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 :	881 11th April 2021 Shift 2
Subject Name :	881
Creation Date :	2021-04-11 19:03:33
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_Physics

Group Number :	1
Group Id :	509398154
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 :	509398246
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 :	509398273
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 50939817623 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 : 50939817624 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 : 50939817625 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 : 50939817626 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 : 50939817627 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 : 50939817628 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 : 50939817629 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 : 50939817630 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 : 50939817631 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 : 50939817632 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 : 50939817633 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 : 50939817634 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 : 50939817635 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 : 50939817636 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 : 50939817637 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 : 50939817638 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 : 50939817639 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 : 50939817640 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 : 50939817641 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 : 50939817642 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 : 50939817643 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 : 50939817644 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 : 50939817645 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 : 50939817646 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 : 50939817647 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 : 50939817648 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 : 50939817649 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 : 50939817650 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 : 50939817651 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 : 50939817652 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 : 50939817653 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 : 50939817654 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 : 50939817655 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 : 50939817656 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 : 50939817657 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 : 50939817658 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 : 50939817659 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

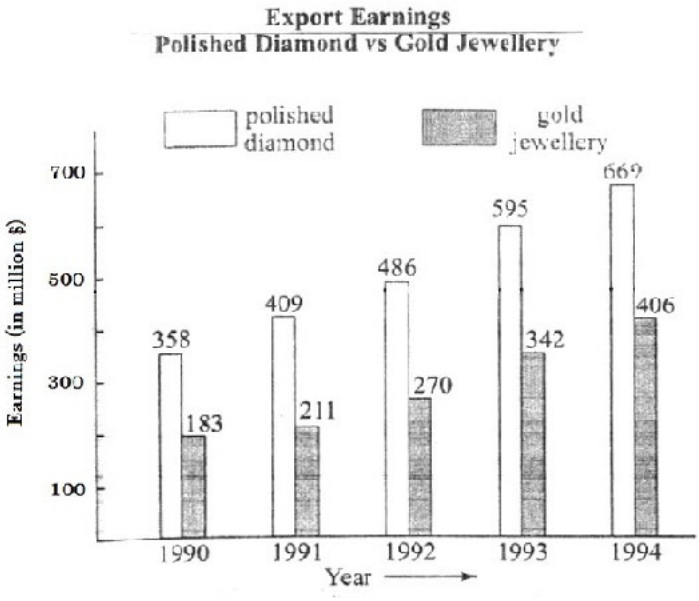
Question Number : 38 Question Id : 50939817660 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval 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

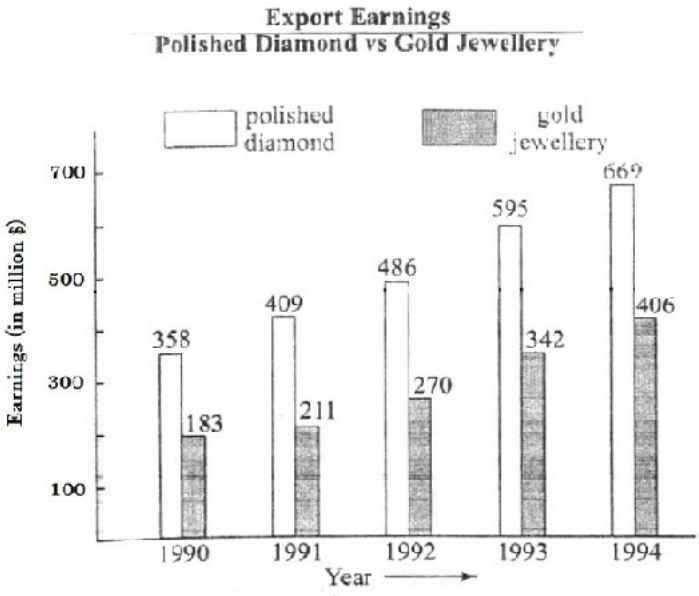
Question Number : 39 Question Id : 50939817661 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval 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 : 50939817662 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 :	509398247
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 :	509398274
Question Shuffling Allowed :	Yes

Question Number : 41 Question Id : 50939817663 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 the barrier potential of a silicon diode at 25 °C is 0·7 V, the barrie the diode at the junction temperature of 100 °C will be (If the cl barrier potential of silicon diode is −2 mV/° C)

Options :

