

TS SET

Notations :

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

| | |
|-----------------------------------------|-----------------------|
| Subject Name : | MATHEMATICAL SCIENCES |
| Duration : | 180 |
| Total Marks : | 300 |
| Display Marks: | 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? | Yes |
| Change Font Color : | No |
| Change Background Color : | No |
| Change Theme : | No |
| Help Button : | No |
| Show Reports : | No |
| Show Progress Bar : | No |

Group 1

| | |
|--------------------------------------|-----------|
| Group Number : | 1 |
| Group Id : | 51714466 |
| Group Maximum Duration : | 0 |
| Group Minimum Duration : | 180 |
| 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 |

Paper I

| | |
|---------------------------------------------------------------------|-----------|
| Section Id : | 517144131 |
| Section Number : | 1 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 42 |
| Number of Questions to be attempted : | 42 |
| Section Marks : | 100 |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 517144403 |

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 1 Question Id : 5171449893 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which of the following factors can influence a student's motivation to learn?

ఈ దిగువ ఏ అంశాలు విద్యార్థి అభ్యాస ప్రేరణను ప్రభావితం చేస్తాయి.

Options :

Genetic makeup

జన్యపరమైన నిర్మాణం

1. ✘

Socioeconomic status

2. ✔

సామాజిక ఆర్థిక అంతస్తు

Weather conditions

3. ✘

వాతావరణ పరిస్థితులు

Political affiliation

4. ✘

రాజకీయ అనుబంధం

Question Number : 2 Question Id : 5171449894 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

You are a school administrator aiming to improve the institution's learning environment. What steps could you take to achieve this goal? Select the most appropriate options.

నువ్వు ఒక బడి నిర్వాహకుడివి. సంస్థ అభ్యాస వాతావరణము మెరుగు చేయాలని ఆశిస్తున్నావు

ఈ లక్ష్యానికి ఏ చర్యలు తీసుకుంటావు. మిక్కిలి సరియైన వాటిని ఎంపిక చేయుము

Options :

Implement rigid rules without student input.

1. ✘

విద్యార్థుల ఉత్సాహకత లేకుండా కఠిన నియమాలను అమలుచేయుట

Offer a variety of extracurricular activities.

2. ✔

వివిధ పాఠ్యాంశేతర కార్యక్రమాలను ప్రతిపాదించుట

Ignore feedback from teachers and students.

3. ✘

ఉపాధ్యాయులు, విద్యార్థుల అభిప్రాయాలను పట్టించుకోకుండుట

Keep the institution's culture unchanged.

4. ✘

సంస్థ సంస్కృతిని మార్పు చేయకుండుట

Question Number : 3 Question Id : 5171449895 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

What is a primary objective of learner-centered teaching?

విద్యార్థి కేంద్రీకృత బోధన ప్రాథమిక లక్ష్యం ఏది ?

Options :

1. ✘ Transmitting facts and information to students.
వాస్తవాలను, సమాచారాన్ని విద్యార్థులకు పంపుట
2. ✘ Encouraging rote memorization of concepts.
వల్లెవేయుచూ జ్ఞాపక శక్తి భావనలను ప్రోత్సహించుట
3. ✔ Fostering critical thinking and independent learning.
కీలక ఆలోచన స్వతంత్ర అభ్యాసములను పెంపొందించుట
4. ✘ Limiting student engagement to assessments only
విద్యార్థుల నియోగించుటను మదింపులకు మాత్రమే పరిమితం చేయుట

Question Number : 4 Question Id : 5171449896 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

What is the main objective of MOOCs?

MOOCs ప్రధాన లక్ష్యమేమి

Options :

1. ✘ To offer degree programs exclusively online.
డిగ్రీ కార్యక్రమాలను ఆన్‌లైనులో మాత్రమే అందచేయుట
2. ✘ To provide high-cost specialized courses.
అత్యంత వ్యయ ప్రత్యేక పాఠ్యక్రమములను ఏర్పాటు చేయుట
3. ✔ To offer free and open access to a wide range of courses.
విస్తృత వ్యాప్తి పాఠ్యక్రమాలకు అందరికీ ఉచిత ప్రవేశం కల్పించుట
4. ✘ To limit access to courses for enrolled students only.
పాఠ్యక్రమాలకు ప్రవేశాన్ని నమెదుచేసుకున్న విద్యార్థులకు మాత్రమే పరిమితం చేయుట

Question Number : 5 Question Id : 5171449897 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

What does ICT stand for in the context of education?

విద్యకు సంబంధించి ICT దీనికి సంబంధించింది ?

Options :

1. ✘ Interactive Classroom Teaching
2. ✘ Integrated Curriculum Training

3. ✓ Information and Communication Technology

4. ✘ International Computer Tools

Question Number : 6 Question Id : 5171449898 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

What is the primary objective of descriptive research?

వర్ణనాత్మక పరిశోధన ముఖ్య లక్ష్యం ఏమి?

Options :

1. ✘ To manipulate variables and establish cause-and-effect relationships
చలాంశాలను మార్చి, కారణ ప్రభావ సంబంధాన్ని నెలకొల్పటం
2. ✓ To explore and understand a phenomenon in its natural setting
దాని సహజ అమరికల దృగ్విషయాన్ని అన్వేషించి, అర్థంచేసుకొనుట
3. ✘ To predict future outcomes based on historical data
చారిత్రాత్మక దత్తాంశ ఆధారంతో భవిష్యత్తు ఫలితాలను అంచనావేయుట
4. ✘ To test hypotheses and theories using statistical analysis
గణాంక విశ్లేషణ ఉపయోగిస్తూ పరికల్పనలను సిద్ధాంతాలను పరీక్షించుట

Question Number : 7 Question Id : 5171449899 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

What is a central tenet of positivist research philosophy?

ధనాత్మక పరిశోధనాతత్వపు కేంద్ర సూత్రమేది?

Options :

1. ✘ Reality is subjective and can be understood differently by different individuals.
వాస్తవికత అత్యంతమైనది వివిధ వ్యక్తులకు వివిధ రకాలుగా అర్థంకావచ్చును
2. ✘ Research findings are shaped by personal biases and opinions.
పరిశోధనా ఫలితాలను వ్యక్తిగత పక్షపాతాలతో, అభిప్రాయాలతో ముడివేస్తారు.
3. ✘ Research should focus on understanding the underlying meanings and interpretations of participants.
పాల్గొనే వారి అంతర్లీనమైన అర్థాలను, వివరణలను అర్థం చేసుకొనుటలో పరిశోధన దృష్టిపెట్టాలి.
4. ✓ Knowledge can be acquired through objective observation and measurement.
నిష్పక్షపాత పరిశీలనతో, కొలతతో జ్ఞానాన్ని సంపాదించవచ్చును.

Question Number : 8 Question Id : 5171449900 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

What is the purpose of the literature review in the research process?

పరిశోధనా ప్రక్రియలో గ్రంథ సమీక్ష ఉద్దేశమేమి ?

Options :

1. ✘ To collect primary data from participants
పాల్గొనే వారినుండి ప్రాథమిక దత్తాంశ సేకరణ
2. ✘ To summarize the research findings
పరిశోధనా ఫలితాలను సంగ్రహించుట
3. ✔ To identify gaps in existing knowledge and establish a theoretical framework
నేటి జ్ఞానంలో అంతరాలను గుర్తించి, సిద్ధాంత రూపకల్పన పెంపొందించుట
4. ✘ To draw conclusions and make recommendations
ముగింపులను చేసి సూచనలు చేయుట

Question Number : 9 Question Id : 5171449901 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The abstract in a thesis typically:

రూపక పరిశోధనా వ్యాస సంగ్రహము

Options :

1. ✘ Contains detailed descriptions of all research methods
అన్ని పరిశోధనా పద్ధతుల విస్తృత వివరణములను కలిగి ఉంటాయి
2. ✘ Is placed at the end of the thesis
సిద్ధాంత వ్యాసం చివర ఇస్తారు
3. ✔ Summarizes the main points of the thesis in a concise manner
సిద్ధాంతా వ్యాసపు ముఖ్య విషయాలు సంక్షిప్త రూపంలో సంగ్రహిస్తుంది.
4. ✘ Lists all the references used in the thesis
సిద్ధాంతా వ్యాసములో ఉపయోగించిన అన్ని సంప్రదింపులను జాబితా చేస్తుంది.

Question Number : 10 Question Id : 5171449902 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Plagiarism in research refers to:

పరిశోధనలో గ్రంథ చౌర్యము అనగా

Options :

1. ✖ Collecting data from multiple sources to ensure accuracy
ఖచ్చితత్వమును పొందుటకు బహుధ వనరుల నుండి దత్తాంశ సేకరణ
2. ✖ Properly citing and referencing sources used in the research
పరిశోధనలో ఉపయోగించిన వనరులను సరిగా అనులేఖించి ప్రస్తావించుట
3. ✔ Using others' ideas, words, or work without giving proper credit
వారికి సరియైన గౌరవం యివ్వకుండా ఇతరుల ఆలోచనలు, మాటలు, పని ఉపయోగించుట
4. ✖ Sharing research findings with the public
పరిశోధనా ఫలితాలను ప్రజలతో పంచుకొనుట

Sub-Section Number : 2
 Sub-Section Id : 517144404
 Question Shuffling Allowed : No
 Is Section Default? : null

Question Id : 5171449903 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Question Numbers : (11 to 15)
 Question Label : Comprehension

Note: Answer the questions 11-15 by reading the following passage:

గమనిక: క్రింద ఇవ్వబడిన సమాచారం ఆధారంగా Q. 11 నుండి Q. 15 ప్రశ్నలకు సమాధానాలను వ్రాయండి.

Some of my critics have said, "Oh, he is a good observer, but he has no power of reasoning!" I do not think that this can be true, for my 'Origin of Species' is one long argument from the beginning to the end, and it has convinced not a few able men. No one could have written it without having some power of reasoning. I have a fair share of invention, and of common sense or judgment, such as every fairly successful lawyer or doctor must have, but not, I believe, in any higher degree. On the favourable side of the balance, I think that I am superior to the common run of men in noticing things which easily escape attention, and in observing them carefully. My industry has been nearly as great as it could have been in the observation and collection of facts. What is far more important, my love of natural science has been steady and ardent.

నా విమర్శకులలో కొందరు ఇలా అన్నారు, "ఓహ్, అతను మంచి పరిశీలకుడు, కానీ అతనికి తార్కిక శక్తి లేదు!" ఇది నిజం కావచ్చునే నేను అనుకోను, ఎందుకంటే నేను రచించిన ఆరిజిన్ ఆఫ్ స్పీసీస్ అనేది మొదటి నుండి చివరి వరకు ఒక సుదీర్ఘ వాదన, మరియు ఇది కొంతమంది సమర్థులైన వ్యక్తులను కూడ ఒప్పించగలిగింది. కొంత తార్కిక శక్తి లేకుండా ఎవరు వ్రాయలేరు. ప్రతి విజయవంతమైన న్యాయవాది లేదా వైద్యుడు తప్పనిసరిగా కలిగి ఉండవలసిన లక్షణాలు ఇంగితజ్ఞానం లేదా తీర్పులో చాకచక్యం. నాకు కూడ ఆ లక్షణాలు పుష్కలంగా ఉన్నాయనే నేను నమ్ముతున్నాను.

