:-`quadP(A)`

D:-need not exist

Correct Answer:- Option-C

Question42:-If `quadA` and `quadB` are mutually exclusive events, each with positive probabilities, then they are

A:-independent events

B:-dependent events

C:-equally likely events

D:-exhaustive events

Correct Answer:- Option-B

Question43:-If `quad{A_n}` is a sequence of events such that `quadsum_(k=1)^ooP(A_k)=oo` , then `quadP(lim"sup"A_n)=1` provided events are

A:-equally likely

B:-Mutually exclusive

C:-independent

D:-pair-wise mutually exclusive

Correct Answer:- Option-C

Question44:-Let `quad{A_n}` be a sequence of events such that `quadB_1=A_1` and `quadB_k=A^c_1 A^c_2...` `A_{k-1}^c A_k` for `quadk>=2` , in which `quadA^c` is the complement of `quadA` . Then the sequence of events `quad{B_n}` are

A:-Pair-wise independent

B:-Mutually independent

C:-Mutually dependent

D:-Pair-wise mutually exclusive

Correct Answer:- Option-D

Question45:-If `quadX` is a random variable with finite expectation, then the value of `quadxP(X<-x)` as `quadx->oo` is

A:-infinity

B:-unity

C:-zero

D:-indeterminate

Correct Answer:- Option-C

Question46:-If `quadX` is a symmetric random variable with distribution function `quadF` and real valued characteristic

function Φ, then for any `quadx` in $\mathfrak{R}$,`quadF(x)=`

A:-`quadF(-x)`

B:-`quadF(-x-0)`

C:-`quadF(-x-0)-1`

D:-`quad1-F(-x-0)`

Correct Answer:- Option-D

Question47:-If the characteristic function Φ of distribution function `quadF` is absolutely integrable on $\mathfrak{R}$, then for

any`quadx` in $\mathfrak{R}$, `quad f'={dF(x)}/dx` is

A:-bounded

B:-uniformly continuous

C:-both (1) and (2)

D:-Neither (1) nor (2)

Correct Answer:- Option-C

Question48:-Let `quadX` and `quadX_n` be independent standard normal variables on a probability space (Ω,`quadfrA,P)` ` `, for `quadn>=1` . Then which of the following is not true?

A:-`X_nstackrel(P)(->)X`

B:-`X_nstackrel(d)(->)X`

C:-`quadE(X_n-X)=0`

D:-`quadVar(X_n-X)=2`

Correct Answer:- Option-A

Question49:-The sequence `quad{X_n}` of independent random variables, each with finite second moment, obeys SLLN if

A:-`quadsum_(k=1)^ooVar(X_k)<oo`

B:-`quadsum_(k=1)^oo{Var(X_k)}/k<oo`

C:-`quadsum_(k=1)^oo{Var(X_k)}/sqrt(k)<oo`

D:-`quadsum_(k=1)^oo{Var(X_k)}/k^2<oo`

Correct Answer:- Option-D

Question50:-Let `quad{X_n}` sequence of independent random variables with
`quadP(X_k=+-k)=1/2k^-Lambda` and `quadP(X_k=0)=1-k^-Lambda` , for `quadk>=1`
Then the sequence does not obey CLT if

A:-`quadLambda=0`

B:-`quadLambda=1`

C:-`quadLambdain(0,1/2)`

D:-`quadLambdain(1/2,1)`

Correct Answer:- Option-B

Question51:-Let `quadX` be a random variable with probability mass function

`quad p(x) = {((6)/(pi^2 x^2) for x=1 ; -2 ; 3 ; -4 ...),(0 elsewhere):}`

Then

A:-`quadE(X)=oo`

B:-`quadE(X)` exists

C:-`quadE(X)<oo` and `quadE(X)` exists

D:-`quadE(X)<oo` , but `quadE(X)` does not exist

Correct Answer:- Option-D

Question52:-Let `quad(X,Y)` has joint density
`quadf(x,y)={(1/8(6-x-y) 0<=x<2; 2<=y<4),(0 "elsewhere"):}`
Then `quadP(X+Y<3)=`

