

Banaras Hindu University

Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

Question Paper Name :	896 905 16th Mar 2022 Shift 3
Subject Name :	896 905
Creation Date :	2022-03-16 19:31:37
Duration :	120
Total Marks :	300
Display Marks:	Yes
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	No
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

RET_Statistics

Group Number :	1
Group Id :	593452152
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	300
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Research_Methodology

Section Id :	593452299
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	40
Number of Questions to be attempted :	40
Section Marks :	120
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	593452327
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 59345216748 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

What is a Research Design ?

शोध अभिकल्प क्या है ?

Options :

A way of conducting research that is not grounded in theory.

1. ✘ शोध संचालन का एक तरीका, जो सिद्धांत पर आधारित न हो।

The choice between using qualitative or quantitative methods.

2. ✘ गुणात्मक या परिमाणात्मक पद्धतियों के उपयोग के मध्य चुनाव।

The style in which you present your research findings e.g. a graph.

3. ✘ वह शैली जिसमें आप अपने शोध खोजों को प्रस्तुत करते हैं; जैसे - ग्राफ।

A framework for every stage of the collection and analysis of data.

4. ✔ आँकड़ों के संकलन और विश्लेषण के प्रत्येक स्तर के लिए एक ढाँचा।

Question Number : 2 Question Id : 59345216749 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The study design of collecting data at a particular point of time is called :

किसी विशेष समय बिन्दु पर आँकड़े संग्रहण करने वाला अध्ययन अभिकल्प कहलाता है :

Options :

Cohort study

1. ✘ सहगण अध्ययन (कोहार्ट स्टडी)

Trend study

2. ✘ प्रवृत्ति अध्ययन

Cross sectional study

3. ✔ प्रतिनिध्यात्मक (समकालीन) अध्ययन

Longitudinal study

4. ✘ अनुदैर्घ्य (दीर्घकालिक) अध्ययन

Question Number : 3 Question Id : 59345216750 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The value of middle position in a distribution of values is called :

मूल्यों के वितरण में मध्य स्थिति का मान कहलाता है :

Options :

Mean

1. ✘ माध्य

Median

2. ✔ माध्यिका

Mode

3. ✖ बहुलक

Mid-point

4. ✖ मध्य-बिन्दु

Question Number : 4 Question Id : 59345216751 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In order to pursue research, which of the following is priorly required ?

शोध को आगे बढ़ाने के लिए, निम्नलिखित में से किसकी पहले आवश्यकता होती है ?

Options :

Develop a research design

1. ✖ शोध अभिकल्प का विकास

Formulate research questions

2. ✔ शोध प्रश्नों का निर्माण

Deciding about the data analysis procedure

3. ✖ आंकड़ा विश्लेषण प्रक्रिया के बारे में निर्णय लेना

Formulating a research hypothesis

4. ✖ शोध परिकल्पना का निर्माण करना

Question Number : 5 Question Id : 59345216752 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is a basis of the quality of a research journal ?

निम्नलिखित में से किसी शोध पत्रिका की गुणवत्ता का आधार कौन है ?

Options :

Impact factor

1. ✓ प्रभाव गुण

h-index

2. ✘ एच-इंडेक्स

g-index

3. ✘ जी-इंडेक्स

i10-index

4. ✘ i10-इंडेक्स

Question Number : 6 Question Id : 59345216753 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If the population is heterogeneous, which one of the following probability sampling methods will be suitable ?

यदि जनसंख्या विजातीय है, तो निम्नलिखित में से कौन-सी सम्भाव्यता प्रतिदर्श विधि अधिक उपयुक्त होगी ?

Options :

- 1. ✘ Sequential sampling
क्रमानुसार प्रतिचयन
- 2. ✘ Quota sampling
कोटा प्रतिचयन
- 3. ✘ Double sampling
दोहरा प्रतिचयन
- 4. ✔ Stratified sampling
स्तरीकृत प्रतिचयन

Question Number : 7 Question Id : 59345216754 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Manipulation is a part of :

प्रहस्तन का एक हिस्सा है।

Options :

- 1. ✘ Historical research
ऐतिहासिक शोध

- Fundamental research
2. ✘ मौलिक शोध
- Descriptive research
3. ✘ वर्णनात्मक शोध
- Experimental research
4. ✔ प्रायोगिक शोध

Question Number : 8 Question Id : 59345216755 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

p-value stands for :

पी-मूल्य से तात्पर्य है :

Options :

- Probability value
1. ✔ सम्भाव्य मूल्य
- Preference value
2. ✘ वरीयता मूल्य
- Pre-determined value
3. ✘ पूर्व-निर्धारित मूल्य

Prescribed value

4. ✖ नियत मूल्य

Question Number : 9 Question Id : 59345216756 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

R^2 is known as the :

R^2 को के रूप में जाना जाता है।

Options :

Coefficient of determination

1. ✔ निर्धारण का गुणांक

Multiple correlation coefficient

2. ✖ बहु-सहसम्बन्ध गुणांक

Partial correlation coefficient

3. ✖ आंशिक सहसम्बन्ध गुणांक

Semi-partial correlation coefficient

4. ✖ अर्ध-आंशिक सहसम्बन्ध गुणांक

Question Number : 10 Question Id : 59345216757 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Rejection of null hypothesis, when it is true, leads to :

शून्य परिकल्पना अस्वीकृत हो जाये जबकि यह सत्य है को इंगित करती है।

Options :

Sampling Error

1. ✖ प्रतिचयन त्रुटि

Type II Error

2. ✖ टाइप II त्रुटि

Type I Error

3. ✔ टाइप I त्रुटि

Estimation Error

4. ✖ अनुमान त्रुटि

Question Number : 11 Question Id : 59345216758 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is first stage in Grounded Theory data analysis :

निम्नलिखित में से ग्राउंडेड थ्योरी के आँकड़ा विश्लेषण का प्रथम चरण कौन-सा होता है ?