నిజానికి, నేను సులభంగా దృష్టిని తప్పించుకునే విషయాలను సూక్ష్మంగా గమనించడంలో మరియు వాటిని జాగ్రత్తగా గమనించడంలో సాధారణ వ్యక్తుల కంటే మెరుగైన వాడిని అని భావిస్తాను. వాస్తవాల పరిశీలన మరియు సేకరణలో నా పరిశ్రమ దాదాపుగా గొప్పగానే ఉందని చెప్పాలి. చాలా ముఖ్యమైన విషయం ఏమిటంటే, సహజ శాస్త్రంపై నాకు స్థిరమైన మక్కువ.

Sub questions

Question Number : 11 Question Id : 5171449904 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Critics condemned the author for want of _____.
విమర్శకులు రచయితను _____ విషయములో ఖండించారు.

Options :

- 1. ✘ common sense
ఇంగితజ్ఞానం
- 2. ✔ reasoning
తార్కికం
- 3. ✘ communication skills
భాష నైపుణ్యం
- 4. ✘ creativity
సృజనాత్మకత

Question Number : 12 Question Id : 5171449905 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The above excerpt is taken from the autobiography of _____
పై సారాంశం _____ ఆత్మకథ నుండి తీసుకోబడింది

Options :

- 1. ✔ Charles Darwin
చార్లెస్ డార్విన్
- 2. ✘ Erasmus Darwin
ఎరాస్మస్ డార్విన్
- 3. ✘ Alfred Russel Wallace
ఆల్ఫ్రెడ్ రస్సెల్ వాలెస్
- 4. ✘ Charles Lyell.
చార్లెస్ లియెల్

Question Number : 13 Question Id : 5171449906 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The author feels that successful lawyers and doctors are _____
విజయవంతమైన న్యాయవాదులు మరియు వైద్యులు _____ అని రచయిత భావిస్తాడు.

Options :

- generous
ఉదారస్వభావులు
1. ✘
- observers
పరిశీలకులు
2. ✘
- industrious
శ్రమ జీవులు
3. ✘
- decision makers
సరి అయిన నిర్ణయం తీసుకునేవారు
4. ✔

Question Number : 14 Question Id : 5171449907 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The author's inclination for compiling facts, reflects his _____
వాస్తవాలను సంకలనం చేయడంలో రచయిత యొక్క మొగ్గు, అతని _____ని ప్రతిబింబిస్తుంది

Options :

- Diligence
కష్టపడే తత్వాన్ని
1. ✔
- Reasoning
తార్కికం
2. ✘
- decision making
నిర్ణయం తీసుకునే తీరు
3. ✘
- motivation
ప్రేరణ
4. ✘

Question Number : 15 Question Id : 5171449908 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The synonym for the word- "ardent" is _____
మక్కువ అనే పదానికి పర్యాయపదం

Options :

- insubstantial
అసంబద్ధమైన
1. ✘
- impatience
అసహనం
2. ✘
- eager
ఉత్సాహం
3. ✔

frail

బలహీనమైన

4. ✘

Sub-Section Number :

3

Sub-Section Id :

517144405

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 16 Question Id : 5171449909 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

_____ communication helps in remembering details of earlier conversations and interactions.

_____ కమ్యూనికేషన్ మునుపటి సంభాషణలు మరియు పరస్పర చర్చల వివరాలను గుర్తించుకోవడంలో సహాయపడుతుంది

Options :

retentive

1. ✓ ధారణ శక్తి

reliable

2. ✘ నమ్మదగిన

inquisitive

3. ✘ జిజ్ఞాస

consistent

4. ✘ స్థిరమైన

Question Number : 17 Question Id : 5171449910 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

_____ provided by teacher in the classroom helps in building students' confidence.

తరగతి గదిలో ఉపాధ్యాయులు అందించిన _____ విద్యార్థుల విశ్వాసాన్ని పెంపొందించడంలో సహాయపడుతుంది

Options :

assignment

1. ✘ అసైన్మెంట్

positive feedback

2. ✓ సానుకుల స్పందన

lecture

3. ✘ ఉపన్యాసం

negative feedback

4. ✘ వ్యతిరేకమైన స్పందన

Question Number : 18 Question Id : 5171449911 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Effective communication across cultural boundaries relies heavily on maintaining _____ attitude.

ప్రభావవంతమైన అంతర్సంస్కృతి సంభాషణ ఈ వైఖరిని కొనసాగించడంపై ఎక్కువగా ఆధారపడి ఉంటుంది.

Options :

- 1. ✘ negative ప్రతికూల
- 2. ✔ positive సానుకూల
- 3. ✘ indifferent ఉదాసీన
- 4. ✘ aggressive దూకుడు

Question Number : 19 Question Id : 5171449912 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Lack of clarity and coherence in providing information, is an example of _____ barrier.

సమాచారాన్ని అందించడంలో స్పష్టత మరియు పొందిక లేకపోవడం _____ అడ్డంకికి ఉదాహరణ

Options :

- 1. ✘ organizational సంస్థాగత
- 2. ✘ psychological మానసిక
- 3. ✘ emotional భావోద్వేగ
- 4. ✔ semantic అర్థసంబంధమైన

Question Number : 20 Question Id : 5171449913 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The usage of mobile phones for many functions like : to talk , to watch movies, to send emails is an example of _____

మాట్లాడటం, సినిమాలు చూడటం, ఇమెయిలు పంపడం వంటి అనేక విధుల కోసం మొబైల్ ఫోన్ల వినియోగం _____ కి ఉదాహరణ

Options :

1. ✓ media convergence
మాధ్యమ కలయిక
2. ✘ out-door media
బహిరంగ మాధ్యమం
3. ✘ transit media
రవాణా మాధ్యమం
4. ✘ traditional media
సాంప్రదాయ మాధ్యమం

Question Number : 21 Question Id : 5171449914 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

10, 14, 22, 38, 70, ____

Options :

1. ✘ 130
2. ✓ 134
3. ✘ 138
4. ✘ 140

Question Number : 22 Question Id : 5171449915 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

XTV, UQS, RNP, OKM, ____

Options :

1. ✘ HLJ
2. ✘ JHL
3. ✘ HJL
4. ✓ LHJ

Question Number : 23 Question Id : 5171449916 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

In a certain code language if the word LOCAL is coded as MPDBM, then which word is coded as DBMMFS ?

ఒక నిర్దిష్ట కోడ్ భాషలో LOCAL అనే పదం MPDBM గా కోడ్ చేయబడితే, ఏ పదం DBMMFS గా కోడ్ చేయబడింది?

Options :

1. ✘ CARROT
2. ✘ CODING
3. ✔ CALLER
4. ✘ CARING

Question Number : 24 Question Id : 5171449917 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Two numbers are in the ratio 9:11. If 6 is added to the first and subtracted from the second, the ratio reverses. Then the first number is ____

రెండు సంఖ్యలు 9:11 నిష్పత్తిలో ఉన్నాయి. మొదటి దానికి 6 జోడించబడి, రెండవదాని నుండి తీసివేస్తే, నిష్పత్తి రివర్స్ అవుతుంది. అప్పుడు మొదటి సంఖ్య ____

Options :

1. ✘ 18
2. ✔ 27
3. ✘ 36
4. ✘ 45

Question Number : 25 Question Id : 5171449918 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

A loss of 12% is incurred by selling an article for Rs. 132. Its cost price (in Rs.) is ____

ఒక వస్తువును రూ.132 కి అమ్మడం ద్వారా 12% నష్టం వస్తుంది. దీని ధర ____

Options :

1. ✔ 150
2. ✘ 120

3. ✖ 88

4. ✖ 176

Question Number : 26 Question Id : 5171449919 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Statements:

No building is wall.

Some walls are rooms.

All buildings are rocks.

ప్రకటనలు:

ఏ భవనమూ గోడ కాదు.

కొన్ని గోడలు గదులు.

భవనాలన్నీ రాళ్లే.

Conclusions:

I. No building is room.

II. Some rooms are buildings .

III. Some rocks which are not buildings being walls is possibility.

తీర్మానాలు:

I. ఏ భవనమూ గది కాదు .

II. కొన్ని గదులు భవనాలు .

III. భవనాలు కాని కొన్ని శిలలు గోడలుగా ఉండే అవకాశం ఉంది.

Options :

1. ✖ III follows

2. ✖ Either I or II follows

3. ✖ I and III follow

4. ✔ III and either I or II follow.

Question Number : 27 Question Id : 5171449920 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

In a class of 95 students, 40 play cricket, 50 play football and 10 play both cricket and football. How many students play only football?

95 మంది విద్యార్థుల తరగతిలో, 40 మంది క్రికెట్ ఆడతారు, 50 మంది ఫుట్ బాల్ ఆడతారు మరియు 10 మంది క్రికెట్ మరియు ఫుట్ బాల్ రెండింటినీ ఆడతారు. ఎంత మంది విద్యార్థులు ఫుట్ బాల్ మాత్రమే ఆడతారు?

Options :

1. ✖ 45

2. ✔ 30

3. ✖ 40

Question Number : 28 Question Id : 5171449921 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

How is my father's daughter's mother's only daughter-in-law related to my wife's son ?

నా తండ్రి కుమార్తె తల్లి ఏకైక కోడలు నా భార్య కొడుకుతో ఎలాంటి భాంధవ్యం కలిగి ఉంది ?

Options :

1. ✓ Mother
2. ✖ Father
3. ✖ Brother
4. ✖ Sister

Question Number : 29 Question Id : 5171449922 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The distinction between laukika and alaukika is made with reference to which one of the following pramanas ?

లౌకిక మరియు అలౌకిక మధ్య వ్యత్యాసం ఈ క్రింది వాటిలో ఏ ప్రమాణానికి సంబంధించి చేయబడింది?

Options :

1. ✖ Anumana (Inference)
2. ✖ Upamana (Comparison)
3. ✓ Pratyaksa (Perception)
4. ✖ S'abda (Verbal testimony)

Question Number : 30 Question Id : 5171449923 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which one of the following is signified by the term 'hetu' in the process of anumana (inference) in classical Indian School of Logic?

క్లాసికల్ ఇండియన్ స్కూల్ ఆఫ్ లాజిక్ లో అనుమాన (నిర్ధారణ) ప్రక్రియలో 'హేతు' అనే పదాన్ని ఈ క్రింది వాటిలో ఏది సూచిస్తుంది?