A:-`5/24`
B:-`5/8`
C:-`3/8`
D:-None of these
Correct Answer:- Option-A

Question53:-If `quadX` and `quadY` are two random variables having finite expectations, then the value of `quadE["min"{X,Y}+"max"{X,Y}]` is
A:-less than `quadE(XY)`
B:-less than `quadE(X+Y)`
C:-equal to `quadE(XY)`
D:-equal to`quadE(X+Y)`
Correct Answer:- Option-D

Question54:-The Poisson distribution `quadP(Lambda)` is unimodal when
A:-`quadlambda` is not an integer
B:-`quadlambda` is an integer
C:-Both (1) and (2)
D:-Neither (1) nor (2)
Correct Answer:- Option-A

Question55:-Which of the following distribution is not a member of power series family of distributions?
A:-Binomial
B:-Poisson
C:-Geometric
D:-Hypergeometric
Correct Answer:- Option-D

Question56:-If `quadX` follows normal `quadN(mu,sigma)` , then the approximate value of `quadE{|X-mu|}` is
A:-Zero
B:-`sigma`
C:-`quad4/5sigma`
D:-`quadsqrt(4/Pi)sigma`
Correct Answer:- Option-C

Question57:-If `quadX` is uniformly distributed with mean unity and variance 0.75, then `quadP(X>1)=`
A:-0.25
B:-0.5
C:-0.75
D:-1
Correct Answer:- Option-B

Question58:-If `quadX` follows normal `quadN(mu,Sigma)` , then `quadY=e^X` follows
A:-Log-normal distribution
B:-Exponential distribution
C:-Logistic distribution
D:-Pareto distribution
Correct Answer:- Option-A

Question59:-If `quadX_j` follows exponential `quadE(Theta_j)` distribution, for `quadj=1,2,...,n,` then the distribution of `quad"min"{X_1,X_2,...,X_n}`
A:-`quadE(Theta_j)`
B:-` E (prod_{j=1}^n theta_j)`
C:-`quadE(sum_(j=1)^nTheta_j)`
D:-`quadE["min"{Theta_1,Theta_2,...,Theta_n}]`
Correct Answer:- Option-C

Question60:-The mode of `quadF` -distribution is
A:-always less than unity
B:-sometimes less than unity
C:-always greater than unity
D:-sometimes equal to unity
Correct Answer:- Option-A

Question61:-"Simple random sampling" is the technique of drawing a sample in such a way that each unit of the population has
A:-distinct and dependent chance of being included in the sample
B:-distinct but independent chance of being included in the sample
C:-an equal but dependent chance of being included in the sample

D:-an equal and independent chance of being included in the sample
Correct Answer:- Option-D
Question62:-In SRSWR with usual notations, the standard error of the sample mean `quadbary` is
A:-`quadS({N-n}/{Nn})^{1/2}`
B:-`quadS({N-1}/{Nn})^{1/2}`
C:-`quadS(1-{n}/{N})^{1/2}`
D:-`quadS/n(1-{1}/{N})^{1/2}`
Correct Answer:- Option-B
Question63:-The formulae for optimum allocation in various strata in stratified sampling were first derived by
A:-Tschuprov
B:-Cochran
C:-Lahiri
D:-Neymann
Correct Answer:- Option-A
Question64:-The ratio estimator of population mean is unbiased if sampling is done according to
A:-PPSWR
B:-PPSWOR
C:-SRSWR
D:-SRSWOR
Correct Answer:- Option-A
Question65:-The cluster sampling is more efficient when
A:-the variation within clusters in more
B:-the variation between clusters is less
C:-both (1) and (2)
D:-neither (1) nor (2)
Correct Answer:- Option-C
Question66:-Local control is a device to maintain
A:-homogeneity within blocks
B:-homogeneity among blocks
C:-both (1) and (2)
D:-neither (1) nor (2)
Correct Answer:- Option-A
Question67:-In a linear model `quadY_{ij}=alpha_i+e_{ij},` `quadj=1,2,...,n_i;` `quadi=1,2,...,k,` consider
(i) `quadalpha_1-3alpha_2+alpha_3+alpha_4`