Options :

Examination

1. ✖ परीक्षण

Open coding

2. ✔ खुली कूट संकेतन

Retardation

3. ✖ अवरोध

Comparison

4. ✖ तुलना

Question Number : 12 Question Id : 59345216759 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The area of the rejection region for a two-tailed test in comparison with area of the one-tailed test for the same level of significance will be :

सार्थकता के समान स्तर के लिए एक-पुच्छीय परीक्षण के अस्वीकृति क्षेत्र की तुलना में द्वि-पुच्छीय परीक्षण का क्षेत्र :

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

Smaller

1. छोटा होगा

- Same
2. समान होगा
- Larger
3. बड़ा होगा
- One-fourth
4. एक चौथाई होगा

Question Number : 13 Question Id : 59345216760 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Basic research is :

मौलिक शोध होता है :

Options :

- Practical and descriptive
1. ✖ व्यावहारिक और वर्णनात्मक
- Client-driven
2. ✖ ग्राहक-प्रेरित
- Expands current knowledge
3. ✔ वर्तमान ज्ञान का विस्तार करने वाला
- Advancement of technology
4. ✖ प्रौद्योगिकी में उन्नति लाने वाला

Question Number : 14 Question Id : 59345216761 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The technique in which an individual is presented with a stimulus and asked to respond with the first thing that comes to mind is known as :

वह तकनीक जिसमें व्यक्ति के सामने एक उत्तेजना प्रस्तुत की जाती है और पहली बात जो दिमाग में आती है, उसका जवाब देने के लिए कहा जाता है, को जाना जाता है :

Options :

Completion techniques

1. ✘ पूर्ति तकनीक

Focus groups

2. ✘ केंद्रित समूह

Association techniques

3. ✔ साहचर्य तकनीक

In depth interviews

4. ✘ गहन साक्षात्कार

Question Number : 15 Question Id : 59345216762 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

An Independent variable is defined as :

एक स्वतंत्र चर को परिभाषित किया जाता है :

Options :

- Change variable
1. ✓ परिवर्तनशील चर
- Confounding variable
2. ✘ भ्रमित चर
- Extraneous variable
3. ✘ वाह्य चर
- Outcome variable
4. ✘ परिणाम चर

Question Number : 16 Question Id : 59345216763 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which one of the following statements is *false* for Research ?

निम्नलिखित में से कौन-सा कथन अनुसंधान के लिए *गलत* है ?

Options :

- Research design is a logical and systematic plan for a research study
1. ✘ अनुसंधान अभिकल्प शोध अध्ययन के लिए एक तार्किक और व्यवस्थित योजना है

Applied research is conducted to solve theoretical problems

2. ✓ सैद्धान्तिक समस्याओं को हल करने के लिए व्यावहारिक अनुसंधान किया जाता है

The basic research is also called as fundamental research

3. ✘ मूल शोध को मौलिक शोध भी कहा जाता है

A hypothesis is a statement that is tested for its validity

4. ✘ परिकल्पना एक कथन है जिसकी वैधता का परीक्षण किया जाता है

Question Number : 17 Question Id : 59345216764 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A researcher has administered some drug for management of diabetes for 4 weeks in a group and measured pre and post data for blood glucose level. Which statistical tool will be used to analyze data ?

एक शोधकर्ता ने एक समूह में 4 सप्ताह के लिए मधुमेह के प्रबंधन के लिए कुछ दवा दी है और रक्त शर्करा के पूर्व और बाद के स्तरों का मापन किया। प्राप्त आँकड़ों के विश्लेषण के लिए किस सांख्यिकीय विधि का उपयोग किया जाएगा ?

Options :

Paired 't' test

1. ✓ युग्मित टी-परीक्षण

Independent t-test

2. ✘ स्वतंत्र टी-परीक्षण

ANOVA test

3. ✖ एनोवा परीक्षण

Chi-square test

4. ✖ काई-वर्ग परीक्षण

Question Number : 18 Question Id : 59345216765 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is a qualitative variable ?

निम्न में से कौन एक गुणात्मक चर है ?

Options :

Colour of hair

1. ✔ बालों का रंग

Body weight

2. ✖ शारीरिक भार

Body height

3. ✖ शारीरिक ऊँचाई

Percentage of haemoglobin

4. ✖ हीमोग्लोबिन का प्रतिशत

Question Number : 19 Question Id : 59345216766 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A researcher should consider which of the following to prepare good research proposal ?

एक शोधकर्ता को अच्छा शोध प्रस्ताव तैयार करने के लिए निम्नलिखित में से किस पर विचार करना चाहिए ?

- (a) Research question should be novel
शोध प्रश्न नवीन होना चाहिए
- (b) Research protocol should be ethical and relevant
अनुसंधान प्रोटोकॉल नैतिक और प्रासंगिक होना चाहिए
- (c) Research question should be interesting and feasible
शोध प्रश्न दिलचस्प और व्यवहार्य होना चाहिए
- (d) Researcher should consider only his/her own interest and benefit
शोधकर्ता को केवल अपनी स्वयं की रुचि एवम लाभ पर विचार करना चाहिए

Options :

- a & d are correct
- 1. ✘ a और d सही हैं
- c & d are incorrect
- 2. ✘ c और d गलत हैं
- a, c & d are correct
- 3. ✘ a, c और d सही हैं

a, b & c are correct

4. ✓ a, b और c सही हैं

Question Number : 20 Question Id : 59345216767 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Why reviewing the existing literature is needed ?

मौजूदा साहित्य की समीक्षा करने की आवश्यकता क्यों है ?

Options :

It does not provide references

1. ✘ यह संदर्भों को प्रदान नहीं करता

It does not provide required word-count

2. ✘ आवश्यक शब्द-गणना नहीं देता

To find out what is already known about area of interest

3. ✓ यह जानने के लिए कि रुचि के क्षेत्र के बारे में पहले से क्या ज्ञात है

To help in non-related disciplines

4. ✘ असम्बन्धित विषयों में सहयोग करने के लिए

Question Number : 21 Question Id : 59345216768 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which one is called non-probability sampling ?

किसे असंभाव्यता प्रतिचयन कहा जाता है ?

Options :

Quota sampling

1. ✓ कोटा प्रतिचयन

Cluster sampling

2. ✘ गुच्छ प्रतिचयन

Systematic sampling

3. ✘ व्यवस्थित प्रतिचयन

Stratified random sampling

4. ✘ स्तरीकृत यादृच्छिक प्रतिचयन

Question Number : 22 Question Id : 59345216769 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Random error can be effectively handled by :

यादृच्छिक त्रुटि को द्वारा प्रभावी ढंग से नियंत्रित किया जा सकता है ।

Options :

Adequate sample size

1. ✓ उपयुक्त नमूना आकार

Randomisation

2. ✖ यादृच्छीकरण

Blinding

3. ✖ अंधकरण

Representativeness

4. ✖ प्रतिनिधित्व

Question Number : 23 Question Id : 59345216770 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The *correct* definition of h index is :

एच-इंडेक्स की *सही* परिभाषा है :

Options :

Largest number h such that h publications have at least h citations

1. ✔ सबसे बड़ी संख्या h जैसे कि h प्रकाशनों में कम से कम h उद्धरण हों

Lowest number h such that h publications have at least h citations

2. ✖ सबसे कम संख्या h जैसे कि h प्रकाशनों में कम से कम h उद्धरण हों

Total number of citations divided by the total number of publications

3. ✖ उद्धरणों की कुल संख्या को प्रकाशन की कुल संख्या से विभाजित करने पर

Another name for impact factor

4. ✘ प्रभाव कारक का दूसरा नाम

Question Number : 24 Question Id : 59345216771 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is *not* a reference management tool ?

निम्नलिखित में से कौन संदर्भ प्रबंधन उपकरण *नहीं* है ?

