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 :	895 904 11th April 2021 Shift 2
Subject Name :	895 904
Creation Date :	2021-04-11 19:03:33
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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
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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

CRET_Mathematics

Group Number :	1
Group Id :	509398163
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 :	509398264
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 :	509398291
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 50939818523 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Generalised conclusion on the basis of a sample is technically known as :
एक नमूने के आधार पर सामान्यीकृत निष्कर्ष तकनीकी रूप से जाना जाता है :

Options :

1. ✔ Statistical inference
सांख्यिकीय निष्कर्ष

2. ✖ Descriptive statistic
वर्णनात्मक आँकड़ा

3. ✖ Data analysis and interpretation
डेटा विश्लेषण और व्याख्या

4. ✖ All of the three
तीनों में सभी

Question Number : 2 Question Id : 50939818524 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The protocol of asking pre-meditated questions in instruments of data collection is :
समंक संग्रह के उपकरणों में पूर्व-मध्यस्थता प्रश्न पूछने का प्रोटोकॉल है :

Options :

1. ✔ Structured
संरचनात्मक

2. ✖ Unstructured
असंरचित

3. ✖ Free-rein
फ्री-रेन

4. ✖ Systematic
व्यवस्थित

Question Number : 3 Question Id : 50939818525 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Survey research is cross-sectional and therefore :
सर्वेक्षण अनुसंधान पार-अनुभागीय है और इसलिए :

Options :

1. ✔ High in replicability but low in internal validity
प्रतिकृति में उच्च लेकिन आंतरिक वैधता में कम

2. ✖ High in internal validity but low in reliability
आंतरिक वैधता में उच्च लेकिन विश्वसनीयता में कम

3. ✖ High in ecological validity but low in external validity
पारिस्थितिक वैधता में उच्च लेकिन बाहरी वैधता में कम

4. ✖ None of the three
तीनों में से कोई नहीं

Question Number : 4 Question Id : 50939818526 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Testing hypothesis is a ..... .
परिकल्पना परीक्षण है ..... ।

Options :

1. ✔ Inferential statistics
आनुमानिक सांख्यिकी

2. ✖ Descriptive statistics
वर्णनात्मक सांख्यिकी

3. ✖ Data preparation
समंक का अयोजन

4. ✖ Data analysis
समंक का विश्लेषण

Question Number : 5 Question Id : 50939818527 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Inductive logic proceeds from :
आगमनात्मक तर्क अग्रसर होता है :

Options :

1. ✖ General to General
सामान्य से सामान्य

2. ✔ Particular to General
विशेष से सामान्य

3. ✖ General to Particular
सामान्य से विशेष

4. ✖ Particular to Particular
विशेष से विशेष

Question Number : 6 Question Id : 50939818528 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The sampling technique based on referral system of respondents is known as :
उत्तरदाताओं की रेफरल प्रणाली पर आधारित प्रतिचयन तकनीक को जाना जाता है :

Options :

1. ✖ Convenience Sampling
सुविधा प्रतिचयन

2. ✔ Snowball Sampling
स्नोबॉल प्रतिचयन

3. ✖ Cluster Sampling
समूह प्रतिचयन

4. ✖ Stratified Sampling
स्तरीकृत प्रतिचयन

Question Number : 7 Question Id : 50939818529 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Analysing the impact of demonetization on economic growth falls under which category of research ?
आर्थिक विकास पर नोटबंदी के प्रभाव का विश्लेषण किस शोध या अनुसंधान श्रेणी के अन्तर्गत आता है ?

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

Options :

1. Descriptive Research
वर्णनात्मक शोध

2. Fundamental Research
मौलिक शोध

3. Pure Research
शुद्ध शोध

4. Casual Research
कारणात्मक शोध

Question Number : 8 Question Id : 50939818530 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Likert scaling is based on :
लिकर्ट पैमाना आधारित है :

Options :

1. ✔ Item-wise scale
पद-क्रम पैमाने पर

2. ✖ Summative scale
योगात्मक पैमाने पर

3. ✖ Reflective scale
परावर्तक पैमाने पर

4. ✖ Formative scale
प्रारंभिक पैमाने पर

Question Number : 9 Question Id : 50939818531 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A research design appropriate for a particular research problem, usually involves the consideration of the following factors :
एक शोध रूपरेखा एक विशेष शोध समस्या के लिए उपयुक्त होती है, जिसमें सामान्यतया निम्नलिखित कारकों पर विचार किया जाता है :

(a) The means of obtaining information
सूचना प्राप्त करने का साधन

(b) The availability and skills of the researcher
शोधकर्ता की उपलब्धता और कौशल

(c) The nature of the problem to be studied
अध्ययन की जाने वाली समस्या की प्रकृति

(d) The availability of time and money for the research work
शोध कार्य के लिए समय और धन की उपलब्धता

Options :

1. ✗ (a), (b) and (d)
(a), (b) और (d)

2. ✗ (a), (b) and (c)
(a), (b) और (c)

3. ✓ (a), (b), (c) and (d)
(a), (b), (c) और (d)

4. ✗ (b), (c) and (d)
(b), (c) और (d)

Question Number : 10 Question Id : 50939818532 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

SHODHGANGOTRI is :
SHODHGANGOTRI है :

Options :

1. ✗ Database of articles
लेखों का डेटाबेस

2. ✗ Database of thesis & dissertation
थीसिस और शोध प्रबंध का डेटाबेस

3. ✓ Database of research synopsis
रिसर्च सिनोप्सिस का डेटाबेस

4. ✗ Database of experts
विशेषज्ञों का डेटाबेस

Question Number : 11 Question Id : 50939818533 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following statements about random sampling method is ***not*** true ?
यादृच्छिक न्यादर्श पद्धति के बारे में निम्नलिखित में से क्या सत्य ***नहीं*** है ?

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

Options :

1. In this methods, each unit has equal chance to be selected.
इस पद्धति में प्रत्येक इकाई के चयनित होने का समान अवसर होता है।

2. Each sample has equal chance of selection.
प्रत्येक प्रतिदर्श के चयन की सम्भावना समान होती है।

3. It is free from personal prejudices and bias
यह व्यक्तिगत पूर्वधारणाओं और पक्षपातों से रहित होता है।

4. This method is very simple to use
यह पद्धति प्रयोग करने में बेहद आसान है।

Question Number : 12 Question Id : 50939818534 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The English word 'Research' derives its origin from :
अंग्रेजी शब्द 'रिसर्च' (शोध) की व्युत्पत्ति है :

Options :

1. ✖ Latin
लैटिन

2. ✔ French
फ्रेंच

3. ✖ German
जर्मन

4. ✖ Italian
इटालियन

Question Number : 13 Question Id : 50939818535 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following approach uses the study of groups to identify general laws that apply to a large group of people ?
इनमें से कौन-सा दृष्टिकोण लोगों के बड़े समूह पर लागू होने वाले सामान्य नियमों की पहचान करने के लिए 'समूहों के अध्ययन' का उपयोग करता है ?