(ii) `quadalpha_1+3alpha_2-alpha_3-alpha_4`

(iii) `quadalpha_1+3alpha_2-2alpha_3-2alpha_4`

Then which of the following is correct?
A:-(i) and (ii) are linear contrasts
B:-(i) and (iii) are linear contrasts
C:-(ii) and (iii) are linear contrasts
D:-(i), (ii) and (iii) are linear contrasts
Correct Answer:- Option-B
Question68:-While analyzing the data of a `quadkxxk` Latin Square Design, the degrees of freedom in the ANOVA is
A:-`quadk^2-1`
B:-`quadk-1`
C:-`quadk^2-2k+1`
D:-`quad(k-1)(k-2)`
Correct Answer:- Option-D
Question69:-In a split plot design with factor `quadA` at 3 levels in main plots, factor `quadB` at 3 levels in sub-plots and 3 replications, the degrees of freedom for sub-plot error is
A:-27
B:-12
C:-8
D:-4
Correct Answer:- Option-B
Question70:-If the interactions `quadAB` and `quadBC` are confounded with incomplete blocks in a `quad2^n` factorial experiment, then automatically confounded effect is

A:-`quadA`
B:-`quadC`
C:-`quadAC`
D:-`quadABC`
Correct Answer:- Option-C

Question71:-Which among the following is a consistent estimator of the population mean when samples are from the Cauchy population?
A:-Sample mean
B:-Sample median
C:-Sample variance
D:-None of these
Correct Answer:- Option-B

Question72:-If the regularity conditions of the CR inequality are violated then the least attainable variance will be
A:-equal to the CR bound
B:-greater than the CR bound
C:-less than the CR bound
D:-zero
Correct Answer:- Option-C

Question73:-A method to obtain the UMVUE is by using
A:-Rao-Blackwell Theorem
B:-Baye's Theorem
C:-Neymann-Pearson Theorem
D:-Lehmann-Scheffe Theorem
Correct Answer:- Option-D

Question74:-A complete-sufficient statistic for `p` in the Bernoulli distribution
`(x, p) = p^x (1-p)^x; x=0, 1.
= 0 `"otherwise"` is
A:-The first order statistic `X_{(1)}`
B:-The `n` `"^{th}"` order statistic `X_{(n)}`
C:-`sum_(i=1)^n X_i`
D:-`X_{(n)}-X_{(1)}`
Correct Answer:- Option-C

Question75:-The least square estimators are
A:-Unbiased
B:-BLUE
C:-UMVUE
D:-All these
Correct Answer:- Option-D

Question76:-A 95% confidence interval for λ, when a large sample is taken from a Poisson population with parameter λ is
A:-`bar x ``+- 1.65``sqrt((bar x)/(n)) `
B:-`lambda+- 1.65 sqrt((lambda)/(n)) `
C:-`bar x+- 1.96sqrt((bar x)/(n)) `
D:-`lambda +- 1.96sqrt((lambda)/(n)) `
Correct Answer:- Option-C

Question77:-The minimum Chi-squared estimators are not necessarily
A:-Unbiased
B:-Consistent
C:-Efficient
D:-Asymptotically normal
Correct Answer:- Option-A

Question78:-Which one of the following statements is true?
A:-Even if the UMP test does not exist, a UMPU test may exist
B:-Even if the UMPU test does not exist, a UMP test may exist
C:-A UMP test exists only if a UMPU test exists
D:-A UMPU test exists only if a UMP test exists
Correct Answer:- Option-A

Question79:-In paired `t` test the two random variables should be
A:-Paired and uncorrelated
B:-Unpaired and correlated
C:-Both paired and correlated

D:-Neither paired nor correlated

Correct Answer:- Option-C

Question80:-With usual notations, the criterion for acceptance in SPRT is

A:-`lambda_m <= ((1-beta))/(alpha) `

B:-`lambda_m >= ((1-beta))/(alpha) `

C:-`lambda_m <=(beta)/((1-alpha)) `

D:-` lambda_m >= (beta)/((1-alpha)`

Correct Answer:- Option-C

Question81:-The Poisson process with parameter λ is a renewal counting process for which the unit lifetimes have _____ distribution with common parameter λ.