Options :

EndNote

1. ✘ एण्डनोट

Zotero

2. ✘ ज़ोटेरो

Mendeley

3. ✘ मेंडले

Scopus

4. ✔ स्कोपस

Question Number : 25 Question Id : 59345216772 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Mean, Median and Mode are :
माध्य, माध्यिका और बहुलक हैं :

Options :

Measures of dispersion

1. ✖ प्रसरण का मापन

Measures of central tendency

2. ✔ केंद्रीय प्रवृत्ति का मापन

Measures of probability

3. ✖ संभाव्यता का मापन

Sampling methods

4. ✖ प्रतिचयन विधि

Question Number : 26 Question Id : 59345216773 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

What is the appropriate measure of dispersion to report when median is reported as the measure of central tendency for a given set of data ?

रिपोर्ट करने के लिए विचलन का उपयुक्त उपाय क्या है जब माध्यिका को आँकड़ों के एक समूह के लिए केंद्रीय प्रवृत्ति के मापन के रूप में प्रयुक्त किया जाता है ?

Options :

Standard deviation

1. ✖ मानक विचलन

Interquartile range

2. ✓ अंतश्चतुर्थक विस्तार

Variance

3. ✗ विचरण

Coefficient of variance

4. ✗ विचरण का गुणांक

Question Number : 27 Question Id : 59345216774 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Open ended group discussion that promotes discussion among participants is called

विवृतांग (ओपन एंडेड ग्रुप) चर्चा जो प्रतिभागियों के बीच परिचर्चा को बढ़ावा देते हैं, कहलाते हैं

Options :

In-depth discussion

1. ✗ गहन चर्चा

Focus group discussions

2. ✓ फोकस ग्रुप चर्चा

Participant observation

3. ✖ प्रतिभागी अवलोकन

Structured interviews

4. ✖ संरचित साक्षात्कार

Question Number : 28 Question Id : 59345216775 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The ability of a tool to correctly measure what it is supposed to measure is called as :

किसी उपकरण/साधन की 'जिस उद्देश्य के मापन के लिए प्रयोग हो रहा है उसे सही-सही मापने की क्षमता' कहलाती है :

Options :

Validity

1. ✔ वैधता

Reliability

2. ✖ विश्वसनीयता

Consistency

3. ✖ संगति

Accuracy

4. ✖ सटीकता

Question Number : 29 Question Id : 59345216776 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In an experimental study of the effects of time spent on studying on grade, time spent studying would be the :

ग्रेड पर अध्ययन में व्यतीत समय के प्रभावों के एक प्रायोगिक अध्ययन में, अध्ययन में बिताया गया समय होगा :

Options :

- Control group
- 1. ✘ नियंत्रण समूह
- Independent variable
- 2. ✔ स्वतंत्र चर
- Experimental group
- 3. ✘ प्रायोगिक समूह
- Dependent variable
- 4. ✘ आश्रित चर

Question Number : 30 Question Id : 59345216777 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A reasoning where we start with certain particular statements and conclude with a universal statement is called :

एक तर्क जहाँ हम कुछ विशिष्ट कथनों से शुरू करते हैं और एक सार्वभौमिक कथन के साथ निष्कर्ष निकालते हैं, कहलाता है :

Options :

Deductive Reasoning

1. ✖ निगमनात्मक तर्क

Inductive Reasoning

2. ✔ आगमनात्मक तर्क

Abnormal Reasoning

3. ✖ असामान्य तर्क

Transcendental Reasoning

4. ✖ प्राशनुभविक तर्क

Question Number : 31 Question Id : 59345216778 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If a distribution is described as platykurtic, then it is :

यदि किसी वितरण को प्लेटिक्यूरटिक (सपाटक कुर्दी) के रूप में वर्णित किया जाता है, तो वह है :

Options :

Peaked

1. ✖ चोटीदार

- Flat
2. ✓ सपाट
- Bimodal
3. ✘ द्विबाहुलकी
- Thin
4. ✘ पतला

Question Number : 32 Question Id : 59345216779 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In a statistical table the row headings are referred to as :

एक सांख्यिकीय तालिका में, पंक्ति शीर्षकों को कहा जाता है :

Options :

- Source note
1. ✘ स्रोत नोट
- Captions
2. ✘ कैप्शन (अनुशीर्षक)
- Stubs
3. ✓ स्टब्स (टूठ)

Body

4. ✖ शरीर

Question Number : 33 Question Id : 59345216780 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following techniques are used to control extraneous variables in research ?

अनुसंधान में बाह्य चरों को नियंत्रित करने के लिए निम्नलिखित में से किस तकनीक का उपयोग किया जाता है ?

Options :

Change of instrument

1. ✖ साधन का परिवर्तन

Randomization

2. ✔ यादृच्छीकरण

Change the research method

3. ✖ अनुसंधान विधियों में परिवर्तन

Parameterization

4. ✖ पैरामीट्रिजेशन (प्राचलीकरण)

Question Number : 34 Question Id : 59345216781 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is the information and library network under UGC ?

यूजीसी के तहत निम्नलिखित में से कौन-सा सूचना और पुस्तकालय नेटवर्क है ?

Options :

INFLIBNET

1. ✓ इनफिलिबनेट

NISCAIR

2. ✗ निस्केयर

Association of Indian Universities

3. ✗ भारतीय विश्वविद्यालयों का संघ

NAAC

4. ✗ नैक

Question Number : 35 Question Id : 59345216782 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A research tool consisting of a series of questions is known as :

प्रश्नों की एक शृंखला से युक्त एक शोध उपकरण को कहा जाता है :

Options :

Observation schedule

1. ✗ अवलोकन अनुसूची

Interview schedule

2. ✘ साक्षात्कार अनुसूची

Questionnaire

3. ✔ प्रश्नावली

Psychological test

4. ✘ मनोवैज्ञानिक परीक्षण

Question Number : 36 Question Id : 59345216783 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

What does a good thesis involve ?

एक अच्छी थीसिस में क्या सम्मिलित होता है ?