Options :

Example Provided

ఉదాహరణ అందించబడింది

1. ✘

Statement of reason

2. ✔ కారణం యొక్క ప్రకటన

Proposition to be proved

3. ✘ నిరూపించవలసిన ప్రతిపాదన

Conclusion Proved

4. ✘ ముగింపు నిరూపించబడింది

Sub-Section Number :

4

Sub-Section Id :

517144406

Question Shuffling Allowed :

No

Is Section Default? :

null

Question Id : 5171449924 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Question Numbers : (31 to 35)

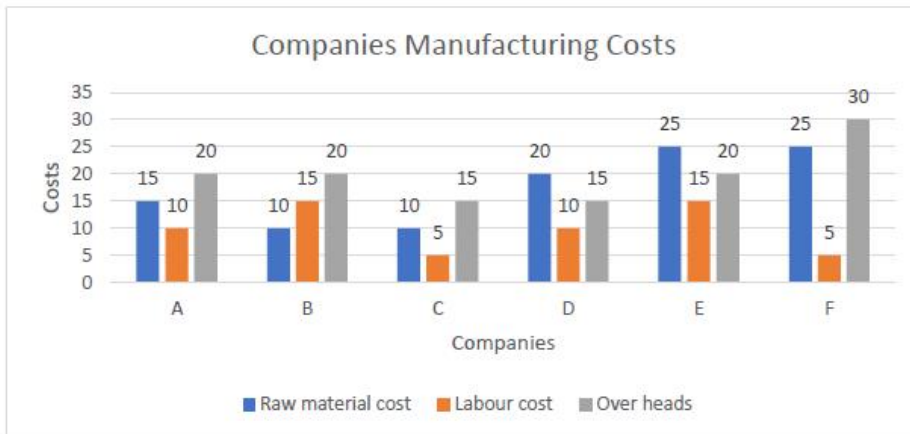
Question Label : Comprehension

Note: Answer the questions Q. 31 to Q. 35 on the basis of the information given below.

గమనిక: క్రింద ఇవ్వబడిన సమాచారం ఆధారంగా Q. 31 నుండి Q. 35 ప్రశ్నలకు సమాధానాలు వ్రాయండి.

Six different companies A, B, C, D, E and F manufactures a similar product . the costs of raw material, labour cost and overheads per unit are given in the following Multiple bar chart.

A, B, C, D, E మరియు F అను ఆరు వేర్వేరు కంపెనీలు ఒకే విధమైన ఉత్పత్తిని తయారు చేస్తాయి. ముడిసరుకు ఖర్చులు, లేబర్ ఖర్చు మరియు యూనిట్‌కు ఓవర్ హెడ్‌లు క్రింది బహుళ బార్ చార్ట్‌లో ఇవ్వబడ్డాయి.



Sub questions

Question Number : 31 Question Id : 5171449925 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Which of the companies has the maximum cost per unit?

ఏ కంపెనీ యూనిట్ కు గరిష్ఠ ధరను కలిగి ఉంది?

Options :

1. ✘ A
2. ✘ B
3. ✘ D
4. ✔ F

Question Number : 32 Question Id : 5171449926 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

If company B produces 5,000 units and sells them at Rs. 68, then the profit of the company is __

కంపెనీ B, 5,000 యూనిట్లను ఉత్పత్తి చేసి యూనిట్ ను రూ. 68, అమ్మిన, అప్పుడు కంపెనీ లాభం __

Options :

1. ✘ Rs. 1,65,000
2. ✘ Rs. 1,40,000
3. ✔ Rs. 1,15,000
4. ✘ Rs. 1,55,000

Question Number : 33 Question Id : 5171449927 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements is true?

కింది ప్రకటనలలో ఏది నిజం?

Options :

1. ✘ The labour costs, of E and F are same.
E మరియు F యొక్క లేబర్ ఖర్చులు ఒకేలా ఉంటాయి.
2. ✘ The ratio of costs, Overheads and labour is same for A, B and E.
ఖర్చులు, ఓవర్ హెడ్లు మరియు లేబర్ నిష్పత్తి A, B మరియు E లకు సమానంగా ఉంటుంది.
3. ✔ The ratio of total cost of A and that of D is same as the ratio of total cost of E and that of F
A మరియు D యొక్క మొత్తం ధర యొక్క నిష్పత్తి E మరియు F యొక్క మొత్తం ధర యొక్క నిష్పత్తికి సమానంగా ఉంటుంది

Labour cost of E is less than labour cost of F

E లేబర్ కాస్ట్ F లేబర్ కాస్ట్ కన్నా తక్కువ

4. ✘

Question Number : 34 Question Id : 5171449928 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Company D can produce a maximum of 1000 units per day and company F can produce upto 800 units per day. If these companies sell their products at Rs 60 and Rs 80 respectively, then what percentage of D's profit is F's profit in the total maximum production of 10 days?

కంపెనీ D రోజుకు గరిష్ఠంగా 1000 యూనిట్లను ఉత్పత్తి చేయగలదు మరియు కంపెనీ F రోజుకు 800 యూనిట్ల వరకు ఉత్పత్తి చేయగలదు. ఈ కంపెనీలు తమ ఉత్పత్తులను వరుసగా రూ. 60 మరియు రూ. 80కి విక్రయిస్తే, 10 రోజుల గరిష్ఠ ఉత్పత్తిలో, F యొక్క లాభం లో D యొక్క లాభం ఎంత శాతం ?

Options :

1. ✓ 15: 16

2. ✘ 3: 4

3. ✘ 7 : 8

4. ✘ 9 : 10

Question Number : 35 Question Id : 5171449929 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

If after a few changes in the production process, the labour costs of B and C become equal, then what will be the ratio of the total cost of the companies?

ఉత్పత్తి ప్రక్రియలో కొన్ని మార్పుల తర్వాత, B మరియు C యొక్క లేబర్ ఖర్చులు సమానంగా మారితే, కంపెనీల మొత్తం ఖర్చు నిష్పత్తి ఎంత ఉంటుంది?

Options :

1. ✘ 1 : 1

2. ✘ 1 : 2

3. ✘ 1 : 3

Can not be determined

4. ✓ నిర్ణయించడం సాధ్యం కాదు

Sub-Section Number :

5

Sub-Section Id :

517144407

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 36 Question Id : 5171449930 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

VIRUS stands for ?

వైరస్ అనగా

Options :

1. ✖ Very Important Record User Searched
2. ✖ Verified Interchanged Result Under Source
3. ✖ Very Important Resource Under Search
4. ✔ Vital Information Resource Under Siege

Question Number : 37 Question Id : 5171449931 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The term Internet means

ఇంటర్నెట్ అనగా

Options :

1. ✔ Interconnected Network
2. ✖ International Network
3. ✖ Interactive Network
4. ✖ Internal Network

Question Number : 38 Question Id : 5171449932 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

SWAYAM platform was developed by Ministry of Education, IIT Madras and

స్వయం వేదికను అభివృద్ధి చేసినది విద్యామంత్రిత్వ శాఖ, ఐ.ఐ.ఐ.టి మద్రాసు, మరియు.....

Options :

1. ✔ NPTEL
2. ✖ NCERT
3. ✖ UGC
4. ✖ Both A and B
A మరియు B రెండును

Question Number : 39 Question Id : 5171449933 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

What is the full form of USB as used in computer-related activities?

కంప్యూటర్కు సంబంధించిన కార్యక్రమాలలో ఉపయోగించిన యు.ఎస్.బి

పూర్తి నామం

Options :

Universal Security Block

1. ✘

Universal Serial Bus

2. ✔

United Serial Bus

3. ✘

None of the above

4. ✘ పైవేవి కావు

Question Number : 40 Question Id : 5171449934 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

..... is a type of memory circuitry that holds the computer's start-up routine.

కంప్యూటరు ప్రారంభ దినచర్యను పట్టుకొనే జ్ఞాపక శక్తి, మెమోరి రన్సు

Options :

RAM

1. ✘

ROM

2. ✔

RIM

3. ✘

Cache Memory

4. ✘

Question Number : 41 Question Id : 5171449935 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

In which year did the word 'sustainable development' come into existence?

'నిలకడ ఆభివృద్ధి' ఏ సంవత్సరం వాడుకలోనికి వచ్చినది?

Options :

1992

1. ✘

1978

2. ✘

3. ✓ 1980

4. ✘ 1987

Question Number : 42 Question Id : 5171449936 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The tropical region lays between⁰N to⁰S
ఉష్ణమండల ప్రాంతము⁰ఉ నుండి.....⁰ద మధ్య ఉంటుంది

Options :

1. ✓ 10, 10

2. ✘ 20, 20

3. ✘ 30, 30

4. ✘ 40, 40

Question Number : 43 Question Id : 5171449937 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

What is the total percentage of nitrogen gas in the air?
గాలిలో నైట్రోజను వాయువు మొత్తం శాతం ఎంత ?

Options :

1. ✘ 12 per cent
12 శాతం

2. ✘ 21per cent
21 శాతం

3. ✓ 78 per cent
78 శాతం

4. ✘ 87 per cent
87 శాతం

Question Number : 44 Question Id : 5171449938 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which of the following processes explains the working of a geothermal power plant?
దిగువ ఏ ప్రక్రియ జియోథెర్మల్ పవరు ప్లాంటు పనితీరును వివరిస్తుంది

Options :

1. ✘ use of potential energy to produce electricity
విద్యుచ్ఛక్తి ఉత్పాదనకు సంభావ్య శక్తి వినియోగం
2. ✔ use of thermal energy to produce electricity
విద్యుచ్ఛక్తి ఉత్పాదనకు ఉష్ణశక్తి వినియోగం
3. ✘ use of kinetic energy to produce electricity
విద్యుచ్ఛక్తి ఉత్పాదనకు గతితార్కిక శక్తి వినియోగం
4. ✘ use of tidal energy to produce electricity
విద్యుచ్ఛక్తి ఉత్పాదనకు అలల శక్తి వినియోగం

Question Number : 45 Question Id : 5171449939 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Kyoto Protocol (1997) was related to.....

1997 క్యోటో ప్రోటోకాల్ దీనికి సంబంధించినది

Options :

1. ✘ Protection of Ozone Layer
ఓజోన్ పొరను రక్షించుట
2. ✔ Reduction in Green House Gas emissions
అకుపచ్చ గృహ వాయు ఉద్ఘాటాలను తగ్గించుట
3. ✘ Conservation of Biodiversity
బయోడైవర్సిటీ పరిరక్షణ
4. ✘ Limiting the rise in global temperature
ప్రపంచ వేడిమిలో పెరుగుదలను పరిమితం చేయుట

Question Number : 46 Question Id : 5171449940 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which was a famous Cultural and Educational Center of Northern University in ancient India

ప్రాచీన భారత ఉత్తర విశ్వవిద్యాలయపు పేరొందిన సాంస్కృతిక విద్యాకేంద్రమేది

Options :

1. ✘ Takhyasila
2. ✘ Bikramshila
3. ✘ Valabi University

Nalanda

4. ✓

Question Number : 47 Question Id : 5171449941 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Educational TV was first introduced in India in the year.....