A:-Poisson

B:-Exponential

C:-Uniform

D:-Geometric

Correct Answer:- Option-B

Question82:-Let `{X_n, n = 0, 1, 2...}` be a Branching process and the corresponding offspring distribution has a pgf `P (s) =(2)/(3) +(s+s^2)/(6) ` . Find the probability of extinction of the process

A:-0

B:-0.25

C:-0.66

D:-1

Correct Answer:- Option-D

Question83:-Let `{X_n}` be a renewal process with `mu = E (X_1) <oo ` and if `M (t)` is the renewal function, then `lim_(t->oo) (M (t))/(t) = .....`

A:-`(1)/(mu) `

B:-`mu `

C:-`(t)/(mu) `

D:-`(mu)/(t) `

Correct Answer:- Option-A

Question84:-If `X_i`'s are independent Poisson variates with respective parameters `lambda_i`, for `i = 1, 2, ...k`, then the conditional distribution of `X_1, X_2,... X_k` given their sum `sum_(i=1)^k X_i = n` is a _____ distribution with parameters _____ and _____.

A:-Binomial with parameters `n` and ` (1)/(k)`

B:-Binomial with parameters `k` and `(1)/(n)`

C:-Multinomial with parameters `n` and `(1)/(k)`

D:-Multinomial with parameters `k` and `(1)/(n)`

Correct Answer:- Option-C

Question85:-If ` (X_1, X_2)` is a Bivariate normal random vector with parameters `(mu_{X1}, mu_{X2}, sigma ^2_X_1, sigma^2_X_2, rho`), when `sigma^2_X_1 = sigma^2_X_2 ` and `rho = 0` , the density function is called

A:-Elliptical Normal

B:-Circular Normal

C:-Symmetrical Normal

D:-Uniform Normal

Correct Answer:- Option-B

Question86:-If the random vector `X` follows Multivariate Normal distribution with mean vector 0 and dispersion matrix `I` and `Q_i = X^' A_i X` are quadratic forms of rank `r_i` such that `sum_(i=1)^k A_i = I_p` , then a necessary and sufficient condition for `Q_i`'s to be distributed as independent chi-square random variables with `r_i` d.f is that

A:-` sum_(i=1)^k r_i=k`

B:-`sum_(i=1)^k r_i = p`

C:-`sum_(i=1)^k r_i=0`

D:-`sum_(i=1)^k r_i = kp`

Correct Answer:- Option-B

Question87:-The relationship between partial correlation coefficients `r_{ij.k},` multiple correlation coefficients `R_{i.jk}`and simple correlation coefficients `r_{ij}` is

A:-`R^2_1.23 = 1+ (1-r^2_12) (1 - r^2_13.2)`

B:-`R^2_1.23 = 1 - (1- r^2_12) (1- r^2_13.2)`

C:-`R^2_1.23 = 1 + (1-r^2_12)// (1-r^2_13.2)`

D:-`R^2_1.23 = 1- (1-r^2_12) // (1-r^2_13.2)`

Correct Answer:- Option-B

Question88:-Hotelling's `T^2` statistic and Mahalnobis `D^2` statistic are connected by the relationship

A:-`D^2 = ((N_1 N_2))/((N_1+N_2)) T^2`

B:-`D^2 =((N_1 N_2))/((N_1-N_2)) T^2`

C:-`D^2 = ((N_1-N_2))/((N_1 N_2)) T^2`

D:-`D^2 = ((N_1 + N_2))/((N_1 N_2)) T^2`

Correct Answer:- Option-D

Question89:-In principal component analysis the variances of the Principal Components are the _____ of the covariance matrix.