- (a) Reducing punctuations as well as grammatical errors to minimal level.
विराम-चिन्हों तथा व्याकरण अशुद्धियों को अल्पतम स्तर तक कम करना।
- (b) Correct reference citation.
समुचित सन्दर्भ उद्धरण।
- (c) Consistency in the way of thesis writing.
थीसिस लेखन के तरीके में सुसंगति।
- (d) All of the three
तीनों में सभी

Choose the *correct* answer from the codes given below :

नीचे दिये गये कूट में से *सही* उत्तर चुनें :

Codes :

कूट :

Options :

a, b, c and d

1. ✓ a, b, c तथा d

a, c and d

2. ✗ a, c तथा d

a, b and c

3. ✓ a, b तथा c

c, b and d

4. ✘ c, b तथा d

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 37 Question Id : 59345216784 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The difference between the expected value of a sample statistic and the estimated value of parameter is called :

नमूना आंकड़ों के अपेक्षित मूल्य और प्राचल के अनुमानित मूल्य के बीच के अन्तर को कहा जाता है :

Options :

Error

1. ✘ त्रुटि

Bias

2. ✔ पूर्वाग्रह

Contradiction

3. ✘ विरोधाभास

Difference

4. ✘ अंतर

Question Number : 38 Question Id : 59345216785 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Among the following, widely used method for extracting factors is :

निम्नलिखित में से, कारकों को निकालने के लिए व्यापक रूप से इस्तेमाल की जाने वाली विधि है :

Options :

Path analysis

1. ✘ पथ विश्लेषण

Discriminant analysis

2. ✘ विभेदक विश्लेषण

Group analysis

3. ✘ समूह विश्लेषण

Principle component analysis

4. ✔ प्रमुख-घटक विश्लेषण

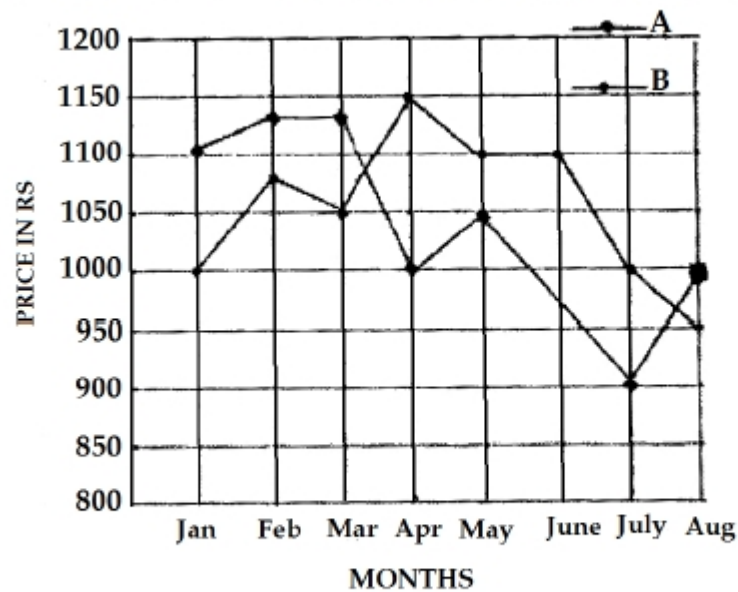
Question Number : 39 Question Id : 59345216786 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Study the following given graph and answer the question :

निम्नलिखित ग्राफ का अध्ययन कीजिए तथा प्रश्न का उत्तर दीजिए :



What was the price difference between commodity A and B in the month of April ?

अप्रैल के महीने में सामग्री A और B के बीच मूल्य का अन्तर क्या था ?

Options :

1. ✘ 250
2. ✔ 150
3. ✘ 100
4. ✘ 90

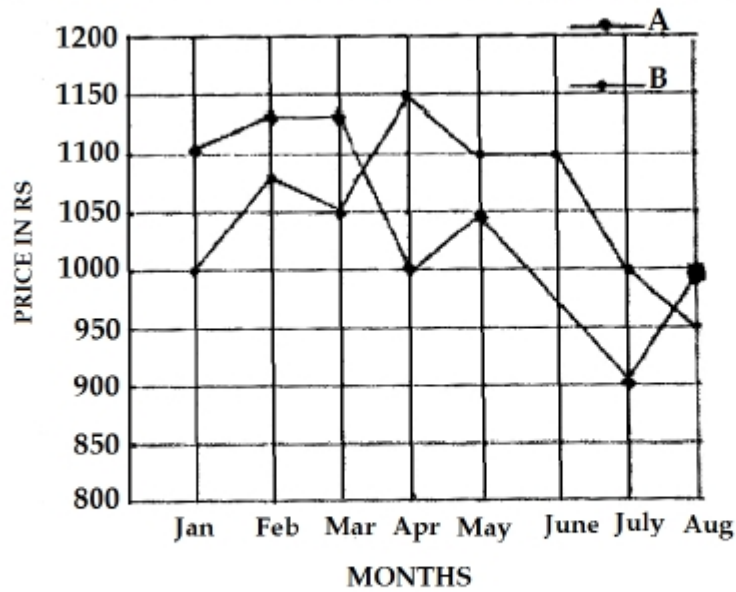
Question Number : 40 Question Id : 59345216787 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Study the following given graph and answer the question :

निम्नलिखित ग्राफ का अध्ययन कीजिए तथा प्रश्न का उत्तर दीजिए :



What was the difference in average price between commodity A and B from April to August ?

अप्रैल से अगस्त तक सामग्री A और B के औसत मूल्य में कितना अन्तर था ?

Options :

1. ✘ 90

2. ✘ 86

3. ✘ 95

4. ✔ 75

Subject_&_Area Concerned

Section Id :	593452300
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	60
Number of Questions to be attempted :	60
Section Marks :	180
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	593452328
Question Shuffling Allowed :	Yes

Question Number : 41 Question Id : 59345216788 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For linear model $E(Y) = X\beta$, the least square estimator of β and its dispersion matrix expression are given by :

Options :

1. ✓ $(X'X)^{-1} X'Y$ and $\sigma^2 (X'X)^{-1}$

2. ✗ $X'Y (X'X)^{-1}$ and $\sigma^2 (X'X)^{-1}$

3. ✗ $(X'X)^{-1} X'Y$ and $(X'X)^{-1}$

4. ✖ $X' Y (X' X)^{-1}$ and $(X' X)^{-1}$

Question Number : 42 Question Id : 59345216789 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The minimum sum of squares $R_0^2 = (Y - X\hat{\beta})'(Y - X\hat{\beta})$ and $r = Rank(X)$, an unbiased estimator of σ^2 is :

Options :

1. ✔ $\hat{\sigma}^2 = \frac{R_0^2}{n - r}$

2. ✖ $\hat{\sigma}^2 = \frac{R_0^2}{n + r}$

3. ✖ $\hat{\sigma}^2 = \frac{R_0^2}{(n - r)(n + r)}$

4. ✖ $\hat{\sigma}^2 = \frac{n + r}{R_0^2}$

Question Number : 43 Question Id : 59345216790 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let C be a g -inverse of $X'X$ and let $H = CX'X$. Then a necessary and sufficient condition that $P'\beta$ is estimable is that :

Options :

1. ✘ $P'(I + H) = 0$

2. ✔ $P'(I - H) = 0$

3. ✘ $P'(I - 2H) = 0$

4. ✘ $P'(I + 2H) = 0$

Question Number : 44 Question Id : 59345216791 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For a balanced incomplete Block Design, which one is true ? (Here notations have their usual meanings)

Options :

1. ✘ $b < v$

2. ✘ $(\lambda - 1)v = r(k - 1)$

3. ✔ $b \geq v$

4. ✘ $\lambda v = r(k - I)$

Question Number : 45 Question Id : 59345216792 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is not a contrast among three treatments combination ?