ఇండియాలో మొదటిసారిగా విద్యా టి.వి ని ప్రవేశపెట్టిన సంవత్సరం

Options :

1. ✘ 1961
2. ✘ 1959
3. ✓ 1968
4. ✘ 1965

Question Number : 48 Question Id : 5171449942 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which of the following is an example of non-conventional learning programme in India?

ఇండియాలో సాంప్రదాయేతర అభ్యాస కార్యక్రమమునకు ఉదాహరణ

Options :

1. ✘ Information Technology
సమాచార సాంకేతికత
2. ✘ Dentistry
దంతవైద్యము
3. ✘ Journalism
పాత్రికేయము
4. ✓ Hotel Management
హోటల్ నిర్వహణ

Question Number : 49 Question Id : 5171449943 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Every system of education is based on?

ప్రతీ విద్యా పద్ధతీ దీనిపై ఆధారపడి ఉంది

Options :

1. ✓ Ideology of nation
దేశ భావజాలము

2. ✘ Social development
సాంఘికాభివృద్ధి

3. ✘ Intellectual development
మేధోవృద్ధి

4. ✘ Skill development
నైపుణ్యాభివృద్ధి

Question Number : 50 Question Id : 5171449944 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

CLASS stands for
CLASS అనగా

Options :

1. ✘ Complete Literacy and Studies in Schools

2. ✘ Computer Literates and Students in Schools

3. ✓ Computer Literacy and Studies in Schools

4. ✘ Centre for Literacy and Studies in Schools

Paper II

| | |
|--------------------------------------------------------------|-----------|
| Section Id : | 517144132 |
| Section Number : | 2 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 100 |
| Number of Questions to be attempted : | 100 |
| Section Marks : | 200 |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 517144408 |
| Question Shuffling Allowed : | Yes |
| Is Section Default? : | null |

Question Number : 51 Question Id : 5171449945 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Let $f : \left[0, \frac{\pi}{2}\right] \rightarrow \mathbb{R}$ be a continuous function and $\int_0^{\sin^2 x} f(t) dt = \frac{3}{4}x$, $x \in \left[0, \frac{\pi}{2}\right]$. Then the value of $f\left(\frac{1}{4}\right)$ is

Options :

$\sqrt{3}$

1. ✖

$\frac{\sqrt{3}}{4}$

2. ✖

$\frac{\sqrt{3}}{2}$

3. ✔

$\frac{1}{2}$

4. ✖

Question Number : 52 Question Id : 5171449946 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Define $d : \mathbb{N}^2 \rightarrow \mathbb{R}$ by $d(x, y) = 1 + x + y \forall x, y \in \mathbb{N}$ and $d(x, x) = 0$.

Consider the following two statements:

- (A) Neighbourhood of 3 with radius 3 with respect to the above metric d is $\{3\}$.
(B) Neighbourhood of 3 with radius 6 with respect to the metric d is $\{1, 3\}$.

Then which of the following is true?

Options :

(A) is true and (B) is false

1. ✖

(A) is false and (B) is true

2. ✖

Both (A) and (B) are false

3. ✖

Both (A) and (B) are true

4. ✔

Question Number : 53 Question Id : 5171449947 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Let f and g be twice differentiable real valued functions on \mathbb{R} satisfying $f'(x) = 3g(x)$ and $g'(x) = -3f(x)$ for all $x \in \mathbb{R}$. If $h = f^2 + fg + g^2$, then $h'' =$
(Here $f^2(x) = f(x)f(x), (fg)(x) = f(x)g(x)$)

Options :

1. ✖ $36 fg$

2. ✔ $-36 fg$

3. ✖ $18 fg$

4. ✖ $-18 fg$

Question Number : 54 Question Id : 5171449948 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following sets in \mathbb{R}^2 , the Euclidean space, an unbounded set is

Options :

1. ✖ $\left\{ (x, y) : x^2 + \frac{y^2}{2} \leq 10 \right\}$

2. ✖ $\{ (x, y) : |x| + |y| \leq 100 \}$

3. ✖ $\{ (x, y) : x^2 + |y| < 1 \}$

4. ✔ $\{ (x, y) : x^2 + y^3 < 1 \}$

Question Number : 55 Question Id : 5171449949 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Let $\sum_{n=0}^{\infty} a_n (x-3)^n = 1 - x^2 + x^4 - x^6 + \dots$ ($0 < x < 1$). Then $\limsup_{n \rightarrow \infty} |a_n|^{\frac{1}{n}} =$

Options :

$$\frac{1}{\sqrt{10}}$$

1. ✓

$$\frac{1}{\sqrt{5}}$$

2. ✗

$$\frac{1}{2\sqrt{2}}$$

3. ✗

$$\frac{1}{\sqrt{2}}$$

4. ✗

Question Number : 56 Question Id : 5171449950 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Consider the statements:

- (A) The set of numbers in $[0,1]$ whose decimal expansions do not contain the digit 7 has Lebesgue measure zero.
- (B) Every Lebesgue measurable set is a Borel set.

Which of the following options is correct?

Options :

(A) is true and (B) is false

1. ✓

(A) is false and (B) is true

2. ✗

Both (A) and (B) are false

3. ✗

Both (A) and (B) are true

4. ✗

Question Number : 57 Question Id : 5171449951 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The values of k for which the series $\sum_{n=1}^{\infty} \left(\frac{1}{n} - \sin \frac{1}{n} \right)^k$ converge are

Options :

$$k > \frac{1}{3}$$

1. ✓

$$k < \frac{1}{3}$$

2. ✗

$$0 < k < \frac{1}{3}$$

3. ✗

$$k < 0$$

4. ✗

Question Number : 58 Question Id : 5171449952 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Let $S = \{(x, y, z) \in \mathbb{R}^3 : x^2 + y^2 + z^2 = 1\}$. Then $\int_S (x^2 + y + z) dA =$

Options :

$$\frac{3}{8} \pi$$

1. ✗

$$\frac{8}{3} \pi$$

2. ✗

$$\frac{3}{4} \pi$$

3. ✗

$$\frac{4}{3} \pi$$

4. ✓

Question Number : 59 Question Id : 5171449953 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

If a square matrix of order four has eigen values $\pm\sqrt{\pm\sqrt{-3}}$, then which of the following is not true?

Options :

$$A^7 = 9A^{-1}$$

1. ✖

$$A^4 + 3I = 0$$

2. ✖

3. ✔ $A^7 + 3A^2 = 0$

$$A^9 = 9A$$

4. ✖

Question Number : 60 Question Id : 5171449954 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

If (x_0, y_0, z_0) is the unique solution of the system of linear equations

$$140x + 97y + 97z = 237$$

$$97x + 140y + 97z = 151$$

$$97x + 97y + 140z = 280,$$

then $(x_0^3 + y_0^3 + z_0^3) =$

Options :

6

1. ✖

10

2. ✔

8

3. ✖

9

4. ✖

Question Number : 61 Question Id : 5171449955 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No
Correct Marks : 2 Wrong Marks : 0

A is a square matrix of order 4 whose eigen values are 0,2,4,6. Using this information which of the following can't be found?

Options :

1. ✖ Rank of A
2. ✖ Determinant of $A^T A$
3. ✖ Eigen values of $(A+I)^{-1}$
4. ✔ Eigen values of $A^T A$

Question Number : 62 Question Id : 5171449956 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No
Correct Marks : 2 Wrong Marks : 0

Consider the following two statements:

- (A) $f(x, y) = x^2 + 4xy + y^2$ has no minimum at (0,0).
(B) f is not positive definite.

Choose the correct option among the following.

Options :

1. ✖ (A) is true and (B) is false
2. ✖ (A) is false and (B) is true
3. ✔ Both (A) and (B) are true
4. ✖ Both (A) and (B) are false

Question Number : 63 Question Id : 5171449957 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No
Correct Marks : 2 Wrong Marks : 0

Let U and V be subspaces of $\mathbb{R}^9(\mathbb{R})$ and $\dim U = \dim V = 6$. Then $\dim(U \cap V)$ will be at least

Options :

1. ✓ 3

2. ✘ 4

3. ✘ 5

4. ✘ 6

Question Number : 64 Question Id : 5171449958 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Consider the following statements concerning three subspaces U, V, W of a vector space $X(F)$.

(A) $\dim(U + V + W) = \dim U + \dim V + \dim W - \dim(U \cap V) - \dim(V \cap W) - \dim(U \cap W)$ is always true.

(B) $\dim(U + V) = \dim U + \dim V + \dim(U \cap V)$ is always true.

Choose the correct option among the following.

Options :

(A) is true and (B) is false

1. ✘

(A) is false and (B) is true

2. ✓

Both (A) and (B) are true

3. ✘

Both (A) and (B) are false

4. ✘

Question Number : 65 Question Id : 5171449959 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Let T be a linear operator on $\mathbb{R}^2(\mathbb{R})$ given by $T(x, y) = (-y, x)$. Then the trace of T^2 is

Options :

1. ✘ 0

2. ✘ -1

3. ✔ -2

4. ✘ 2

Question Number : 66 Question Id : 5171449960 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Consider the matrix $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, where $a+b=c+d$. Then the eigen values of A are

Options :

1. ✔ $a-c, c+d$

2. ✘ $a+c, c+d$

3. ✘ $a+c, c-d$

4. ✘ $a-c, c-d$

Question Number : 67 Question Id : 5171449961 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

$$\int_0^{\infty} \frac{1 - \cos 2x}{x^2} dx =$$

Options :

1. ✘ $\frac{\pi}{2}$

2. ✔ π

$$\frac{\pi}{4}$$

3. ✘

$$2\pi$$

4. ✘

Question Number : 68 Question Id : 5171449962 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

If $f(z) = u(x, y) + iv(x, y)$ is analytic in an open connected set Ω and $au + bv + c = 0$ for some constants a, b, c , then $\oint_{|z|=1} \frac{f(z)}{z^2} dz =$

Options :

$$2\pi i$$

1. ✘

$$-2\pi i$$

2. ✘

$$\pi i$$

3. ✘

$$0$$

4. ✔

Question Number : 69 Question Id : 5171449963 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The number of analytic functions f in a neighbourhood of origin and for which

$$f\left(\frac{1}{n}\right) + f''\left(\frac{1}{n}\right) = 0 \quad \forall n \in \mathbb{N}$$

Options :

$$0$$

1. ✘

$$1$$

2. ✘

2

3. ✘

∞

4. ✔

Question Number : 70 Question Id : 5171449964 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The radius of convergence of Taylor series of $f(z) = \frac{1}{z^4 + 5z^2 + 4}$ about the point $z_0 = 1+i$ is

Options :

$\sqrt{3}$

1. ✘

$\sqrt{2}$

2. ✘

1

3. ✔

4

4. ✘

Question Number : 71 Question Id : 5171449965 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

If $f(z) = \sum_{n=0}^{\infty} 2n z^{2n}$ is Maclaurin series of $f(z)$ in $|z| < 1$, then the number of poles of $f(z)$ in $|z| < 2$ is