Options :

1. ✖ Idiographic Approach
इडियोग्राफिक (वस्तुपरक) दृष्टिकोण

2. ✔ Nomothetic Approach
नोमोथेटिक (सिद्धान्तपरक) दृष्टिकोण

3. ✖ Empirical Approach
अनुभवजन्य दृष्टिकोण

4. ✖ Pragmatic Approach
यथार्थवादी दृष्टिकोण

Question Number : 14 Question Id : 50939818536 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In the context of Research Process, the following operational steps are taken in certain order :
अनुसंधान प्रक्रिया के संदर्भ में, निम्नलिखित परिचालन चरण एक निश्चित क्रम में उठाए जाते हैं :

(A) Conceptualising the research design
अनुसंधान अभिकल्प की अवधारणा।

(B) Formulating a research problem
शोध समस्या का गठन।

(C) Selecting a sample
प्रतिदर्श का चयन।

(D) Constructing an instrument for data collection
डेटा संग्रह के लिए अनुसंधान साधन का निर्माण।

Which of the following options represents the correct order ?
निम्नलिखित में से कौन-सा विकल्प सही क्रम का प्रतिनिधित्व करता है ?

Options :

1. ✔ B, A, D, C

2. ✖ B, D, A, C

3. ✖ B, C, A, D

4. ✖ B, C, D, A

Question Number : 15 Question Id : 50939818537 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Impact factor of a journal is defined as :
किसी जर्नल के प्रभाव कारक (Impact factor) को इस प्रकार परिभाषित किया गया है :

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

Options :

1. It is the monthly average number of citations that articles published in the last twelve months in a given journal received
यह किसी दिए गए जर्नल में पिछले बारह महीनों में प्रकाशित लेखों की मासिक औसत उद्धरण संख्या है

2. It is the yearly average number of citations that articles published in the last four years in a given journal received
यह दी गइ पत्रिका में पिछले चार वर्षों में प्रकाशित लेखों की वार्षिक औसत उद्धरण संख्या है

3. It is the yearly average number of citations that articles published in the last two years in a given journal received
यह किसी दिए गए जर्नल में पिछले दो वर्षों में प्रकाशित लेखों की वार्षिक औसत उद्धरण संख्या है

4. It is the yearly average number of citations that articles published in the last five years in a given journal received
यह दी गई पत्रिका में पिछले पाँच वर्षों में प्रकाशित लेखों की वार्षिक औसत उद्धरण संख्या है

Question Number : 16 Question Id : 50939818538 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The three basic principles of experimental design are :
प्रयोगात्मक योजना के तीन मूलभूत सिद्धान्त हैं :

Options :

1. ✖ Replication, randomization and Substitution
रेप्लीकेशन, रेन्डेमाइजेशन एवं सब्स्टीट्यूशन

2. ✔ Replication, randomization, and local control
रेप्लीकेशन, रेन्डेमाइजेशन एवं लोकल कन्ट्रोल

3. ✖ Substitution, replication and local control
सब्स्टीट्यूशन, रेप्लीकेशन एवं लोकल कन्ट्रोल

4. ✖ Substitution, randomization and local control
सब्स्टीट्यूशन, रेन्डेमाइजेशन एवं लोकल कन्ट्रोल

Question Number : 17 Question Id : 50939818539 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Differences in the means of more than two treatments are analysed by :
दो से अधिक उपचारों के माध्य में विभेद का विश्लेषण किया जाता है :

Options :

1. ✖ Simple t-test
साधारण टी-परीक्षण

2. ✖ Chi square test
काई स्क्वायर परीक्षण

3. ✔ F-test
एफ-परीक्षण

4. ✖ Paired sample t-test
युग्मित सैम्पल टी-टेस्ट

Question Number : 18 Question Id : 50939818540 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is ***not*** a method of research ?
निम्नलिखित में से कौन शोध की एक विधि ***नहीं*** है ?

Options :

1. ✖ Survey
सर्वेक्षण

2. ✖ Historical
ऐतिहासिकता

3. ✔ Observation
अवलोकन

4. ✖ Philosophical
दार्शनिकता

Question Number : 19 Question Id : 50939818541 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following graphical presentation is two dimensional ?
निम्न में से कौन आरेखीय प्रस्तुतीकरण **दो** अक्षीय है ?

Options :

1. ✖ Pie chart
पाई चार्ट

2. ✖ Bar chart
दण्ड आरेख

3. ✔ Histogram
आयत चित्र

4. ✖ Box plot
बॉक्स प्लाट

Question Number : 20 Question Id : 50939818542 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Correlational Research can be classified from the perspectives of :
सह-संबंध अनुसंधान को किस दृष्टिकोण के आधार पर वर्गीकृत किया जा सकता है ?

Options :

1. ✖ Applications of the findings of the research study.
शोध अध्ययन के निष्कर्षों के अनुप्रयोग के आधार पर।

2. ✔ Objectives of the research study.
शोध अध्ययन के उद्देश्य के आधार पर।

3. ✖ Mode of enquiry used in conducting the study.
अध्ययन के संचालन में उपयोग की जाने वाली जांच के तरीके के आधार पर।

4. ✖ Outcome of the research.
शोध के परिणाम के आधार पर।

Question Number : 21 Question Id : 50939818543 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A researcher might want to examine the reactions of the general population towards people in wheelchairs. He/She can study their reactions by sitting in a wheelchair himself/herself. Such method of collecting data is known as :
एक शोधकर्ता व्हीलचेयर में बैठे लोगों के प्रति सामान्य आबादी की प्रतिक्रियाओं की जांच करना चाहता है। वह स्वयं व्हीलचेयर में बैठकर उनकी प्रतिक्रियाओं का अध्ययन कर सकता है। डेटा एकत्र करने की इस विधि को किस रूप में जाना जाता है ?

Options :

1. ✖ Disguised Observation
प्रच्छन्न अवलोकन

2. ✔ Participant Observation
प्रतिभागी अवलोकन

3. ✖ Non-Participant Observation
गैर-प्रतिभागी अवलोकन

4. ✖ Self Recording Observation
स्वयं रिकॉर्डिंग अवलोकन

Question Number : 22 Question Id : 50939818544 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is are citation/reference style(s) ?
निम्नलिखित में से कौन उद्धरण/संदर्भ विधि (विधियाँ) है/हैं ?

(A) American Physical Association
अमेरिकन फिजिकल एसोसिएशन

(B) Modern Linguistic Association
मॉडर्न लिंग्विस्टिक एसोसिएशन

(C) Oxford Standard for the Citation of Language Association
ऑक्सफोर्ड स्टैण्डर्ड फॉर द साइटेशन ऑफ लेंग्वेज एसोसिएशन

(D) Vancouver
वैंकूवर

Choose the correct answer from the codes given below :
निम्नलिखित में से कौन-सा सही कूट है :

Options :

1. ✖ (a), (b), (c) and (d)
(a), (b), (c) और (d)

2. ✖ (a), (b) and (c)
(a), (b) और (c)

3. ✖ (a) and (d)
(a) और (d)

4. ✔ (d) only
केवल (d)

Question Number : 23 Question Id : 50939818545 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

One-way ANOVA is used to :
एक-तरफा एनोवा का उपयोग किया जाता है :

Options :

1. ✖ Determine whether there is any statistically significant difference between the means of single independent group before and after intervention
यह निर्धारित करता है कि क्या एक स्वतंत्र समूह में हस्तक्षेप के पहले और बाद के माध्य (mean) के बीच कोई सांख्यिकीय महत्त्वपूर्ण अंतर है

2. ✖ Determine whether there are any statistically significant differences between the medians of two or more independent groups
यह निर्धारित करता है कि क्या दो या अधिक स्वतंत्र समूहों के मध्यस्थों के बीच कोई सांख्यिकीय महत्त्वपूर्ण अन्तर है

3. ✔ Determine whether there are any statistically significant differences between the means of two or more independent/unrelated groups
यह निर्धारित करता है कि क्या दो या अधिक स्वतंत्र/असंबंधित समूहों के माध्य (mean) के बीच कोई सांख्यिकीय महत्त्वपूर्ण अन्तर है या नहीं

Determine whether there are any statistically significant differences between the squared means of two or more independent group
निर्धारित करता है कि क्या दो या अधिक स्वतंत्र समूहों के वर्ग माध्य (squared mean) के बीच कोई सांख्यिकीय महत्त्वपूर्ण अन्तर है या नहीं

4. ✖

Question Number : 24 Question Id : 50939818546 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following principles of experimental design have been enumerated by Professor R. A. Fisher ?
प्रायोगिक डिजाइन के निम्नलिखित सिद्धान्तों में से कौन-कौन से सिद्धान्त प्रोफेसर आर० ए० फिशर द्वारा गिनाए गए हैं ?