Options :

1. ✘ $T_1 - T_3$

2. ✔ $T_1 + 2T_2 - T_3$

3. ✘ $T_1 - 2T_2 + T_3$

4. ✘ $-T_1 + 2T_2 - T_3$

Question Number : 46 Question Id : 59345216793 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In a split plot design, smaller mean square due to error is obtained for :

Options :

1. ✔ sub-plot error

2. ✘ main plot error
3. ✘ experimental error
4. ✘ main plot error and experimental error

Question Number : 47 Question Id : 59345216794 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which interaction effect is confounded with blocks for following arrangements ?

Replicate	Block 1	(1)	(ab)	(ac)	(bc)
	Block 2	(a)	(b)	(c)	(abc)

Options :

1. ✘ A
2. ✘ AB
3. ✘ C
4. ✔ ABC

Question Number : 48 Question Id : 59345216795 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In a 3^3 factorial experiment the effects are :

Options :

1. ✘ Linear only
2. ✘ Quadratic only
3. ✔ Linear and quadratic both
4. ✘ Neither linear nor quadratic

Question Number : 49 Question Id : 59345216796 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If in a Latin square design with 5 treatments, a treatment is deleted, then the decrease in error degrees of freedom will be :

Options :

1. ✘ 2
2. ✘ 4
3. ✔ 6

4. ✘ 8

Question Number : 50 Question Id : 59345216797 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X have a $\chi^2(r)$ distribution. Then $E(X^k)$ exists :

Options :

1. ✘ $\forall k > -\infty$
2. ✘ Only $\forall k > 0$
3. ✔ Only $\forall k > -r/2$
4. ✘ Only $\forall k > r/2$

Question Number : 51 Question Id : 59345216798 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X have a Poisson distribution with parameter $\lambda = 100$. Then lower bound for $P(180 < X < 220)$ is :

Note: For this question, discrepancy is found in question/answer. Full

Marks is being awarded to all candidates.

Options :

1. $\frac{1}{2}$

2. $\frac{1}{4}$

3. $\frac{1}{3}$

4. 0

Question Number : 52 Question Id : 59345216799 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Three 6-faced fair dice are thrown. In 10 independent throws, let X be the number of times all three faces are alike and let Y be the number of times only two faces are alike.

Thus, $E(6XY)$ is :

Options :

1. ✓ $25/4$

2. ✗ $25/6$

3. ✗ $25/24$

4. ✖ 1/2

Question Number : 53 Question Id : 59345216800 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X have a binomial distribution with parameters n and $p = 1/3$. Determine the smallest integer n such that $P(X \geq 1) \geq 0.75$.

Options :

1. ✖ 2

2. ✖ 3

3. ✔ 4

4. ✖ 5

Question Number : 54 Question Id : 59345216801 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In post stratification, let m_h be the number of sampled unit falling in the h^{th} stratum, then m_h is :

Options :

1. ✘ Fixed
2. ✘ Known a priori
3. ✔ Random Variable
4. ✘ Equal for all Strata

Question Number : 55 Question Id : 59345216802 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

When the regression equation of Y on X is $Y = kX$, the most suitable method will be :

Options :

1. ✘ Usual sample mean
2. ✔ Ratio estimator
3. ✔ Product estimator
4. ✘ Usual sample mean and Product estimator

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 56 Question Id : 59345216803 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In Midzuno system of sampling, the unit at the first draw is selected with :

Options :

1. ✘ Equal probabilities
2. ✔ Unequal probabilities
3. ✘ With probability zero
4. ✘ With probability one

Question Number : 57 Question Id : 59345216804 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If S_{wsy}^2 is the variation among units that lie within the same systematic sample, systematic sampling will be better than the SRSWOR when :

Options :

1. ✔ $S_{wsy}^2 > S^2$
2. ✘ $S_{wsy}^2 < S^2$

3. ✘ $S_{wsy}^2 = S^2$

4. ✘ Always

Question Number : 58 Question Id : 59345216805 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The relationship between the variances of unordered sample ($\hat{\theta}_u$) and ordered sample ($\hat{\theta}_0$) is :

Options :

1. ✔ $Var(\hat{\theta}_u) \leq Var(\hat{\theta}_0)$

2. ✘ $Var(\hat{\theta}_u) > Var(\hat{\theta}_0)$

3. ✘ $Var(\hat{\theta}_u) = Var(\hat{\theta}_0)$

4. ✘ None of the three

Question Number : 59 Question Id : 59345216806 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

When knowledge of population mean of auxiliary character (\bar{X}) is not known, this is case of :

Options :

1. ✘ Two-stage sampling
2. ✔ Two-phase sampling
3. ✘ Cluster sampling
4. ✘ Systematic sampling

Question Number : 60 Question Id : 59345216807 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X have a Poisson distribution. If $P(X = 1) = P(X = 3)$, the mode of the distribution is :

Options :

1. ✘ 3
2. ✘ 1
3. ✔ 2

4. ✖ 0

Question Number : 61 Question Id : 59345216808 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

When it is not possible to find solution in LPP, it is called as solution ?
From the following, choose the suitable option to fill the blank :

Options :

1. ✔ Infeasible
2. ✖ Unbounded
3. ✖ Improper
4. ✖ Unknown

Question Number : 62 Question Id : 59345216809 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Suppose X_n has a $N_p(\mu_n, \Sigma_n)$ distribution then $X_n \xrightarrow{D} N_p(\mu, \Sigma)$ if and only if :

Options :

1. ✖ $\Sigma_n \rightarrow \Sigma$

2. ✘ $\mu_n = \mu$ and $\Sigma_n \rightarrow \Sigma$

3. ✔ $\mu_n \rightarrow \mu$ and $\Sigma_n \rightarrow \Sigma$

4. ✘ $\mu_n = \mu$ and $\Sigma_n = \Sigma$

Question Number : 63 Question Id : 59345216810 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

What is the sufficient statistic for θ if the sample arises from a beta distribution with parameters a and b in which $a = b = \theta > 0$?