Options :

1

1. ✘

2

2. ✔

3

3. ✘

4

4. ✘

Question Number : 72 Question Id : 5171449966 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

If c is the circle $z = 2e^{it}, t \in [0, 2\pi]$, then $\int_c \sin^2\left(\frac{1}{z-1}\right) dz =$

Options :

0

1. ✔

πi

2. ✘

$2\pi i$

3. ✘

$-\pi i$

4. ✘

Question Number : 73 Question Id : 5171449967 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Consider the function $f(z) = \sum_{n=0}^{\infty} a_n z^n, a_0 = 1, a_1 = -1, 3a_n + 4a_{n-1} - a_{n-2} = 0, n = 2, 3, \dots$ If Z denotes the number of zeros of $f(z)$ and P the number of poles of $f(z)$, then $Z - P =$

Options :

1

1. ✘

-1

2. ✔

2

3. ✘

-3

4. ✘

Question Number : 74 Question Id : 5171449968 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The circle of convergence of $f(z) = \frac{1}{(z^2 + 1)(z + 1 + i)}$ about the point $z_0 = \frac{1}{2}$ is

Options :

$$|2z - 1| = \sqrt{3}$$

1. ✘

$$|z - 1| = \sqrt{5}$$

2. ✘

$$|2z - 1| = \sqrt{5}$$

3. ✔

$$|2z - 1| = \sqrt{7}$$

4. ✘

Question Number : 75 Question Id : 5171449969 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Consider the polynomial $f(x) = x^4 + 2x^3 - 3x^2 - 4x + 2$ over the field of rational numbers \mathbb{Q} . If E is the splitting field of $f(x)$ over \mathbb{Q} , then the degree of E over \mathbb{Q} is

Options :

4

1. ✘

3

2. ✘

2

3. ✔

1

4. ✖

Question Number : 76 Question Id : 5171449970 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which of the following numbers is not an irreducible element over $\mathbb{Z}[i]$?

Options :

3

1. ✖

$3+2i$

2. ✖

$1-i$

3. ✖

$5-i$

4. ✔

Question Number : 77 Question Id : 5171449971 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The number of subgroups of the permutation group S_4 is

Options :

20

1. ✖

25

2. ✖

30

3. ✔

18

4. ✖

Question Number : 78 Question Id : 5171449972 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The number of distinct conjugate classes of the Dihedral group D_5 is

Options :

- 1. ✖
- 2. ✔
- 3. ✖
- 4. ✖

Question Number : 79 Question Id : 5171449973 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which of the following pairs of polynomials in $\mathbb{Z}_5[x]$ have same roots in \mathbb{Z}_5 ?

Options :

- 1. ✔
 $f(x) = 3x^5 - 4x^2, \quad g(x) = x^2 + 3x$
- 2. ✖
 $f(x) = x^5 - 4x^2, \quad g(x) = x^2 + 2x$
- 3. ✖
 $f(x) = x^4 - 4x, \quad g(x) = x^3 + x$
- 4. ✖
 $f(x) = x^2 + 2x + 3, \quad g(x) = x^2 + 3x + 1$

Question Number : 80 Question Id : 5171449974 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

A field among the following is

Options :

$$\frac{\mathbb{C}[x]}{\langle x^2+2 \rangle}$$

1. ✘

$$\frac{\mathbb{Q}[x]}{\langle x^4+4 \rangle}$$

2. ✘

$$\frac{\mathbb{Z}_5[x]}{\langle x^2+3x+4 \rangle}$$

3. ✔

$$\frac{\mathbb{Z}_5[x]}{\langle x^2+2x+2 \rangle}$$

4. ✘

Question Number : 81 Question Id : 5171449975 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Consider the subring $R = \left\{ \frac{p}{q} : p, q \in \mathbb{Z}, q \text{ odd} \right\}$ of $(\mathbb{Q}, +, \cdot)$. Then the number of maximal ideals in R is

Options :

1

1. ✔

2

2. ✘

3

3. ✘

4

4. ✘

Question Number : 82 Question Id : 5171449976 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let E be the extension of \mathbb{Q} of smallest degree such that all the roots of $f(x) = 2x^4 - x^3 - 3x^2 - 4x + 6 \in \mathbb{Q}[x]$ lie in E . Then which of the following is not a correct statement?

Options :

$x^2 + 1$ splits completely into linear factors in E .

1. ✖

E is the splitting field of $x^2 + 6x + 10$.

2. ✖

E is the splitting field of $x^3 + x^2 + 9x + 9$.

3. ✖

$x^4 - x^2 - 2$ has all its roots in E .

4. ✔

Question Number : 83 Question Id : 5171449977 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $n \in \mathbb{N}$, $A_n = \{n, n+1, n+2, \dots\}$ and $T = \{\phi, A_n\}_{n \in \mathbb{N}}$, where ϕ is the empty set. In the topological space (\mathbb{N}, T) consider the following statements:

- (A) The closure of $\{2, 4, 6, 8, \dots\}$ is \mathbb{N} .
- (B) The set $\{1, 3, 5, 7, \dots\}$ is an open set.
- (C) There are only three open sets containing 3.

Which of the following options is correct?

Options :

(A) is true, (B) is false and (C) is true

1. ✔

(A) is true, (B) is true and (C) is false

2. ✖

All the three statements are false

3. ✖

All the three statements are true

4. ✖

Question Number : 84 Question Id : 5171449978 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Consider the following statements:

- (A) Every completely regular space is a Hausdorff space.
(B) There are normal spaces which are not compact Hausdorff spaces.
Choose the correct option among the following.

Options :

1. ✖ (A) is true and (B) is false
2. ✖ (A) is false and (B) is true
3. ✔ Both (A) and (B) are true
4. ✖ Both (A) and (B) are false

Question Number : 85 Question Id : 5171449979 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

$$\lim_{n \rightarrow \infty} (1 + \sqrt[n]{2} + \sqrt[n]{3} + \dots + \sqrt[n]{n} - n - \log_e n) =$$

Options :

1. ✔ -1
2. ✖ 1
3. ✖ 0
4. ✖ 2

Question Number : 86 Question Id : 5171449980 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

$$\lim_{n \rightarrow \infty} \frac{1}{n} \int_0^n |\sin x| \cos^2 x \, dx =$$

Options :

$$\frac{2}{\pi}$$

1. ✖

$$\frac{5}{3\pi}$$

2. ✖

$$\frac{2}{3\pi}$$

3. ✔

$$\frac{4}{3\pi}$$

4. ✖

Question Number : 87 Question Id : 5171449981 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Consider $y'(x) + 2y(x) = f(x)$ for $x \geq 0$, $y(0) = 2$ and $f(x) = \begin{cases} 2 & \text{if } x \in [0, 2) \\ 0 & \text{if } x \in [2, \infty) \end{cases}$. Then $y(x) =$

Options :

1. ✔ $2e^{-x} \cosh x$ for $x \in [0, 2)$ and e^{-2x} for $x \in [2, \infty)$

2. ✖ $2e^{-2x} \cosh x$ for $x \in [0, 2)$ and e^{-2x} for $x \in [2, \infty)$

3. ✖ $2e^{-x} \cosh 2x$ for $x \in [0, 2)$ and e^{-2x} for $x \in [2, \infty)$

4. ✖ $1 + \cosh x$ for $x \in [0, 2)$ and e^{-x} for $x \in [2, \infty)$

Question Number : 88 Question Id : 5171449982 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Let f and g be two differentiable functions on \mathbb{R} such that $f'' + f = g$ and $g'' + g = f$. Then $f + g$ is necessarily a

Options :

1. ✘ constant function
2. ✔ linear function
3. ✘ quadratic function
4. ✘ polynomial function of degree 3

Question Number : 89 Question Id : 5171449983 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The real values of p for which $y'' + 2py' + y = 3$ admits solutions $y = f(x)$ with infinitely many critical points are

Options :

1. ✔ $|p| < 1$
2. ✘ $|p| < 2$
3. ✘ $|p| > 1$
4. ✘ $|p| > 2$

Question Number : 90 Question Id : 5171449984 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The set of values of $L > 1$ such that $x^2 y''(x) + y(x) = 0, 1 \leq x \leq L, y(1) = y(L) = 0$ has a non zero solution is

Options :

1. ✔ $\left\{ e^{\frac{2n\pi}{\sqrt{3}}} : n \in N \right\}$

2. ✘ $\left\{ e^{\frac{2n\pi}{\sqrt{3}}} : n \in N, n \text{ odd} \right\}$

3. ✘ $\left\{ e^{\frac{n\pi}{\sqrt{3}}} : n \in N \right\}$

4. ✘ $\left\{ e^{\frac{n\pi}{\sqrt{3}}} : n \in N, n \text{ odd} \right\}$

Question Number : 91 Question Id : 5171449985 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

$y = y(x)$ is the solution of $y''' - y'' - y' - 2y = 0$ such that $\lim_{x \rightarrow \infty} y(x) = 0$. Then the values of a, b, c and d satisfying $ay(0) + by'(0) + cy''(0) = d$ are respectively

Options :

1. ✘ 1,0,1,1

2. ✘ 0,1,1,1

3. ✘ 1,1,0,1

4. ✔ 1,1,1,0

Question Number : 92 Question Id : 5171449986 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Consider the basis of solutions of $\sum_{n=0}^7 \frac{d^n y}{dx^n} = 0$. Then the dimension of subspace of real solutions of this differential equation that satisfies $\lim_{x \rightarrow \infty} y(x) = 0$ is

Options :

1. ✘ 2

2. ✔ 3

4

3. ✖

5

4. ✖

Question Number : 93 Question Id : 5171449987 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The eigen values of the partial differential equation

$$\frac{\partial u}{\partial t} = k \frac{\partial^2 u}{\partial x^2}, u(x,0) = f(x), u(0,t) = 0, u(L,t) = 0 \text{ are}$$

Options :

$$\left\{ \left(\frac{2n\pi}{L} \right)^2 : n \in N \right\}$$

1. ✖

$$\left\{ \left(\frac{n\pi}{L} \right)^2 : n \in N \right\}$$

2. ✔

$$\left\{ \left(\frac{n\pi}{2L} \right)^2 : n \in N \right\}$$

3. ✖

$$\left\{ \left(\frac{n\pi}{L} \right) : n \in N \right\}$$

4. ✖

Question Number : 94 Question Id : 5171449988 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The number of solutions of the boundary value problem $y'' + 4y = 0, y'(0) = 1, y'(\pi) = -1$ is

Options :

one

1. ✖

two

2. ✖

zero

3. ✔

infinitely many

4. ✖

Question Number : 95 Question Id : 5171449989 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The partial differential equation $\frac{\partial^2 z}{\partial x^2} + 6\frac{\partial^2 z}{\partial x \partial y} - 16\frac{\partial^2 z}{\partial y^2} = 0$ is

Options :