1. ✖ 0·85 V

2. ✔ 0·55 V

3. ✖ 0·90 V

4. ✖ 0·95 V

Question Number : 42 Question Id : 50939817664 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 the input peak voltage across the secondary coil of the transform bridge rectifier, the d.c. value of the voltage across the load of the b will be

Options :

1. ✖ V_p / π

2. ✖ $2V_p$

3. ✔ $2V_p/\pi$

4. ✖ $V_p/2\pi$

Question Number : 43 Question Id : 50939817665 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 base-emitter voltage of an ideal transistor is

Options :

1. ✔ 0 V

2. ✖ 0·3 V

3. ✖ 0·7 V

4. ✖ 1 V

Question Number : 44 Question Id : 50939817666 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 a.c. emitter resistance of an emitter follower

Options :

1. ✖ equals d.c. emitter resistance

2. ✖ is larger than the load resistance

3. ✖ is β times larger than the load resistance (where β is the current ga transistor)

4. ✔ is usually less than the load resistance

Question Number : 45 Question Id : 50939817667 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 the Q point is at the centre of the a.c. load line, the maxir peak output voltage equals (terms have their usual meanings)

Options :

1. ✖ V_{CEQ}

2. ✔ $2V_{CEQ}$

3. ✖ I_{CQ}

4. ✖ $2I_{CQ}$

Question Number : 46 Question Id : 50939817668 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 easiest way to bias a JFET in the Ohmic region is with

Options :

1. ✖ voltage-divider bias

2. ✖ self-bias

3. ✔ gate-bias

4. ✖ source-bias

Question Number : 47 Question Id : 50939817669 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 differential amplifier has an output error voltage of 0·6 V and a of 300, the input offset voltage will be

Options :

1. ✖ 18 V

2. ✖ 3000 V

3. ✔ 2 mV

4. ✖ $\frac{1}{2}$ mV

Question Number : 48 Question Id : 50939817670 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_{unity} is 10 MHz and mid-band open-loop voltage gain is 2×10^5, t cut-off frequency of the Op-Amp will be

Options :

1. ✖ 10 Hz

2. ✖ 20 Hz

3. ✔ 50 Hz

4. ✖ 100 Hz

Question Number : 49 Question Id : 50939817671 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 an Op-Amp has only a positive supply voltage, its output cani

Options :

1. ✔ be negative

2. ✖ be zero

3. ✖ be equal to the supply voltage

4. ✖ be ac-coupled

Question Number : 50 Question Id : 50939817672 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 sample-and-hold circuits, the Op-Amp buffer is essential beca

Options :

1. ✔

it prevents the hold capacitor voltage from changing due to loadir subsequent circuitry

2. ✖ without it, the switch when closed, will short the input to the ou

3. ✖ the switch resistance will otherwise load the output

4. ✖ the hold capacitor has a high impedance

Question Number : 51 Question Id : 50939817673 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 decay scheme

$$P_Z^A \rightarrow D_{Z-1}^A + \text{———} + \text{———}$$

the blank spaces should respectively contain.

Options :

1. ✖ β^+ and n

2. ✖ β^- and ν

3. ✔ β^+ and ν

4. ✖ β^+ and β^-

Question Number : 52 Question Id : 50939817674 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 certain radioactive element has a half-life of 20 days. The time it 7/8 of the atoms originally present to disintegrate is

Options :

1. ✖ 30 days

2. ✔ 60 days

3. ✖ 90 days

4. ✖ 120 days

Question Number : 53 Question Id : 50939817675 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 force responsible for the radioactive decay of the nucleus is

Options :

1. ✖ gravitational force

2. ✔ weak nuclear force

3. ✖ strong nuclear force

4. ✖ electromagnetic force

Question Number : 54 Question Id : 50939817676 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 200 MeV energy is released in the fission of a single nucleus o number of fissions which should occur per second to produce a p is

Options :

1. ✖ $3 \cdot 1 \times 10^{9}$

2. ✔ $3 \cdot 1 \times 10^{13}$

3. ✖ 10^{12}

4. ✖ $13 \cdot 1 \times 10^{6}$

Question Number : 55 Question Id : 50939817677 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 of the following semiconducting materials does not e effect?

Options :

1. ✖ GaAs

2. ✖ InP

3. ✔ Si

4. ✖ GaAsP

Question Number : 56 Question Id : 50939817678 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 rotation period of Sun on its axis is

Options :

1. ✖ equal at all places

2. ✔ 27 days at equator

3. ✖ 70 days at poles

4. ✖ All of these

Question Number : 57 Question Id : 50939817679 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 d.c. voltage of 100 volts is switched on across a circuit containing of 10 Ω in series with an inductance of 25 H. What is the rate current at the instant when the current is 8 A ?