(a) Principle of Revision
संशोधन का सिद्धान्त

(b) Principle of Replication
प्रतिकृति का सिद्धान्त

(c) Principle of Randomization
यादृच्छिकीकरण का सिद्धान्त

(d) Principle of Local Control
स्थानीय नियंत्रण का सिद्धान्त

Choose the correct answer from the codes given below :
नीचे दिए गए कोड में से सही उत्तर चुनें :

Options :

(a), (b) and (c)
(a), (b) और (c)

1. ✖

(a), (b) and (d)
(a), (b) और (d)

2. ✖

(b) (c) and (d)
(b) (c) और (d)

3. ✔

(a), (c) and (d)
(a), (c) और (d)

4. ✖

Question Number : 25 Question Id : 50939818547 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Read the statements A and B and choose the correct option :
कथन A और B पढ़ें और सही विकल्प चनें :

Statement A : Exploratory research studies are also termed as formulative research studies.
कथन A : अन्वेषणात्मक शोध अध्ययनों को प्रारंभिक शोध अध्ययन भी कहा जाता है।

Statement B : Exploratory research study is undertaken with the objective either to explore an area where little is known or to investigate the possibilities of undertaking a particular research study.
कथन B : अन्वेषणात्मक शोध अध्ययन का उद्देश्य किसी ऐसे विषय में शोध करना जिसके बारे में बेहद कम जानकारी उपलब्ध हो या किसी ख़ास विषय के बारे में शोध अध्ययन करने की संभावनाओं का पता लगाना होता है।

Options :

Both the statements are true.
दोनों कथन सत्य हैं।

1. ✔

Both the statements are false.
दोनों कथन असत्य हैं।

2. ✖

Statement A is true but B is false.
3. ✖ कथन A सत्य है लेकिन B गलत है।

Statement B is true but A is false.
4. ✖ कथन B सत्य है लेकिन A गलत है।

Question Number : 26 Question Id : 50939818548 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following are the online anti-plagiarism software ?
निम्नलिखित में से कौन-से ऑनलाइन एंटी-प्लेजिरिज्म सॉफ्टवेयर हैं :

(a) Urkund
उरकुंड

(b) Overleaf
ओवरलीफ

(c) Turnitin
टर्निटिन

(d) Viper
वाईपर

Choose the correct answer from the codes given below :
नीचे दिए गए कोड में से सही उत्तर चुनें :

Options :

(a), (b) and (c)
1. ✖ (a), (b) और (c)

(a), (b) and (d)
2. ✖ (a), (b) और (d)

(a), (c) and (d)
3. ✔ (a), (c) और (d)

(a) and (c)
4. ✖ (a) और (c)

Question Number : 27 Question Id : 50939818549 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Whether a test is one-sided or two-sided depends on :
क्या एक परीक्षण एकतरफा है या दो तरफा है :

Options :

alternative hypothesis
1. ✔ वैकल्पिक परिकल्पना

null and alternate both
2. ✖ शून्य और वैकल्पिक दोनों

null hypothesis
3. ✖ अशक्त परिकल्पना

either by null or by alternate
4. ✖ या तो शून्य या वैकल्पिक द्वारा

Question Number : 28 Question Id : 50939818550 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which measure of dispersion do not depends on all observations ?
फैलाव का कौन सा माप सभी अवलोकनों पर निर्भर नहीं करता है ?

Options :

1. ✖ Root mean & square deviation
मूल माध्य और वर्ग विचलन

2. ✖ Mean deviation
माध्य विचलन

3. ✔ Quartile deviation
चतुर्थक विचलन

4. ✖ Standard deviation
मानक विचलन

Question Number : 29 Question Id : 50939818551 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If r is the simple correlation coefficient, the quantity r^2 is termed as :
यदि r सरल सहसंबंध गुणांक है, तो मात्र r^2 को निम्न के रूप में कहा जाता है :

Options :

1. ✖ Coefficient of alienation
परकीयकरण का गुणांक

2. ✖ Coefficient of variation
भिन्नता का गुणांक

3. ✔ Coefficient of determination
दृढ़ संकल्प का गुणांक

4. ✖ Coefficient of non-determination
गैर-निर्धारण का गुणांक

Question Number : 30 Question Id : 50939818552 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A Scattergram is extremely effective :
एक स्कैटरग्राम अत्यंत प्रभावी है :

Options :

1. ✔ to show visually how two variables are covering
नेत्रहीन दिखाने के लिए कि दो चर कैसे ढकते हैं

2. ✖ in organising the scattered footnotes of the research.
शोध के बिखरे पांवों को व्यवस्थित करने में।

3. ✖ in organising the scattered bibliography of the research.
शोध की बिखरी हुई ग्रंथ सूची के आयोजन में।

4. ✖ in organising the scattered results drawn after the rigorous literature review.
कठोर साहित्य समीक्षा के बाद निकाले गए बिखरे परिणामों को व्यवस्थित करने में।

Question Number : 31 Question Id : 50939818553 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The conclusions/findings of which type of research can ***not*** be generalized to other situations ?
किस प्रकार के शोध के निषकर्ष को दूसरी परिस्थितियों में सामान्यीकृत ***नहीं*** किया जा सकता है ?

Options :

1. ✖ Casual Comparative Research
कारणात्मक तुलनात्मक शोध

2. ✖ Historical Research
ऐतिहासिक शोध

3. ✔ Descriptive Research
विवरणात्मक शोध

4. ✖ Experimental Research
प्रायोगिक शोध

Question Number : 32 Question Id : 50939818554 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which one is called non-probability sampling ?
निम्नलिखित में से कौन गैर-प्रायिकता प्रतिचयन कहा जाता है ?