1. ✖ parabolic

2. ✔ hyperbolic

3. ✖ elliptic

non homogeneous

4. ✖

Question Number : 96 Question Id : 5171449990 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $u(x, t)$ be the solution of $u_t - 9u_{xx} = 0$, $-\infty < x < \infty$, $t > 0$,

$$u(x, 0) = f(x) = \begin{cases} 1 & \text{if } |x| \leq 2 \\ 0 & \text{if } |x| > 2 \end{cases},$$

$$u_t(x, 0) = g(x) = \begin{cases} 1 & \text{if } |x| \leq 2 \\ 0 & \text{if } |x| > 2 \end{cases}. \text{ Then } u\left(0, \frac{1}{6}\right) =$$

Options :

7

1. ✖

$\frac{7}{2}$

2. ✖

$$\frac{7}{3}$$

3. ✖

$$\frac{7}{6}$$

4. ✔

Question Number : 97 Question Id : 5171449991 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The number of solutions of $y'' + 16y = \sin x$, $y(0) = y\left(\frac{\pi}{2}\right) = 1$ is

Options :

one

1. ✖

zero

2. ✖

two

3. ✖

∞

4. ✔

Question Number : 98 Question Id : 5171449992 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The largest interval containing zero on which the solution of $y' = 2xy^2$, $y(0) = 1$ is continuous is

Options :

(-2,2)

1. ✖

(-1,1)

2. ✔

(-3,0)

3. ✖

(-1,0)

4. ✘

Question Number : 99 Question Id : 5171449993 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

If $S_{k,n} = \sum_{j=1}^n j^k$, then $\frac{S_{4,n}}{S_{2,n}}$ is a quadratic in n , say $an^2 + bn + c$, where $a + b + c =$

Options :

1. ✓ 1

2. ✘ 2

3. ✘ 3

4. ✘ 4

Question Number : 100 Question Id : 5171449994 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Newton's iteration formula to the square root of 5 is

Options :

$$x_n = 2 \left(x_{n-1} + \frac{5}{x_{n-1}} \right)$$

1. ✘

$$x_n = x_{n-1} + \frac{5}{x_{n-1}}$$

2. ✘

$$2x_n = x_{n-1} + \frac{5}{x_{n-1}}$$

3. ✓

$$3x_n = x_{n-1} + \frac{5}{x_{n-1}}$$

4. ✘

Question Number : 101 Question Id : 5171449995 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The least square line that can be fit for $y(x) = e^x$ on the interval $(-1,1)$ is $y = a_0 + a_1x$, where

$a_0 =$

Options :

1. ✖ $\cos 1$

2. ✖ $\cosh 1$

3. ✔ $\sinh 1$

4. ✖ $\sin 1$

Question Number : 102 Question Id : 5171449996 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Suppose $y = f(x)$ is a periodic function of period 3. A trigonometric sum that includes the following data points of $y = f(x)$

| | | | |
|--------|---|---|---|
| x | 0 | 1 | 2 |
| $f(x)$ | 0 | 1 | 1 |

is $y(x) = k \left(1 - \cos \frac{2\pi}{3}x \right)$ for some appropriate k . Then $y\left(\frac{3}{2}\right) =$

Options :

1. ✖ 1

2. ✔ $\frac{4}{3}$

3. ✖ $\frac{5}{3}$

4. ✖ 2

Question Number : 103 Question Id : 5171449997 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $J(y) = \int_0^1 (y'')^2 dx$, $I(y) = \int_0^1 y dx$. Then the extremals to J subject to $I(y) = 1$ and the boundary conditions $y(0) = y(1) = 0$, $y'(0) = y'(1) = 0$ is $y = ax^4 + bx^3 + cx^2$, where $a + b + c =$

Options :

- 1. ✖
- 2. ✔
- 3. ✖
- 4. ✖

Question Number : 104 Question Id : 5171449998 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Consider the functional $J(y) = \int_0^1 (y'^2 - y^2 + 2xy) dx$. Then the extremal of J subject to $y(0) = 0$, $y(1) = 0$ is $y = x - k \sin x$, where $k =$

Options :

- 1. ✖
- 2. ✖
- 3. ✔
- 4. ✖

Question Number : 105 Question Id : 5171449999 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The number of extremals of $J(y) = \int_0^\pi (y'^2 - 4y^2) dx$ subject to $y(0) = 0 = y(\pi)$ is

Options :

1. ✖ 0

2. ✖ 1

3. ✖ 2

4. ✔ ∞

Question Number : 106 Question Id : 51714410000 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The solution of the functional $J(y) = \int_0^1 e^x \sqrt{1+y'^2} dx$ is

Options :

1. ✔ $y(x) = \sec^{-1}\left(\frac{e^x}{a}\right) + b$

2. ✖ $y(x) = \operatorname{cosec}^{-1}\left(\frac{e^x}{a}\right) + b$

3. ✖ $y(x) = \cos^{-1}\left(\frac{e^x}{a}\right) + b$

4. ✖ $y(x) = \sin^{-1}\left(\frac{e^x}{a}\right) + b$

Question Number : 107 Question Id : 51714410001 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The eigen values of $g(x) = f(x) + \lambda \int_0^1 (x+t)g(t) dt$ are the roots of the quadratic equation

Options :

1. ✖ $\lambda^2 - 12\lambda + 12 = 0$

2. ✓ $\lambda^2 + 12\lambda - 12 = 0$

3. ✗ $\lambda^2 + 12\lambda + 12 = 0$

4. ✗ $\lambda^2 - 12\lambda - 12 = 0$

Question Number : 108 Question Id : 51714410002 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The initial value problem corresponding to the integral equation

$$y(x) = 1 + \int_0^x (x-t)F(t)dt + \lambda \int_0^x (t-x)y(t)dt \text{ is}$$

Options :

1. ✗ $y''(x) - \lambda y(x) = F(x), y(0) = 1, y'(0) = 0$

2. ✓ $y''(x) + \lambda y(x) = F(x), y(0) = 1, y'(0) = 0$

3. ✗ $y''(x) - 2\lambda y(x) = F(x), y(0) = 1, y'(0) = 0$

4. ✗ $y''(x) + 2\lambda y(x) = F(x), y(0) = 1, y'(0) = 0$

Question Number : 109 Question Id : 51714410003 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

A ball falls from a height onto a fixed horizontal plane. The coefficient of restitution is e and the height reached by the ball in the n^{th} rebound is h_n . If the ball travels a distance d before coming to rest after a time t , then the ordered pair (d, t) is

Options :

1. ✓ $\left(-h \coth h, \frac{1+e}{1-e} \sqrt{\frac{2h}{g}} \right)$

2. ✗ $\left(h \coth h, \frac{1+e}{1-e} \sqrt{\frac{2g}{h}} \right)$

$$\left(-h \tanh h, \frac{1+e}{1-e} \sqrt{\frac{2h}{g}} \right)$$

3. ✖

$$\left(h \coth h, \frac{1+e}{1-e} \sqrt{\frac{2h}{g}} \right)$$

4. ✖

Question Number : 110 Question Id : 51714410004 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The torus formed by rotating the circle $x^2 + (y - a)^2 = b^2$ ($a > b$) about x -axis has moment of inertia is $\frac{M}{4}k$, where M is the mass of the body, in which $k =$

Options :

$$4a^2 + 5b^2$$

1. ✖

$$5a^2 + 4b^2$$

2. ✖

$$3a^2 + 4b^2$$

3. ✖

$$4a^2 + 3b^2$$

4. ✔

Question Number : 111 Question Id : 51714410005 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

From a vessel containing 3 white and 5 black balls 4 balls are transferred into an empty vessel. From this vessel, a ball is drawn and it is found to be white. What is the chance that out of 4 balls transferred 3 are white and 1 black is

Options :

$$1/9$$

1. ✖

$$1/8$$

2. ✖

$$1/7$$

3. ✔

$$1/6$$

4. ✖

Question Number : 112 Question Id : 51714410006 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Match the inequalities

- | | |
|----------------------------|--------------------------------------------------------------|
| a) Holder's inequality | (i) $E[X+Y ^5]^{1/5} \leq [E X ^5]^{1/5} + [E Y ^5]^{1/5}$ |
| b) Lianpunov's inequality | (ii) $E[XY] \leq [E X ^2]^{1/2} [E Y ^2]^{1/2}$ |
| c) Triangular inequality. | (iii) $E[X ^2]^{1/2} \leq [E X ^3]^{1/3}$ |
| d) Minkowski's inequality. | (iv) $E[(X+Y)^2]^{1/2} \leq (E X ^2)^{1/2} + (E Y ^2)^{1/2}$ |
| | (v) $E[(XY)^2] \leq E[(X^2)] E[(Y^2)]$ |

Options :

(a) ↔ (iv); (b) ↔ (iii); (c) ↔ (v), (d) ↔ (i)

1. ✘

(a) ↔ (ii); (b) ↔ (iii); (c) ↔ (iv), (d) ↔ (i)

2. ✔

(a) ↔ (ii); (b) ↔ (iv); (c) ↔ (i), (d) ↔ (v)

3. ✘

4. ✘ (a) ↔ (v); (b) ↔ (ii); (c) ↔ (i), (d) ↔ (iv)

Question Number : 113 Question Id : 51714410007 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Let $\{X_n, n \geq 1\}$ be a sequence of random variables satisfying the probability and property are given below. Among the following statements Correct statement(s) is/are:

- (i) $P[X_n = n] = \frac{1}{n}$ and $P[X_n=0]=1 - \frac{1}{n}$ does not hold almost sure convergence.
- (ii) $P[X_n = \pm n^\lambda] = \frac{1}{2}, \lambda > \frac{1}{2}$ does not hold convergence in probability.
- (iii) $P[X_n = n] = \frac{1}{n^2}$ and $P[X_k=0]=1 - \frac{1}{n^2}$ does not hold convergence in quadratic mean.

Options :

(i) , (ii)

1. ✘

(ii) , (iii)

2. ✘

(i) , (iii)

3. ✘

(i) , (ii) , (iii)

4. ✔

Question Number : 114 Question Id : 51714410008 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $\{X_n, n \geq 1\}$ be a sequence of random variables satisfying the probability and property are given below. Among the following statements correct statement(s).

- (i) $P[X_n = \pm 2^n] = 2^{-(2n+1)}$ & $P[X_n = 0] = 1 - 2^{-2n}$ holds Central Limit Theorem.
- (ii) $U[-n, n]$ does not hold Central Limit Theorem.
- (iii) $P[X_n = \pm 2^n] = \frac{1}{2}$ does not hold Central Limit Theorem.

Options :

1. ✘ (i), (ii)

2. ✘ (ii), (iii)

3. ✔ (iii)

4. ✘ (i) (ii) (iii)

Question Number : 115 Question Id : 51714410009 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s):

- (i) A random sample of size 100 is taken from a population whose mean is 60 and variance is 400, using central limit theorem, the probability for mean of the sample will not differ from 60 by more than 4 is 0.9546. (Assume: $P[0 < z < c]$ values are 0.1112, 0.4773, 0.6826 when $c = 1, 1.2$ and 2).
- (ii) Central limit theorem gives us the fact that the empirical frequencies of many natural populations exhibit a bell-shaped curve and it provides a simple method for computing approximate probabilities of sums of independent random variables.