Options :

1. ✖ 0 A/s

2. ✖ 1 A/s

3. ✔ 0·8 A/s

4. ✖ 5 A/s

Question Number : 58 Question Id : 50939817680 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 binding energy of an electron in the ground state of He^+ ion

Options :

1. ✖ 13·6 eV

2. ✖ 27·2 eV

3. ✔ 54·4 eV

4. ✖ 6·8 eV

Question Number : 59 Question Id : 50939817681 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 magnetic vector potential satisfies

Options :

1. ✖ Laplace's equation

2. ✔ Poisson's equation

3. ✖ Both Laplace's equation and Poisson's equation

4. ✖ None of these

Question Number : 60 Question Id : 50939817682 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 rectangular waveguide of internal dimensions ($a = 4$ cm and $b =$ 3 operated in TE_{11} mode. The minimum operating frequency is

Options :

1. ✔ 6·25 GHz

2. ✖ 6·0 GHz

3. ✖ 5·0 GHz

4. ✖ 3·75 GHz

Question Number : 61 Question Id : 50939817683 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 terms of electrostatic potentials (A and Φ) the field vectors $\vec{E}$ an by

Options :

1. ✖ $\vec{B} = \text{curl } \vec{A} \text{ and } \vec{E} = \text{grad } \phi - \frac{\partial \vec{A}}{\partial t}$

2. ✖ $\vec{B} = \text{curl } \vec{A} \text{ and } \vec{E} = -\text{grad } \phi + \frac{\partial \vec{A}}{\partial t}$

3. ✖ $\vec{B} = \text{curl } \vec{A} \text{ and } \vec{E} = \text{grad } \phi + \frac{\partial \vec{A}}{\partial t}$

4. ✔ $\vec{B} = \text{curl } \vec{A} \text{ and } \vec{E} = -\text{grad } \phi - \frac{\partial \vec{A}}{\partial t}$

Question Number : 62 Question Id : 50939817684 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 magnetic field intensity vector of a plane wave i $\vec{H}(x, y, z, t) = 10 \sin(5000t + 0 \cdot 004x + 30 \hat{a}_y)$, where $\hat{a}_y$ denotes th in y-direction. The wave is propagating with phase velocity

Options :

1. ✖ 5×10^4 m/s

2. ✖ -3×10^8 m/s

3. ✔ $-1 \cdot 25 \times 10^7$ m/s

4. ✖ 3×10^8 m/s

Question Number : 63 Question Id : 50939817685 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 magnetohydrodynamic (MHD) wa

Options :

1. ✖ Sound wave

2. ✔ Light wave

3. ✖ Magneto-sonic wave

4. ✖ Alfvén wave

Question Number : 64 Question Id : 50939817686 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 standing wave ratio, when a load impedance of 250 Ohms is cc 75 Ohms line will be

Options :

1. ✖ 0·3

2. ✖ 75

3. ✖ 250

4. ✔ 3·33

Question Number : 65 Question Id : 50939817687 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 attenuation constant of a conductor of conductivity 200 unit 1 M radian/s in air will be

Options :

1. ✔ 11·2

2. ✖ 1·12

3. ✖ 56·23

4. ✖ 5·62

Question Number : 66 Question Id : 50939817688 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 for the Earth's ionosphere with electron density $n = 10^{12}\ \mathrm{m}^{-3}$, K the value of Debye length (λ_D) will be

Options :

1. ✖ $4 \times 10^{-3}\ \mathrm{m}$

2. ✖ $10 \times 10^{-3}\ \mathrm{m}$

3. ✔ $2 \cdot 3 \times 10^{-3}\ \mathrm{m}$

4. ✖ $7 \times 10^{-3}\ \mathrm{m}$

Question Number : 67 Question Id : 50939817689 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

Two states of an atom have definite parities. An electric dipol between these states is

Options :

1. ✖ allowed if both the states have even parity

2. ✖ allowed if both the states have odd parity

3. ✔ allowed if the two states have opposite parities

4. ✖ not allowed unless a static electric field is applied

Question Number : 68 Question Id : 50939817690 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 presence of a weak magnetic field, atomic hydrogen u transition by emission of radiation $^2P_{1/2} \rightarrow {}^2S_{1/2}$. The numbe spectral lines that are observed in the resultant Zeeman spectr

Options :