A:-diagonal elements

B:-eigen values

C:-normalized elements

D:-non-zero elements

Correct Answer:- Option-B

Question90:-For discriminating between two populations R.A. Fisher suggested the linear discriminant function `X'l` for which

A:-` ("(mean difference)"^2)/("variance")`

B:-`("mean difference")^2/("A.M.")`

C:-`("mean difference")/("median")`

D:-`("variance")/("mean difference")`

Correct Answer:- Option-A

Question91:-Assume that the time to failure `(T)` for a certain bulb has an exponential distribution `f ((t)/(lambda))` with parameter `lambda >0` with the prior pdf `g (lambda)` of `lambda` is an exponential distribution with parameter 2. Then the posterior pdf of `lambda` given `T = t` is

A:-`(2)/(t+2)`

B:-`(lambda)/(e^lambda (t+2))`

C:-`(lambda e^(lambda (t+2)))/((t+2)^2)`

D:-`(lambda (t+2)^2)/(e^(lambda (t+2)))`

Correct Answer:- Option-D

Question92:-The basic elements of statistical decision theory is

A:-a space Ω `= {ul theta}` of all possible states of nature

B:-an action space `A = {a}` of all possible courses of action

C:-a loss function `L (ul theta, a)` giving the incurred loss when action `a` is taken and the state is ` ul theta`

D:-all these

Correct Answer:- Option-D

Question93:-When there is no censoring for the life length `T`, the general formula of a survival function is

A:-`hat {S (t)} = (" # of individuals with" T >= t)/("total sample size")`

B:-`hat {S (t)} = (" # of individuals with" T <= t)/("total sample size")`

C:-`hat {S (t)} = (" # of individuals with" T = t)/("total sample size")`

D:-`hat {S (t)} = (" # of individuals with" T = 0)/("total sample size")`

Correct Answer:- Option-A

Question94:-The Cox's Proportional Hazard Model (Cox's PH Model) with explanatory variables ` ul X = (X_1, X_2, ... X_p), beta_i` their regression coefficients and `h_0 (t)` a base line hazard, is `h (t, ul X) =`

A:-`e^{h_0 (t) sum_(i=1)^p beta_i X_i}`

B:-`log h_0 (t) + sum_(i=1)^p beta_i X_i`

C:-`h_0 (t) e sum_(i=1)^p beta_i X_i`

D:-`e^(h_0 (t)) sum_(i=1)^p beta_i X_i`

Correct Answer:- Option-C

Question95:-When an inspection lot contains no defectives the OC function `L (p)` is

A:-`L (p) = 1`

B:-`L (p) = oo`

C:-` L (p) = 0`

D:-None of these

Correct Answer:- Option-A

Question96:-In a Time series data, the two main components which cause lack of stationarity are

A:-Seasonal and irregular variations

B:-Cyclic and irregular variations

C:-Trend and cyclic variations

D:-Trend and seasonal variations

Correct Answer:- Option-D

Question97:-In the ARMA (1, 1) model `Z_t = ``phi Z_{t-1} + epsilon _t - theta epsilon_{t-1}` the condition for stationarity and invertilibility are respectively

A:-` | phi | <= 1 and | theta | < 1` with `phi != theta`

B:-` | phi | <= 1 and | theta | < 1` with `phi = theta`

C:-` | phi | > 1 and | theta | > 1` with `phi!= theta`

D:-` | phi | > 1 and | theta | > 1` with `phi = theta`

Correct Answer:- Option-A

Question98:-In a Linear programming Problem with `n + m` variables and `m` constraints the number of basic solutions is

A:-` ((n+m),(m))`

B:-`((n),(m))`

C:-`((m),(n))`

D:-`((n+m),(n-m))`

Correct Answer:- Option-A

Question99:-If the demand curve is of the form `p = ae^{-bx}` , where `p` is the price and `x` is the demand, then the price elasticity of demand is

A:-`eta_p = bx`

B:-`eta_p = - bx`

C:-`eta_p = 1//bx`

D:-`eta_p = - 1 // bx`

Correct Answer:- Option-C

Question100:-The Engel's curves for constant prices and those for constant incomes are respectively

A:-Concave and Convex

B:-Convex and Concave

C:-Both Concave

D:-Both Convex

Correct Answer:- Option-B