Options :

1. ✔ Quota sampling
कोटा प्रतिचयन

2. ✖ Cluster sampling
गुच्छ प्रतिचयन

3. ✖ Systematic sampling
सुनियोजित/व्यवस्थित प्रतिचयन

4. ✖ Stratified random sampling
स्तरित यादृच्छिक प्रतिचयन

Question Number : 33 Question Id : 50939818555 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In an experimental design, the dependent variable is :
एक प्रयोगात्मक प्रारूप में निर्भर चर वो होता है जिसे/जिसमें :

Options :

1. ✔ The one that is not manipulated and in which any changes are observed
कोई परिवर्तन/छेड़छाड़ नहीं की जाती और जिसमें होने वाले परिवर्तन की समीक्षा की जाती है।

2. ✖ The one that is manipulated in order to observe any effects on the other
परिवर्तन किया जाता है जिससे दूसरों में होने वाले परिवर्तन की समीक्षा की जाए।

3. ✖ A measure of the extent to which personal values affect research
किस प्रकार व्यक्तिगत मूल्य शोध को प्रभावित करते हैं उसके मापक के रूप में प्रयोग किया जाता है।

4. ✖ An ambiguous concept whose meaning depends on how it is defined
एक अस्पष्ट अवधारणा माना जा सकता है जिसका अर्थ इस पर निर्भर करता है कि उसे कैसे परिभाषित किया जाए।

Question Number : 34 Question Id : 50939818556 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

When a group of people with defined characteristics are followed up to determine incidence is known as :
घटना को निर्धारित करने के लिए परिभाषित विशेषताओं वाले लोगों के समूह को निम्न प्रकार से जाना जाता है :

Options :

1. ✖ Case series
केस सीरीज

2. ✔ Cohort
कोहोर्ट

3. ✖ Case control
केस नियंत्रण

4. ✖ Experimental
प्रायोगिक

Question Number : 35 Question Id : 50939818557 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In the process of conducting research, formulation of hypothesis is followed by :
अनुसंधान संचालन की प्रक्रिया में, उपकल्पना निर्माण का अनुसरण करता है :

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

Options :

1. Statement of objectives
उद्देश्यों का कथन

2. Collection or data
तथ्यों का संकलन

3. Analysis of data
तथ्यों का विश्लेषण

4. Selection of research tools
अनुसंधान यंत्रों का चयन

Question Number : 36 Question Id : 50939818558 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following features are considered as critical in qualitative research ?
निम्नलिखित में से कौन-सी विशेषतायें गुणात्मक शोध के लिए महत्त्वपूर्ण मानी जाती हैं ?

Options :

1. ✖ Collecting data with the help of standardized research tools.
मानकित शोध साधनों के के सहयोग से आंकड़ों का संग्रहण

2. ✖ Design sampling with probability sample techniques.
प्रायिकता प्रतिचयन तकनीकों के प्रयोग द्वारा प्रतिचयन प्रारूप का निर्धारण

3. ✔ Collecting data with bottom-up empirical evidence.
ऊर्ध्वगामी आनुभविक साक्ष्यों के प्रयोग से आंकड़ों का संग्रहण

4. ✖ Gathering data with top-down schematic evidence.
शीर्ष-पाद योजनाबद्ध साक्ष्यों के प्रयाग से आंकड़ों का संग्रहण

Question Number : 37 Question Id : 50939818559 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Among 25000 individual in a city, 105 were indentified with Covid-19 positive. Calculate the prevalence of Covid-19 per 1000 population.
एक शहर में 25000 व्यक्तियों में, 105 कोविड–19 सकारात्मक के साथ इडेंट किए गए थे। प्रति 1000 जनसंख्या पर कोविड–19 की व्यापकता की गणना करें।

Options :

1. ✖ 5.2

2. ✔ 4.2

3. ✖ 3.2

4. ✖ 2.2

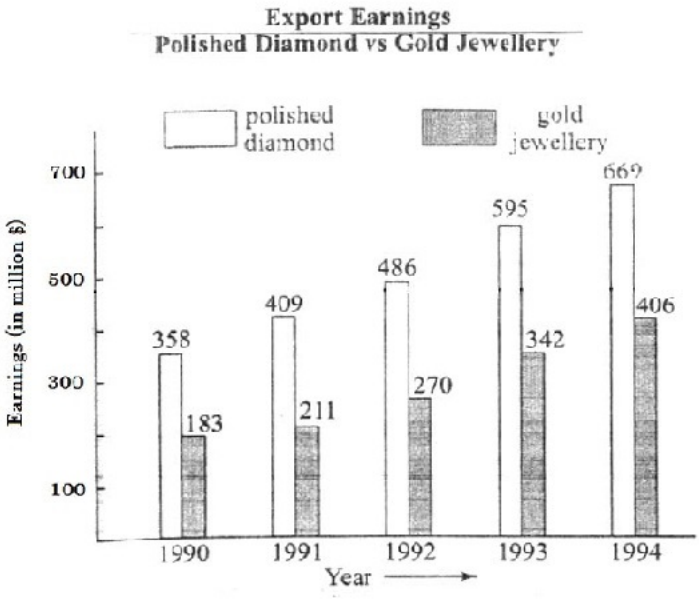
Question Number : 38 Question Id : 50939818560 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The following multiple bar chart shows the export earnings from polished diamonds and gold jewellery. Study the chart and answer the question :

निम्नलिखित बहु बार चार्ट पालिश्ड हीरे और सोने के आभूषणों से निर्यात आय को दर्शाता है। चार्ट का अध्ययन करें और दिए गए प्रश्न का उत्तर दें :



What was average earning from gold jewellery over 1990 to 1994 ?
1990 से 1994 तक स्वर्ण आभूषण से औसत प्राप्ति क्या थी ?

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

Options :

1. 503.4 Million
503.4 मिलियन

2. 501.6 Million
501.6 मिलियन

3. 500 Million
500 मिलियन

4. 510 Million
510 मिलियन

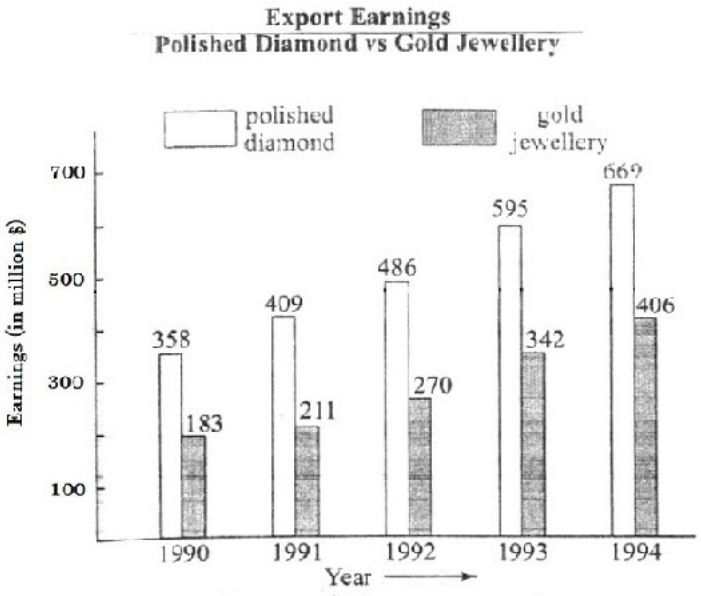
Question Number : 39 Question Id : 50939818561 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The following multiple bar chart shows the export earnings from polished diamonds and gold jewellery. Study the chart and answer the question :

निम्नलिखित बहु बार चार्ट पालिश्ड हीरे और सोने के आभूषणों से निर्यात आय को दर्शाता है। चार्ट का अध्ययन करें और दिए गए प्रश्न का उत्तर दें :



In which year the difference of export earning of two types of jewellery is maximum ?
किस वर्ष में दो आभूषणों के निर्यात प्राप्ति का अन्तर अधिकतम था ?

Options :

1. ✔ 1994

2. ✖ 1993

3. ✖ 1991

4. ✖ 1992

Question Number : 40 Question Id : 50939818562 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Directions : Study the following table and answer the question given :
Production of different types of scooters in a company

निर्देश : निम्नलिखित तालिका का अध्ययन करें और दिए गए प्रश्न का उत्तर दें :
एक कंपनी में विभिन्न प्रकार के स्कूटर का उत्पादन

Figures in '000

Year	Type of scooters				
	A	B	C	D	E
1992	180	60	84	100	76
1993	210	90	32	80	48
1994	135	30	44	95	85
1995	190	85	69	125	115
1996	260	95	120	80	120
1997	240	140	161	90	185

What was the approximate percentage of production of A-type scooters in 1995 to its total production over the years ?