1. ✖ 2

2. ✖ 3

3. ✔ 4

4. ✖ 6

Question Number : 69 Question Id : 50939817691 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 multi-electron atom l, L and S specify the one-electron or momentum, total orbital angular momentum and total s momentum, respectively. The selection rules for electric dipo between the two electronic energy levels, specified by l, L and S

Options :

1. ✖ $\Delta L = 0, \pm 1;\ \Delta S = 0;\ \Delta l = 0, \pm 1$

2. ✔ $\Delta L = 0, \pm 1;\ \Delta S = 0;\ \Delta l = \pm 1$

3. ✖ $\Delta L = 0, \pm 1;\ \Delta S = \pm 1;\ \Delta l = 0, \pm 1$

4. ✖ $\Delta L = 0, \pm 1;\ \Delta S = \pm 1;\ \Delta l = \pm 1$

Question Number : 70 Question Id : 50939817692 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 lifetime of an atomic state is 1 nanosecond. The natural line
spectral line in the emission spectrum of this state is of the orc

Options :

1. ✖ 10^{-10} eV

2. ✖ 10^{-9} eV

3. ✔ 10^{-6} eV

4. ✖ 10^{-4} eV

Question Number : 71 Question Id : 50939817693 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 a He-Ne laser with cavity lifetime $t_c = 5 \times 10^{-8}$ s. If
$R_2 = 0 \cdot 98$, calculate the cavity length d; assume $n_0 = 1$

Options :

1. ✖ 5 cm

2. ✖ 10 cm

3. ✔ 15 cm

4. ✖ 20 cm

Question Number : 72 Question Id : 50939817694 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 $2P \rightarrow 1S$ spontaneous transition in the hydrogen atom,
Einstein B coefficient assuming the spontaneous emission lifeti
state to be 1·6 ns, calculate the Einstein B coefficient

Options :

1. ✔ $4 \cdot 2 \times 10^{20}\ \mathrm{m^{-3} J^{-1} s^{-2}}$

2. ✖ $4 \cdot 2 \times 10^{20}\ \mathrm{m^{-1} J^{-1} s^{-2}}$

3. ✖ $14 \cdot 2 \times 10^{20}\ \mathrm{m}^{-3}\mathrm{J}^{-1}\ \mathrm{s}^{-2}$

4. ✖ $14 \cdot 2 \times 10^{20}\ \mathrm{m}^{-1}\mathrm{J}^{-1}\ \mathrm{s}^{-2}$

Question Number : 73 Question Id : 50939817695 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 matrix

$$A = \frac{1}{\sqrt{3}} \begin{bmatrix} 1 & 1+i \\ 1-i & -1 \end{bmatrix}$$

is

Options :

1. ✖ orthogonal

2. ✖ anti-symmetric

3. ✔ unitary

4. ✖ symmetric

Question Number : 74 Question Id : 50939817696 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 linear differential equation $\frac{dy}{dx} = xy$. If $y = 2$ at $x = 0$, th

of y at $x = 2$ is given by

Options :

1. ✖ $2e^{-2}$

2. ✔ $2e^{2}$

3. ✖ e^{-2}

4. ✖ e^{2}

Question Number : 75 Question Id : 50939817697 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 eigenvalues of the matrix

$$\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 1 \\ 0 & 1 & 0 \end{bmatrix}$$

are

Options :

1. ✖ $0,\ 1,\ 1$

2. ✔ $0, -\sqrt{2}, \sqrt{2}$

3. ✖ $\sqrt{2}, \sqrt{2}, 0$

4. ✖ $\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}, 0$

Question Number : 76 Question Id : 50939817698 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 the probability of a crystal lattice enables itself to act as a diffra to photons, the incident energy of photons would be in the rang

Options :

1. ✖ meV

2. ✖ KeV

3. ✔ eV

4. ✖ MeV

Question Number : 77 Question Id : 50939817699 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 a two-dimensional square lattice (lattice constant a) witl mass m per lattice point interacting with only the nearest neighbc constant K. The velocity of sound is then

Options :

1. ✔ $\sqrt{\frac{K}{m}}\,a$

2. ✖ $\sqrt{\frac{K}{m}}\,qa$

3. ✖ $\sqrt{\frac{K}{m}}\,qa^2$

4. ✖ $\sqrt{\frac{K}{m}}\,q^2a$

Question Number : 78 Question Id : 50939817700 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 electron density in a three-dimensional free Fermi metal is r Fermi wave-vector as