Options :

1. ✘ Σx_i

2. ✘ $\prod(1 - x_i)$

3. ✔ $\prod x_i (1 - x_i)$

4. ✘ $\Sigma x_i^a (1 - x_i)^b$

Question Number : 64 Question Id : 59345216811 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X have the pdf $f(x ; \theta) = \frac{1}{2\theta}$, for $-\theta < x < \theta$, zero elsewhere, where $\theta > 0$, then :

Options :

1. ✘ statistic $T = |X|$ is sufficient but not complete for θ
2. ✘ statistic $T = X$ is sufficient but not complete for θ
3. ✘ sufficient statistic does not exist for θ
4. ✔ statistic $T = |X|$ is sufficient and complete for θ

Question Number : 65 Question Id : 59345216812 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X_1, X_2, \dots, X_n be a random sample of size n from a distribution with pdf $f(x ; \theta) = \theta x^{\theta-1}$, for $0 < x < 1$, zero elsewhere, where $\theta > 0$, then :

Options :

1. ✘ $T = \frac{(X_1 + X_2 + \dots + X_n)}{n}$ is complete and sufficient statistic for θ
2. ✘ $T = (X_1 X_2 \dots X_n)^{\frac{1}{n}}$ is sufficient statistic but not complete for θ

3. ✘ $T = \frac{(X_1 + X_2 + \dots + X_n)}{n}$ is sufficient statistic but not complete for θ

4. ✔ $T = (X_1 X_2 \dots X_n)^{\frac{1}{n}}$ is complete and sufficient statistic for θ

Question Number : 66 Question Id : 59345216813 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For two estimators $T_1 = t_1(X_1, X_2, \dots, X_n)$ and $T_2 = t_2(X_1, X_2, \dots, X_n)$ and $R_{t_1} \leq R_{t_2}$ for all $\theta \in \Theta$, where R_{t_1} represent risk of $t_1(\cdot)$. Then estimator $t_1(\cdot)$ is defined to be :

Options :

1. ✘ Sufficient Estimator

2. ✘ Consistent Estimator

3. ✔ Admissible Estimator

4. ✘ Minimax Estimator

Question Number : 67 Question Id : 59345216814 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following assumptions are required to show the consistency, unbiasedness, and efficiency of the ordinary least square estimator ?

(i) $E(\mu_t) = 0$

(ii) $Var(\mu_t) = \sigma^2$

(iii) $Cov(\mu_t, \mu_{t-j}) = 0; t \neq t - j$

(iv) $\mu_t \sim N(0, \sigma^2)$

Options :

1. ✓ (i), (ii) and (iii) only

2. ✗ (ii) and (iv) only

3. ✗ (iii) only

4. ✓ (i), (ii), (iii) and (iv)

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 68 Question Id : 59345216815 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $L(\theta ; X_1, X_2, \dots, X_n)$ be the likelihood function for a sample X_1, X_2, \dots, X_n having joint density $f(x_1, x_2, \dots, x_n ; \theta)$ where θ belong to the parameter space Θ . Then a test defined as $\lambda = \lambda_n = \lambda(x_1, x_2, \dots, x_n) = \frac{\text{Sup}_{\theta \in \Theta_0} L(\theta ; x_1, x_2, \dots, x_n)}{\text{Sup}_{\theta \in \Theta} L(\theta ; x_1, x_2, \dots, x_n)}$ is :

Options :

1. ✘ Uniformly Most Powerful Test
2. ✘ Monotone Likelihood Ratio Test
3. ✘ Unbiased Test
4. ✔ Generalized Likelihood Ratio Test

Question Number : 69 Question Id : 59345216816 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A set of jointly sufficient statistics is defined to be minimal sufficient if and only if :

Options :

1. ✔ It is a function of every other set of sufficient statistics.
2. ✘ It is not a function of every other set of sufficient statistics.
3. ✘ It is a function of some other set of sufficient statistics.

4. ✘ It is a function of any sufficient statistics in the set.

Question Number : 70 Question Id : 59345216817 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let x_1, x_2, \dots, x_n be a random sample from a density $f(x | \theta)$, where θ is a value of the random variable Θ with known density $g_{\Theta}(\theta)$. Then the estimator $\tau(\theta)$ with respect to the prior $g_{\Theta}(\theta)$ is defined as $E[\tau(\theta) | x_1, x_2, \dots, x_n]$ is called :

Options :

1. ✘ Minimax Estimator
2. ✘ Bayes Estimator
3. ✔ Posterior Bayes Estimator
4. ✘ Sufficient Estimator

Question Number : 71 Question Id : 59345216818 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X_1 and X_2 be independent exponential random variables with means λ_1 and λ_2 , respectively. Let $Z_1 = \min(X_1, X_2)$ and $Z_2 = \begin{cases} 0 & ; Z_1 = X_1 \\ 1 & ; Z_1 = X_2 \end{cases}$

MLEs of λ_1 and λ_2 based on Z_1 and Z_2 are :

Options :

1. ✓ $\hat{\lambda}_1 = Z_1$ if $Z_2 = 0$ and $\hat{\lambda}_2 = Z_1$ if $Z_2 = 1$

2. ✗ $\hat{\lambda}_1 = Z_1^{1-Z_2}$ and $\hat{\lambda}_2 = Z_1^{Z_2}$

3. ✗ $\hat{\lambda}_1 = \min(X_1, X_2)$ and $\hat{\lambda}_2 = \max(X_1, X_2)$

4. ✗ $\hat{\lambda}_1 = Z_1$ and $\hat{\lambda}_2 = Z_2$

Question Number : 72 Question Id : 59345216819 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X_1, X_2, \dots, X_n be i.i.d. $P(\lambda)$ variables and consider the following statements :

(A) $T = \sum_{i=1}^n X_i$ is a complete sufficient statistic for λ

(B) $\bar{X} = \frac{T}{n}$ is the unique UMVUE for λ

(C) $E(X_1 | T)$ is the unique UMVUE for λ

Select the correct answer using the code given below :

Options :

1. ✘ (A) and (B) only

2. ✘ (B) and (C) only

3. ✔ (A), (B) and (C)

4. ✘ (A) and (C) only

Question Number : 73 Question Id : 59345216820 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let p be the probability that a coin will fall head in a single toss in order to test the hypothesis $H_0 : p = \frac{1}{2}$ against $H_1 : p = \frac{3}{4}$. A coin is tossed 5 times and H_0 is rejected if more than three heads are obtained. The probability of type-I error is :

Options :

1. ✔ $3/16$

2. ✖ 47/128

3. ✖ 81/128

4. ✖ 13/16

Question Number : 74 Question Id : 59345216821 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For a stable population, this condition is not necessary :

Options :

1. ✖ Population has a fixed age and sex distribution

2. ✖ Constant fertility and mortality rate are experienced at each age

3. ✔ Population has equal birth and death rate

4. ✖ Population is closed to migration

Question Number : 75 Question Id : 59345216822 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which one is not a measure of population growth ?

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. TFR
2. GRR
3. NRR
4. Vital Index

Question Number : 76 Question Id : 59345216823 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

With population growth rate of 1.0 how much time it would take to double the population :

Options :

1. ✘ 28 Years
2. ✘ 46 Years
3. ✔ 70 Years

4. ✘ 100 Years

Question Number : 77 Question Id : 59345216824 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

${}_n P_x$ Column of life table refers to :

Options :

1. ✘ Probability of death

2. ✔ Survival function

3. ✘ Expectation of life at birth

4. ✘ Number of persons living between ages x and $x + 1$

Question Number : 78 Question Id : 59345216825 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which one of the following is not an assumption of life-table ?