Options :

1. ✘ (i)

2. ✘ (ii)

3. ✔ (i) & (ii)

4. ✘ Neither (i) nor (ii)

Question Number : 116 Question Id : 51714410010 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Among the following statements(s), identify the correct statement(s) related to a characteristic function ϕ (in the usual notations):

- (i) A function ϕ on \mathbb{R} is a characteristic function iff it is sem-definite and continuous.
- (ii) A function ϕ on \mathbb{R} is a characteristic function iff $\phi(-\infty)=0$, $\phi(\infty)=1$, $\phi(t)=\phi(-t)$, convex and $\lim_{t \rightarrow 0} \phi(t)=0$.
- (iii) A continuous function $\phi(t)$ is a characteristic function iff $\phi(0) = 1$, $\phi(x, A) = \iint \phi(t-u) e^{(it-u)x} dt du$ and it is bounded over $(-\infty, \infty)$

Options :

- 1. ✘ (i), (ii)
- 2. ✘ (iii)
- 3. ✘ (i) (ii) & (iii)
- 4. ✔ None is correct

Question Number : 117 Question Id : 51714410011 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Identify the correct statement among the following: (in the usual notations)

- (i) If $\{X_n, n \geq 1\}$ be the sequence of random variables with distribution function $F_n(x)=0$, if $x < c$; and $F_n(x) = 1$, if $x \geq c$; then the modes of convergences in probability and law are equivalent.
- (ii) Consistent estimator is not necessarily unbiased, may not be unique, may be meaningless and $T_n(x)$ is consistent if $\forall(T_n(x)) \rightarrow 0$ as $n \rightarrow \infty$ and $T_n(x)$ as $n \rightarrow \infty$ is unbiased.

Options :

- 1. ✘ (i)
- 2. ✘ (ii)
- 3. ✔ (i), (ii)
- 4. ✘ Neither (i) nor (ii)

Question Number : 118 Question Id : 51714410012 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Let $\{X_n, n \geq 1\}$ be a sequence of square integrable independent random variables with

$\sum_{n=1}^{\infty} \frac{\sigma_{X_n}^2}{n^2} < \infty$ then the sequence holds ____ law of large numbers.

Options :

Bernoulli's weak

1. ✘

Khintchin's weak

2. ✘

Chebychev's weak

3. ✘

Kolmogorov strong

4. ✔

Question Number : 119 Question Id : 51714410013 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Match the density $f(x)$ with the corresponding Variance(s)

- | | |
|-----------------------------------------------------------------------|---------------|
| a) $6x(1-x)$; $0 < x \leq 1$. | (i) $1/20$ |
| b) $\frac{1}{2} x^2 e^{-x}$; $x \geq 0$. | (ii) 3 |
| c) $\frac{1}{2} (x+1)$; $-1 < x < 1$. | (iii) $2/9$ |
| d) x^3 if $0 \leq x \leq 1$; and $3(2-x)^3$ if $1 \leq x \leq 2$. | (iv) $17/300$ |
| | (v) $1/24$ |

Options :

(a) \leftrightarrow (i); (b) \leftrightarrow (iii); (c) \leftrightarrow (ii) , (d) \leftrightarrow (v).

1. ✘

(a) \leftrightarrow (ii); (b) \leftrightarrow (iii); (c) \leftrightarrow (i) , (d) \leftrightarrow (iv).

2. ✘

(a) \leftrightarrow (i); (b) \leftrightarrow (ii); (c) \leftrightarrow (iii) , (d) \leftrightarrow (iv).

3. ✔

(a) \leftrightarrow (ii); (b) \leftrightarrow (iv); (c) \leftrightarrow (i) , (d) \leftrightarrow (iii).

4. ✘

Question Number : 120 Question Id : 51714410014 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statements

- (i) The equality of mean and variance is necessary and sufficient condition for a power series distribution to be Poisson.
- (ii) The probability that three points selected randomly lie on a circumference of a circle will lie on a semi-circle is 0.75.

Options :

1. ✖ (i)

2. ✖ (ii)

3. ✔ (i), (ii)

4. ✖ Neither (i) nor (ii)

Question Number : 121 Question Id : 51714410015 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s)(in the usual notations):

- (i) If the moments of random variable X are $E[X^r] = 0.6, r=1,2, \dots$ then $P[X=0]=0.4$ and $P[X=1]=0.60$.
- (ii) If $f(x) = 2e^{-2x}, x>0$ then the density of $Y=x^3$ is Weibull distribution with parameters $(2, 1/3)$.

Options :

1. ✖ (i)

2. ✖ (ii)

3. ✔ (i) & (ii)

4. ✖ Neither (i) nor (ii)

Question Number : 122 Question Id : 51714410016 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The daily consumption of electric power in millions of kilowatt-hours can be treated as a random variable having gamma distribution with parameters $\lambda = \frac{1}{2}$ and $a=3$. If the power plant of this city has a daily capacity of 12 million kilowatt-hours, what is the probability that this power supply will be inadequate on any day?

Options :

1. ✓ 0.0625

2. ✘ 0.0375

3. ✘ 0.375

4. ✘ 0.625

Question Number : 123 Question Id : 51714410017 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following, identify the correct statement(s) (in the usual notations):

- (i) The distribution function of Cauchy variate is $F(x) = \frac{1}{\pi} \left[\frac{\pi}{2} + \tan^{-1}x \right]$ where $0 < x < \infty$.
- (ii) $f(x) = 1 - |1-x|$ for $0 < x < 2$ is a probability density function of random variable X.

Options :

1. ✘ (i)

2. ✓ (ii)

3. ✘ Both (i) & (ii)

4. ✘ Neither (i) nor (ii)

Question Number : 124 Question Id : 51714410018 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

If X_1, X_2, \dots, X_n be the random sample of size 'n' drawn from an exponential distribution with density $f(x) = \alpha e^{-\alpha x}$, $x \geq 0$ then the distribution of $W = X_{(r+1)} - X_{(r)}$ is (in the usual notations)

Options :

1. ✘ $\alpha e^{-\alpha W}$

2. ✘ $r\alpha e^{-r\alpha W}$

$$(r+1)\alpha e^{-(r+1)\alpha w} - r\alpha e^{-r\alpha w}$$

3. ✘

$$(n-r)\alpha e^{-(n-r)\alpha w}$$

4. ✔

Question Number : 125 Question Id : 51714410019 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

If X and Y are two independent and identically distributed standard Cauchy variates then the density of $U=XY$ is (in the usual notations)

Options :

$$\frac{1}{\pi^2(1+x^2)(1+y^2)}$$

1. ✘

$$\frac{2 \log |u|}{\pi^2(u^2-1)}$$

2. ✔

$$\frac{\log |u|}{\pi(u^2-1)}$$

3. ✘

$$\frac{2 \cdot \log u}{\pi(u+1)(u-1)}$$

4. ✘

Question Number : 126 Question Id : 51714410020 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following, identify the correct statements, based on the relation between

Z, t, F and χ^2 (in the usual notations):

(i) If $k_1=1$ and $k_2=n$ then $t^2 = F_{1,n}$.

(ii) If $k_1=n$ and $k_2=\infty$ then $Z = \frac{1}{2} \log \left[\frac{\chi^2}{n} \right]$.

(iii) If $k_1=1$ and $k_2=\infty$ then $F_{1,\infty} = \chi^2(1)$.

(iv) If $k_1=n$ and $k_2=\infty$ then $F = \left[\frac{\chi^2}{n} \right]$.

Options :

(i), (ii)

1. ✘

(i), (iii)

2. ✘

(i), (iii), (iv)

3. ✖

(i), (ii), (iii), (iv)

4. ✔

Question Number : 127 Question Id : 51714410021 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s) (in the usual notations):

- (i) If X follows Binomial(n,p) where p follows Uniform over (0,1) then X follows Beta First kind
- (ii) If X follows Binomial(n,p) where p follows Beta First kind then X follows Beta First kind
- (iii) If X follows Binomial(n,p) where n follows Poisson then X follows Negative Binomial.

Options :

(i)

1. ✖

(ii)

2. ✖

(iii)

3. ✖

(i) (ii)

4. ✔

Question Number : 128 Question Id : 51714410022 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the wrong statement(s) (in the usual notations):

- i) The confidence interval with $1-\alpha$ confidence coefficient for the variance of the normal distribution, when mean is known, is
$$P[\mu-\chi^2 s^2 \leq \sigma^2 \leq \mu+\chi^2 s^2] = 1-\alpha$$
 where χ^2 is with level $\frac{1}{2} \alpha$.
- ii) The confidence interval with $1-\alpha$ confidence coefficient for the mean of the normal distribution, when standard deviation σ is known, is
$$P[\bar{x}-Z \sigma/\sqrt{n} \leq \mu \leq \bar{x}+Z \sigma/\sqrt{n}] = \alpha$$
 where Z is with level $\frac{1}{2} \alpha$.

Options :

(i)

1. ✖

2. ✘ (ii)

3. ✔ (i), (ii)

4. ✘ Both (i) & (ii) are correct

Question Number : 129 Question Id : 51714410023 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s) (in the usual notations):

- (i) Let x_1, x_2, \dots, x_n be a random sample of size 'n' drawn from logistic family has monotone likelihood ratio with location parameter θ .
- (ii) Let x_1, x_2, \dots, x_n be a random sample of size 'n' drawn from Beta(a,b) distribution of first kind then the family has monotone likelihood ratio for 'a'.
- (iii) Let x_1, x_2, \dots, x_n be a random sample of size 'n' drawn from Hypergeometric distribution with parameters (n,m,M), where m is the only unknown parameter then the family follows monotone likelihood ratio in x.

Options :

1. ✔ (i), (ii) (iii)

2. ✘ (i), (ii)

3. ✘ (ii), (iii)

4. ✘ (i), (iii)

Question Number : 130 Question Id : 51714410024 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s) (in the usual notations):

- (i) Let x_1, x_2, \dots, x_n be a random sample of size 'n' drawn from a population with density $f(x) = \theta \cdot x^{-(\theta+1)}$ where $x \geq 1, \theta > 0$ then $\prod_{i=1}^n x_i$ is minimal sufficient for θ .
- (ii) Let x_1, x_2, \dots, x_n be a random sample of size 'n' drawn from Uniform (0, θ), $0 < \theta < 1$ then $x_{(n)}$ is the sufficient statistic for θ .
- (iii) Let x_1, x_2, \dots, x_n be a random sample of size 'n' drawn from Uniform ($\theta - 1/2$, $\theta + 1/2$), then $T = (x_{(1)}, x_{(n)})$ is jointly sufficient statistic for θ is not complete.