1995 में A-टाइप के स्कूटरों के उत्पादन का अनुमानित प्रतिशत इसके कुल उत्पादन से कितना था ?

Options :

1. ✖ 20

2. ✔ 15

3. ✖ 23

4. ✖ 40

Subject_&_Area Concerned

Section Id :	509398265
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 :	509398292
Question Shuffling Allowed :	Yes

Question Number : 41 Question Id : 50939818563 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For the equation

$$\frac{dx}{dt} = 2x\,(x-5)\left(1-\frac{x}{10}\right)$$

with $x(0)=4$, which of the following statements is correct?

Options :

1. ✔ $\lim_{t\to\infty} x(t) = 0$

2. ✖ $\lim_{t\to\infty} x(t) = 4$

3. ✖ $\lim_{t\to\infty} x(t) = 5$

4. ✖ $\lim_{t\to\infty} x(t) = 10$

Question Number : 42 Question Id : 50939818564 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The differential equation

$$\frac{dy}{dx} = y^{2/3}, y(0) = 0$$

has

Options :

1. ✖ no solution

2. ✖ unique solution

3. ✔ two solutions

4. ✖ infinitely many solutions

Question Number : 43 Question Id : 50939818565 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The differential equation

$$\frac{d^2x}{dt^2} + (\cos t)\frac{dx}{dt} + e^t x = t^2$$

can be written in the matrix form as

(where $\cdot \equiv \frac{d}{dt}$)

Options :

1. ✔ $\begin{bmatrix} \dot{x} \\ \dot{x}_1 \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ -e^t & -\cos t \end{bmatrix} \begin{bmatrix} x \\ x_1 \end{bmatrix} + \begin{bmatrix} 0 \\ t^2 \end{bmatrix}$

2. ✖ $\begin{bmatrix} \dot{x} \\ \dot{x}_1 \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ -\cos t & -e^t \end{bmatrix} \begin{bmatrix} x \\ x_1 \end{bmatrix} + \begin{bmatrix} 0 \\ t^2 \end{bmatrix}$

3. ✖ $\begin{bmatrix} \dot{x} \\ \dot{x}_1 \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ e^t & \cos t \end{bmatrix} \begin{bmatrix} x \\ x_1 \end{bmatrix} + \begin{bmatrix} 0 \\ t^2 \end{bmatrix}$

4. ✖ $$\begin{bmatrix} \dot{x} \\ \dot{x}_1 \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ e^t & \cos t \end{bmatrix} \begin{bmatrix} x \\ x_1 \end{bmatrix} + \begin{bmatrix} t^2 \\ 0 \end{bmatrix}$$

Question Number : 44 Question Id : 50939818566 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The solution of the partial differential equation

$$\frac{\partial u}{\partial t} + 3\frac{\partial u}{\partial x} + 2u = 0$$

with $u(x, 0) = \sin x^2$ is

Options :

1. ✖ $\sin(x^2 - 4t^2)$

2. ✖ $e^{-2t}\sin(x - 3t)$

3. ✔ $e^{-2t}\sin(x - 2t)^2$

4. ✖ $e^{-2t}\sin x^2$

Question Number : 45 Question Id : 50939818567 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If $u(x, t)$ satisfy the partial differential equation

$$\frac{\partial^2 u}{\partial t^2} = 9\frac{\partial^2 u}{\partial x^2}$$

then $u(x, t)$ can be of the form :

(where f and g are non-trivial smooth functions.)

Options :

1. ✖ $u(x, t) = f(x^2 - 9t^2) + g(x^2 + 9t^2)$

2. ✖ $u(x, t) = f(3x - t) + g(3x + t)$

3. ✖ $u(x,t) = f(3x-t) + tg(3x-t)$

4. ✔ $u(x,t) = f(e^{x-3t}) + g(x+3t)$

Question Number : 46 Question Id : 50939818568 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let a, b, c and d be four differentiable functions on $\mathbb{R}^2$. Then differential equation

$$\left(a(x,y)\frac{\partial}{\partial x} + b(x,y)\frac{\partial}{\partial y}\right)\left(c(x,y)\frac{\partial}{\partial x} + d(x,y)\frac{\partial}{\partial y}\right)u = 0$$

is

Options :

1. ✖ always hyperbolic

2. ✖ always parabolic

3. ✖ never parabolic

4. ✔ never elliptic

Question Number : 47 Question Id : 50939818569 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The Newton-Raphson algorithm for finding the value of $\sqrt[5]{N}$ is

Options :

1. ✔ $x_{n+1} = \frac{1}{5}\left(4x_n + \frac{N}{x_n^4}\right)$

2. ✖ $x_{n+1} = \frac{1}{5}\left(4x_n - \frac{N}{x_n^4}\right)$

3. ✖ $$x_{n+1} = \frac{1}{4}\left(5x_n + \frac{N}{x_n^4}\right)$$

4. ✖ $$x_{n+1} = \frac{1}{4}\left(5x_n - \frac{N}{x_n^4}\right)$$

Question Number : 48 Question Id : 50939818570 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If $f(x) = 3x^3 - 2x^2 + 1$, then $\Delta^3 f(x)$ is equal to

Options :

1. ✖ 3

2. ✖ 6

3. ✖ 9

4. ✔ 18

Question Number : 49 Question Id : 50939818571 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Using trapezoidal rule, the value of $\int_0^1 f(x)\,dx$, where $f(x)$ is gi

x	:	0·0	0·5	1·0
$f(x)$:		1·0	0·8	0·5

is :

Options :

1. ✖ 0·50

2. ✔ 0·75

3. ✖ 1·25

4. ✖ 1·50

Question Number : 50 Question Id : 50939818572 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The value of y at $x = 0 \cdot 1$ of the initial value problem $\frac{dy}{dx} = x + y$, y

Runge-Kutta fourth-order method is

Options :

1. ✖ 1·0003

2. ✖ 1·0013

3. ✖ 1·0103

4. ✔ 1·1103

Question Number : 51 Question Id : 50939818573 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The continuum hypothesis for fluid in motion states that

Options :

1. ✖ the molecules are very close to each other

2. ✖ the particle is well distributed in a given space

3. ✔ the material is continuously distributed in a given space

4. ✖ infinitely many particles are scattered in a given space

Question Number : 52 Question Id : 50939818574 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The surface $f(x, y, z, t) = 0$ will be a possible boundary surfac
motion if

Options :

1. ✖ the material derivative of f is greater than zero

2. ✖ the material derivative of f is less than zero

3. ✖ the material derivative of f is a constant

4. ✔ the material derivative of f is equal to zero

Question Number : 53 Question Id : 50939818575 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For a irrotational motion of fluid, which of the following statemer true?

Options :

1. ✖ The vorticity vector is non-zero.

2. ✔ The vorticity vector is zero.

3. ✖ The divergence of velocity is non-zero.

4. ✖ The divergence of velocity is zero.