Options :

1. ✘ The deaths are equally distributed throughout the year

2. ✓ The cohort of people diminishes gradually by death and migration

3. ✘ The cohort is closed to in-migration and out-migration

4. ✘ The death rate is related to a predetermined age-specific death rate

Question Number : 79 Question Id : 59345216826 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X be a continuous random variable with probability density function $f(x)$ and $y = g(x)$ is differentiable function for all x such that $g'(x) < 0 \forall x$. Then the probability density function of Y is given by :

Options :

$$h(y) = f(g^{-1}(y)) \frac{d}{dy} g^{-1}(y) ; g(\infty) < y < g(-\infty)$$

1. ✘

$$h(y) = -f(g^{-1}(y)) \frac{d}{dy} g^{-1}(y) ; g(-\infty) < y < g(\infty)$$

2. ✓

$$h(y) = f(y) \frac{d}{dy} g^{-1}(y) ; g(\infty) < y < g(-\infty)$$

3. ✘

$$h(y) = -f(y) \frac{d}{dy} g^{-1}(y) ; g(-\infty) < y < g(\infty)$$

4. ✘

Question Number : 80 Question Id : 59345216827 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $\langle X_k \rangle$ be a sequence of random variables having probability density function

$$P(X_k = \pm k^\alpha) = \frac{1}{2}$$

Then the value of α for which strong law of large number holds for it, is :

Options :

1. ✘ $\alpha = 1$

2. ✘ $\frac{1}{2} < \alpha < 1$

3. ✘ $\alpha > 1$

4. ✔ $\alpha < \frac{1}{2}$

Question Number : 81 Question Id : 59345216828 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let rv X follows lognormal distribution. Let $Y = \log X$. The hazard rate of Y is :

Options :

1. ✓ increasing
2. ✗ decreasing
3. ✗ non-monotone
4. ✗ bath-tub shaped

Question Number : 82 Question Id : 59345216829 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X be a continuous random variable having probability density function

$$f(x) = \begin{cases} 1 & \forall 0 < x < 1 \\ 0 & \text{otherwise} \end{cases}$$

Then the probability density function $h(y)$ of $Y = e^x$ is given by :

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1.
$$h(y) = \begin{cases} \frac{1}{2}e^{-y} & \forall 1 < y < \infty \\ 0 & \text{otherwise} \end{cases}$$

2.
$$h(y) = \begin{cases} \frac{1}{2}e^{-\frac{y}{2}} & \forall 0 < y < 1 \\ 0 & \text{otherwise} \end{cases}$$

3.
$$h(y) = \begin{cases} \frac{1}{2}e^{-\frac{y}{2}} & \forall 0 < y < \infty \\ 0 & \text{otherwise} \end{cases}$$

4.
$$h(y) = \begin{cases} \frac{1}{4}e^{-y} & \forall 1 < y < \infty \\ 0 & \text{otherwise} \end{cases}$$

Question Number : 83 Question Id : 59345216830 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $X : \Omega \rightarrow \Omega'$ be a function, where Ω and Ω' are any two spaces of points. Also, let X^{-1} be the inverse function of X as a set function. If \mathcal{C} be a class of subsets of Ω' and $\sigma(\mathcal{C})$ be the minimal σ field containing \mathcal{C} , then which one of the following is *true* :

Options :

1. ✖ $X^{-1}(\mathcal{C}) \subseteq \sigma(\mathcal{C})$

2. ✘ $X^{-1}(\mathcal{C}) \supseteq \sigma(\mathcal{C})$
3. ✘ $\sigma(X^{-1}(\mathcal{C})) \supseteq \sigma(\mathcal{C})$
4. ✔ $\sigma(X^{-1}(\mathcal{C})) = X^{-1}(\sigma(\mathcal{C}))$

Question Number : 84 Question Id : 59345216831 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let us consider the following two statements :

S_1 : A field containing finite number of sets is also a σ – field.

S_2 : A field containing infinite number of sets is necessarily a σ – field.

Choose the correct answer from the options given below :

Options :

1. ✘ Both the statements S_1 and S_2 are correct
2. ✔ Statement S_1 is correct while statement S_2 is wrong
3. ✘ Statement S_2 is correct while statement S_1 is wrong
4. ✘ Both the statements S_1 and S_2 are wrong

Question Number : 85 Question Id : 59345216832 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let \mathcal{A} be a class of all the intervals of the form $(x, \infty) \forall x \in \mathbb{R}$, where \mathbb{R} is the set of all the real numbers. Then :

Options :

1. ✘ $\bigcup_{n=1}^{\infty} \left(x - \frac{1}{n}, \infty \right) \in \mathcal{A} \forall x \in \mathbb{R}$

2. ✘ $\bigcup_{n=1}^{\infty} \left(x - \frac{1}{n}, \infty \right) = (x, \infty) \forall x \in \mathbb{R}$

3. ✔ $\bigcup_{n=1}^{\infty} \left(x - \frac{1}{n}, \infty \right) = [x, \infty) \forall x \in \mathbb{R}$

4. ✘ None of three

Question Number : 86 Question Id : 59345216833 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let \mathcal{A} be a class of subsets of \mathbb{N} , the set of all the natural numbers, which is given by

$$\mathcal{A} = \{A \subseteq \mathbb{N} \mid \text{either } A \text{ is finite or } A^C \text{ is finite}\},$$

where A^C denotes the complement of the set A . Then which of the following is *correct* ?

Options :

1. ✘ \mathcal{A} is not a field of subsets of \mathbb{N}
2. ✘ \mathcal{A} is a σ – field of subsets of \mathbb{N}
3. ✘ \mathcal{A} is not closed under complementation
4. ✔ \mathcal{A} is not a σ – field of subsets of \mathbb{N}

Question Number : 87 Question Id : 59345216834 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let Ω be the sample space of a random experiment and \mathcal{A} is a σ – field of subsets of Ω .

Suppose X is a constant function defined on Ω , by $X(\omega) = c \forall \omega \in \Omega$, where c is a real constant. Then :

Options :

1. ✘ $\{\omega \in \Omega \mid X(\omega) > t\} = \phi \forall t \in \mathbb{R}$
2. ✘ $\{\omega \in \Omega \mid X(\omega) > t\} = \phi \forall t < c$

3. ✘ $\{\omega \in \Omega \mid X(\omega) > t\} = \Omega \quad \forall t > c$

4. ✔ $\{\omega \in \Omega \mid X(\omega) > t\} = \Omega \quad \forall t < c$

Question Number : 88 Question Id : 59345216835 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

An urn contains n tickets, numbered 1 to n and k tickets are randomly drawn at a time. Then the expected value of the sum of numbers on the tickets drawn is :

Options :

1. ✘ $\frac{nk}{2}$

2. ✘ $\frac{n(k+1)}{4}$

3. ✔ $\frac{k(n+1)}{2}$

4. ✘ $\frac{nk}{4}$

Question Number : 89 Question Id : 59345216836 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A and B throw with one die for a stake of Rs. 44, which is to be won by the player who first throws 6. If A has the first throw, then the respective expectations of A and B are :

Options :

1. ✘ Rs. 20, Rs. 24
2. ✔ Rs. 24, Rs. 20
3. ✘ Rs. 18, Rs. 26
4. ✘ Rs. 26, Rs. 18

Question Number : 90 Question Id : 59345216837 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $\langle X_n \rangle$ be a sequence of discrete random variables with the following probability mass function :

$$P(X_n = 1) = \frac{1}{n}, P(X_n = 0) = 1 - \frac{1}{n} \quad \forall n \in \mathbb{N}$$

Then for every $\epsilon > 0$, which one of the following statement is *correct* ?