Options :

1. ✘ (i), (ii)

2. ✘ (ii), (iii)

3. ✘ (i), (iii)

4. ✔ (i), (ii), (iii)

Question Number : 131 Question Id : 51714410025 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s) (in the usual notations):

- (i) A test T of the H_0 is said to be unbiased if the probability of rejecting H_0 when it is false is at least as much as the probability of rejecting H_0 when it is true.
- (ii) A test T of $H_0: \theta = \theta_0$ Vs $H_1: \theta = \theta_1$ is said to be minimax if for any T^* , $\text{Max}\{R(T, \theta_0), R(T, \theta_1)\} \leq \text{Max}\{R(T^*, \theta_0), R(T^*, \theta_1)\}$.

Options :

1. ✘ (i)

2. ✘ (ii)

3. ✔ (i), (ii)

4. ✘ Neither (i) nor (ii)

Question Number : 132 Question Id : 51714410026 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s) (in the usual notations):

- (i) A sample of 900 members is found to have a mean of 3.40 cm. The test statistic value for testing can it be reasonably regarded as a simple sample from a large population whose mean is 3.25 cm and SD 2.61 cm is 1.72
- (ii) standard error S.E. enables us to determine the probable limits within which population parameter may be expected.
- (iii) The discrepancy between observed and expected value of test statistic is less than Z_α times of standard error.

Options :

1. ✔ (i), (ii), (iii)

2. ✘ (ii), (iii)

3. ✘ (i) (ii)

(i), (iii)

4. ✘

Question Number : 133 Question Id : 51714410027 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The best critical region suggested by Neyman-Pearson takes form $r = f_1 / f_0 > c$, the constant c can be obtained by _____ (in the usual notations)

Options :

$P [r > c] \leq 1 - \alpha/2$

1. ✘

$P [r > c] \leq \alpha$

2. ✔

$P [r < c] \leq \alpha.$

3. ✘

$P [r < c] \leq 1 - \alpha/2.$

4. ✘

Question Number : 134 Question Id : 51714410028 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The ranks of 20 observations of three groups of different feeding materials are given below.

A: 14 6 11 1 5 13 17

B: 2 15 7 3 8

C: 16 20 12 19 18 10 9 4

The suitable test statistic value for testing H_0 that the three feeds are equally effective is

Options :

5.99

1. ✘

3.98

2. ✔

2.97

3. ✘

2.57

4. ✘

Question Number : 135 Question Id : 51714410029 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Given the score of two groups of persons, with sizes 7 and 9, scores are collected to test the distribution of scores are identical:

A: 10 13 12 15 16 8 6

B: 20 14 7 9 17 18 19 25 24

The suitable test statistic value to test the hypothesis is

Options :

1. ✓ U = 13
2. ✗ R = 16
3. ✗ D = 9
4. ✗ No test is applicable

Question Number : 136 Question Id : 51714410030 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the wrong statement(s):

- (i) Most internet polls along with call-in, text-in, write-in polls are representative of some larger population of interest and attracts people who feel strongly about the issue.
- (ii) In a program, viewers were invited to call one telephone number to respond "Yes" and another to respond "No" on an issue. There was a charge for calling either number. More than 1,86,000 callers responded and 67% said "No". This is an example of Convenience Sampling.
- (iii) When the participation in the survey is optional, it can be described as non-response.
- (iv) People answering to the question that they do not understand is an example of response bias

Options :

1. ✓ (i), (ii) & (iii)
2. ✗ (i), (iii)
3. ✗ (iii), (iv)
4. ✗ (i), (iii), (iv)

Question Number : 137 Question Id : 51714410031 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

In a two-stage sampling with equal first stage units, units of each stage are generally selected using

- i. Simple Random Sampling
- ii. Stratified Random Sampling
- iii. Sampling with Replacement
- iv. Sampling without Replacement

Options :

1. ✘ (i) (iii)
2. ✘ (ii) (iii)
3. ✔ (i) (iv)
4. ✘ (ii) (iv)

Question Number : 138 Question Id : 51714410032 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s) (in the usual notations):

- i) In a group of 200 workers numbering from 1 to 200, a sample of 10 workers are selected using systematic sampling. Then the probability for selecting one worker from the numbers 120-140 is $1/10$.
- ii) Let V_{ran} , V_{prop} and V_{opt} be the variances of the usual estimators under Simple random sampling, proportional allocation and optimum allocation for a given sample size. If N_h is large, then $V_{\text{ran}} \geq V_{\text{prop}} \geq V_{\text{opt}}$.

Options :

1. ✘ (i)
2. ✔ (ii)
3. ✘ Both (i) & (ii)
4. ✘ Neither (i) nor (ii)

Question Number : 139 Question Id : 51714410033 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s):

- (i) The Kruskal -Wallis test is based on the assumptions, that the variable under study is continuous, the observations are independent within and between samples and populations are identical except possibly in respect of median.
- (ii) The probability density function of two random variables X and Y is given by $f(x, y) = 1.5(x^2+y^2)$ where $0 \leq x, y \leq 1$ then the regression line of Y on X is $Y = \frac{-15}{73}X + \frac{55}{73}$.

Options :

- 1. ✘ (i)
- 2. ✘ (ii)
- 3. ✔ (i), (ii)
- 4. ✘ Neither (i) nor (ii)

Question Number : 140 Question Id : 51714410034 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s) (in the usual notations):

- (i) The average loss of information due to missing value in a Randomized Block Design with 5 treatments in 6 blocks is 20/21.
- (ii) A 2^3 factorial experiment conducted in two blocks with treatments:
Block-I: (1) (a) (bc) (abc)
Block-II: (c) (b) (ac) (ab)
the confounded term is BC.

Options :

- 1. ✘ (i)
- 2. ✘ (ii)
- 3. ✔ (i) (ii)
- 4. ✘ neither (i) nor (ii)

Question Number : 141 Question Id : 51714410035 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the wrong statement(s) (in the usual notations):

- (i) Split plot design can be treated in general as factorial experimental design with unequal number of levels in the factors.
- (ii) Split-plot design is a confounded design in which the main plot treatments are confounded with whole plots.
- (iii) The error degrees of freedom for main plots and sub plots are $p(r-1)(q-1)$ and $(r-1)(p-1)$ respectively.

Options :

1. ✓ (iii)

2. ✗ (i), (ii)

3. ✗ (ii), (iii)

4. ✗ All

Question Number : 142 Question Id : 51714410036 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Let r_v be the replications of v treatments and k_b be the b block sizes of a general incomplete block design, then the C matrix is (in the usual notations).

Options :

1. ✗ $N'N - rE_{vv}$

2. ✗ $\lambda I_v - v^{-1}N'N$

3. ✓ $rI_v - N' k^{-1}N$

4. ✗ $(r-\lambda)I_v - \lambda E_{vv}$

Question Number : 143 Question Id : 51714410037 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the wrong statement(s) (in the usual notations):

- (i) In a hypothetical market, there are only two brands A and B. A customer buys brand A with probability 0.7 if his purchase as A buys and buys brand B with probability 0.4 if his last purchase was B. The proportion of customers buy brand A and brand B in the long run is [0.667 0.333].
- (ii) The stochastic matrix $P = \begin{bmatrix} 0 & 1 \\ \frac{1}{2} & \frac{1}{2} \end{bmatrix}$ is regular.

Options :

1. ✘ (i)
2. ✘ (ii)
3. ✔ (i), (ii)
4. ✘ Neither (i) nor (ii)

Question Number : 144 Question Id : 51714410038 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The nature of states of the Markov chain with transition probability matrix

$$P = \begin{bmatrix} 0 & 1 & 0 \\ \frac{1}{2} & 0 & \frac{1}{2} \\ 0 & 1 & 0 \end{bmatrix} \text{ is}$$

Options :

1. ✘ Finite irreducible and all states are ergodic.
2. ✘ Finite reducible, all states are ergodic, all states are null persistent.
3. ✘ Finite irreducible and all states are ergodic, and all states are non-null persistent.
4. ✔ Finite irreducible, all states are not ergodic, all states are non-null persistent.

Question Number : 145 Question Id : 51714410039 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The mean vector and variance covariance matrix of $[Y \ Z_1 \ Z_2]'$ are $[5 \ 2 \ 0]'$ and

$\begin{bmatrix} 10 & 1 & -1 \\ 1 & 7 & 3 \\ -1 & 3 & 2 \end{bmatrix}$. The best linear predictor $Y = \beta_0 + \beta_1 Z_1 + \beta_2 Z_2$ estimate of β vector is

Options :

1. ✘ $[3 \ 1 \ 0]$
2. ✘ $[3 \ 2 \ 0]$
3. ✔ $[3 \ 1 \ -2]$
4. ✘ $[3 \ 2 \ 2]$

Question Number : 146 Question Id : 51714410040 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The first principal component when the covariance matrix $\Sigma = \begin{bmatrix} 1 & 4 \\ 4 & 100 \end{bmatrix}$ is (in the usual notations of variables)

Options :

1. ✘ $0.999 X_1 - 0.040 X_2$
2. ✔ $0.040 X_1 + 0.999 X_2$
3. ✘ $0.707 X_1 + 0.707 X_2$
4. ✘ $0.707 Z_1 + 0.707 Z_2$

Question Number : 147 Question Id : 51714410041 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The generalized variance of a tri-variate normal distribution with sample covariance

matrix $S = \begin{bmatrix} 4 & 3 & 1 \\ 3 & 9 & 2 \\ 1 & 2 & 1 \end{bmatrix}$ is

Options :

1. ✘ 4.667

2. ✓ 14

3. ✘ 36

4. ✘ 98/18

Question Number : 148 Question Id : 51714410042 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The arrival rate and service rates of a M/M/1 queuing system are 3 and 4, then the probability of the system emptiness is

Options :

1. ✘ 0.15

2. ✓ 0.25

3. ✘ 0.35

4. ✘ 0.45

Question Number : 149 Question Id : 51714410043 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Among the following statements, identify the correct statement(s):

- (i) In a pay-off matrix, if each element of a column is dominated by any other column then delete inferior elements column
- (ii) If the game does not have a saddle point, then Simplex method is used to solve a 3x3 game.
- (iii) Graphical method is used for games of order $2 \times n$ or $m \times 2$.

Options :

1. ✘ i & ii

2. ✘ i & iii

3. ✘ ii & iii

4. ✓ i, ii & iii

Question Number : 150 Question Id : 51714410044 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

In an inventory EOQ model, among the following wrong assumptions is / are

- (i) Annual demand is unknown and not a constant
- (ii) Estimates of carrying and ordering costs are **inaccurate**
- (iii) The ratio of ordering cost per order placed to carrying cost as a percentage of average inventory is always a constant.
- (iv) Instantaneous receipt of orders not occurs exactly when previous inventory is used up.

Options :

- 1. ✓ All
- 2. ✗ (ii) & (iii)
- 3. ✗ (iii)
- 4. ✗ (i) (ii) (iv)