Options :

1. ✖ $\frac{k_F^3}{2\pi}$

2. ✖ $\frac{k_F^2}{2\pi}$

3. ✔ $\frac{k_F^3}{3\pi^2}$

4. ✖ $\frac{k_F^2}{3\pi^2}$

Question Number : 79 Question Id : 50939817701 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 specific heat per unit volume in a three-dimensional free Fe proportional to the temperature as

Options :

1. ✖ T^0

2. ✔ T

3. ✖ T^2

4. ✖ T^3

Question Number : 80 Question Id : 50939817702 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 density of states in a tight binding band in one-dimension s

Options :

1. ✔ square root singularity

2. ✖ Van Hove singularity

3. ✖ no singularity

4. ✖ None of these

Question Number : 81 Question Id : 50939817703 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 a quantum Hall system, the magnetic flux gets quantized in u quantum as

Options :

1. ✖ $\frac{hc}{2e}$

2. ✖ $\frac{2hc}{e}$

3. ✔ $\frac{hc}{e}$

4. ✖ None of these

Question Number : 82 Question Id : 50939817704 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

Two matrices A and B are said to be similar if $B = P^{-1}AP$ for soı matrix P. Which of the following statements is not true?

Options :

1. ✖ Trace of A = Trace of B

2. ✖ A and B have the same eigenvectors

3. ✔ A and B have the same eigenvalues

4. ✖ Det A = Det B

Question Number : 83 Question Id : 50939817705 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 the Fourier transform $F[\delta(x-a)] = \exp(-i2\pi\vartheta a)$, then $F^{-1}[$ co correspond to

Options :

1. ✖ a constant

2. ✖ $\frac{1}{2}[\delta(x-a) + i\delta(x+a)]$

3. ✖ $[\delta(x-a) - \delta(x+a)]$

4. ✔ $\frac{1}{2}[\delta(x-a) + \delta(x+a)]$

Question Number : 84 Question Id : 50939817706 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 classical ideal gas particles confined under $1\,d$ potential $V($ execute random motion. Their average energy is

Options :

1. ✖ $3k_BT$

2. ✖ $3k_BT/2$

3. ✖ k_BT

4. ✔ $k_BT/2$

Question Number : 85 Question Id : 50939817707 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 mean square displacement for simple symmetric $1\,d$ random steps goes as

Options :

1. ✔ N

2. ✖ $\sqrt{N}$

3. ✖ $1/N$

4. ✖ $1/\sqrt{N}$

Question Number : 86 Question Id : 50939817708 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 Fourier transform of Gaussian distribution results in

Options :

1. ✖ constant

2. ✖ exponential

3. ✔ Gaussian

4. ✖ None of these

Question Number : 87 Question Id : 50939817709 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 specific heat of ideal gas composed of $1\,d$ quantum harmonic the limit of high temperature

Options :

1. ✖ increases

2. ✖ decreases

3. ✔ remains constant

4. ✖ None of these

Question Number : 88 Question Id : 50939817710 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 system with total energy E and angular momentum $\vec{M}$ is desc Hamiltonian

$$H = \frac{p_x^2}{2m} + \frac{p_y^2}{2m} + \frac{p_z^2}{2m} + \frac{3}{2}m\left(x^2 + z^2\right) + \frac{5}{2}my^2$$

The conserved quantities of this system are

Options :

1. ✖ $E,\ M_z$

2. ✖ $E,\ M_y,\ M_z$

3. ✔ $E,\ M_y$

4. ✖ $E, \mid M \mid^2$

Question Number : 89 Question Id : 50939817711 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 Lagrangian of a 1-d system is given by $L(x, \dot{x}) = \frac{1}{2}\left(\frac{\dot{x}}{x}\right)^2$

Hamiltonian of the system is given by

Options :

1. ✔ $\frac{x^2 p_x^2}{2} - V(x)$

2. ✖ $\frac{p_x^2}{2x^2} - V(x)$

3. ✖ $\frac{\dot{x}^2}{2x^2} + V(x)$

4. ✖ $\frac{x^2 p_x^2}{2} + V(x)$

Question Number : 90 Question Id : 50939817712 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 bracket $\{\mid \vec{r} \mid, \mid \vec{p} \mid\}$ is equal to

Options :

1. ✖ 0

2. ✖ $\mid \vec{r} \mid \mid \vec{p} \mid$

3. ✔ $\hat{r} \cdot \hat{p}$

4. ✖ $\vec{r} \cdot \vec{p}$

Question Number : 91 Question Id : 50939817713 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