Options :

1. ✘ $P(|X_n| > \epsilon) = \begin{cases} 0 & \forall 0 < \epsilon < 1 \\ 1 & \forall \epsilon \geq 1 \end{cases}$

2. ✓
$$P(|X_n| > \epsilon) = \begin{cases} \frac{1}{n} & \forall 0 < \epsilon < 1 \\ 0 & \forall \epsilon \geq 1 \end{cases}$$

3. ✗
$$P(|X_n| > \epsilon) = \begin{cases} \frac{1}{n} & \forall 0 < \epsilon < 1 \\ 1 & \forall \epsilon \geq 1 \end{cases}$$

4. ✗
$$P(|X_n| > \epsilon) = \begin{cases} 1 & \forall 0 < \epsilon < 1 \\ 0 & \forall \epsilon \geq 1 \end{cases}$$

Question Number : 91 Question Id : 59345216838 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following distribution possess the non-monotone hazard rate function ?

Options :

1. ✗ Gamma distribution

2. ✗ Pareto distribution

3. ✗ Weibull distribution

4. ✓ Log-normal distribution

Question Number : 92 Question Id : 59345216839 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $x_1 = -2, x_2 = 1.5, x_3 = 2.5, x_4 = -4$ be the observed values of a random sample of size 4 from the population having probability density function :

$$f(x|\theta) = \frac{e^{-x}}{e^{\theta} - e^{-\theta}} \quad \forall -\theta \leq x \leq \theta, \theta > 0$$

Then the maximum likelihood estimator of θ is :

Options :

1. ✖ Only 2
2. ✖ Either 1.5 or 2.5
3. ✔ Only 4
4. ✖ Any value between 1.5 and 2.5

Question Number : 93 Question Id : 59345216840 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X_1, X_2, X_3, \dots be a sequence of i.i.d. $N(0, 1)$ random variables. Then as

$n \rightarrow \infty, \frac{1}{n} \sum_{i=1}^n X_i^2$ converges in probability to :

Options :

1. ✖ 0

2. ✘ 0.5

3. ✔ 1

4. ✘ 2

Question Number : 94 Question Id : 59345216841 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $X_{(n)}$ be the largest order statistics of a random sample X_1, X_2, \dots, X_n from exponential distribution with probability density function $f(x) = e^{-x}; x > 0$. Then the limiting value of $P(X_{(n)} - \log_e(n) < 2)$ for large value of n is :

Options :

1. ✘ $1 - e^{-2}$

2. ✘ $e^{-e^{-0.5}}$

3. ✔ $e^{-e^{-2}}$

4. ✘ e^{-e^2}

Question Number : 95 Question Id : 59345216842 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X_1 and X_2 be two independent random variables with respective moment generating functions :

$$M_1(t) = \left(\frac{3}{4} + \frac{1}{4} e^t \right)^3 \quad \forall t \in \mathbb{R} \quad \text{and} \quad M_2(t) = e^{2(e^t - 1)} \quad \forall t \in \mathbb{R}$$

Then the value of $P(X_1 + X_2 = 1)$ is :

Options :

1. ✓ $\frac{81}{64} e^{-2}$

2. ✗ $\frac{9}{8} e^{-2}$

3. ✗ $\frac{9}{8} e^{-1}$

4. ✗ $\frac{81}{64} e^{-1}$

Question Number : 96 Question Id : 59345216843 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The value of the real constant c for which the function given below will be p.d.f. :

$$f(x) = \frac{c|x|}{(1+|x|)^4} \quad \forall x \in \mathbb{R} \text{ is :}$$

Options :

1. ✘ $\frac{1}{6}$

2. ✘ $\frac{1}{2}$

3. ✘ 2

4. ✔ 3

Question Number : 97 Question Id : 59345216844 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let Z_1, Z_2, \dots, Z_6 be the independent random variables with the following probability mass function :

$$P(Z_k = 1) = P(Z_k = -1) = \frac{1}{2} \quad \forall k = 1(1)6$$

Then $P(\sum_{k=1}^6 X_k = 4)$ is :

Options :

1. ✓ $\frac{3}{32}$

2. ✘ $\frac{3}{4}$

3. ✘ $\frac{3}{64}$

4. ✘ $\frac{3}{16}$

Question Number : 98 Question Id : 59345216845 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Lifetimes (in weeks) of 5 cancer patients are noted to be 8, 10+, 20, 37 and 50+, where (+) indicates the censored observations. The Kaplan-Meier estimate of the survival function at time 20 is :

Options :

1. ✘ $\frac{6}{15}$

2. ✓ $\frac{8}{15}$

3. ✘ $\frac{3}{5}$

4. ✘ $\frac{4}{5}$

Question Number : 99 Question Id : 59345216846 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let x be a single observation from a population having probability density function

$$f(x|\theta) = \theta e^{-\theta x} : 0 \leq x < \infty, \theta > 0$$

If $x > 1$ be the critical region for testing $H_0 : \theta = 2$ against $H_1 : \theta = 1$, then the corresponding values of α and β are, respectively :

Options :

1. ✘ $\alpha = 1 - \frac{1}{e^2}, \beta = \frac{1}{e}$

2. ✔ $\alpha = \frac{1}{e^2}, \beta = \frac{e-1}{e}$

3. ✘ $\alpha = \frac{1}{e^2}, \beta = \frac{1}{e}$

4. ✘ $\alpha = 1 - \frac{1}{e^2}, \beta = \frac{1}{e}$

Question Number : 100 Question Id : 59345216847 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X and Y denote the lifetimes (in years) of two independent components connected in series with respective probability density functions :

$$f_X(x) = \frac{x}{4} e^{-\frac{x}{2}}; x > 0$$

$$f_Y(y) = \frac{1}{2} e^{-\frac{y}{2}}; y > 0$$

Then the probability that the system will survive for at least 2 years is :

Options :

1. ✘ e^{-2}
2. ✔ $2e^{-2}$
3. ✘ $3e^{-2}$
4. ✘ $4e^{-2}$