Question Number : 54 Question Id : 50939818576 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The complex potential at any point z of a fluid (in $2D$ motion) due t strength m at a point z_0 and a doublet of strength μ at the origin w doublet's axis is

Options :

1. ✖ $\frac{\mu}{z} + m \log (z - z_0)$

2. ✖ $\frac{\mu}{z^2} + m \log (z - z_0)$

3. ✔ $\frac{\mu}{z} - m \log (z - z_0)$

4. ✖ $\frac{\mu}{z^2} - m \log (z - z_0)$

Question Number : 55 Question Id : 50939818577 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

At any point in a viscous fluid in motion there exist exactly

Options :

1. ✔ three principal planes

2. ✖ six principal planes

3. ✖ nine principal planes

4. ✖ twelve principal planes

Question Number : 56 Question Id : 50939818578 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Number of independent stress components in a stress matrix is

Options :

1. ✖ 9

2. ✔ 6

3. ✖ 3

4. ✖ 2

Question Number : 57 Question Id : 50939818579 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If a rigid body is in a rotating frame, then

Options :

1. ✖ Both centrifugal and Coriolis forces always exist

2. ✔

centrifugal force always exists and Coriolis force exists only when t is in motion in the rotating frame

3. ✖

centrifugal force exists only when the body is in motion in the rotati and Coriolis force always exists

4. ✖ Either centrifugal force or Coriolis force exists

Question Number : 58 Question Id : 50939818580 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The generalized momentum variable corresponding to a cyclic co

Options :

1. ✔ remains constant during motion

2. ✖ takes several values during motion

3. ✖ remains constant only in the first-half of the motion

4. ✖ remains constant only in the second-half of the motion

Question Number : 59 Question Id : 50939818581 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For a body rotating about a fixed axis under no external forces

Options :

1. ✔ the kinetic energy and the angular momentum are constants thr the motion

2. ✖ the kinetic energy and the angular momentum are variables throug motion

3. ✖ the angular momentum is constant and the kinetic energy is throughout the motion

4. ✖

the kinetic energy is constant and the angular momentum is throughout the motion

Question Number : 60 Question Id : 50939818582 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The Poisson's bracket of two dependent variables $u(q_r, p_r, t; r = 1,$ $v(q_r, p_r, t; r = 1, 2, \cdots, n)$ is defined as

Options :

1. ✔ $$[u, v] = \sum_{r=1}^{n} \left(\frac{\partial u}{\partial q_r} \frac{\partial v}{\partial p_r} - \frac{\partial u}{\partial p_r} \frac{\partial v}{\partial q_r} \right)$$

2. ✖ $$[u, v] = \sum_{r=1}^{n} \left(\frac{\partial u}{\partial p_r} \frac{\partial v}{\partial q_r} + \frac{\partial u}{\partial q_r} \frac{\partial v}{\partial p_r} \right)$$

3. ✖ $$[u, v] = \sum_{r=1}^{n} \left(\frac{\partial u}{\partial p_r} \frac{\partial v}{\partial q_r} - \frac{\partial u}{\partial q_r} \frac{\partial v}{\partial p_r} \right)$$

4. ✖ $$[u, v] = \sum_{r=1}^{n} \left(\frac{\partial u}{\partial q_r} - \frac{\partial v}{\partial p_r} \right)$$

Question Number : 61 Question Id : 50939818583 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The minimizer and maximizer of the function

$$f(x_1, x_2) = \frac{1}{3} x_1^3 + \frac{1}{3} x_2^3 - 4x_1 - 16x_2$$

are

Options :

1. ✔ $(2, 4), (-2, -4)$

2. ✖ $(-2,-4),(2,4)$

3. ✖ $(-4,-2),(2,4)$

4. ✖ $(-4,-2),(4,2)$

Question Number : 62 Question Id : 50939818584 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If

$$Q=\begin{bmatrix}3 & 0 & 1\\ 0 & 4 & 2\\ 1 & 2 & 3\end{bmatrix}$$

then the directions Q-conjugate to $(1,0,0)$ are :

Options :

1. ✔ $(1,0,-3),(1,4,-3)$

2. ✖ $(0,1,-3),(1,4,-3)$

3. ✖ $(0,-3,1),(1,4,-3)$

4. ✖ $(0,-3,1),(1,0,-3)$

Question Number : 63 Question Id : 50939818585 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The function $f(x,y,z):=4x^2+5z^2+6xy+xz-3x-2y+15$ is

Options :

1. ✖ Both convex and concave

2. ✖ convex but not concave

3. ✖ concave but not convex

4. ✔ Neither convex nor concave

Question Number : 64 Question Id : 50939818586 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If $\{x^k\}_{k=0}^{\infty}$ is a steepest descent sequence for a given function $f:\mathcal{R}$ that $x^1 = (1, 2, 3)^T$, $x^2 = (2, t, 4)^T$, $x^3 = (4, 0, 1)^T$, $x^4 = (2, s, 3)^T$, ther of t and s are

Options :

1. ✔ $t = 1,\ s = -10$

2. ✖ $t = -1,\ s = -10$

3. ✖ $t = 10,\ s = -1$

4. ✖ $t = -10,\ s = 1$

Question Number : 65 Question Id : 50939818587 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Consider the problem to minimize $x_1^2 + 4x_2^2$ subject to $x_1 + x_2 \geq$ which satisfies the Karush-Khun-Tucker conditions is

Options :

1. ✔ $\left(\frac{8}{5}, \frac{2}{5}\right)$

2. ✖ $\left(\frac{2}{5}, \frac{8}{5}\right)$

3. ✖ $\left(\frac{5}{2}, \frac{5}{8}\right)$

4. ✖ $\left(\frac{5}{8}, \frac{5}{2}\right)$

Question Number : 66 Question Id : 50939818588 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The regular points of the feasible region

$$F := \{(x_1, x_2) \in \mathscr{R}^2 : x_2 - x_1^2 \geq 0,\ 2 - x_1 - x_2 \geq 0,\ x_1 \geq 0\}$$

are

Options :

1. ✔ $(1, 1),\ (0, 0),\ (0, 2)$

2. ✖ $(1, 1),\ (0, 0),\ (2, 2)$

3. ✖ $(0, 1),\ (0, 0),\ (0, 2)$

4. ✖ $(1, 1),\ (0, 1),\ (0, 2)$

Question Number : 67 Question Id : 50939818589 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is true in an LPP ?

Options :

1. ✔ $\text{Min}\,(Z) = -\text{Max}\,(-Z)$

2. ✖ $\text{Min}\,(Z) = -\text{Max}\,(Z)$

3. ✖ $\text{Min}\,(Z) = \text{Max}\,(-Z)$

4. ✖ None of these

Question Number : 68 Question Id : 50939818590 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The maximum value of $Z = 4x_1 + x_2$, subject to constraints

$$x_1 + x_2 \leq 50$$
$$3x_1 + x_2 \leq 90$$
$$x_1 \geq 0, x_2 \geq 0$$

is

Options :

1. ✖ 50

2. ✖ 110

3. ✔ 120

4. ✖ 140

Question Number : 69 Question Id : 50939818591 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If $f(a) = f'(a) = 0$ and $f'/g' \neq$ constant, then the solution of

$$\int_a^x [g(x) - g(t)]\, y(t)\, dt = f(x)$$

is

Options :