Given that the linear transformation of generalized q and c momentum p

$$Q = q + 4ap$$
$$P = bq + 2p$$

is canonical if

Options :

1. ✔ $ab = \frac{1}{4}$

2. ✖ $ab = -\frac{1}{4}$

3. ✖ $ab = \frac{3}{4}$

4. ✖ $ab = -\frac{3}{4}$

Question Number : 92 Question Id : 50939817714 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 particle having finite motion under the influence of t $V(x, y) = 5y^3 + 2xy^2$. Which of the following is correct regardi average kinetic energy ($\overline{T}$), average potential energy ($\overline{U}$) and total the system?

Options :

1. ✖ $\overline{T} = \frac{2}{3}\overline{U}$

2. ✔ $\overline{T} = \frac{3}{2}\overline{U}$

3. ✖ $\overline{U} = \frac{3}{5}E$

4. ✖ $\overline{T} = \overline{U}$

Question Number : 93 Question Id : 50939817715 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

Under which condition on a and b the Hamiltonians

$$H_1 = \frac{1}{2m}[(p_x - ay)^2 + p_y^2]$$

and

$$H_2 = \frac{1}{2m}[p_x^2 + (p_y - bx)^2]$$

will represent the same system?

Options :

1. ✖ $a = b$

2. ✔ $a = -b$

3. ✖ $ab = 1$

4. ✖ $ab = -1$

Question Number : 94 Question Id : 50939817716 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 eigenvalue of the operator $\cos\left(a\frac{\partial}{\partial\phi}\right)$ in the $\psi_{2,1,-1}(r,\theta,\phi)$ H-atom is

Options :

1. ✖ $\cos(a)$

2. ✖ $-\cos(a)$

3. ✖ $-\cosh(a)$

4. ✔ $\cosh(a)$

Question Number : 95 Question Id : 50939817717 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 an eigenfunction of position oper momentum representation?

Options :

1. ✖ $\cos 2p + \sin 2p$

2. ✔ $\cos\ p + i \sin\ p$

3. ✖ $\cos 2p + 2i \sin 2p$

4. ✖ $i \sin\ p + 2 \cos\ p$

Question Number : 96 Question Id : 50939817718 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 5 identical spin half, non-interacting particles are placed unde harmonic potential the ground state energy becomes 65 eV. If 3 s are put in the same system, what will be the ground state ener

Options :

1. ✖ 39 eV

2. ✖ 45 eV

3. ✔ 25 eV

4. ✖ 50 eV

Question Number : 97 Question Id : 50939817719 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 particle of mass m is subjected to the potential $V(x, y) = x^2 +$ ground state energy of the system is

Options :

1. ✔ $\frac{\hbar}{2\sqrt{m}}(\sqrt{3}+1)$

2. ✖ $\frac{\hbar}{\sqrt{2m}}(\sqrt{3}+1)$

3. ✖ $\hbar\sqrt{\frac{2}{m}}(\sqrt{3}+1)$

4. ✖ $\frac{2\hbar}{\sqrt{m}}(\sqrt{3}+1)$

Question Number : 98 Question Id : 50939817720 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 Pauli matrices for three spin half particles are $\vec{\sigma}_1, \vec{\sigma}_2$ and $\vec{\sigma}_3$ The dimension of the Hilbert space required to define $\hat{O} = \vec{\sigma}_1 \cdot (\vec{\sigma}_2 \times \vec{\sigma}_3)$ is

Options :

1. ✖ 2

2. ✖ 4

3. ✔ 8

4. ✖ infinite

Question Number : 99 Question Id : 50939817721 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 addition of two angular momentums $\frac{\vec{3}}{2}$ and $\frac{\vec{1}}{2}$. The C $C^{\frac{3}{2},\frac{1}{2},1}_{\frac{1}{2},\frac{1}{2},1}$ is

Options :

1. ✖ $\frac{\sqrt{3}}{2}$

2. ✖ $-\frac{\sqrt{3}}{2}$

3. ✖ $\frac{1}{2}$

4. ✔ $-\frac{1}{2}$

Question Number : 100 Question Id : 50939817722 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 causes the fine structure splitting in the H-atom spectru

Options :

1. ✖ Spin-orbit coupling of proton

2. ✔ Spin-orbit coupling of electron

3. ✖ J-J coupling of electron

4. ✖ Coupling of proton spin with electron's orbital angular momentu