1. ✖ $y(x) = \dfrac{f(x)}{g(x)}$

2. ✖ $y(x) = \dfrac{f'(x)}{g'(x)}$

3. ✖ $y(x) = \dfrac{d}{dx}\left[\dfrac{f(x)}{g(x)}\right]$

4. ✔ $y(x) = \dfrac{d}{dx}\left[\dfrac{f'(x)}{g'(x)}\right]$

Question Number : 70 Question Id : 50939818592 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Solution of the equation

$$y(x) = 13x^2 - \int_0^x \frac{1}{x}\left(\frac{t^2}{x^2} - 1\right) y(t)\, dt$$

with $y(0) = 0$ is

Options :

1. ✖ $y(x) = 3x^2$

2. ✖ $y(x) = 5x^2$

3. ✔ $y(x) = 15x^2$

4. ✖ $y(x) = 13x^2$

Question Number : 71 Question Id : 50939818593 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Consider all sequences $\{f_n\}_{n=1}^{\infty}$ of real valued continuous functio

Identify which of the following statements is correct

Options :

1. ✖ If $\{f_n\}_{n=1}^{\infty}$ converges to f pointwise on $[a, b]$

$$\lim_{n\to\infty} \int_a^b f_n(x)\, dx = \int_a^b f(x)\, dx$$

2. ✔ If $\{f_n\}_{n=1}^{\infty}$ converges to f uniformly on $[a, b]$

$$\lim_{n\to\infty} \int_a^b f_n(x)\, dx = \int_a^b f(x)\, dx$$

3. ✖ If $\{f_n\}_{n=1}^{\infty}$ converges to f uniformly on $[a, b]$, then f is continuous

4. ✖

If $\{f_n\}_{n=1}^{\infty}$ converges to f pointwise on $[a, b]$, then f is continuous c

Question Number : 72 Question Id : 50939818594 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For $n \in \mathbb{N}$, let $f_n, g_n : (0, 1) \to \mathbb{R}$ be functions defined by $f_n($

$g_n(x) = nxe^{-nx^2}$. Then

Options :

1. ✖

$\{f_n\}_{n=1}^{\infty}$ converges uniformly but $\{g_n\}_{n=1}^{\infty}$ does not converge unifo

2. ✖

$\{g_n\}_{n=1}^{\infty}$ converges uniformly but $\{f_n\}_{n=1}^{\infty}$ does not converge unifc

3. ✖

Both $\{f_n\}_{n=1}^{\infty}$ and $\{g_n\}_{n=1}^{\infty}$ converge uniformly

4. ✔

Neither $\{f_n\}_{n=1}^{\infty}$ nor $\{g_n\}_{n=1}^{\infty}$ converge uniformly

Question Number : 73 Question Id : 50939818595 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $f : \mathbb{R} \times \mathbb{R} \to \mathbb{R}$ be defined by

$$f(x, y) = \begin{cases} (x^2 + y^2)^{1/2} \sin\left(\dfrac{y^2}{x}\right), & \text{if } x \neq 0 \\ 0, & \text{if } x = 0 \end{cases}$$

Then at $(0, 0)$

Options :

1. ✖

f is continuous and directional derivatives of f do not exist direction

2. ✖

f is continuous and directional derivatives of f do not exist in any d

3. ✖

f is not continuous and the directional derivatives of f exist in all di

4. ✔

f is not differentiable and the directional derivatives of f exi directions

Question Number : 74 Question Id : 50939818596 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of following statements is true?

Options :

1. ✖

The series $\sum_{n=1}^{\infty} \frac{1}{n^p + n^q x^z}$, $p > 1$ is uniformly convergent for all va and differentiable term by term if $q > 3p - 2$

2. ✖

The series $\sum_{n=1}^{\infty} \frac{1}{n^p + n^q x^z}$, $p > 1$ is uniformly convergent for all va and differentiable term by term if $q > 2p - 3$

3. ✔

The series $\sum_{n=1}^{\infty} \frac{1}{n^p + n^q x^z}$, $p > 1$ is uniformly convergent for all va and differentiable term by term if $q < 3p - 2$

4. ✖

The series $\sum_{n=1}^{\infty} \frac{1}{n^p + n^q x^z}$, $p > 1$ is uniformly convergent for all va and differentiable term by term if $q < 2p - 1$

Question Number : 75 Question Id : 50939818597 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The sum of the series

$$\sum_{n=1}^{\infty} (-1)^{n-1} a_n \text{ with } a_n = \frac{2}{n+1}\left(1+\frac{1}{2}+\frac{1}{3}+\cdots+\frac{1}{n}\right)$$

is

Options :

1. ✖ $\log(2)$

2. ✖ $2\log(2)$

3. ✔ $\frac{1}{2}\log(2)$

4. ✖ None of these

Question Number : 76 Question Id : 50939818598 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $E=[0,1]$ and define $f_n : E \to R$ by $f_n(x) = 1/(nx+1)$ with $\{f_n\}$ c function f. Then which of the following assertions holds :

Options :

1. ✖ f is continuous

2. ✖ f is differentiable

3. ✖ $\{f_n\}$ converges uniformly to the function f

4. ✔ None of these

Question Number : 77 Question Id : 50939818599 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $E=[0,1]$ and define $f_n : E \to R$ by $f_n(x) = (1+x^2)e^{x/n}$ suc converges to a function f. Then which of the following assertion

Options :

1. ✖ $f(x) = (1 + x^2)\, e^x$

2. ✖ f is not continuous

3. ✖ $\{f_n\}$ does not converge uniformly to a function f

4. ✔ None of these

Question Number : 78 Question Id : 50939818600 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $\{a_n\}$ be a sequence of positive terms. Then the series $\sum_{n=}^{\infty}$ converges uniformly on R if

Options :

1. ✖ $\{a_n\}$ is decreasing and $a_n \to 0$

2. ✔ $\{a_n\}$ is decreasing and $na_n \to 0$

3. ✖ $\{a_n\}$ is increasing and $a_n \to \infty$

4. ✖ $\{a_n\}$ is increasing and $na_n \to \infty$

Question Number : 79 Question Id : 50939818601 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $T : R^4 \to R^3$ be defined by $T(x, y, z, w) = (x^2y, xyz, x^2 + y^2 + z$ directional derivative of the function T at $a = (1, 2, -1, -2)$ in $u = (0, 1, 2, -2)$ is

Options :

1. ✖ $(1, 2, 3)$

2. ✖ $(1, 3, 2)$

3. ✖ $(1, 3, 3)$

4. ✔ $(1, 3, 4)$

Question Number : 80 Question Id : 50939818602 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let U be an open rectangle in R^n. Suppose $T = (T_1, T_2, \cdots, T_n$ continuously differentiable mapping such that $\left|\frac{\partial T_i}{\partial x_j}\right| \leq M$ for all which of the following assertions holds :

Options :

1. ✖ $||T(x) - T(y)|| \leq M ||x - y||$ for all $x, y \in U$

2. ✖ $||T(x) - T(y)|| \leq nM ||x - y||$ for all $x, y \in U$

3. ✔ $||T(x) - T(y)|| \leq n^2 M ||x - y||$ for all $x, y \in U$

4. ✖ None of these

Question Number : 81 Question Id : 50939818603 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let E be a measurable set in R and $x \in R$. Then

Options :

1. ✖ $E + x$ is measurable, but measure of E and $E + x$ are not same

2. ✖ $E + x$ is not measurable

3. ✔ $E + x$ is measurable, but measure of E and $E + x$ are same

4. ✖ None of these

Question Number : 82 Question Id : 50939818604 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

At $z = \pi$, the function f defined by $f(z) = \exp(z/\sin z)$ has

Options :

1. removable singularity ✖

2. pole ✖

3. essential singularity ✔

4. None of these ✖

Question Number : 83 Question Id : 50939818605 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The value of integral

$$\int_{|z|=\pi/2} \frac{dz}{z^2 \sin z}$$

is

Options :

1. $\pi i/3$ ✔

2. $2\pi i/3$ ✖

3. πi ✖

4. 0 ✖

Question Number : 84 Question Id : 50939818606 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $f(z) = u(x, y) + iv(x, y)$ and if $u(x, y) = x^3 - 3xy^2 - y$, then f

Options :

1. $z^3 + iz$ ✔

2. $z^3 + i\bar{z}$ ✖

3. ✖ $z^3 - iz$

4. ✖ $z^3 - i\bar{z}$

Question Number : 85 Question Id : 50939818607 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The residue of the function $z^2 \sin\left(\frac{1}{z}\right)$ at $z = 0$ is

Options :

1. ✖ $\frac{1}{6}$

2. ✔ $-\frac{1}{6}$

3. ✖ $\frac{\pi i}{3}$

4. ✖ $-\frac{\pi i}{3}$

Question Number : 86 Question Id : 50939818608 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A manifold admitting an atlas with only one chart should be

Options :

1. ✔ homeomorphic to an open subset of a Euclidean space

2. ✖ homeomorphic to a closed subset of a Euclidean space

3. ✖ bounded

4. ✖ compact

Question Number : 87 Question Id : 50939818609 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A mapping f from a manifold N to a manifold M is said to be diff for every $p \in N$ there exist charts (U, φ) about p and (V, ψ) abou $f(U) \subset N$, such that

Options :

1. ✖ the function $\psi \circ f \circ \varphi^{-1}$ is bijective

2. ✖ the function $\psi \circ f \circ \varphi^{-1}$ is continuous

3. ✔ the function $\psi \circ f \circ \varphi^{-1}$ is differentiable

4. ✖ the function $\psi \circ f \circ \varphi^{-1}$ is homomorphism

Question Number : 88 Question Id : 50939818610 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A mapping f from a manifold $N = \mathbb{R}$ to a manifold $M = \mathbb{R}^2$ $f(t) = (t^2, t^3)$, for all $t \in \mathbb{R}$. Then

Options :

1. ✖ the mapping f is not one-one

2. ✔ the mapping f is not an immersion

3. ✖ the mapping f is an immersion

4. ✖ the mapping f is not continuous

Question Number : 89 Question Id : 50939818611 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X, Y be vector fields on a C^∞-manifold M and $f, g \in C^\infty(M)$. T is equal to

Options :

1. ✖ $fX(g)Y - gY(f)X - fg[X;Y]$

2. ✖ $fX(g)Y + gY(f)X + fg[X;Y]$

3. ✖ $fX(g)Y + gY(f)X - fg[X;Y]$

4. ✔ $fX(g)Y - gY(f)X + fg[X;Y]$

Question Number : 90 Question Id : 50939818612 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $(\mathbb{R}^3, g)$ be a Riemannian manifold with $g = (1+X^2)\,dx^2 + dy^2 + e^z dz^2$. Then the Christoffel symbols Γ^1_{11} given by respectively

Options :

1. ✖ $\frac{x}{1+x^2}$ and 2

2. ✖ $\frac{x}{1-x^2}$ and 2

3. ✔ $\frac{x}{1+x^2}$ and $\frac{1}{2}$

4. ✖ $\frac{x}{1-x^2}$ and $\frac{1}{2}$

Question Number : 91 Question Id : 50939818613 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let (M, g) be a Riemannian manifold. A connection ∇ on M is cor metric g if and only if for any vector fields X, Y, Z on M

Options :

1. ✔ $Xg(Y,Z) = g(\nabla_X Y, Z) + g(Y, \nabla_X Z)$

2. ✖ $Xg(Y,Z) = g(\nabla_X Y, Z) - g(Y, \nabla_X Z)$

3. ✖ $Xg(Y,Z) = -g(\nabla_X Y, Z) - g(Y, \nabla_X Z)$

4. ✖ $Xg(Y,Z) = -g(\nabla_X Y, Z) + g(Y, \nabla_X Z)$

Question Number : 92 Question Id : 50939818614 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following statements is true?

Options :

1. ✔ There exists only one (up to isomorphism) group of order 65.

2. ✖ If a prime p divides the order of a group G, then G contains a subgroup of order p.

3. ✖ Every group of order 76 contains a unique element of order 19.

4. ✖ The number of Sylow 3-subgroups of A_4 is 3.

Question Number : 93 Question Id : 50939818615 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Find the correct statement

Options :

1. ✖ Every group of order 49 is a simple group.

2. ✖ Every group of order 49 is a cyclic group.

3. ✔ Every group of order 49 is a commutative group.

4. ✖ There exists a non-commutative group of order 49.

Question Number : 94 Question Id : 50939818616 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following statements is false?

Options :

1. ✖ There exists a non-cyclic commutative group of order 28.

2. ✔ $Z \times Z \cong Z$

3. ✖ There exists a non-commutative group of order 24.

4. ✖ $Z_7 \times Z_9 \cong Z_{63}$

Question Number : 95 Question Id : 50939818617 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The number of subgroups of order 2 in the group $Z_2 \times Z_2 \times Z_2$ i

Options :

1. ✖ 8

2. ✔ 7

3. ✖ 4

4. ✖ 1

Question Number : 96 Question Id : 50939818618 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $\alpha = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 \\ 2 & 1 & 4 & 5 & 3 \end{pmatrix}$ be the element of the symmetric group elements and consider the following statements :

(i) The order of α is 5.

(ii) α is conjugate to $\begin{pmatrix} 4 & 5 & 2 & 3 & 1 \\ 5 & 4 & 3 & 1 & 2 \end{pmatrix}$.

(iii) α is a product of two cycles.

(iv) α commutes with all elements of S_5.

Which of the above statements is/are correct?

Options :

1. ✖ (i) only

2. ✔ (ii) and (iii)

3. ✖ (iii) only

4. ✖ (ii) and (iv)

Question Number : 97 Question Id : 50939818619 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let G be a group of order 60. Pick out the true statement

Options :

1. ✖ G is Abelian.

2. ✖ G has a subgroup of order 30.

3. ✔ G has subgroups of order 2, 3 and 5.

4. ✖ G has subgroups of order 6, 10 and 15.

Question Number : 98 Question Id : 50939818620 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let R be the polynomial ring $Z_2[x]$ and write elements of Z_2 as $\{0,$ the ideal generated by the element $f(x) \in R.$ If $f(x) = x^2 + x -$ quotient ring $\frac{R}{(f(x))}$ is

Options :

1. ✖ a ring but not an integral domain

2. ✖ an integral domain but not a field

3. ✔ a finite field of order 4

4. ✖ an infinite field

Question Number : 99 Question Id : 50939818621 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Find the value of $a \in Z$ such that $2+\sqrt{3}$ is a root of the $x^3 - 5x^2 + ax - 1$

Options :

1. ✖ 3

2. ✔ 5

3. ✖ 4

4. ✖ 2

Question Number : 100 Question Id : 50939818622 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 : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following statements is not correct?

Options :

1. ✖

Any finitely generated left R-module can be expressed as the quot free R-module F of finite rank.

A simple module is cyclic.

2. ✖

3. ✔

Let M be a simple R-module. Then every non-zero homom $f : M \to M$ is not an isomorphism.

4. ✖

The Abelian group Q as a Z-module is not finitely generated.